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*****
*
*      *--08/30/77 --- REDUCED COMPUTER OUTPUT MICROFILM (COM) SERVICE -----*
*
*      DUE TO VACATIONS, MICROFILM SERVICE WILL BE 0800-1630 MONDAY THROUGH FRIDAY.
*      THIS PERIOD WILL LAST FROM AUG 31 UNTIL SEPT 12. HOWEVER, IF THERE IS SUFFICIENT
*      NEED, SATURDAY AND SUNDAY SERVICE WILL BE PROVIDED.
*      CONTACT THE SHIFT SUPERVISOR, EXT. 2405 IF YOU FORSEE A NEED FOR ADDITIONAL
*      SERVICE DURING THIS PERIOD.
*
*      *--08/23/77 --- JOBS WITH CALCOMP OUTPUT HELD IN PURGE -----*
*
*      ON 8/23/77 COM DSP WAS RE-INSTALLED. COM REPLACES MLB$DRVR AND SPOOLS TO TAPE
*      JOBS THAT REQUIRE PROCESSING ON THE CALCOMP. (I.E. JOBS WITH SYSOUT W, X, Y,
*      OR Z OUTPUT). FOR THE 1ST 2 WEEKS 8/23/77 TO 9/02/77, ALL JOBS PROCESSED BY COM
*      WILL BE HELD IN PROCESS PURGE AFTER THEIR DATA SETS HAVE BEEN 'PRINTED'. THESE
*      JOBS WILL BE RELEASED AFTER THEIR OUTPUT HAVE BEEN CHECKED.
*
*      *--08/30/77----- FORTRAN CATALOGED PROCEDURES CHANGED -----*
*
*      ON TUESDAY MORNING, AUGUST 30, ALL CATALOGED PROCEDURES WHICH REFER
*      TO THE FORTRAN SUBROUTINE LIBRARIES WERE CHANGED. THE ORDER IN WHICH THE
*      LIBRARIES ARE SEARCHED WERE REVERSED SO THAT SYS3.FORTLIB WERE SEARCHED
*      BEFORE SYS1.FORTLIB.
*      THIS CHANGE WILL HAVE NO IMMEDIATE EFFECT ON JOBS CURRENTLY RUNNING
*      ON THE SYSTEM. WE RECOMMEND THAT SIMILAR CHANGES BE MADE TO YOUR PRIVATE
*      PROCEDURE LIBRARIES TO TAKE ADVANTAGE OF FUTURE LIBRARY ENHANCEMENTS.
*      THE FOLLOWING PROCEDURES ARE AFFECTED:
*
*      ASMCG   ASMFCG   ASMGCG   ASMGO   ASMCLG   ASMFCLG   ASMGCLG   ASMLINK   ASMCL
*      ASMFCL  ASMGCL  ECLLINKX ECLLINKA ECLLINKF ECLLOADX ECLLOADA ECLLOADF ECLLODRX
*      ECLLODRA ECLLODRF FETE     FORTGCG  FORTGCLD FORTHCG  FORTHCLD FORTXCLG FTNGGO
*      FORTGCLG FTNGLINK FORTGCL  FTNHGO  FORTHCLG FORTRAN  FTNHLINK FORTHCL  FTNHLOOK
*      LINK    LKED    LINKGO  FORTGLG FORTHLG  LINKPX1  LOADGO   MORTGCG  MORTGCL
*      MORTGCLG MORTHCG  MORTHCL MORTHCLG MORTRAN  MORTXCLG MRTXFETE PXLINKGO PX1FLG
*      PX1LFLG  PXLOADGO PX1LFG  PX1CG   PX1FCG  PX1LFCG  PX1GO    PX1CLG  PX1FCLG
*      PX1LFCLG PX1LINK  PX1CL   PX1FCL  PX1LFCL  PX1LOOK
*
*****

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```

ISV40 JOB ORIGIN FROM GROUP=LOCAL , DSP=IJP, DEVICE=SYA , 9F8
//MRDCG871 JOB MRD$CG,888,CLASS=E,TIME=(1,30) 0.002 A
//*MAIN LINES=25 0.004
//*MAIN HOLD=OUTPUT
//MCS80 EXEC ASM,ASMTIM='(1,25)',ASMRGN=400K, 0.022
// ASMPRM='NOESD,TERM,LINECOUNT(115)', 0.024
// ASMPGM=ASMH,ASMVER=NEW, 0.026
// ASMLB5='SYS1,DUMMYC',ASMLE3='WYL,CG,MRD,MACLIB', 0.028
// ASMLB4='WYL,CG,MCS,MACLIB' 0.03
//ASM,SYSDD DD UNIT=SYSDA,DSN=%%PNCH,DISP=(,PASS),SPACE=(TRK,(9,5)) 0.032
//ASM,SYSDD DD UNIT=SYSDA,DSN=%%LIST,DISP=(,PASS),SPACE=(CYL,(4,2)), 0.034
// DCB=(RECFM=FBM,LRECL=121,BLKSIZE=3509) 0.036
//OBJOUT DD DSN=WYL,CG,MRD,OBJ,DISP=(MOD,DELETE), 0.038
// UNIT=DISK,VOL=SER=SCFEV5,SPACE=(TRK,(10,5)) 0.04
//SYSIN DD * 0.042
/* 3859.004
//CLEANUP EXEC PGM=CLEANUP1,REGION=76K 3859.006
//STEPLIB DD DSN=WYL,CG,PUB,LOADMODS,DISP=SHR 3859.008
//IN DD DSN=%%LIST,DISP=(OLD,DELETE) 3859.01
//OUT DD SYSOUT=A,DCB=(BLKSIZE=1936,RECFM=FBM) 3859.012
//OBJIN DD DSN=%%PNCH,DISP=(OLD,DELETE) 3859.014
//OBJOUT DD DSN=WYL,CG,MRD,OBJ,UNIT=2314, 3859.016
// VOL=SER=SCFEV5,DISP=(NEW,KEEP),SPACE=(TRK,(10,5),RLSE), 3859.018
// DCB=BLKSIZE=1600 3859.02
//CIAO EXEC PGM=CIAO,COND=EVEN,REGION=76K 3860.002
//STEPLIB DD DSN=WYL,CG,LJS,LOADMODS,DISP=SHR 3860.004
//JOBQ DD DSN=SYS1.SYSJOBQE,DISP=SHR 3860.006

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LOCATE' 0164WYL,CG,MRD,MACLIB '
AL01640E001/WYL0070004
LOCATE' 0164WYL,CG,MCS,MACLIB '
AL01640E001/WYL0110003
LOCATE' 0164WYL,CG,PUB,LOADMODS '
AL01640E001/WYL0060004
LOCATE' 0164WYL,CG,LJS,LOADMODS '
AL01640E001/WYL0050004
ARIX63 JOB (0164) MRDCG871 IS PRIORITY 09 CLASS B

```

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AMDS01 JOB 0164 (MRDCG871) IN SETUP ON MAIN=SYC TIME 16:39:19
AMDS02 SYSLIB B USING D WYL007 ON 224
AMDS02 SYSLIB B USING D WYL011 ON 463
AMDS02 OBJOUT B USING D SCFEV5 ON 222
AMDS02 STEPLIB B USING D WYL006 ON 223
AMDS02 STEPLIB B USING D WYL005 ON 553
MRDCG871 IEF403I MRDCG871 STARTED TIME=16.40.57
MRDCG871 IEF234E D 608,ASP608
MRDCG871 IEF234E R 60B,,MRDCG871
*MRDCG871*62 IECASPO 60B IS MRDCG871 ASM MCS80 ASPI0001
*MRDCG871*63 IECASPO 609 IS MRDCG871 A ASM MCS80 SYSTEM
MRDCG871 IEC202E K 60B,010164,NL,MRDCG871,ASM
*MRDCG871*79 IECASPO 60B IS MRDCG871 A CLEANUP OUT
*MRDCG871*84 INTASPC ASP *SYA @TO MRD MRDCG871 IS ENDING; ASM=0, CLEANUP=0
MRDCG871 IEF404I MRDCG871 ENDED TIME=16.45.41

```

```

----- OPERATING SYSTEM MESSAGES -----
//MRDCG871 JOB MRD$CG,888,CLASS=E,TIME=(1,30) 0.002
//MCS80 EXEC ASM,ASMTIM='(1,25)',ASMRGN=400K, 0.022

```

```

// ASMPRM='NOESD,TERM,LINECOUNT(115)', 0.024
// ASMPGM=ASMH,ASMVER=NEW, 0.026
// ASMLB5='SYS1,DUMMYC',ASMLB3='WYL,CG,MRD,MACLIB', 0.028
// ASMLB4='WYL,CG,MCS,MACLIB' 0.03
//ASM,SYSGO DD UNIT=SYSDA,DSN=##PNCH,DISP=(,PASS),SPACE=(TRK,(9,5)) 0.032
//ASM,SYSRINT DD UNIT=SYSDA,DSN=##LIST,DISP=(,PASS),SPACE=(CYL,(4,2)), 0.034
// DCB=(RECFM=FBM,LRECL=121,BLKSIZE=3509) 0.036
//OBJOUT DD DSN=WYL,CG,MRD,OBJ,DISP=(MOD,DELETE), 0.038
// UNIT=DISK,VOL=SER=SCFEV5,SPACE=(TRK,(10,5)) 0.04
//SYSIN DD DSN=##ASPI0001,UNIT=(CTC,,DEFER),VOL=SER=010164, 0.042
// DISP=(OLD,DELETE),DCB=(RECFM=FB,LRECL=80,BLKSIZE=2000,BUFNO=02)

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IEF236I ALLOC. FOR MRDCG871 ASM MCS80
IEF237I STEPLIB ALLOCATED (555,555)
IEF237I SYSGO ALLOCATED (460) SYSLIB ALLOCATED (555,555,224,463,555,546)
IEF237I SYSRINT ALLOCATED (222) SYSPUNCH ALLOCATED (608)
IEF237I SYSTEM ALLOCATED (609) SYSUT1 ALLOCATED (461)
IEF237I SYSUT2 ALLOCATED (227) SYSUT3 ALLOCATED (460)
IEF237I OBJOUT ALLOCATED (222) SYSIN ALLOCATED (608)

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IEF142I - STEP WAS EXECUTED - COND CODE 0000

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IEF285I SYS1.DUMMYL KEPT SYSDV1.
IEF285I SYS1.LINKNEW KEPT SYSDV1.
IEF285I SYS77243.T163823.RV001.MRDCG871.PNCH PASSED WORK01.
IEF285I SYS1.DUMMYC KEPT SYSDV1.
IEF285I SYS1.DUMMYC KEPT SYSDV1.
IEF285I WYL,CG,MRD,MACLIB KEPT WYL007.
IEF285I WYL,CG,MCS,MACLIB KEPT WYL011.
IEF285I SYS1.DUMMYC KEPT SYSDV1.
IEF285I SYS3,MACLIB KEPT ALT18C.
IEF285I SYS77243.T163823.RV001.MRDCG871.LIST PASSED SCFEV5.
IEF285I SYS77243.T163823.RV001.MRDCG871.ASP0A002 DELETED ASP609.
IEF285I SYS77243.T163823.RV001.MRDCG871.R0002652 DELETED WORK02.
IEF285I SYS77243.T163823.RV001.MRDCG871.R0002653 DELETED SCFEV4.
IEF285I SYS77243.T163823.RV001.MRDCG871.R0002654 DELETED WORK01.
IEF283I WYL,CG,MRD,OBJ NOT DELETED 8 SCFEV5 1.
IEF285I SYS77243.T163823.RV001.MRDCG871.ASPI0001 DELETED 010164.

```

SMF001I	STEP ASM	STEP NUMBER=	1				RETURN=	0 DEC	
SMF002I	DATE= 08/31/77	STRT=	16:40:57.30	STOP=	16:44:44.85	E.T.=	3:47.55	CPU=	0:47.74
SMF003I	CPU ID= 91-C	SYSTEM=	MVT 21.8	MEM REQ=	400K	MEM USED=	398K	MEMRY FUNC=	0.90
SMF004I						WAIT=	1:37.53		
SMF005I	I/O COUNTS	2314/555=	0	2314/555=	0	3330/460=	7	2314/555=	0
SMF005I	I/O COUNTS	2314/555=	0	2314/224=	7	3330/463=	24	2314/555=	0
SMF005I	I/O COUNTS	2314/546=	0	2314/222=	374	CTC./608=	0	CTC./609=	1
SMF005I	I/O COUNTS	3330/461=	307	2314/227=	0	3330/460=	0	2314/222=	0
SMF005I	I/O COUNTS	CTC./608=	173						
SMF006I	I/O TOTALS	OTHER=	174	7 TRK=	0	9 TRK=	0	DASD=	719
SMF007I	STEP CHARGES	CTHER=	0.87	7 TRK=	0.00	9 TRK=	0.00	DASD=	28.76
SMF008I	STEP CHARGES			MEM=	42.97	CPU=	47.74	TOTAL=	120.28

```

//CLEANUP EXEC PGM=CLEANUP1,REGION=76K 3859.006
//STEPLIB DD DSN=WYL,CG,PUB,LOADMODS,DISP=SHR 3859.008
//IN DD DSN=##LIST,DISP=(OLD,DELETE) 3859.01
//OUT DD SYSOUT=A,DCB=(BLKSIZE=1936,RECFM=FBM) 3859.012
//OBJIN DD DSN=##PNCH,DISP=(OLD,DELETE) 3859.014
//OBJOUT DD DSN=WYL,CG,MRD,OBJ,UNIT=2314, 3859.016
// VOL=SER=SCFEV5,DISP=(NEW,KEEP),SPACE=(TRK,(10,5),RLSE), 3859.018
// DCB=BLKSIZE=1600 3859.02

```

```

IEF236I ALLOC. FOR MRDCG871 CLEANUP
IEF237I STEPLIB ALLOCATED (223) IN ALLOCATED (222)
IEF237I OUT ALLOCATED (608) OBJIN ALLOCATED (460)

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IEF237I OBJOUT ALLOCATED (222)

IEF142I - STEP WAS EXECUTED - COND CODE 0000

IEF285I WYL.CG.PUB.LOADMODS
IEF285I SYS77243.T163823.RV001.MRDCG871.LIST
IEF285I SYS77243.T163823.RV001.MRDCG871.ASPOA003
IEF285I SYS77243.T163823.RV001.MRDCG871.PNCH
IEF285I WYL.CG.MRD.OBJ

KEPT
DELETED
DELETED
DELETED
KEPT

WYL006.
SCFEV5.
ASP60B.
WORK01.
SCFEV5.

SMF001I STEP CLEANUP STEP NUMBER= 2
SMF002I DATE= 08/31/77 STRT= 16:44:45.20
SMF003I CPU ID= 91-C SYSTEM= MVT 21.8
SMF004I
SMF005I I/O COUNTS 2314/223= 0
SMF005I I/O COUNTS 2314/222= 15
SMF006I I/O TOTALS OTHER= 386
SMF007I STEP CHARGES OTHER= 1.93
SMF008I STEP CHARGES

STOP= 16:45:37.36
MEM REQ= 78K
2314/222= 376
7 TRK= 0
7 TRK= 0.00
MEM= 0.92

E.T.= 0:52.16
MEM USED= 30K
WAIT= 0:35.67
CTC./60B= 386
9 TRK= 0
9 TRK= 0.00
CPU= 1.19

RETURN= 0 DEC
CPU= 0:01.19
MEMRY FUNC= 0.77
3330/460= 9
DASD= 400
DASD= 16.00
TOTAL= 19.98

//CIAO EXEC PGM=CIAO,COND=EVEN,REGION=76K 3860.002
//STEPLIB DD DSN=WYL.CG.LJS.LOADMODS,DISP=SHR 3860.004
//JOBQ DD DSN=SYS1.SYSJOBQE,DISP=SHR 3860.006

IEF236I ALLOC. FOR MRDCG871 CIAO
IEF237I STEPLIB ALLOCATED (553)

JOBQ ALLOCATED (10)

IEF142I - STEP WAS EXECUTED - COND CODE 0020

IEF285I WYL.CG.LJS.LOADMODS
IEF285I SYS1.SYSJOBQE

KEPT
KEPT

WYL005.
DRUM1 .

SMF001I STEP CIAO STEP NUMBER= 3
SMF002I DATE= 08/31/77 STRT= 16:45:37.65
SMF003I CPU ID= 91-C SYSTEM= MVT 21.8
SMF004I
SMF005I I/O COUNTS 2314/553= 0
SMF006I I/O TOTALS OTHER= 0
SMF007I STEP CHARGES OTHER= 0.00
SMF008I STEP CHARGES

STOP= 16:45:41.13
MEM REQ= 78K
2301/100= 4
7 TRK= 0
7 TRK= 0.00
MEM= 0.05

E.T.= 0:03.48
MEM USED= 6K
WAIT= 0:01.06
9 TRK= 0
9 TRK= 0.00
CPU= 0.07

RETURN= 20 DEC
CPU= 0:00.07
MEMRY FUNC= 0.77
DASD= 4
DASD= 0.16
TOTAL= 0.28

ASSEMBLER DONE

NO STATEMENTS FLAGGED IN THIS ASSEMBLY

OVERRIDING PARAMETERS- NOESD,TERM,LINECOUNT(115)

OPTIONS FOR THIS ASSEMBLY

NODECK, OBJECT, LIST, XREF(SHORT), NORENT, NOTEST, BATCH, ALIGN, NOESD, NORLD, TERM, LINECOUNT(15),

FLAG(0), SYSPARM()

NO OVERRIDING DD NAMES

ASM H V 05 16.41 08/31/77

MACRO DEFINITION FOUND WITHIN INPUT STREAM

MEMBER(S) USED -	ADC	ADCI	ADD	ADDI	ALIGN	ANA	ANAI	AND	ANDI	ASCII
	CAL	CALL	CALL@	CCB	CCBSET	CHAR	CMA	CMC	CMDEF	CMP
	CMPI	DAA	DEC	DI	DS	DSALFINE	EI	ELSE	END	EQU
	EXITIF	GETL	GET2	HLT	IF	INC	INIT	INP	IOR	IORI
	JMP	LABEL	LD	LEVCHK	LOD	LODI	LOOP	MULT	NEG	NESTDN
	NESTUP	NOP	ORA	ORAI	ORG	OUT	POP	PUSH	RESUME	RET
	ROT	SBB	SBBI	ST	STC	SUB	SUBI	XADR	XASC	XCH
	XCHAR	XCHK	XINDEX	XJMPCAL	XNUL	XOR	XORI	XPAND	XPSHPOP	XRA
	XRAI	XREG	XREGP	XREPL	XRR	XSETCC	XXRI			

WYL.CG.MRD.MACLIB ON WYL007
MEMBER(S) USED - COMMON ZINGER

WYL.CG.MCS.MACLIB ON WYL011
MEMBER(S) USED - MACROS80

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				1	PRINT OFF SUPPRESS LISTING OF MACROS	0.044
				1493	PRINT ON,GEN,NODATA	0.054
				1494	GBLA &(256)	0.056
				1495	GBLC &VGTVER	1.
				1496	&VGTVER SETC 'VGT18'	2.
				1497	&VGTVER TITLE 'THE VGT - VIDEO GRAPHICS TERMINAL'	3.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77	
1498	*				*****		4.
1499	*						5.
1500	*						6.
1501	*				TTTTTT HH HH EEEEEEE V V GGGGG TTTTTT		7.
1502	*				TT HH HH EE VV VV GG GG TT		8.
1503	*				TT HH HH EE V V GG TT		9.
1504	*				TT HHHHHH EEEEE VV VV GG TT		10.
1505	*				TT HH HH EE VVV GG GGG TT		11.
1506	*				TT HH HH EE VVV GG GG TT		12.
1507	*				TT HH HH EEEEEEE V GGGGG TT		13.
1508	*						14.
1509	*						15.
1510	*						16.
1511	*						17.
1512	*						18.
1513	*				THIS IS THE SOFTWARE FOR THE SLAC-STANFORD VIDED GRAPHICS TERMINAL.		19.
1514	*						20.
1515	*				IT HAS BEEN WRITTEN (IN LATE 1975 AND 1976) BY :		21.
1516	*				LEN SHUSTEK AND		22.
1517	*				ED FRANK AND		23.
1518	*				MARK DE LEMOS		24.
1519	*				WITH SUGGESTIONS FROM OUR FRIENDS		25.
1520	*						26.
1521	*				IT SUPPORTS ALL SORTS OF NEAT THINGS		27.
1522	*						28.
1523	*						29.
1524	*						30.
1525	*				MAILING ADDRESS: COMPUTATION RESEARCH GROUP		31.
1526	*				STANFORD LINEAR ACCELERATOR CENTER		32.
1527	*				P.O. BOX 4349		33.
1528	*				STANFORD, CALIFORNIA 94305		34.
1529	*						35.
1530	*						36.
1531	*						37.
1532	*				THIS SOFTWARE IS WRITTEN USING THE SLAC 8080 ASSEMBLY,		38.
1533	*				WHICH IS A MACRO-ASSEMBLER BASED ON THE IBM 370 ASSEMBLER H.		39.
1534	*				FOR DOCUMENTATION SEE COMPUTATION GROUP TECHNICAL MEMO #174,		40.
1535	*				AVAILABLE FROM SLAC.		41.
1536	*						42.
1537	*				THE VGT IS A BEAST, WHOSE RESPONSIBILITY FOR EXISTENCE BELONGS		43.
1538	*				TO:		44.
1539	*						45.
1540	*				LEN SHUSTEK AND		46.
1541	*				FOREST BASKETT.		47.
1542	*						48.
1543	*				IF IT BYTES, BY ALL MEANS BYTE IT BACK.		49.
1544	*						50.
1545	*				FURTHER INFORMATION ABOUT THE INTERNAL STRUCTURE OF THE VGT IS		51.
1546	*				IN COMPUTATION GROUP TECHNICAL MEMO #175, AVAILABLE FROM SLAC.		52.
1547	*						53.
1548	*				*****		54.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000000				1550	*DEFINITIONS ZINGER	56.
				1551	&VGTVER CSECT ,	57.
				1552	ASCII , DEFINE ASCII CHARACTER SET	57.002
				1589	PUNCH '* &VGTVER ASSEMBLED ON &SYSDATE @ &SYSTIME'	58.
	00020			1590	@SP EQU &(C' ')	59.
				1592	*INCLUDE #VGTDEFNS USE VGT GRD CG ON CAT	60.
				1593	*****	60.001
				1594	*	* 60.002
				1595	THE VGT - VIDEO GRAPHICS TERMINAL	* 60.003
				1596	*	* 60.004
				1597	**** HARDWARE DEFINITIONS ****	* 60.005
				1598	*	* 60.006
				1599	*	* 60.007
				1600	*****	60.008
				1601	* UPDATE LIST 23 MAY 76 LJS	60.009
				1602	* 3 AUG 76 MRD	60.01
				1603	* 5 AUG 76 LJS	60.011
				1604	* 30 AUG 76 EHF (ADDED MODESET2)	60.012
				1605	* 4 SEP 76 LJS (ADDED WRAP ADDRESSES)	60.013
				1606	*	60.014
				1607	* MEMORY MAP	60.015
				1608	*	60.016
	00400			1609	K EQU 1024	60.017
	00000			1611	ROM EQU 0*K	60.018
	02000			1613	CPURAM EQU 8*K	60.019
	00400			1615	CPURAMSZ EQU 1*K	60.02
	02800			1617	CHGENROM EQU 10*K	60.021
	03000			1619	CHGENRAM EQU 12*K	60.022
	04000			1621	RAM EQU 16*K	60.023
	04400			1623	LWRAPADR EQU 17*K	60.024
	07400			1625	HWRAPADR EQU 29*K	60.025
				1627	*	60.026
				1628	*	60.027
				1629	* I/O SYMBOLS MARKED '(PORT)' ARE I/O PORTS,	60.028
				1630	* OTHERS ARE BIT-WITHIN-PORT DEFINITIONS.	60.029
				1631	*	60.03
				1632	*	60.031
				1633	* INPUT PORTS	60.032
				1634	*	60.033
	00084			1635	KEYBOARD EQU X'84' (PORT) KEYBOARD CHARACTER, X'80' IS STROBE	60.034
	00085			1637	STATBITS EQU X'85' (PORT) STATUS BITS:	60.035
	00010			1639	KBNEWCHR EQU X'10' NEW KB CHAR (IE STROBE CHANGED)	60.036
	00008			1641	FRAMECNT EQU X'08' EVEN/ODD FRAME BIT	60.037
	00004			1643	FRAMEINT EQU X'04' END-OF-FRAME INTERRUPT	60.038
	00002			1645	KBATTN EQU X'02' KEYBOARD 'ATTN' KEY PRESSED	60.039
	00001			1647	KBRPT EQU X'01' KEYBOARD 'REPEAT' KEY PRESSED	60.04
	00041			1649	URTSTAT EQU X'41' (PORT) USART STATUS	60.041
	00001			1651	URTTXRDY EQU X'01' XMIT READY BIT	60.042
	00002			1653	URTRXRDY EQU X'02' RCVR CHAR READY	60.043
	00038			1655	URTRERR EQU B'00111000' RECVR ERRORS. PUNT.	60.044
	00020			1657	URTRVBK EQU B'00100000' REVERSE BREAK RECIEVED	60.045
	00001			1659	URTRCV EQU X'01' (PORT) USART RECEIVED CHARACTER	60.046
	00086			1661	ATODVAL EQU X'86' (PORT) VALUE OF LAST A/D CONVERSION	60.047
	00087			1663	PARIN EQU X'87' (PORT) PARALLEL DATA INPUT	60.048
	00001			1665	PRTREADY EQU X'01' VERSATEC PRINTER READY BIT	60.049

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT
		00083	1667	SCRWHEEL EQU	X'83' (PORT)

ASM H V 05 16.41 08/31/77

SCROLLING WHEEL POSITION

60.05

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				1670 *		60.052
				1671 *	OUTPUT PORTS	60.053
				1672 *		60.054
00082	1673	RSFRMINT	EQU	X'82'	(PORT) RESET FRAME INTERRUPT	60.055
00083	1675	RSURTINT	EQU	X'83'	(PORT) RESET USART INTERRUPT	60.056
00084	1677	DISADDRH	EQU	X'84'	(PORT) HIGH-ORDER DISPLAY ADDRESS	60.057
00085	1679	DISADDRL	EQU	X'85'	(PORT) LOW-ORDER DISPLAY ADDRESS	60.058
00086	1681	BELL	EQU	X'86'	(PORT) BEEPER	60.059
00087	1683	CHLINE1	EQU	X'87'	(PORT) 1ST LINE OF ROW 1 TO DISPLAY	60.06
00080	1685	MODESET	EQU	X'80'	(PORT) CONTROL BITS:	60.061
00080	1687	REVRVID	EQU	X'80'	REVERSE VIDEO CONTROL	60.062
00040	1689	SCRNBLNK	EQU	X'40'	SCREEN BLANKING CONTROL	60.063
00020	1691	NORCMCHR	EQU	X'20'	NO ROM CHARS (RAM ONLY) IN TEXT MODE	60.064
0000C	1693	URTCLOCK	EQU	X'0C'	USART EXTERNAL/INTERNAL CLOCK CONTRL	60.065
00010	1695	GRAPHMD	EQU	X'10'	GRAPH MODE	60.066
00002	1697	QUICKMD	EQU	X'02'	QUICK MODE FOR RAM ACCESS	60.067
00001	1699	SIXTNMD	EQU	X'01'	16 RASTERS/ROW MODE	60.068
000A6	1701	MODESET2	EQU	X'A6'	(PORT) MORE MODEBITS	60.069
00080	1703	HIGHWRAP	EQU	X'80'	WRAP TO X'7600'	60.07
00040	1705	ATODSTRT	EQU	X'40'	START A/D CONVERSION (20 USEC.)	60.071
00041	1707	URTCTL	EQU	X'41'	(PORT) USART CONTROL BITS:	60.072
00057	1709	URTINTRS	EQU	B'01010111'	INTERNAL RESET (TO SET MODE)	60.073
0007A	1711	URTMODE	EQU	B'01111010'	ASYNC, EVEN PARITY, 7BITS, 16XCLK	60.074
00079	1713	URTX1MD	EQU	B'01111001'	ASYNC, EVEN PARITY, 7BITS, 1XCLK<--	60.075
0000F	1715	URTBREAK	EQU	B'00001111'	SEND BREAK	60.076
00007	1717	URTRSBK	EQU	B'00000111'	RESET BREAK	60.077
00017	1719	URTRSERR	EQU	B'00010111'	RESET RCV ERR, RCV ENB, DTR, XMT ENB	60.078
00001	1721	URTXMT	EQU	X'01'	(PORT) USART TRANSMITTED CHARACTER	60.079
0008E	1723	URTSPEED	EQU	X'8E'	(PORT) USART BAUD RATE; 4 BITS RCV, 4 XMIT	60.08
00096	1725	KBRESET	EQU	X'96'	(PORT) RESET KB STROBE FF (IE 'KBNEWCHR')	60.081
0009E	1727	ATODSEL	EQU	X'9E'	(PORT) SELECT ANALOG SOURCE BY 1 OF A3-A0	60.082
000AE	1729	KBCLICK	EQU	X'AE'	(PORT) KEYBOARD CLICK	60.083
000B6	1731	PAROUT	EQU	X'B6'	(PORT) PARALLEL DATA OUT	60.084
000BE	1733	PARRESET	EQU	X'BE'	(PORT) PARALLEL OUTPUT RESET	60.085
				1735	*INCLUDE VGTRAMAP USE VGT GRO CG ON CAT	61.
00080	1736	CMDKEY	EQU	X'80'		61.001

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
1739					*****	61.003
1740					* HERE ARE THE COROUTINE MACRO DEFINITIONS	61.004
1741					*****	61.005
1742					MACRO	61.006
1743	&L				CCB &STACKSZ=40	61.007
1744					GCLA &CCBLEN	61.008
1745					AIF (K'&L GT 6).ERR LENGTH OF NAME<7	61.009
1746	&L				DS 0X	61.01
1747	&L.SP				DS 2 THIS STACKPTR IS 2 BECAUSE WE DO A	61.011
1748	.*				DOUBLE STORE OF HL TO &L.SP BELOW	61.012
1749	&L.CS				DS 1 POINTER TO CHARACTER SOURCE CCB	61.013
1750	&L.CP				DS 1 POINTER TO CHARACTER PROC. CCB	61.014
1751					DS &STACKSZ HERE IS THE STACK	61.015
1752	&L.ST				DS 0 THE END OF IT	61.016
1753	&CCBLEN				SETA &CCBLEN+&STACKSZ+4 INCREMENT COUNTER	61.017
1754					AIF (&CCBLEN LT 256).OK AND MAKE SURE WE STAY ON ONE PAGE	61.018
1755					MNOTE 8,'***ERROR*** CONTROL BLOCKS EXCEED 255'	61.019
1756	.OK				MEXIT	61.02
1757	.ERR				MNOTE 8,'***ERROR*** COROUTINE NAME TOO LONG'	61.021
1758					MEND	61.022
1760					MACRO	61.024
1761	&LABEL				CCBSET &CCB,&EP=,&CS=,&CP=	61.025
1762					AIF ('&LABEL' EQ '').SKIP	61.026
1763	&LABEL				EQU *	61.027
1764	.SKIP				ANOP	61.028
1765					AIF ('&EP' EQ '').A1	61.029
1766					LODI A,&CCB.ST-6,> SET THE INITIAL ENTRY POINT	61.03
1767					ST A,&CCB.SP PUT IT IN THE STACK POINTER	61.031
1768					LODI HL,&EP SET THE INITIAL ENTRY POINT	61.032
1769					ST HL,&CCB.ST-2	61.033
1770	.A1				AIF ('&CS' EQ '').A2	61.034
1771					LODI A,&CS.SP,>	61.035
1772					ST A,&CCB.CS STORE CHARACTER SOURCE CCB LOCATION	61.036
1773	.A2				AIF ('&CP' EQ '').A3	61.037
1774					LODI A,&CP.SP,>	61.038
1775					ST A,&CCB.CP SIMILARLY FOR CHARACTER PROC.	61.039
1776	.A3				ANOP	61.04
1777					MEND	61.041
1779					MACRO	61.043
1780	&LABEL				RESUME &CURTASK,&NEWTASK	61.044
1781	&LABEL				LODI HL,-6	61.045
1782					ADD HL,SP PREPARE TO STORE BC,DE	61.046
1783					ST HL,&CURTASK.SP	61.047
1784					LODI L,&CURTASK,&NEWTASK,> HL NOW POINTS AT &CCB.CP OR CS	61.048
1785					CALL RESUMER CALL GLOBAL ROUTINE	61.049
1786					MEND	61.05
1788					MACRO	61.052
1789	&LABEL				CALL@ &TASK THIS IS FOR CALL INDIRECTS	61.053
1790	&LABEL				LD HL,&TASK GET THE ROUTINE ADDRESS	61.054
1791					CALL JUMPER AND CALL GLOBAL ROUTINE	61.055
1792					MEND	61.056

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				1794	*****	61.058
				1795	*	61.059
				1796	*	61.06
				1797	ASSEMBLY CONSTANTS AND RAM LOCATIONS	61.061
				1798	*****	61.062
				1799	*	61.063
		04400		1800	ITEXT EQU X'4400'	61.064
		00051		1802	LINESIZE EQU 81	61.065
		00025		1804	NLINES EQU 37	61.066
		008B5		1806	SCRNSIZE EQU LINESIZE*NLINES	61.067
		058F0		1808	GRAPHEVN EQU X'10000'-(512+15+1)*LINESIZE	61.068
		0AA41		1810	GRAPHODD EQU GRAPHEVN+257*LINESIZE	61.069
		004BF		1812	TOPOFF EQU 15*LINESIZE	61.07
		0000D		1814	CHARHITE EQU 13	61.071
		0BC00		1816	ITXTSIZE EQU X'10000'-ITEXT	61.072
		0000E		1818	IWASTED EQU ITXTSIZE-ITXTSIZE/LINESIZE*LINESIZE	61.073
		014F0		1820	EXTRA EQU GRAPHEVN-ITEXT	61.074
		014E2		1822	EXLINES EQU EXTRA/LINESIZE*LINESIZE	61.075
				1824	*	61.076
000000		02000		1825	DRG CPURAM	61.077
				1827	* COROUTINE CONTROL BLOCKS...	61.078
		02000		1828	DISPL CCB	61.079
				1830		
002000		02000		1831		
				1832		
002000		02002		1833		
				1834		
002002		02003		1835		
				1836		
002003				1837		
002004				1838		
		0202C		1839	LOADER CCB	61.08
00202C				1841		
		0202C		1842		
00202C				1843		
		0202E		1844		
00202E				1845		
		0202F		1846		
00202F				1847		
002030				1848		
		02058		1849		
		02058		1850	GETCHR CCB	61.081
002058				1852		
		02058		1853		
002058				1854		
		0205A		1855		
00205A				1856		
		0205B		1857		
00205B				1858		
00205C				1859		
		02084		1860		
		02084		1861	HEXER CCB	61.082
002084				1863		
		02084		1864		
002084				1865	PROCESSES ADDRESSES	

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
			02086	1866		
002086				1867		
			02087	1868		
002087				1869		
002088				1870		
			020B0	1871		
				1872	*	
			00050	1873	ALIGN 0,256,FILL=	61.083
002080				1875		61.084
				1876	*	
			02100	1877	INTROUT DS 2	61.085
002100				1879	ADDRESS OF INTERRUPT HANDLER	61.086
			02102	1880	GETPTR DS 2	
002102				1882	NEXT BUFFERED CHAR TO PRCESS	61.087
			02104	1883	PUTPTR DS 2	
002104				1885	NEXT FREE BUFFER LOCATIN	61.088
			02106	1886	BUFCNT DS 2	
002106				1888	CURRENT AMOUNT OF STUFF IN BUFFER	61.089
			02108	1889	NXTCHL1 DS 2	
002108				1891	ADDR OF NEXT CHL1TAB ENTRY TO USE	61.09
			0210A	1892	NXTDISA DS 2	
00210A				1894	NEXT DISPLAY ADDR TO BE LOADED	61.091
			0210C	1895	SAVDISA DS 2	
00210C				1897	SAVED DISPLAY ADDRESS AT "HOME" TIME	61.092
			0210E	1898	SIMDISA DS 2	
00210E				1900	SAVED DISPLAY AT "CLEAR" TIME	61.093
			02110	1901	CLRFLG DS 1	
002110				1903	MSB=1 FOR CLR NEEDED, LSB FOR BANNER	61.094
			02111	1904	MODEBITS DS 1	
002111				1906	CURRENT MODE BITS (SEE "MODESET")	61.095
			02112	1907	CURSLOC DS 2	
002112				1909	LOCATION OF CURSOR	61.096
			02114	1910	CURSX DS 1	
002114				1912	COLUMN NUMBER (ORIGIN 0)	61.097
			02115	1913	CURSX2 DS 1	
002115				1915	TAB OFFSET	61.098
				1916	***** NOTE THE ABOVE TWO BYTES MUST BE SUCCESSIVE LOCATIONS	61.099
				1917	* ALSO NOTE THAT IF YOU MOVE ANY OF THE ABOVE BYTES AROUND AND	61.1
				1918	* THEN TRY TO DEBUG A NEW VERSION FROM RAM, YOU WILL HAVE TROUBLE.	61.101
			02116	1919	CURSCTR DS 1	61.102
002116				1921	COUNT FOR CURSOR BLINK	
			02117	1922	CURSCHAR DS 1	
002117				1924	CHAR DISPLACED BY CURSOR	61.103
			02118	1925	PREVCHAR DS 1	
002118				1927	PREVIOUS CHAR TYPED OR RECEIVED	61.104
				1928	*	
			02119	1929	ESCCHAR DS 1	
002119				1931	(X'FF' FOR CR-LF SEQUENCE)	61.105
				1932	ESCAPE CHAR (MUST FOLLOW PREVCHAR)	61.106
			0211A	1934	LAST <CMD>COMMAND	61.107
00211A				1935		
			0211B	1937	KEYCTR DS 1	
00211B				1938	COUNT FOR CHAR REPEAT	61.108
			0211C	1938	KEYSAVED DS 1	
00211C				1940	CHAR TO BE REPEATED	61.109
			0211D	1941	SCRCTR DS 1	
					SCROLL COUNTER	61.11

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 16.41 08/31/77
00211D				1943			
		0211E		1944	TIME	DS 4	HHMSSTT, IN DECIMAL 61.111
00211E				1946			
				1947	*		
		02122		1948	TIMELC	DS 2	X'CO' FOR CLR TO ZERO, NOT BLANK 61.112
002122				1950			LOCATION OF TIME MSG 61.113
		02124		1951	BRKSTATE	DS 1	IS BREAK BEING ISSUED 61.114
002124				1953			
		02125		1954	PATSTAT	DS 1	PATCHING STATUS 61.115
002125				1956			
		00080		1957	LCUSYPAR	EQU X'80'	PARITY NO GOOD 61.116
		00040		1959	NOTHEX	EQU X'40'	NONHEX CHAR RECVD 61.117
		00020		1961	TYPERR	EQU X'20'	BAD PATCH TYPE 61.118
		00010		1963	CKSMERR	EQU X'10'	CHECKSUM BAD 61.119
		00008		1965	PATFAIL	EQU X'08'	PATCH DID NOT STICK 61.12
		00001		1967	PATCHING	EQU X'01'	INDICATES PATCHING BEING DONE 61.121
		02126		1969	PATCKSM	DS 1	CHECKSUM 61.122
002126				1971			
		02127		1972	PATCNT	DS 1	COUNTER 61.123
002127				1974			
				1975	*		61.124
		02128		1976	LCLMODE	DS 1	SEND TO COMPUTER=0,NOT=ANYTHING 61.125
002128				1978			
		00004		1979	NORCV	EQU X'04'	61.126
		00002		1981	NSEND	EQU X'02'	61.127
		00020		1983	PATFLAG	EQU X'20'	61.128
		02129		1985	SAVSTK	DS 2	61.129
002129				1987			
		0212B		1988	POINTER	DS 2	CURRENT CHARACTER TO BE SENT 61.13
00212B				1990			
				1991	*		TO GETCHAR IF GETBUF IS NOT SOURCE 61.131
		0212D		1992	HEXADDR	DS 2	61.132
00212D				1994			
		0212F		1995	FOOADDR	DS 2	HANDLER FOR UNDEF. COMMANDS 61.133
00212F				1997			
				1998	*		PATCH THIS ADDRESS TO GET CONTROL 61.134
				1999	*		FOR ALL KEYBOARD COMMANDS (I.E. 61.135
				2000	*		<CMD X> WHICH ARE NOT DEFINED IN 61.136
				2001	*		THE ROMS. YOU ARE CALLED, SO YOU 61.137
				2002	*		SHOULD DO A RETURN AT THE END. 61.138
				2003	*		ALSO INTERRUPTS ARE DISABLED. 61.139
				2004	*		YOU NEED NOT RESTORE ANY REGISTERS. 61.14
				2005	*		E REGISTER HAS PREVIOUS COMMAND 61.141
		02131		2006	FLAGS	DS 1	MISCELLANEOUS FLAGS 61.142
002131				2008			
		00080		2009	FULLDUPL	EQU X'80'	FULL DUPLEX MODE 61.143
		00001		2011	TABREF	EQU X'01'	HAVE TABS BEEN CLEAR? 61.144
				2013	*		61.145
				2014	*		61.146
				2015	*		61.147
		02132		2016	SOURCE	DS 2	CURRENT CHARACTER SOURCE 61.148
002132				2018			
				2019	*		61.149
		02134		2020	PREVSCRL	DS 1	PREVIOUS SCROLLING POSITION 61.15
002134				2022			

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
			02135	2023	CRLFQVR DS 1	61.151
002135				2025		
			02136	2026	CNTLOMD DS 1	61.152
002136				2028		
			02137	2029	ALLOWGMD DS 1	61.153
002137				2031		
				2032	*	61.154
			02138	2033	XMITSTAT DS 1	61.155
002138				2035		
			02139	2036	XMITTYPE DS 1	61.156
002139				2038		
			0213A	2039	XMITGET DS 2	61.157
00213A				2041		
			0213C	2042	XMITPUT DS 2	61.158
00213C				2044		
			0213E	2045	XMITSAV DS 2	61.159
00213E				2047		
			02140	2048	XMCNT DS 1	61.16
002140				2050		
			02141	2051	XMCHAR DS 1	61.161
002141				2053		
			02142	2054	XMITBITS DS 1	61.162
002142				2056		
			00080	2057	SPEEDO EQU X'80'	61.163
			00040	2059	XMFLAG EQU X'40'	61.164
			00020	2061	HTABSEND EQU X'20'	61.165
			00010	2063	BTABSEND EQU X'10'	61.166
			02143	2065	CURSPEED DS 1	61.167
002143				2067		
			02144	2068	CRCNT DS 1	61.168
002144				2070		
			02145	2071	DC1CNT DS 1	61.169
002145				2073		
				2074	*	61.17
				2075	*	61.171
			02146	2076	SHIFTMD DS 1	61.172
002146				2078		
			02147	2079	XMITHAN DS 2	61.173
002147				2081		
			02149	2082	HTAETAB DS 21	61.174
002149				2084		
				2085	***** STUFF FOR THE PRINTING ROUTINE...	61.175
			0215E	2086	COLUMN1 DS 1	61.176
00215E				2088		
			0215F	2089	CONTCHAR DS 1	61.177
00215F				2091		
			02160	2092	EXCESS DS 1	61.178
002160				2094		
			02161	2095	SPLEN DS 1	61.179
002161				2097		
			02162	2098	CHARNUM DS 1	61.18
002162				2100		
			02163	2101	ADDNUM DS 1	61.181
002163				2103		
			02164	2104	ORNUM DS 1	61.182

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
002164				2106		
				2107	*****	61.183
				2108	*	61.184
				2109	*	61.185
				2110	*	61.186
				2111	*	61.187
				2112	*****	61.188
		02165		2113	TEKXXX DS 0X	61.189
002165				2115		
		02165		2116	TEKXHI DS 1X	61.19
				2118		
002165		02166		2119	TEKXLOW DS 1X	61.191
002166				2121		
		02167		2122	TEKYHI DS 1X	61.192
002167				2124		
		02168		2125	TEKYLOW DS 1X	61.193
002168				2127		
				2128	*	61.194
		02169		2129	GRAPHPOS DS 4X	61.195
002169				2131		
				2132	*	61.196
		0216D		2133	#QUADS DS X	61.197
00216D				2135		
				2136	*	61.198
		0216E		2137	VECTEMP DS 5X	61.199
00216E				2139		
		02173		2140	GRAPHTEM DS 4X	61.2
002173				2142		
				2143	*	61.201
		02177		2144	CHARPOS DS 2X	61.202
002177				2146		
		02179		2147	DIREC1 DS 1X	61.203
002179				2149		
		0217A		2150	DIREC2 DS 1X	61.204
00217A				2152		
		0217B		2153	TYPE DS 1X	61.205
00217B				2155		
		02114		2156	XOFF EQU CURSX	61.206
00217C				2158	DS 1X	61.207
				2160	*	61.208
		053F0		2161	EVENADD EQU GRAPHEVN	61.209
		0AA41		2163	CDDADD EQU GRAPHODD	61.21
		05151		2165	NEXT EQU ODDADD-EVENADD	61.211
		0217D		2167	EVENODD DS 1X	61.212
00217D				2169		
		02800		2170	ROMGEN EQU CHGENROM	61.213
				2172	*	61.214
		0217E		2173	XMASK DS 1X	61.215
00217E				2175		
		0217F		2176	MARGIN DS 1X	61.216
00217F				2178		
		02117		2179	GRPOLD C EQU CURSCHAR	61.217
		02180		2181	GRPCSET DS 2X	61.218
002180				2183		
		02182		2184	TEXT DS 2	61.219
					CURRENT WRAP VALUE	

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 16.41 08/31/77
002182				2186			
		02184		2187	MTEXT	DS 2	MINUS TEXT 61.22
002184				2189			
		02186		2190	TEXTTOP	DS 2	CURRENT UPPER BOUNDARY (NEGATIVE) 61.221
002186				2192			
		02188		2193	TEXTBOT	DS 2	CURRENT LOWER BOUNDARY (NEGATIVE) 61.222
002188				2195			
		0218A		2196	WASTED	DS 2	THE CURRENT NUMBER OF WASTED BYTES 61.223
00218A				2198			
		0218C		2199	GRPDRAW	DS 3	VECTOR DRAWING CODE 61.224
00218C				2201			
				2202	*		
		00008		2203	CURSTIME	EQU 8	8/60 SECOND FOR CURSOR BLINK 61.226
		00014		2205	KEYRPTD	EQU 20	2/5 SECOND CHAR REPEAT DELAY 61.227
		00003		2207	KEYRPTR	EQU 3	20 REPETITIONS PER SECOND 61.228
		00004		2209	SCRGTIME	EQU 4	SCROLL QUICKLY RATE (CHAR LINES) 61.229
		00006		2211	SCRSTIME	EQU 6	SCROLL SLOWLY RATE (RASTERS) 61.23
		00030		2213	SCRPTIME	EQU 48	PAGE SCROLLING RATE(ONCE AC SECOND) 61.231
				2215	*		
		01C00		2216	HELPIFNO	EQU ROM+7*K	HELP IS IN 8TH ROM 61.233
				2218	*		
				2219	*		
		023FF		2220	STACK	EQU CPURAM+CPURAMSZ-1	STACK IS WHATEVER IS LEFT OVER 61.236
				2222	*		
				2223	*		
				2224	*****		61.239
				2225	*****		61.24
				2226	*	END OF CPU RAM VARIABLES	* 61.241
				2227	*	ALL RAM VARIABLES SHOULD GO BEFORE THIS COMMENT	* 61.242
				2228	*		* 61.243
				2229	*	THE LABEL 'ENDCPRAM'	* 61.244
				2230	*	SHOULD BE USED BY PROGRAMS TO ORG THEIR OWN VARIABLES	* 61.245
				2231	*		* 61.246
		0218F		2232	ENDCPRAM	EQU *	* 61.247
				2234	*		* 61.248
				2235	*****		61.249
				2236	*****		61.25
00218F		04000		2237		ORG RAM	61.251
		04000		2239	XMITBUF	DS 256	ATLEAST THAT BIG 61.252
004000				2241			
		04100		2242	XMITEND	EQU *	END OF XMITBUF 61.253
				2244	*		61.254
				2245	*		61.255
		04100		2246	BUFFER	EQU *	A RATHER LARGE BUFFER 61.256
				2248	*		WHICH MUST END ON A PAGE BNDRY-1 61.257
		04400		2249	BUFEND	EQU X'4400'	LAST PAGE+1 OF BUFFER 61.258
				2251	*		61.259

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
2253					MACRO	61.261
2254	&LABEL				CMDEF &CHAR,&ROUTINE	61.262
2255	.*					61.263
2256	.*				DEFINE AN ENTRY IN THE COMMAND DEFINITION TABLE	61.264
2257	.*					61.265
2258					AIF ('&LABEL' EQ '').NOLABEL	61.266
2259	&LABEL				EQU *-2	61.267
2260	.NOLABEL				ANOP	61.268
2261					DC X'&CHAR',AL2(&ROUTINE-&SYSECT)	61.269
2262					MEND	61.27
2264					MACRO	61.272
2265	.*					61.273
2266	.*				MULTIPLY	61.274
2267	.*					61.275
2268	&NAME				MULT &A	61.276
2269	&NAME				DS 0X	61.277
2270					AIF ('&A' NE '80').CHK81	61.278
2271					ADD HL,HL	61.279
2272					ADD HL,HL	61.28
2273					ADD HL,HL *8	61.281
2274					ADD HL,HL *16	61.282
2275					LOD D,H	61.283
2276					LOD E,L SAVE IT	61.284
2277					ADD HL,HL	61.285
2278					ADD HL,HL *64	61.286
2279					ADD HL,DE	61.287
2280					MEXIT	61.288
2281	.CHK81				AIF ('&A' NE '81').ERROR	61.289
2282					LOD DE,HL	61.29
2283					ADD HL,HL	61.291
2284					ADD HL,HL	61.292
2285					ADD HL,HL	61.293
2286					ADD HL,HL	61.294
2287					XCH HL,DE	61.295
2288					ADD HL,DE	61.296
2289					XCH HL,DE	61.297
2290					ADD HL,HL	61.298
2291					ADD HL,HL	61.299
2292					ADD HL,DE	61.3
2293					MEXIT	61.301
2294	.ERROR				MNOTE 12,'NOT MULT BE 80 OR 81'	61.302
2295					MEND	61.303
2297					MACRO	61.305
2298	&LABEL				DSALFINE	61.306
2299	.*				THIS IS A HUMOROUS MACRO WHICH MERELY COUSES A SUBROUTINE	61.307
2300	.*				TO REPEAT ITSELF BEFORE RETURNING.	61.308
2301					AIF ('&LABEL' EQ '').NOLABEL	61.309
2302	&LABEL				EQU *	61.31
2303	.NOLABEL				ANOP	61.311
2304					CALL *+3	61.312
2305					MEND	61.313
2306	*					62.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
2307	*				LUSER ENTRY POINTS. THESE WILL (BY USING THE EXECFILE #AEQU)	63.
2308	*				BE CHANGED INTO EQU STATEMENTS FOR USE IN OTHER PROGRAMS	64.
2309	*				(VIA THE *INCLUDE FACILITY IN A#ACALL). THEY PROVIDE THE ONLY	65.
2310	*				KNOWN LINKAGE INTO COMMONLY USED VGT ROM ROUTINES. IF THERE	66.
2311	*				IS SOME ROUTINE WHICH YOU THINK SHOULD HAVE AN ENTRY POINT	67.
2312	*				DEFINED FOR IT, YOU MIGHT ADD IT YOURSELF (WHICH IS, OF COURSE,	68.
2313	*				FROWNED UPON BY THE HIGHER UPS) OR WRITE TO:	69.
2314	*					70.
2315	*				VGT ENTRY POINT OFFER	71.
2316	*				P.O. BOX A	72.
2317	*				GRAND RAPIDS, MICH 48075	73.
2318	*					74.
2319	*				ALLOW 6 TO 8 WEEKS FOR DELIVERY	75.
2320	*				OFFER VOID WHERE PROHIBITED BY LAW	76.
2321	*				THE DECISION OF THE JUDGES IS FINAL.	77.
2322	*				ALL JUDGING IS PERFORMED BY AN OUTSIDE CONSULTING	78.
2323	*				FIRM, FOR WHOM WE ARE PAYING THROUGH THE NOSE	79.
2324	*				ALL EMPLOYEES OF SLAC OR MEMBERS THEIR IMMEDIATE FAMILIES	80.
2325	*				MAY NOT ENTER THIS COMPETITION.	81.
2326	*					82.
2327					ENTRY SCOPLOAD,VECTOR GRAPH MODE DRAWING ROUTINES	83.
2328					ENTRY CHARPROC,KESTORE,KEYDOIT CHARACTER PROCESSORS	84.
2329					ENTRY STUFXMIT SENDS CHARACTER TO HOST	85.
2330					ENTRY HEXIN CONVERTS CHARACTER TO HEX	86.
2331					ENTRY CLEAR CLEARS SCREEN PER POEM	87.
2332					ENTRY RESUMER GLOBAL ROUTINE USED BY RESUME MACRO	88.
2333					ENTRY PRINTDO PRINTING ROUTINE (USES LOADER'S	89.
2334	*				CCB, ONLY IF YOU ARE IN TEXT MODE	90.
2335	*				AND CONTCHAR CONTAINS 0)	91.
2336					ENTRY BUFCHK CHECKS RECEIVE BUFFER	92.
2337	*					93.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				2339	*****	95.
				2340	*	96.
				2341	* BASIC INTERRUPT PROCESSING	97.
				2342	*	98.
				2343	*****	99.
				2344	*	100.
				2345	* MASTER RESET INTERRUPT	101.
				2346	*	102.
				2347	* (THIS CODE MUST NOTE GO BEYOND LOCATION X'35')	103.
				2348	*	104.
004100		00000		2349	ORG 0	105.
000000	31FF23			2351	POWERUP LODI SP,STACK	106.
000003	3E79			2353	LODI A,URTX1MD	107.
000005	D341			2355	OUT URTCTL	108.
000007	3E17			2357	LODI A,URTRSERR	109.
000009	D341			2359	OUT URTCTL	110.
00000B	CD6A06			2361	CALL CLRBUFS	111.
00000E	3E81			2363	LODI A,X'81'	112.
000010	321021			2365	ST A,CLRFLG	113.
000013	21F201			2367	LODI HL,@TODC1	114.
000016	224721			2369	ST HL,XMITHAN	115.
000019	3E0C			2371	LODI A,X'0C'	116.
00001B	D380			2373	OUT MODESET	117.
00001D	3E1B			2375	LODI A,@ESC	118.
00001F	321921			2377	ST A,ESCCHAR	119.
000022	97			2379	SUB A	120.
000023	321121			2381	ST A,MODEBITS	121.
000026	323921			2383	ST A,XMITTYPE	122.
000029	323721			2385	ST A,ALLOWGMD	123.
00002C	324621			2387	ST A,SHIFTMD	124.
00002F	322821			2389	ST A,LCLMODE	125.
000032	C3F908			2391	JMP RESETII	126.
				2393	*	127.
				2394	* FRAME AND/OR USART INTERRUPT	128.
				2395	*	129.
000035		00038		2396	ORG 7*8	130.
000038	E5			2398	INTERRPT PUSH HL	131.
000039	2A0021			2400	LD HL,INTROUT	132.
00003C	E3			2402	XCH HL,(SP)	133.
00003D	C9			2404	RET U	134.
		0003E		2406	ROMINT EQU *	135.
00003E	F5			2408	PUSH FA	136.
00003F	E5			2410	PUSH HL	137.
000040	D5			2412	PUSH DE	138.
000041	C5			2414	PUSH BC	139.
000042	DB85			2416	INP STATBITS	140.
000044	E604			2418	ANDI FRAMEINT	141.
000046	CA4102			2420	JMP Z,INTURT	142.
000049	D382			2422	OUT RSFRMINT	143.
				2424	*	144.
00004B	DB85			2425	INP STATBITS	145.
00004D	E608			2427	ANDI FRAMECNT	146.
00004F	2A0821			2429	LD HL,NXTCHL1	147.
000052	7E			2431	LD A,(HL)	148.
000053	C25A00			2433	JMP NZ,SETCHL1	149.

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          LOC  OBJECT CODE  ADDR1 ADDR2  STMT  SOURCE STATEMENT  ASM H V 05 16.41 08/31/77
000056 07070707          2435          ROT  L,4          150.
00005A D387          2437  SETCHL1  OUT  CHLINE1        151.
          2439 *          152.
00005C 2A0A21          2440          LD  HL,NXTDISA        153.
00005F 3A1121          2442          LD  A,MODEBITS        SETUP DISPLAY ADDR: 154.
000062 E610          2444          ANDI GRAPHMD          155.
000064 CA7400          2446          JMP  Z,SENDISA        IF TEXT MODE, THEN (NXTDISA) 156.
000067 2100AF          2448          LODI HL,GRAPHODD+TOPOFF 157.
00006A DB85          2450          INP STATBITS          ELSE 158.
00006C E608          2452          ANDI FRAMECNT        'GRAPHODD' OR 'GRAPHEVN' 159.
00006E CA7400          2454          JMP  Z,SENDISA        DEPENDING ON FRAME COUNT BIT 160.
000071 21AF5D          2456          LODI HL,GRAPHEVN+TOPOFF 161.
000074 7D          2458  SENDISA  LOD  A,L          SEND OUT THE DISPLAY ADDRESS 162.
000075 D385          2460          OUT  DISADDRL        163.
000077 7C          2462          LOD  A,H          164.
000078 D384          2464          OUT  DISADDRH        165.
          2466 *          166.
00007A FB          2467          EI  ,          ENABLE WHILE DOING SCROLLING 167.
00007B DB83          2469          INP SCRWHEEL        GET WHEEL CONTENTS 168.
00007D 47          2471  CMPLOOP  LOD  B,A          FOR STARTUP 169.
00007E DB83          2473          INP SCRWHEEL        NOW GET IT FOR REAL 170.
000080 B8          2475          CMP  B          SEE IF ITS SETTLED 171.
000081 C27D00          2477          JMP  NZ,CMPLOOP        NO. THEN CHECK AGAIN 172.
          2479 *          173.
          2480 *          AT THIS POINT A AND B CONTAIN THE NEW WHEEL CONTENTS 174.
          2481 *          175.
000084 E6FE          2482          ANDI X'FE'          CLR LOW ORDER BIT. AND A PIZZA TO GO 176.
000086 213421          2484          LODI HL,PREVSCRL        POINTER TO OLD WHEEL CONTENTS 177.
000089 46          2486          LOD  B,M          GET OLD CONTENTS 178.
00008A 77          2488          LOD  M,A          SAVE NEW CONTENTS 179.
00008B 90          2490          SUB  B          GET THE DIFFERNCE 180.
00008C CAE100          2492          JMP  Z,ENDWHEEL        181.
00008F FAB400          2494          JMP  S,NEGL00P        182.
          2496 *          183.
          2497 *          NOW WE GO THIS WAY 184.
          2498 *          185.
          2499 *POSITIVE CASE 186.
          2500 * IF THIS WERE PASCAL WE COULD USE A POSITIVE CASE STATEMENT. 187.
          2501 * BUT IN CASE YOU HAVEN'T NOTICED THIS IS ASM H 188.
          2502 *          189.
          2503 *          EHF 1976 190.
          2504 *          191.
000092 0601          2505          LODI B,1          INITIALIZE COUNTER TO 1 192.
          00094 2507          LOOP 'SUBI CHARHITE;EXITIF S;INC B' 193.
000094 D60D          2510
000096 FA9D00          2511
000099 04          2512
00009A C39400          2513
          0009D 2514
00009D 05          2516          DEC  B          SEE IF COUNTER IS EXACTLY 194.
          2518 *          ONE (I.E. QUOTIENT IS 0) 195.
00009E CAAA00          2519          JMP  Z,POSRASTR        IF SO DO NO FULL LINE SCROLLS 196.
0000A1 4F          2521          LOD  C,A          SAVE REMAINDER 197.
          000A2 2523          LOOP 'CALL SCRUP;DEC B',UNTIL,Z 198.
0000A2 CDD804          2526

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                                ASM H V 05 16.41 08/31/77
LOC  OBJECT CODE  ADDR1 ADDR2  STMT  SOURCE STATEMENT
0000A5 05          2527
0000A6 C2A200      2528
                                000A9 2529
0000A9 79          2531
                                000AA 2533 POSRASTR LOD A,C          GET REMAINDER BACK          199.
                                2535 EQU *          HERE TO UPDATE RASTER COUNTER:          200.
0000AA C60D      2537 ADDI CHARHITE RESTORE AFTER DIVISION TO GET REM.          201.
0000AC CAE100    2539 JMP Z,ENDWHEEL IF ZERO, NO RASTER SCROLLING          202.
0000AF 47        2541 LOD B,A          SAVE THAT          203.
0000B0 CD3505    2543 POSLP2 CALL SCRUPSDO SCROLL A RASTER LINE          204.
0000B3 05        2545 DEC B          SEE IF DONE          205.
0000B4 C2B000    2547 JMP NZ,POSLP2 MORE RASTER LINES TO SCROLL          206.
0000B7 C3E100    2549 JMP ENDWHEEL OTHERWISE CLEANUP AND RETURN          207.
                                *          208.
                                *          209.
                                2551 *HERE FOR NEGATIVE CASE          210.
                                *          211.
                                *          212.
0000BA 2F        2554 NEGLOOP CMA ,          TAKE 2'S COMPLEMENT OF A          213.
0000BB 3C        2556 INC A          SO WE CAN DO DIVISION AS ABOVE          214.
0000BC 0601      2558 LODI B,1          215.
                                000BE 2560 LOOP 'SUBI CHARHITE;EXITIF S;INC B'          216.
0000BE D60D      2563
0000C0 FAC700    2564
0000C3 04        2565
0000C4 C3BE00    2566
                                000C7 2567
0000C7 05        2569 DEC B          217.
0000C8 CAD400    2571 JMP Z,NEGRASTR          218.
0000CB 4F        2573 LOD C,A          219.
                                000CC 2575 LOOP 'CALL SCRDOWN;DEC B',UNTIL,Z          220.
0000CC CDC004    2578
0000CF 05        2579
0000D0 C2CC00    2580
                                000D3 2581
0000D3 79          2583 LOD A,C          221.
                                000D4 2585 NEGRASTR EQU *          HERE TO UPDATE RASTERS          222.
0000D4 C60D      2587 ADDI CHARHITE GET REMAINDER          223.
0000D6 CAE100    2589 JMP Z,ENDWHEEL IF ZERO, NO RASTER SCROLL          224.
0000D9 47        2591 LOD B,A          SAVE IT          225.
0000DA CD1605    2593 NEGLP2 CALL SCRDOWNSD SCROLL DOWN A RASTER LINE          226.
0000DD 05        2595 DEC B          SEE IF DONE          227.
0000DE C2DA00    2597 JMP NZ,NEGLP2 NOT DONE          228.
                                *          229.
                                *          230.
                                *          231.
                                *          232.
                                000E1 2603 ENDWHEEL HERE TO FINISH THINGS OFF          233.
0000E1 F3        2605 EQU *          234.
0000E2 212121    2607 DI ,          NOW DISABLE AFTER WHEEL STUFF          235.
0000E5 7E        2609 TICKTOCK LODI HL,TIME+3 UPDATE CLOCK TIME          236.
0000E6 C601      2611 LOD A,M          237.
0000E8 27        2613 ADDI 1          238.
0000E9 77        2615 DAA ,          239.
0000EA FE60      2617 LOD M,A          240.
0000EC FAF500    2619 CMPI X'60'          241.
                                JMP S,NOTICK

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LOC  OBJECT CODE  ADDR1 ADDR2  STMT  SOURCE STATEMENT
0000EF 3600          2621          LODI  M,0          242.
0000F1 2B          2623          DEC   HL          243.
0000F2 C3E500      2625          JMP   TICKTOCK    244.
          000F5    2627 NOTICK EQU   *          245.
          *      2629 *          246.
0000F5 211621      2630          LODI  HL,CURSCTR  TIME TO CHANGE CURSOR? 247.
0000F8 35          2632          DEC   M          248.
0000F9 C21701      2634          JMP   NZ,CHKKBRD NO... 249.
0000FC 3608      2636          LODI  M,CURSTIME YES - RESET COUNTER 250.
0000FE 2A1221    2638          LD    HL,CURSLOC CURRENT LOCATION 251.
000101 7E          2640          LOD   A,M        CURRENT CURSOR 252.
000102 FE7F      2642          CMPI  @DEL       BLOB? 253.
000104 CA0C01    2644          JMP   Z,CURCHI   YES... 254.
000107 367F      2646          LODI  M,@DEL     NO - MAKE IT A BLOB 255.
000109 C31701      2648          JMP   CHKKBRD   256.
00010C 3A1721    2650 CURCHI LD    A,CURCHAR  CURSOR IS A BLOB, 257.
00010F FE7F      2652          CMPI  @DEL       IS CHAR, TOO? 258.
000111 77          2654          LOD   M,A        SUPPOSE NOT, PUT IN CHAR 259.
000112 C21701      2656          JMP   NZ,CHKKBRD CORRECT... 260.
000115 3620      2658          LODI  M,' '      WRONG - MAKE CURSOR BLANK 261.
000117 DB84      2660 CHKKBRD INP   KEYBOARD  GET POSSIBLE KEYBOARD CHAR 262.
000119 B7          2662          IOR   A          263.
00011A FA8802    2664          JMP   S,KEYRCVED KEY DEPRESSED... 264.
00011D 3EFF      2666          LODI  A,X'FF'    NOTHING - RESET KEYBRD REPEAT COUNT 265.
00011F 321B21    2668          ST   A,KEYCTR   266.
000122 321A21    2670          ST   A,PRVCCHAR RESET PREVIOUS CMD KEY 267.
000125 3E01      2672          LODI  A,1        SET SCROLL TIMING 268.
000127 321D21    2674          ST   A,SCRCTR   AND RESET IT 269.
00012A 2A2221    2676          LD    HL,TIMELOC MUST WE ERASE THE TIME MSG? 270.
00012D 7C          2678          LOD   A,H        271.
00012E B7          2680          IOR   A          272.
00012F CA3F01    2682          JMP   Z,CHKATTN NO... 273.
000132 3E08      2684          LODI  A,11       274.
000134 3620      2686 TIMERASE LODI  M,' '      275.
000136 23          2688          INC   HL          276.
000137 3D          2690          DEC   A          277.
000138 C23401    2692          JMP   NZ,TIMERASE 278.
00013B 97          2694          SUB   A          279.
00013C 322321    2696          ST   A,TIMELOC+1 280.
00013F DB85      2698 CHKATTN INP   STATBITS  281.
000141 E602      2700          ANDI  KBATTN     ATTN KEY PRESSED? 282.
000143 CA3102    2702          JMP   Z,DNTBREAK GO SEE IF SHOULD TURN OFF BRK 283.
000146 CD0E02    2704          CALL XMITRCLR   284.
000149 3E0F      2706          LODI  A,URTBREAK SEND BREAK IF SO 285.
00014B D341      2708 CTLBRK OUT   URTCTL  286.
          *      2710 *          287.
          0014D  2711 INTEND EQU   *          HERE TO CHECK FOR XMIT RDY 288.
          *      2713 * CHK FOR SENDING CHARACTERS 289.
00014D DB41      2714          INP   URTSTAT   290.
00014F E601      2716          ANDI  URITXRDY  CAN WE XMIT 291.
000151 CAE201    2718          JMP   Z,INTEND2 NO WE CANT 292.
000154 2A4721    2720          LD    HL,XMITHAN YES WE CAN GET HANDLER ADD 293.
          *      2722 * IF IN @TE1 MODE THIS IS JUST A BRANCH TO @TE1 294.
000157 E9      2723          JMP   (HL)      295.
          *      2725 *          296.

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LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				2726	* WE COME HERE AFTER THE BRANCH FROM XMIT INTERRUPT.	297.
				2727	* @TCE1 IS A GENERAL PURPOSE ROUTINE USED TO TAKE CHARACTERS OUT	298.
				2728	* OF BUFFER	299.
				2729	*	300.
		00158		2730	@TE1 EQU * TRANSMIT EVERY ONE	301.
000158	3A4221			2732	LD A,XMITBITS GET THE FLAG	302.
00015B	E640			2734	IF 'ANDI XMFLAG',NZ IF IT IS ON,	303.
00015D	CA8101			2737		
000160	3A4021			2738	LD A,XMCNT GET THE COUNT	304.
000163	B7			2740	ORA A IF IT IS POSITIVE,	305.
000164	CA7E01			2742	IF NZ THEN WE CAN XMIT THE	306.
000167	3D			2745	DEC A CHAR IN XMCHAR...	307.
000168	324021			2747	ST A,XMCNT AND DO THE RIGHT NUMBER	308.
00016B	C27901			2749	IF Z IF THE NUMBER IS NOW ZERO	309.
00016E	3A4221			2752	LD A,XMITBITS THEN TURN OFF THE FLAG	310.
000171	E6BF			2754	ANDI X'FF'-XMFLAG	311.
000173	324221			2756	ST A,XMITBITS AND SAVE THAT	312.
000176	C37E01			2758	ELSE , IF THE COUNT IS POSITIVE,	313.
		00179		2760		
000179	3A4121			2761	LD A,XMCHAR GET THE PROPER CHAR	314.
00017C	D301			2763	OUT URTXMT AND XMIT IT	315.
		0017E		2765	END	316.
		0017E		2768	END	317.
		0017E		2770		
00017E	C3E201			2772	ELSE , IF THE XMFLAG IS OFF,	318.
		00181		2774		
000181	2A3A21			2775	LD HL,XMITGET GET PNT TO THINGS TO BE SNT	319.
000184	3A3C21			2777	LD A,XMITPUT SEE IF ANYTHING THERE	320.
000187	BD			2779	CMP L	321.
000188	C29201			2781	JMP NZ,XMITINFO THERE IS	322.
00018B	3A3D21			2783	LD A,XMITPUT+1 GET HIGH PART OF PUT	323.
00018E	BC			2785	CMP H SEE IF EQUAL	324.
00018F	CAE201			2787	EXITIF Z NOTHING TO SEND SO LEAVE	325.
		00192		2789	XMITINFO EQU * HERE TO SEND SOMETHING	326.
000192	23			2791	INC HL MOVE POINTER UP	327.
000193	3E41			2793	LODI A,XMITEND,< SEE IF WRAP AROUND	328.
000195	BC			2795	CMP H	329.
000196	C29C01			2797	JMP NZ,XMITNOWP	330.
000199	210040			2799	LODI HL,XMITBUF	331.
		0019C		2801	XMITNOWP EQU * SAVE NEW POINTER	332.
00019C	223A21			2803	ST HL,XMITGET GET CHARACTER	333.
00019F	7E			2805	LD A,(HL)	334.
0001A0	47			2807	LOD B,A	335.
0001A1	3A3121			2809	LD A,FLAGS SEE IF FULL DUPLEX	336.
0001A4	E680			2811	ANDI FULLDUPL	337.
0001A6	78			2813	LOD A,B GET THE CHAR BACK	338.
0001A7	C2B401			2815	JMP NZ,SENDOK IF SO, THEN JUST SEND...	339.
0001AA	FE09			2817	CMPI @HT OTHERWISE SEE IF ITS A TAB	340.
0001AC	CACA01			2819	JMP Z,STXMFLG IF SO THEN SET THE FLAG	341.
0001AF	FE12			2821	CMPI X'12' ALSO SEE IF REVERSE TAB	342.
0001B1	CACA01			2823	IF NZ IF NOT, THEN XMIT	343.
0001B4	D301			2826	SENDOK OUT URTXMT SEND IT OFF TO HOST	344.
0001B6	FE04			2828	CMPI @EOT SEE IF CNTL D ATTN	345.
0001B8	CAC001			2830	JMP Z,SIMCR YES THEN FAKE A <CR> FOR TYPE AHEAD	346.
				2832	* THIS IS USEFUL WAY OF DELETING A	347.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SCURCE STATEMENT	ASM H V 05 16.41 08/31/77
				2833 *		LINE YOU JUST TYPED, BUT NOT CLRIN
				2834 *		OUT ALL OF TYPEAHEAD BUFFER.
				2835 *		
0001BB	FE0D			2836	CMPI @CR	WAS IT <CR>
0001BD	C2D901			2838	EXITIF NZ	
0001C0	214421			2840	SIMCR LODI HL,CRCNT	
0001C3	35			2842	DEC M	DECREASE COUNT OF <CR> IN BUF
0001C4	23			2844	INC HL	
0001C5	3600			2846	LODI M,0	AND TURN OFF DC1 INDICATOR
0001C7	C3D901			2848	ELSE ,	IF IT WAS TAB OR REVERSE TAB,
		001CA		2850		
0001CA	3A4221			2851	STXMFLG LD A,XMITBITS	THEN SET THE XMFLAG
0001CD	F640			2853	ORAI XMFLAG	
0001CF	324221			2855	ST A,XMITBITS	AND STORE THA BACK
0001D2	97			2857	SUB A	ALSO ZERO THE COUNT
0001D3	324021			2859	ST A,XMCNT	
0001D6	78			2861	LOD A,B	AND PUT THE CHAR+X'90'
				2863 *		IN THE BUFFER
0001D7	C690			2864	ADDI X'90'	
		001D9		2866	END	
0001D9	57			2869	LOD D,A	SAVE THE CHARACTER
0001DA	3A3121			2871	LD A,FLAGS	SEE IF IN FULLDUPLEX MODE
0001DD	E680			2873	ANDI FULLDUPL	SEE IF IN FULLDUPLEX MODE
0001DF	CC2303			2875	CALL Z,KEYSTOR2	PUT IN DISPLAY BUFFER
		001E2		2877	END ,	
				2880 *		
		001E2		2881	INTEND2 EQU *	HERE TO LEAVE FROM INTERUPT
0001E2	C1			2883	POP BC	
0001E3	D1			2885	POP DE	
0001E4	E1			2887	POP HL	
0001E5	F1			2889	POP FA	
0001E6	F8			2891	EI ,	
0001E7	C9			2893	RET ,	*** END OF INTERRUPT ***
				2895 *		
				2896 *	THIS ROUTINE DOES CHECKING FOR XMIT ON CR	
				2897 *		
0001E8	3A4421			2898	@TOCR LD A,CRCNT	
0001EB	B7			2900	IOR A	COMPAR
0001EC	CAE201			2902	JMP Z,INTEND2	NO CR-THEN NO XMIT
0001EF	C35801			2904	JMP @TE1	ELSE XMIT
		001F2		2906	@TODC1 EQU *	ROUTINE TO XMIT ON DC1
0001F2	3A4521			2908	LD A,DC1CNT	
0001F5	B7			2910	IOR A	
0001F6	CAE201			2912	JMP Z,INTEND2	NO DC1 NO XMIT
0001F9	C35801			2914	JMP @TE1	ELSE GO XMIT
				2917 *		
		001FC		2918	RCVCLR EQU *	ESET RECEIVER BUFFER
0001FC	210041			2920	LODI HL,BUFFER	
0001FF	220421			2922	ST HL,PUTPTR	INITIALIZE BUFFER POINTERS
000202	220221			2924	ST HL,GETPTR	
000205	210000			2926	LODI HL,0	
000208	220621			2928	ST HL,BUFCNT	

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LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT ASM H V 05 16.41 08/31/77
00020B C32802 2930 JMP XMBITCLR AND GO CLEAR XMITBITS 400.
2932 * 401.
2933 * 402.
2934 * 403.
2935 * 404.
2936 * 405.
2937 * HERE FOR RESETTING XMITR 406.
2938 * 407.
0020E 2939 XMITRCLR EQU * 408.
00020E 210040 2941 LODI HL,XMITBUF 409.
000211 223C21 2943 ST HL,XMITPUT 410.
000214 223A21 2945 ST HL,XMITGET 411.
000217 223E21 2947 ST HL,XMITSAV 412.
00021A 97 2949 SUB A 413.
00021B 324421 2951 ST A,CRCNT 414.
00021E 324521 2953 ST A,DC1CNT SET FOR WAIT FOR DC1 415.
000221 324021 2955 ST A,XMCNT 416.
000224 3D 2957 DEC A SET BREAK ON 417.
000225 322421 2959 ST A,BRKSTATE SET FOR BREAK IS ON 418.
2961 * NOTE THE FOLLOWING RELATED TO TYPE AHEAD. IF YOU GO INTO 419.
2962 * TYPEAHEAD WHILE COMPUTER IS TYPEING AND THEN START TYPING 420.
2963 * TYPEAHEAD WILL NOT WORK UNTIL FIRST CARRAIGE RETURN 421.
2964 * HOWEVER IF YOU HIT ATTN OR BUF RESET IT TYPE AHEAD WILL STILL WORK 422.
2965 * 423.
2966 * 424.
000228 3A4221 2967 XMBITCLR LD A,XMITBITS 425.
00022B E6BF 2969 ANDI 255-XMFLAG 426.
00022D 324221 2971 ST A,XMITBITS 427.
000230 C9 2973 RET , AND GO HOME 428.
2975 * 429.
2976 * 430.
2977 * 431.
00231 2978 DNTBREAK EQU * HERE TO TURN OFF BREAK (MAYBE) 432.
000231 212421 2980 LODI HL,BRKSTATE ADD OF INDICATOR 433.
000234 34 2982 INC M -1 MEANS BREAK IS ON 434.
000235 3600 2984 LODI M,0 MAKE IT ZERO IN ANY CASE 435.
000237 C24D01 2986 JMP NZ,INTEND POSITIVE MEANS NO BREAK SET 436.
00023A 3E07 2988 LODI A,URTRSBRK DATA TO RESET BREAK 437.
00023C D341 2990 OUT URTCTL PUT OUT ON UART CTL LINES 438.
00023E C34D01 2992 JMP INTEND AND GO BACK 439.
2994 * 440.
2995 * 441.
2996 * 442.
000241 D383 2997 INTURT OUT RSURTINT RESET POSSIBLE INTERRUPT 443.
000243 DB41 2999 INP URTSTAT USART STATUS 444.
000245 6F 3001 LOD L,A 445.
000246 E602 3003 ANDI URTRXRDY RCV CHAR? 446.
000248 CA4D01 3005 JMP Z,INTEND NO... 447.
00024B 7D 3007 LOD A,L GET BACK STATBITS 448.
00024C E638 3009 ANDI URTRERR 449.
00024E CA5702 3011 JMP Z,RCVROK 450.
000251 D386 3013 OUT BELL 451.
000253 3E17 3015 LODI A,URTRSERR 452.
000255 D341 3017 OUT URTCTL 453.
00257 3019 RCVROK EQU * 454.

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LOC OBJECT CODE ADDR1 ADDR2 STMT SOURCE STATEMENT
000257 3A2821 3021 LD A,LCLMODE 455.
00025A E604 3023 ANDI NORCV IS IT IN LOCAL MODE 456.
00025C DB01 3025 INP URTRCV GET CHAR 457.
00025E C24D01 3027 JMP NZ,INTEND YES THEN IGNORE RECIEVED STUFF 458.
000261 FE11 3029 CMPI @DC1 459.
000263 C27E02 3031 JMP NZ,NOTDC1 IS IT A @DC1? 460.
000266 3A4521 3033 LD A,DC1CNT WERE WE ALREADY TYPING?? 461.
000269 B7 3035 IOR A 462.
00026A CA7302 3037 JMP Z,SETDC1 NO, SO DO NORMAL STUFF 463.
00026D 2A3E21 3039 LD HL,XMITSAV YES SO REPROMPT 464.
000270 223A21 3041 ST HL,XMITGET 465.
000273 3E11 3043 SETDC1 LODI A,@DC1 SET DC1CNT TO NOT ZERO 466.
000275 324521 3045 ST A,DC1CNT YES,STORE IT 467.
000278 2A3A21 3047 LD HL,XMITGET GET XMITTER ADDRESS 468.
00027B 223E21 3049 ST HL,XMITSAV AND SAVE FOR REPROMPTING 469.
00027E B7 3051 NOTDC1 IOR A 470.
00027F CA4D01 3053 JMP Z,INTEND IGNORE NULL 471.
000282 CD2403 3055 CALL KEYSTORE GO SAVE THE CHARACTER IN BUFFER 472.
000285 C34D01 3057 JMP INTEND 473.
000288 E67F 00288 3059 KEYRCVED EQU * 474.
00028A 6F 3061 ANDI X'7F' REMOVE STROBE BIT 475.
00028B DB85 3063 LOD L,A 476.
00028D E601 3065 INP STATBITS 477.
00028F 0F 3067 ANDI KBRPT SEE IF REPEAT PRESS 478.
000290 B5 3069 ROT R PUT IT IN RIGHT PLACE 479.
000291 FA9B02 3071 IOR L 480.
000294 57 3073 JMP S,KEYCMD 481.
000295 CDA302 3075 LOD D,A SAVE IT 482.
000298 C34D01 3077 CALL KEYRPTL REG. CHAR. DO REPEAT 483.
00029B CDC602 3079 JMP INTEND AND GO HOME 484.
00029E D396 0029B 3081 KEYCMD EQU * ITS A COMMAND 485.
0002A0 C34D01 3083 CALL CMDDOIT GO PROCESS <CMD> FUNCTION 486.
3085 OUT KBRESET RESET 'NEWKB STROBE' BIT 487.
3087 JMP INTEND THEN GO HOME 488.
3089 * 489.
3090 * AUTOMATIC KEY REPEAT LOGIC 490.
3091 * 491.
0002A3 211B21 3092 KEYRPTL LODI HL,KEYCTR LOOK AT REPEAT COUNTER 492.
0002A6 DB85 3094 INP STATBITS GET THE 'NEW KB STROBE' STATUS BIT 493.
0002A8 E610 3096 ANDI KBNEWCHR WHICH INDICATES A NEW CHARACTER 494.
0002AA C2B802 3098 JMP NZ,KEYNEWCH YES, INDEED... 495.
0002AD 34 3100 INC M OLD CHAR - INCREMENT REPEAT WAIT CTR 496.
0002AE 7E 3102 LOD A,M 497.
0002AF FE14 3104 CMPI KEYRPTD TIME FOR REPEAT? 498.
0002B1 D8 3106 RET C NO - DO NOTHING 499.
0002B2 D603 3108 SUBI KEYRPTR YES - DECR. FOR NEXT REPEAT 500.
0002B4 77 3110 LOD M,A 501.
0002B5 C3D802 3112 JMP KEYDOIT2 AND GO DOIT 502.
0002B8 D396 3114 KEYNEWCH OUT KBRESET RESET 'NEW KB STROBE' STATUS BIT 503.
0002BA 36FF 3116 LODI M,X'FF' INITIALIZE REPEAT WAIT COUNTER 504.
0002BC C3D802 3118 JMP KEYDOIT2 AND PROCESS FIRST OCCURENCE OF CHAR 505.
3120 * 506.
3121 * 507.

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LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				3123	*****	509.
				3124	*	510.
				3125	* CHARPROC: CHARACTER PROCESSING ROUTINE	511.
				3126	*	512.
				3127	* THE CHARACTER IN 'A' IS EITHER (1) PROCESSED AS A <COMMAND>	513.
				3128	* IF THE HIGH-ORDER BIT IS ON, OR (2) PUT IN THE	514.
				3129	* 'RECEIVER BUFFER' FOR LATER BACKGROUND PROCESSING.	515.
				3130	*	516.
				3131	* CALLS FROM THE BACKGROUND SHOULD PROBABLY DISABLE INTERRUPTS.	517.
				3132	*	518.
				3133	* DESTROYS: A, BC, DE, HL	519.
				3134	*	520.
				3135	*****	521.
0002BF	57	002BF		3136	CHARPROC EQU * HERE TO PROCESS CHARACTERS	522.
				3138	LOD D,A SAVE THE CHAR	523.
				3140	*	524.
				3141	*	525.
				3142	*	526.
				3143	*	527.
				3144	* CHECK FOR SPECIAL ESCAPE KEYS	528.
				3145	*	529.
0002C0	E680			3146	ANDI CMDKEY 'CMD' KEY?	530.
0002C2	CADA02			3148	JMP Z,KEYDOIT NO, NOT SPECIAL...	531.
0002C5	7A			3150	LOD A,D	532.
0002C6	E67F			3152	CMDDOIT ANDI X'7F'	533.
0002C8	218003			3154	LODI HL,CMDTAB	534.
0002CB	CD2E07			3156	CALL SEARCH SEARCH FOR CHAR IN TABLE	535.
0002CE	D8			3158	RET C	536.
0002CF	3A1A21			3160	LD A,PRVCCHAR	537.
0002D2	5F			3162	LOD E,A SAVE LAST CMD CHAR	538.
0002D3	7A			3164	LOD A,D LOAD BACK CHAR	539.
0002D4	321A21			3166	ST A,PRVCCHAR SAVE NEW ONE AS OLD	540.
0002D7	E9			3168	JMP (HL) AND GO TO ROUTINE	541.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				3171	*****	543.
				3172	*	544.
				3173	* KEYDOIT: PUT CHARACTER IN TRANSMIT OR RECEIVE BUFFER	545.
				3174	*	546.
				3175	* THE CHARACTER IN 'D' IS STORED IN TRANSMIT BUFFER (IF NOT	547.
				3176	* LOCAL OR SEMI-LOCAL MODE)	548.
				3177	* OTHERWISE, IT PASSES CONTROL TO 'KESTORE' (Q.V.)	549.
				3178	*	550.
				3179	* DESTROYS: A, HL	551.
				3180	*	552.
				3181	*****	553.
0002D8	D3AE			3182	KEYDOIT2 OUT KBCCLICK SAME AS KEYDOIT, BUT CLICKS	554.
0002DA	7A			3184	KEYDOIT LOD A,D THE CHAR	555.
0002DB	321C21			3186	ST A,KEYSAVED SAVE IT FOR NEXT TIME	556.
0002DE	B7			3188	IOR A SEE IF SPECIAL CURS MOTION	557.
0002DF	FA2403			3190	JMP S,KESTORE IF SIGNED IT IS SO DON'T SEND	558.
0002E2	3A2821			3192	LD A,LCLMODE SEE IF JUST LOCAL TXT ENTRY	559.
0002E5	E602			3194	ANDI NOSEND	560.
0002E7	C22303			3196	JMP NZ,KESTOR2 IT IS.GO AROUND XMIT STUFF	561.
				3198	*	562.
				3199	* STUFXMIT: STORE (D) IN TRANSMIT BUFFER	563.
				3200	*	564.
0002EA	2A3C21			3201	STUFXMIT LD HL,XMITPUT PLACE TO STORE CHAR IN BUF	565.
0002ED	23			3203	INC HL BUMP IT	566.
0002EE	97			3205	SUB A CLEAR A	567.
0002EF	323821			3207	ST A,XMITSTAT SO WE CAN CLEAR XMITSTAT	568.
0002F2	3E41			3209	LODI A,XMITEND,< CHECK FOR WRAP AROUND	569.
0002F4	BC			3211	CMP H	570.
0002F5	C2FB02			3213	JMP NZ,XMITCHK	571.
0002F8	210040			3215	LODI HL,XMITBUF WE WRAPED	572.
		002FB		3217	XMITCHK EQU *	573.
0002FB	3A3A21			3219	LD A,XMITGET CHKECK FOR OVERRUN	574.
0002FE	BD			3221	CMP L	575.
0002FF	C21103			3223	JMP NZ,XMITROOM NOT YET	576.
000302	3A3B21			3225	LD A,XMITGET+1 CHECK HIGHT ORDER DAART	577.
000305	BC			3227	CMP H	578.
000306	C21103			3229	JMP NZ,XMITROOM OKAY, WE CAN STORE	579.
000309	D386			3231	OUT BELL TELL USER ABOUT OVERRUN	580.
00030B	3E01			3233	LODI A,1 PUT 1 IN A	581.
00030D	323821			3235	ST A,XMITSTAT AND STORE IN XMITSTAT	582.
000310	C9			3237	RET , AND LEAVE	583.
		00311		3239	XMITROOM EQU *	584.
000311	223C21			3241	ST HL,XMITPUT AND SAVE FINAL ADDRESS	585.
000314	7A			3243	LOD A,D GET IT	586.
000315	77			3245	ST A,(HL) AND PUT IT IN BUFFER	587.
000316	FE04			3247	CMPI @EOT SEE IF CNTL-D	588.
000318	CA1E03			3249	JMP Z,SETSIMCR IF SO TREAT AS THOUGH <CR>	589.
				3251	*	590.
00031B	FE0D			3252	CMPI @CR SEE COMMENTS IN TYPEAHEAD FOR REASON	591.
				3254	* NOTE THIS CHECK MUST STAY HERE, BECAUSE WE DON'T	592.
				3255	* WANT TO SCREW UP CARRIAGE RET COUNT IF BUFFER OVERFLOW	593.
00031D	C0			3256	RET NZ NO,THEN LEVAE	594.
00031E	214421			3258	SETSIMCR LODI HL,CRCNT	595.
000321	34			3260	INC M UPDATE CRCNR	596.
000322	C9			3262	RET , AND GO CHK ABOUT DOING OUTPUT	597.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				3265	*****	599.
				3266	*	600.
				3267	* KEYSTORE: PUT 'A' IN THE RECEIVER BUFFER,	601.
				3268	* (EXCEPT IN CONTROL-UNDERSCORE (NON-ECHO) MODE)	602.
				3269	*	603.
				3270	* DESTROYS: A, DE, HL	604.
				3271	*	605.
				3272	*****	606.
000323	7A			3273	KEYSTOR2 LOD A,D	607.
				3275	*	608.
		00324		3276	KEYSTORE EQU *	609.
000324	57			3278	LD D,A	610.
000325	FE0D			3280	CMPI @CR	611.
000327	C23403			3282	JMP NZ,NOTCRCHG	612.
00032A	3A3121			3284	LD A,FLAGS	613.
00032D	213621			3286	LODI HL,CNTLOMD	614.
				3288	*	615.
				3289	*	616.
				3290	*	617.
				3291	*	618.
000330	A6			3292	AND M	619.
000331	323121			3294	ST A,FLAGS	620.
000334	2A0421			3296	NOTCRCHG LD HL,PUTPTR	(* THIS MUST BE DONE DISABLED *)
000337	23			3298	INC HL	INCREMENT PUTPTR CIRCULARLY
000338	7C			3300	LOD A,H	622.
000339	FE44			3302	CMPI BUFEND,<	623.
00033B	C24103			3304	JMP NZ,KEYST1	624.
00033E	210041			3306	LODI HL,BUFFER	625.
000341	3A0221			3308	KEYST1 LD A,GETPTR	DOES IT NOW RUN INTO GETPTR?
000344	BD			3310	CMP L	627.
000345	C25203			3312	JMP NZ,KEYST2	628.
000348	3A0321			3314	LD A,GETPTR+1	629.
00034B	BC			3316	CMP H	630.
00034C	C25203			3318	JMP NZ,KEYST2	NO, AGAIN...
00034F	D386			3320	OUT BELL	YES - SQUAWK ABOUT IT
000351	C9			3322	RET ,	AND IGNORE THIS INCOMING CHARACTER
000352	220421			3324	KEYST2 ST HL,PUTPTR	SAVE UPDATED PUTPTR
000355	72			3326	LOD M,D	AND PUT IN THE NEW CHAR
000356	2A0621			3328	LD HL,BUFCNT	636.
000359	23			3330	INC HL	637.
00035A	220621			3332	ST HL,BUFCNT	638.
00035D	3A4221			3334	LD A,XMITBITS	639.
000360	E680			3336	ANDI SPEEDO	SEE IF WE DO AUTO UART CNTL
000362	C8			3338	RET Z	IF FLAG IS OFF, GO HOME
000363	3A4321			3340	LD A,CURSPEED	GET CURRENT UART SPEED
000366	B7			3342	ORA A	643.
000367	C8			3344	RET Z	644.
000368	7C			3346	LOD A,H	RETURN IF SPEED IS ALREADY MINIMUM
000369	B7			3348	ORA A	646.
00036A	C0			3350	RET NZ	647.
00036B	7D			3352	LOD A,L	648.
00036C	FE10			3354	CMPI X'10'	649.
00036E	D27703			3356	IF C	650.
000371	3A4321			3359	LD A,CURSPEED	651.
000374	C37803			3361	ELSE	652.
						653.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
			00377	3363		
000377	FE20			3364	CMPI X'20'	654.
000379	D8			3366	RET C	655.
00037A	97			3368	SUB A	656.
			0037B	3370	END	657.
00037B	D38E			3373	OUT URTSPEED	658.
00037D	C9			3375	KEYDEF RET ,	659.
00037E	2A2F21			3377	KEYEND LD HL,FOOADDR	660.
000381	E9			3379	JMP (HL)	661.
					UNDEF . COMMAND, GET ADDRESS	
					GO TO IT	

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				3382	*****	663.
				3383	***** LOCAL COMMAND TABLE	664.
				3384	*****	665.
		00380		3385	CMDTAB CMDEF 20,LOCAL SPACE	666.
000382	200445			3387		
000385	3A05FE			3388	CMDEF 3A,PGDOWN :-SCROLL PAGES DOWN	667.
000388	3B05E9			3390	CMDEF 3B,PGUP PAGE UP (;)	668.
00038B	4004CE			3392	CMDEF 40,SCRUPQ @ SCROLL UP	669.
00038E	5B05C1			3394	CMDEF 5B,UNHOME LEFT BRACKET RETURN	670.
000391	5C04B6			3396	CMDEF 5C,SCRDOWNQ REV SLASH -SCROLL DWN QUICK	671.
000394	5D057D			3398	CMDEF 5D,HOME RIGHT BRACKET HOME DISPLAY TO CURSOR	672.
000397	63044F			3400	CMDEF 63,CLRSCRN C-CLEAR SCREEN	673.
00039A	740553			3402	CMDEF 74,SHOWTIME T SHOWTIME IN UPPER RIGHT	674.
00039D	080445			3404	CMDEF 08,LOCAL BS	675.
0003A0	090445			3406	CMDEF 09,LOCAL HT	676.
0003A3	0A0445			3408	CMDEF 0A,LOCAL LF	677.
0003A6	0B0445			3410	CMDEF 0B,LOCAL VT	678.
0003A9	0C048A			3412	CMDEF 0C,ENTGRPC FORMFEED ENTER GRAPH AND CLEAR	679.
0003AC	0D0445			3414	CMDEF 0D,LOCAL CR	680.
0003AF	0E0687			3416	CMDEF 0E,COPY SO	681.
0003B2	0F0687			3418	CMDEF 0F,COPY SI	682.
0003B5	110687			3420	CMDEF 11,COPY OUTPUT STATUS	683.
0003B8	17068E			3422	CMDEF 17,PATCHST COMMENCE PATCHING	684.
0003BB	130687			3424	CMDEF 13,COPY CNTL S, CHANGE CHAR SET	685.
0003BE	120445			3426	CMDEF 12,LOCAL BACK TAB	686.
0003C1	210671			3428	CMDEF 21,STPRV ,CHANGE ESCAPE CHARACTER	687.
0003C4	311468			3430	CMDEF 31,SETTAB	688.
0003C7	32146E			3432	CMDEF 32,CLRSTAB 2,CLEAR SINGLE TAB	689.
0003CA	331476			3434	CMDEF 33,CLRATAB 3,CLEAR ALLTABS AND ENABLE TABS	690.
0003CD	34142F			3436	CMDEF 34,RESETTAB 4,TURN OFF TABS,SIMULATE 4013 TAB	691.
0003D0	3F0433			3438	CMDEF 3F,HELPCHK ?-GIVE USER HELP	692.
0003D3	42044B			3440	CMDEF 42,STORSIZE BIG GRAPHS	693.
0003D6	43063B			3442	CMDEF 43,S@TE1 SHIFT C-XMIT ON XR	694.
0003D9	4515BE			3444	CMDEF 45,BRGEXT SHIFT E = SET FOR EXTERNAL CLOCK	695.
0003DC	4604AA			3446	CMDEF 46,SETFULL F-FULLDUPLES(REMOTE ECHO)	696.
0003DF	470445			3448	CMDEF 47,LOCAL SPECIAL EXECUTION MODE	697.
0003E2	4804A2			3450	CMDEF 48,SETHALF H-HALFDUPLEX	698.
0003E5	4915B3			3452	CMDEF 49,BRGINT SHIFT I = SET FOR INTERNAL CLOCK	699.
0003E8	44062B			3454	CMDEF 44,S@TOCR <CMD><SHIFT>D LINEMODE	700.
0003EB	4D044B			3456	CMDEF 4D,STORSIZE <CMD><SHIFT>M NORMAL	701.
0003EE	4E15AA			3458	CMDEF 4E,NOGMODE SHIFT N = DON'T ALLOW ENTER GMODE	702.
0003F1	5006A8			3460	CMDEF 50,PRNTINIT INITIALIZE PRINTING ROUTINE	703.
0003F4	510633			3462	CMDEF 51,S@TODC1 CMD Q TYPE AHEAD	704.
0003F7	72066A			3464	CMDEF 72,CLRBUFS R, CLEAR XMIT,RCV BUFS	705.
0003FA	53044B			3466	CMDEF 53,STORSIZE <CMD>SHIFT S SMALL GRAPH	706.
0003FD	550671			3468	CMDEF 55,STPRV SHIFT U = SET UART SPEED(CHGUART)	707.
000400	56067A			3470	CMDEF 56,VIDEOINV SHIFT V = INVERT VIDEO	708.
000403	5715C9			3472	CMDEF 57,SETURTX1 SHIFT W = X 1 CLOCK FOR UART	709.
000406	5815D2			3474	CMDEF 58,SETURTX6 SHIFT X = X 16 CLOCK FOR UART	710.
000409	5915AE			3476	CMDEF 59,YESGMODE SHIFT Y = ALLOW ENTRY INTO GMODE	711.
00040C	64065C			3478	CMDEF 64,SPEEDOFF TURN OFF SPEEDO	712.
00040F	65064E			3480	CMDEF 65,SPEEDOON TURN ON SPEEDO	713.
000412	670496			3482	CMDEF 67,ENTERGRP G-ENTER GRAPHMODE	714.
000415	6806CF			3484	CMDEF 68,HEXINIT H-PROCESS HEX ADDR	715.
000418	6B0469			3486	CMDEF 6B,LEAVGRP K CLEAR SCREEN AND LEAVE GMODE	716.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
00041B	4C0613			3488	CMDEF 4C,SETLCL	SHIFT L-LOCAL MODE(NO XMIT TO HOST) 717.
00041E	6D05CA			3490	CMDEF 6D,MOVECURS	M MOVE CURSOR TO BOTTOM OF PAGE 718.
000421	6E0483			3492	CMDEF 6E,NORMODE	N LEAVE GRAPH MODE 719.
000424	6F0523			3494	CMDEF 6F,SCRUPS	D SCROLL UP SLOWLY 720.
000427	70050C			3496	CMDEF 70,SCRDWS	P SCROLL DOWN SLOWLY 721.
00042A	710969			3498	CMDEF 71,SETCCBS	SET UP CCB CHAIN AGAIN. 722.
00042D	52061C			3500	CMDEF 52,SETRMT	SHIFT R-REMOTE MODE(XMIT TO HOST) 723.
000430	00037E			3502	CMDEF 00,KEYEND	THAT'S ALL FOLKS 724.
				3504	*	725.
				3505	*	726.
				3506	*	727.
				3507	*	728.
				3508	*	729.
				3509	*	730.
				3510	*	731.
				3511	*	732.
				3512	*	733.
				3513	*	734.
				3514	*	735.
				3515	*	736.
				3516	*	737.
				3517	*	738.
				3518	*	739.
				3519	*	740.
				3520	*	741.
		00433		3521	HELPCHK EQU *	742.
				3523	CMP E	743.
				3525	RET Z	744.
				3527	LD A,MODEBITS	ARE WE IN GRAPHMODE? 745.
				3529	ANDI GRAPHMD	746.
				3531	JMP Z,NOCLR	NO ,THEN DO NOT CLEAR SCREEN 747.
				3533	CALL CLRGRPH	YES... 748.
				3535	NOCLR LODI A,X'3F'+X'80'	PUT A ? MARK INTO BUFFER 749.
				3537	JMP KEYSTORE	AND PUT IT IN BUFFER 750.
				3539	*	751.
				3540	*	752.
				3541	*	753.
				3542	LOCAL IORI X'80'	PUT IN HIGH ORDER BIT 754.
				3544	*	755.
				3545	*	756.
				3546	LOD D,A	SAVE THE CHAR 757.
				3548	JMP KEYRPTL	DO THE CHAR 758.
				3550	*	759.
				3551	*	760.
				3552	*	761.
				3553	STORSIZE ST A,TYPE	762.
				3555	RET .	763.
				3557	*	764.
				3558	*	765.
				3559	*	766.
				3560	CLRSCREEN EQU *	767.
				3562	*	768.
				3563	CMP E	NOT OFF ALL OF MEMEMORY THOUGH 769.
				3565	RET Z	YUP, THEN DON'T DO IT AGAIN 770.
				3567	LD A,MODEBITS	SEE IF IN GRAPH MODE 771.
00044F	BB					
000450	C8					
000451	3A1121					

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000454	E610			3569	ANDI GRAPHMD	772.
000456	C25F04			3571	JMP NZ,CLRGRPH	773.
000459	3EA0			3573	LODI A,X'A0'	774.
00045B	321021			3575	ST A,CLRFLG	775.
00045E	C9			3577	RET ,	776.
				3579	*	777.
				3580	*	778.
		0045F		3581	CLRGRPH EQU *	779.
00045F	3EC0			3583	LODI A,X'CO'	780.
000461	321021			3585	ST A,CLRFLG	781.
000464	3E8C			3587	LODI A,@FF+X'80'	782.
000466	C32403			3589	JMP KEYSTORE	783.
				3591	* THE ABOVE IS A LITTLE KLUGGY IN THAT FF MAY BE OUT	784.
				3592	* OF SYNC WITH REST OF TEXT.	785.
				3593	* EHF	786.
				3594	*	787.
				3595	*	788.
				3596	*	789.
		00469		3597	LEAVGRP EQU *	790.
000469	BB			3599	CMF E	791.
00046A	C8			3601	RET Z	792.
00046B	3E80			3603	LODI A,X'80'	793.
00046D	321021			3605	ST A,CLRFLG	794.
000470	2A8A21			3607	LD HL,WASTED	795.
000473	CDD408			3609	CALL MINUSHL	796.
000476	11AFFF			3611	LODI DE,-LINESIZE	797.
000479	19			3613	ADD HL,DE	798.
00047A	221221			3615	ST HL,CURSLOC	799.
00047D	3A1121			3617	LD A,MODEBITS	800.
000480	E610			3619	ANDI GRAPHMD	801.
000482	C8			3621	RET Z	802.
				3623	*	803.
		00483		3624	NORMODE EQU *	804.
000483	BB			3626	CMF E	805.
000484	C8			3628	RET Z	806.
000485	3EFE			3630	LODI A,X'FE'	807.
000487	C32403			3632	JMP KEYSTORE	808.
				3634	*	809.
				3635	*	810.
				3636	*	811.
		0048A		3637	ENTGRPC EQU *	812.
00048A	BB			3639	CMF E	813.
00048B	C8			3641	RET Z	814.
				3643	*	815.
				3644	*	816.
00048C	3A3721			3645	LD A,ALLOWGMD	817.
00048F	B7			3647	IOR A	818.
000490	C0			3649	RET NZ	819.
000491	3EC0			3651	LODI A,X'CO'	820.
000493	321021			3653	ST A,CLRFLG	821.
				3655	*	822.
				3656	*	823.
				3657	*	824.
		00496		3658	ENTERGRP EQU *	825.
000496	BB			3660	CMF E	826.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000497	C8			3662	RET Z	YES DON'T DO ITHIS 827.
000498	3A3721			3664	LD A,ALLOWGMD	CHECK IF WE CAN ENTER 828.
00049B	B7			3666	IOR A	829.
00049C	C0			3668	RET NZ	IF NZ THEN WE CANT 830.
00049D	3E8C			3670	LODI A,@FF+X'80'	PUT IN INDICATOR 831.
00049F	C32403			3672	JMP KEYSTORE	AND PUT INTO BUFFER. 832.
				3674	*	833.
				3675	*	834.
				3677	*	836.
				3678	*	837.
				3679	*	838.
				3680	SETHALF LD A,FLAGS	839.
0004A2	3A3121			3682	ANDI 255-FULLDUPL	840.
0004A5	E67F			3684	JMP SETFULL2	841.
0004A7	C3AF04			3686	SETFULL LD A,FLAGS	842.
0004AA	3A3121			3688	IORI FULLDUPL	843.
0004AD	F680			3690	SETFULL2 ST A,FLAGS	844.
0004AF	323121			3692	ST A,CNTLOMD	845.
0004B2	323621			3694	RET ,	846.
0004B5	C9					

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LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				3697 *		848.
				3698 *	SCROLL DOWN QUICKLY	849.
				3699 *		850.
0004B6	211D21			3700	SCRDWNQ LODI HL,SCRCTR	851.
0004B9	35			3702	DEC M	852.
0004BA	C0			3704	RET NZ	853.
0004BB	3604			3706	LODI M,SCRQTIME	854.
0004BD	CDC004			3708	DSALFINE	855.
				3710 *		856.
0004C0	CDE604			3711	SCRDWN CALL DOWNCHK	857.
0004C3	D0			3713	RET NC	858.
0004C4	2A0A21			3715	LD HL,NXTDISA	859.
0004C7	CDC508			3717	CALL SUBWRP81	860.
0004CA	220A21			3719	ST HL,NXTDISA	861.
0004CD	C9			3721	RET ,	862.
				3723 *		863.
				3724 *	SCROLL UP QUICKLY	864.
				3725 *		865.
0004CE	211D21			3726	SCRUPQ LODI HL,SCRCTR	866.
0004D1	35			3728	DEC M	867.
0004D2	C0			3730	RET NZ	868.
0004D3	3604			3732	LODI M,SCRQTIME	869.
0004D5	CDD804			3734	DSALFINE	870.
				3736 *		871.
0004D8	CDF604			3737	SCRUP CALL UPCHK	872.
0004DB	D0			3739	RET NC	873.
0004DC	2A0A21			3741	SCRUPDO LD HL,NXTDISA	874.
0004DF	CDBA08			3743	CALL ADDWRP81	875.
0004E2	220A21			3745	ST HL,NXTDISA	876.
0004E5	C9			3747	RET ,	877.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0004E6	F3			3750	DOWNCHK DI ,	DISABLE TO CHECK POINTERS 879.
0004E7	2A0A21			3752	LD HL,NXTDISA	CHECKS TO SEE IF WE CAN SCROLL DOWN 880.
0004EA	545D			3754	LOD DE,HL	REMEMBER NXTDISA 881.
0004EC	2A8621			3756	LD HL,TEXTTOP	GET UPPER BOUNDARY 882.
0004EF	FB			3758	EI ,	RE-ENABLE 883.
0004F0	19			3760	ADD HL,DE	FIND DIFFERENCE 884.
0004F1	11FFFF			3762	LODI DE,X'FFFF'	885.
0004F4	19			3764	ADD HL,DE	886.
0004F5	C9			3766	RET ,	RETURN WITH CARRY RESET IF IT IS 0 887.
0004F6	F3			3768	UPCHK DI ,	888.
0004F7	2A0A21			3770	LD HL,NXTDISA	GET DISPLAY ADDRESS 889.
0004FA	11B50B			3772	LODI DE,SCRNSIZE	ADD ON SIZE OF SCREEN 890.
0004FD	CDBD08			3774	CALL ADDWRP	891.
000500	545D			3776	LOD DE,HL	SAVE NEW NXTDISA 892.
000502	2A8821			3778	LD HL,TEXTBOT	SEE IF ITS TOO FAR 893.
000505	FB			3780	EI ,	RE-ENABLE 894.
000506	19			3782	ADD HL,DE	895.
000507	11FFFF			3784	LODI DE,X'FFFF'	896.
00050A	19			3786	ADD HL,DE	897.
00050B	C9			3788	RET ,	RETURN WITH CARRY RESET IF SO 898.
				3790	*	899.
				3791	*	SCROLL DOWN SLOWLY 900.
				3792	*	901.
00050C	211D21			3793	SCRDWNS LODI HL,SCRCTR	902.
00050F	35			3795	DEC M	TIME TO ACT? 903.
000510	C0			3797	RET NZ	NO... 904.
000511	3606			3799	LODI M,SCRSTIME	YES - RESET FOR NEXT TIME 905.
000513	CD1605			3801	DSALFINE	SCROLL TWO RASTER LINES 906.
000516	210821			3803	SCRDWNSD LODI HL,NXTCHL1	POINT TO PTR TO CHL1TAB ENTRY 907.
000519	35			3805	DEC M	DECREMENT LOW BYTE OF PTR 908.
00051A	7E			3807	LOD A,M	(TABLE IS ALL ON 1 PAGE) 909.
00051B	FE46			3809	CMPI CHL1TAB,>	UP BEFORE START OF TABLE? 910.
00051D	D0			3811	RET NC	NO - LEAVE IT 911.
00051E	3652			3813	LODI M,CHL1TAB+12,>	YES - MOVE TO BOTTOM OF TABLE 912.
000520	E5			3815	PUSH HL	SAV NXTCHL1 913.
000521	CDE604			3817	CALL DOWNCHK	SHOULD WE SCROLL A FULL LINE? 914.
000524	E1			3819	POP HL	915.
000525	DAC004			3821	JMP C,SCRDOWN	IT'S OK, GO DO IT 916.
000528	3646			3823	LODI M,CHL1TAB,>	NO SO MOVE POINTER BACK... 917.
00052A	C9			3825	RET ,	918.
				3827	*	919.
				3828	*	SCROLL UP SLOWLY 920.
				3829	*	921.
00052B	211D21			3830	SCRUPS LODI HL,SCRCTR	922.
00052E	35			3832	DEC M	923.
00052F	C0			3834	RET NZ	924.
000530	3606			3836	LODI M,SCRSTIME	925.
000532	CD3505			3838	DSALFINE	SCROLL TWO RASTER LINES 926.
000535	CDF604			3840	SCRUPS DO LODI HL,NXTCHL1	DO WE MOVE AT ALL? 927.
000538	D0			3842	RET NC	NO, JUST RETURN 928.
000539	210821			3844	LODI HL,NXTCHL1	POINT TO PTR TO CHL1TAB ENTRY 929.
00053C	34			3846	INC M	INCREMENT LOW BYTE OF PTR 930.
00053D	7E			3848	LOD A,M	931.
00053E	FE53			3850	CMPI CHL1TAB+13,>	PAST THE END? 932.
000540	D8			3852	RET C	NO - LEAVE IT THERE 933.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000541	3646			3854	LODI M,CHL1TAB,>	934.
000543	C3D804			3856	JMP SCRUP	935.
				3858	*	936.
				3859	*	937.
				3860	*	938.
				3861	*	939.
				3862	*	940.
				3863	*	941.
				3864	*	942.
				3865	*	943.
				3866	*	944.
				3867	*	945.
				3868	*	946.
				3869	*	947.
				3870	*	948.
				3871	*	949.
				3872	*	950.
				3873	*	951.
				3874	*	952.
				3875	*	953.
				3876	*	954.
000546	8009911AA22BB3			3877	CHL1TAB DC X'8009911AA22BB3'	955.
00054D	3CC44DD55EE6			3878	DC X'3CC44DD55EE6'	956.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SCURCE STATEMENT	ASM H V 05 16.41 08/31/77
				3880 *		958.
				3881 *	DISPLAY CLOCK TIME IN UPPER RIGHT CORNER	959.
				3882 *		960.
000553	2A0A21			3883	SHOWTIME LD HL,NXTDISA	961.
000556	119100			3885	LODI DE,80+65	962.
000559	19			3887	ADD HL,DE	963.
00055A	222221			3889	ST HL,TIMELOC	964.
00055D	111E21			3891	LODI DE,TIME	965.
000560	1A			3893	SHOWTIM1 LD A,(DE)	966.
000561	0F0F0F0F			3895	ROT R,4	HIGH-ORDER DECIMAL DIGIT 967.
000565	E60F			3897	ANDI X'0F'	968.
000567	C630			3899	ADDI '0'	969.
000569	77			3901	ST A,(HL)	970.
00056A	23			3903	INC HL	971.
00056B	1A			3905	LD A,(DE)	972.
00056C	E60F			3907	ANDI X'0F'	LOW-ORDER DECIMAL DIGIT 973.
00056E	C630			3909	ADDI '0'	974.
000570	77			3911	ST A,(HL)	975.
000571	23			3913	INC HL	976.
000572	13			3915	INC DE	NEXT PAIR 977.
000573	7B			3917	LOD A,E	978.
000574	FE22			3919	CMPI TIME+4,>	DONE? 979.
000576	C8			3921	RET Z	YES... 980.
000577	363A			3923	LODI M,'::'	NO - INSERT '::' 981.
000579	23			3925	INC HL	982.
00057A	C36005			3927	JMP SHOWTIM1	983.
				3930 *		985.
				3931 *	HOME SCREEN TO PUT CURSOR AT BOTTOM	986.
				3932 *		987.
00057D	BB	0057D		3933	HOME EQU *	988.
00057E	C8			3935	CMP E	WAS LAST CMD HOME? 989.
00057F	2A0A21			3937	RET Z	YES, IGNORE THIS ONE 990.
000582	E5			3939	LD HL,NXTDISA	SAVE CURRENT DISPLAY ADDRESS 991.
000583	2A1221			3941	PUSH HL	BY PUSHING IT 992.
000586	119DF4			3943	LD HL,CURSLOC	CURSOR LOCATION 993.
000589	CDC808			3945	LODI DE,-(SCRNSIZE-LINESIZE)+1	994.
00058C	3A1421			3947	CALL SUBWRP	-(SCREENSIZE-LINESIZE)+1 995.
00058F	2F			3949	LD A,CURSX	996.
000590	85			3951	CMA ,	997.
000591	6F7C			3953	ADD L	-XLOC-1 998.
000593	CEFF			3955	LOD LA,AH	999.
000595	67			3957	ADCI X'FF'	1000.
000596	220A21			3959	LOD H,A	1001.
000599	444D			3961	ST HL,NXTDISA	THAT RESULT IN NEW START OF SCREEN 1002.
00059B	2A8621			3963	LOD BC,HL	SAVE THE NEW NXTDISA 1003.
00059E	11B50B			3965	LD HL,TEXTTOP	SEE IF THAT PUTS TEXTTOP ON SCREEN 1004.
0005A1	CDE508			3967	LODI DE,SCRNSIZE	BY USING CLEVER CIRCLEFN 1005.
0005A4	D2B005			3969	CALL CIRCLEFN	1006.
0005A7	2A8621			3971	JMP NC,HOMEDONE	IT DOESN'T SO GO STORE IT 1007.
0005AA	CDD408			3973	LD HL,TEXTTOP	IT DOES SO MAKE NXTDISA=TEXTTOP 1008.
0005AD	220A21			3975	CALL MINUSHL	1009.
0005B0	E1			3977	ST HL,NXTDISA	1010.
				3979	HOMEDONE POP HL	REMEMBER WHERE IT WAS 1011.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0005B1	3A0A21			3981	LD A,NXTDISA	SEE IF IT IS THE SAME 1012.
0005B4	BD			3983	CMP L	1013.
0005B5	C2BD05			3985	JMP NZ,NOTSAME	IF NOT, STORE OLD ADDRESS 1014.
0005B8	3A0B21			3987	LD A,NXTDISA+1	1015.
0005BB	BC			3989	CMP H	1016.
0005BC	C8			3991	RET Z	IF SAME, DO NOT STORE 1017.
0005BD	220C21			3993	NOTSAME ST HL,SAVDISA	1018.
0005C0	C9			3995	RET U	1019.
				3998	*	1021.
				3999	*	UNHOME: RETURN TO WHERE WE WERE WHEN "HOME" WAS DONE 1022.
				4000	*	1023.
0005C1	BB			4001	UNHOME CMP E	1024.
0005C2	C8			4003	RET Z	1025.
0005C3	2A0C21			4005	LD HL,SAVDISA	1026.
0005C6	220A21			4007	ST HL,NXTDISA	1027.
0005C9	C9			4009	RET ,	1028.
		005CA		4011	MOVECURS EQU *	MOVE CURSOR TO BOTTOM OF DISPLAY 1029.
0005CA	2A1221			4013	LD HL,CURSLOC	RESTORE CURSOR CHARACTER 1030.
0005CD	3A1721			4015	LD A,CURCHAR	1031.
0005D0	77			4017	ST A,(HL)	1032.
0005D1	2A0A21			4019	LD HL,NXTDISA	1033.
0005D4	11640B			4021	LODI DE,SCRNSIZE-LINESIZE	1034.
0005D7	CDBD08			4023	CALL ADDWRP	1035.
0005DA	221221			4025	ST HL,CURSLOC	1036.
0005DD	7E			4027	LD A,(HL)	GET NEW CURSOR CHARACTER 1037.
0005DE	321721			4029	ST A,CURCHAR	AND SAVE IT 1038.
0005E1	97			4031	SUB A	1039.
0005E2	321421			4033	ST A,CURSX	RESET X POSITION 1040.
0005E5	321521			4035	ST A,CURSX2	ALSO TABS POSITION 1041.
0005E8	C9			4037	RET ,	1042.
				4039	*	1043.
				4040	* PAGE UP.	1044.
				4041	*	1045.
		005E9		4042	PGUP EQU *	1046.
0005E9	BB			4044	CMP E	WAS LAST PAGE UP 1047.
0005EA	211D21			4046	LODI HL,SCRCTR	ADD OF SCROLLING TIME 1048.
0005ED	C2F205			4048	JMP NZ,PGUDOIT	ITS FIRST TIME 1049.
				4050	*	ELSE SEE IF TIME TO SCROLL 1050.
0005F0	35			4051	DEC M	DECREMENT SCROLL COUNT 1051.
0005F1	C0			4053	RET NZ	IF NOT ZERO-->THEN NOT TIME 1052.
0005F2	3630			4055	PGUDOIT LODI M,SCRPTIME	RESET 1053.
0005F4	061F			4057	LODI B,NLINES-6	DO 31 LINES 1054.
0005F6	CDD804			4059	KEEPUP CALL SCRUP	DO ONE LINE 1055.
0005F9	05			4061	DEC B	ALTER COUNT 1056.
0005FA	C2F605			4063	JMP NZ,KEEPUP	AND KEEP IT UP 1057.
0005FD	C9			4065	RET ,	1058.
				4067	*	1059.
				4068	*	1060.
				4069	* PAGEDOWN.	1061.
				4070	*	1062.
		005FE		4071	PGDOWN EQU *	1063.
0005FE	BB			4073	CMP E	WAS LAST PAGE 1064.
0005FF	211D21			4075	LODI HL,SCRCTR	ADD OF SCROLLING TIME 1065.
000602	C20706			4077	JMP NZ,PGDDOIT	ITS FIRST TIME 1066.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				4079 *	ELSE SEE IF TIME TO SCROLL	1067.
000605	35			4080	DEC M	1068.
000606	C0			4082	RET NZ	1069.
000607	3630			4084	PGDDOIT LODI M,SCRIPTIME	1070.
000609	061F			4086	LODI B,NLINES-6	1071.
00060B	CDC004			4088	KEEPUP2 CALL SCRDOWN	1072.
00060E	05			4090	DEC B	1073.
00060F	C20B06			4092	JMP NZ,KEEPUP2	1074.
000612	C9			4094	RET ,	1075.
				4096 *		1076.
				4097 *		1077.
				4098 *	SET LOCAL	1078.
				4099 *		1079.
		00613		4100	SETLCL EQU *	1080.
000613	3A2821			4102	LD A,LCLMODE	1081.
000616	F606			4104	ORAI NORCV+NOSEND	1082.
000618	322821			4106	ST A,LCLMODE	1083.
00061B	C9			4108	RET ,	1084.
				4110 *		1085.
				4111 *	SETREMOTE - SEND STUFF TO COMPUTER	1086.
				4112 *		1087.
		0061C		4113	SETRMT EQU *	1088.
00061C	3A2821			4115	LD A,LCLMODE	1089.
00061F	E620			4117	ANDI PATFLAG	1090.
000621	3E22			4119	LODI A,PATFLAG+NOSEND	1091.
000623	C22706			4121	JMP NZ,REMTDOIT	1092.
000626	97			4123	SUB A	1093.
000627	322821			4125	REMTDOIT ST A,LCLMODE	1094.
00062A	C9			4127	RET ,	1095.
				4129 *		1096.
				4130 *		1097.
				4131 *	SETTING XMIT MODES	1098.
				4132 *		1099.
		0062B		4133	S@TOCR EQU *	1100.
00062B	21E801			4135	LODI HL,@TOCR	1101.
00062E	3E01			4137	LODI A,1	1102.
000630	C33F06			4139	JMP STXMITTP	1103.
				4141 *		1104.
		00633		4142	S@TODC1 EQU *	1105.
000633	21F201			4144	LODI HL,@TODC1	1106.
000636	3E02			4146	LODI A,2	1107.
000638	C33F06			4148	JMP STXMITTP	1108.
				4150 *		1109.
		0063B		4151	S@TE1 EQU *	1110.
				4153 *	THIS IS NORMAL XMIT MODE	1111.
00063B	215801			4154	LODI HL,@TE1	1112.
00063E	97			4156	SUB A	1113.
		0063F		4158	STXMITTP EQU *	1114.
00063F	224721			4160	ST HL,XMITHAN	1115.
000642	323921			4162	ST A,XMITTYPE	1116.
000645	CD0E02			4164	CALL XMITRCLR	1117.
000648	3E11			4166	LODI A,@DC1	1118.
00064A	324521			4168	ST A,DC1CNT	1119.
00064D	C9			4170	RET ,	1120.
				4172 *	AND LEAVE	1121.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
00064E	BB			4173	SPEEDOON CMP E	1122.
00064F	C8			4175	RET Z	1123.
000650	3A4221			4177	LD A,XMITBITS	1124.
000653	F680			4179	ORAI SPEEDO	1125.
000655	324221			4181	ST A,XMITBITS	1126.
000658	000000			4183	NOP 3	1127.
				4185	*	1127.1
				4186	*	1127.2
				4187	*	1127.3
00065B	C9			4188	RET U	1128.
00065C	BB			4190	SPEEDOFF CMP E	1129.
00065D	C8			4192	RET Z	1130.
00065E	3A4221			4194	LD A,XMITBITS	1131.
000661	E67F			4196	ANDI 255-SPEEDO	1132.
000663	324221			4198	ST A,XMITBITS	1133.
000666	000000			4200	NOP 3	1134.
				4202	*	1134.1
				4203	*	1134.2
				4204	*	1134.3
000669	C9			4205	RET U	1135.
				4207	*	1136.
				4208	*	1137.
				4209	* CLEAR BUFFERS	1138.
				4210	*	1139.
		0066A		4211	CLRBUFS EQU *	1140.
00066A	CD0E02			4213	CALL XMITRCLR	1141.
00066D	CDFC01			4215	CALL RCVCLR	1142.
000670	C9			4217	RET ,	1143.
				4219	*	1144.
				4220	*	1145.
		00671		4221	STPRV EQU *	1146.
000671	7A			4223	LOD A,D	1147.
000672	F680			4225	IORI X'80'	1148.
000674	321821			4227	ST A,PREVCHAR	1149.
000677	C3F006			4229	JMP SEMILCL	1150.
				4231	*	1151.
				4232	* INVERT VIDEO POLARITY	1152.
				4233	*	1153.
		0067A		4234	VIDEOINV EQU *	1154.
00067A	BB			4236	CMP E	1155.
00067B	C8			4238	RET Z	1156.
00067C	3A1121			4240	LD A,MODEBITS	1157.
00067F	EE80			4242	XORI REVRVID	1158.
000681	D380			4244	OUT MODESET	1159.
000683	321121			4246	ST A,MODEBITS	1160.
000686	C9			4248	RET ,	1161.
000687	BB			4250	COPY CMP E	1162.
000688	C8			4252	RET Z	1163.
000689	F680			4254	IORI X'80'	1164.
00068B	C32403			4255	JMP KEYSTORE	1165.
00068E	BB			4258	PATCHST CMP E	1166.
00068F	C8			4260	RET Z	1167.
000690	3E52			4262	CCBSET LOADER,EP=LOADST,CP=DISPL,CS=GETCHR	1168.
000692	322C20			4264		
000695	21C40A			4265		

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
00698	225620			4266		
0069B	3E58			4267		
0069D	322E20			4268		
006A0	3E00			4269		
006A2	322F20			4270		
006A5	C3BF06			4271	JMP U,PRNTINT2 GO DO OTHER STUFF	1169.
		006A8		4273	PRNTINIT EQU *	1170.
006A8	BB			4275	CMP E	1171.
006A9	C8			4277	RET Z	1172.
006AA	3E52			4279	CCBSET LOADER,EP=PRINTEP,CP=DISPL,CS=GETCHR	1173.
006AC	322C20			4281		
006AF	21ED0B			4282		
006B2	225620			4283		
006B5	3E58			4284		
006B7	322E20			4285		
006BA	3E00			4286		
006BC	322F20			4287		
		006BF		4288	PRNTINT2 CCBSET GETCHR,CP=LOADER	1174.
006BF	3E2C			4290		
006C1	325B20			4291		
006C4	3E2C			4292	CCBSET DISPL,CS=LOADER	1175.
006C6	320220			4294		
006C9	CD2403			4295	CALL KEYSTORE PUT IN A CHAR SO WE GET STARTED	1176.
006CC	C3F006			4297	JMP SEMILCL GO HOME AFTER SETUP.	1177.
		006CF		4299	HEXINIT EQU *	1178.
006CF	BB			4301	CMP E	1179.
006D0	C8			4303	RET Z	1180.
006D1	3EAA			4305	CCBSET HEXER,EP=HEXEP,CP=DISPL,CS=GETCHR	1181.
006D3	328420			4307		
006D6	21ED0E			4308		
006D9	22AE20			4309		
006DC	3E58			4310		
006DE	328620			4311		
006E1	3E00			4312		
006E3	328720			4313		
006E6	3E84			4314	CCBSET GETCHR,CP=HEXER	1182.
006E8	325B20			4316		
006EB	3E84			4317	CCBSET DISPL,CS=HEXER	1183.
006ED	320220			4319		
006F0	3A2821			4320	SEMILCL LD A,LCLMODE SET SEMILOCAL MODE (NOSEND)	1184.
006F3	E604			4322	ANDI NORCV SEE IF WE IS REALLY IN LOCAL MODE	1185.
006F5	3E22			4324	LODI A,PATFLAG+NOSEND ASSUME NOT AND LOAD USUAL FLAGS	1186.
006F7	CAFC06			4326	JMP Z,STOREIT GO STORE IF OK.	1187.
006FA	3E26			4328	LODI A,PATFLAG+NORCV+NOSEND WE WAS ALREADY LOCAL, SO	1188.
006FC	322821			4330	STOREIT ST A,LCLMODE STORE ALL FLAGS	1189.
006FF	C9			4332	RET U	1190.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				4335	*****	1192.
				4336	*	1193.
				4337	* HERE ARE THE GLOBAL SYSTEM ROUTINES	1194.
				4338	*	1195.
				4339	*****	1196.
000700	E9			4340	JUMPER JMP (HL)	1197.
000701	C5D5			4342	RESUMER PUSH BC,DE SAVE REGS	1198.
000703	6E			4344	LOD L,M HL NOW POINTS TO STACK POINTER	1199.
000704	6E			4346	LOD L,M HL NOW IS STACKPTR OF NEW TASK	1200.
000705	F9			4348	LOD SP,HL	1201.
000706	D1C1			4350	POP DE,BC RESTORE REGS	1202.
000708	C9			4352	RET U REACTIVATE NEW TASK	1203.
				4354	*****	1204.
				4355	*	1205.
				4356	* HEXIN: CONVERT ASCII CHARACTER IN 'A' TO EQUIVALENT HEX.	1206.
				4357	* IF NOT HEX, RETURN C ELSE NC.	1207.
				4358	*	1208.
				4359	* DESTROYS: A (ONLY IF HEX)	1209.
				4360	*	1210.
000709	FE30			4361	HEXIN CMPI '0'	1211.
00070B	FA2C07			4363	JMP S,BADHEX SMALLER THEN 0	1212.
00070E	FE3A			4365	CMPI ':' :=9+1	1213.
000710	FA2907			4367	JMP S,HEXOK	1214.
000713	FE41			4369	CMPI 'A' IS IT UPPERCASE A-F?	1215.
000715	FA2C07			4371	JMP S,BADHEX TOO SMALL, NO GOOD	1216.
000718	FE47			4373	CMPI 'G'	1217.
00071A	FA2707			4375	JMP S,LETTER IT IS, OK...	1218.
00071D	FE61			4377	CMPI 'A' HOW ABOUT LOWERCASE??	1219.
00071F	FA2C07			4379	JMP S,BADHEX TOO SMALL	1220.
000722	FE67			4381	CMPI 'G'	1221.
000724	F22C07			4383	JMP NS,BADHEX TOO BIG	1222.
000727	C609			4385	LETTER ADDI 9 IT'S OK, MAKE IT RIGHT VALUE	1223.
000729	E60F			4387	HEXOK ANDI X'0F' AND CHOP OFF HIGH-ORDER BITS	1224.
00072B	C9			4389	RET ,	1225.
00072C	37			4391	BADHEX STC , SET CARRY TO INDICATE NOT HEX	1226.
00072D	C9			4393	RET U AND RETURN	1227.
				4395	*****	1228.
				4396	*	1229.
				4397	* SEARCH: SEARCH THE COMMAND TABLE WHOSE ADDRESS IS IN HL	1230.
				4398	* FOR THE CHARACTER IN 'A'.	1231.
				4399	* (N.B.: THE TABLE ADDRESS IS THE FIRSTENTRY-2)	1232.
				4400	* EACH TABLE ENTRY IS OF THE FORM:	1233.
				4401	* DC 'C' CHARACTER',AL2(UNREVERSED ADDRESS)	1234.
				4402	* THE LAST ENTRY IN THE TABLE MUST BE X'00' FOLLOWED	1235.
				4403	* BY THE ADDRESS OF THE ROUTINE TO BE EXECUTED IF	1236.
				4404	* THE CHARACTER IS NOT IN THE TABLE.	1237.
				4405	*	1238.
00072E	57			4406	SEARCH LOD D,A SAVE THE CHAR	1239.
00072F	23			4408	SEARCHLP INC HL INC TO RIGHT PLACE	1240.
000730	23			4410	INC HL	1241.
000731	7E			4412	LOD A,M GET CONTENTS	1242.
000732	23			4414	INC HL	1243.
000733	BA			4416	CMP D SEE IF ITS THE CHAR	1244.
000734	CA3B07			4418	JMP Z,GOTCMD IF SO GET ADDRESS	1245.
000737	B7			4420	ORA A NO SEE IF ZERO	1246.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000738	C22F07			4422	JMP NZ,SEARCHLP	ITS NOT LOOP AROUND AND TRY AGAIN 1247.
00073B	5E			4424	GOTCMD LOD E,M	GET HIGH ORDER ADDRESS 1248.
00073C	23			4426	INC HL	1249.
00073D	6E			4428	LOD L,M	AND LOW ORDER 1250.
00073E	63			4430	LOD H,E	1251.
00073F	7A			4432	LOD A,D	RESTORE THE CHAR 1252.
000740	C9			4434	RET ,	1253.
				4436	*****	1254.
000741	F5			4437	SENDBYTE PUSH AF	SAVE THE CHAR 1255.
000742	E6F0			4439	ANDI X'F0'	COMPUTE FIRST DIGIT 1256.
000744	07070707			4441	ROT L,4	1257.
000748	CD6907			4443	CALL HEXOUT	1258.
000748	57			4445	LOD D,A	1259.
00074C	F3			4447	DI ,	DISABLE TO DO CHAR 1260.
00074D	CDDA02			4449	CALL KEYDOIT	OUTPUT FIRST DIGIT 1261.
000750	FB			4451	EI ,	RENABLE 1262.
000751	F1			4453	POP AF	RETRIEVE CHAR 1263.
000752	E60F			4455	ANDI X'0F'	GET SECOND DIGIT 1264.
000754	CD6907			4457	CALL HEXOUT	1265.
000757	57			4459	LOD D,A	1266.
000758	F3			4461	DI ,	DISABLE TO DO CHAR 1267.
000759	CDDA02			4463	CALL KEYDOIT	OUTPUT 1268.
00075C	FB			4465	EI ,	RENABLE 1269.
00075D	C9			4467	RET ,	GO HOME 1270.
				4469	*****	1271.
				4470	*	1272.
				4471	*	1273.
				4472	* HEXSTR: ACCUMULATE THE ASCII HEX CHAR IN 'A' INTO THE	1274.
				4473	* NUMBER IN HL.	1275.
				4474	* RETURN C IF NOT HEX, ELSE RETURN NC.	1276.
				4475	* 1277.	
00075E	CD0907			4475	HEXSTR CALL HEXIN	CONVERT TO HEX 1277.
000761	D8			4477	RET C	1278.
000762	29			4479	ADD HL,HL	ROTATE FOUR BITS LEFT 1279.
000763	29			4481	ADD HL,HL	1280.
000764	29			4483	ADD HL,HL	1281.
000765	29			4485	ADD HL,HL	1282.
000766	85			4487	ADD L	BUT ADD NEW DIGIT (AND CLEAR C) 1283.
000767	6F			4489	LOD L,A	GET ADDRESS IN HL 1284.
000768	C9			4491	RET U	AND RETURN 1285.
				4493	*****	1286.
000769	FE0A			4494	HEXOUT CMPI 10	1287.
00076B	3F			4496	CMC ,	1288.
00076C	CE30			4498	ADCI X'30'	1289.
00076E	27			4500	DAA ,	1290.
00076F	C9			4502	RET ,	1291.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				4505	*****	1293.
				4506	*	1294.
				4507	* CLEAR: ROUTINE TO CLEAR THE SCREEN (IT RHYMES)	1295.
				4508	*	1296.
				4509	* THIS ROUTINE WILL CLEAR THE SCREEN	1297.
				4510	* DEPENDING HOW THE A REG SEEMS	1298.
				4511	* IF THE 40 BIT IS SET	1299.
				4512	* THEN ALL ZEROS WILL IT GET	1300.
				4513	* OTHERWISE A BLANK IS USED	1301.
				4514	* SO TEXT MODE WON'T BE CONFUSED	1302.
				4515	*	1303.
				4516	* THE 20 BIT IS QUITE A FELLOW	1304.
				4517	* AND IN ITS CLEAR IS VERY MELLOW	1305.
				4518	* FOR ONLY ONE PAGE DOTH IT ZAP	1306.
				4519	* TO RID THE SCREEN OF CRUFTY CRAP	1307.
				4520	* BUT DON'T DESPAIR, WE ARE NOT DONE	1308.
				4521	* FOR WHEN WE FIND THE LOW BIT 1	1309.
				4522	* A BANNER ON THE SCREEN WILL GLOW	1310.
				4523	* TO SHOW THE CHARACTERS WE KNOW.	1311.
				4524	*	1312.
				4525	* <EHF> AND <LJS> TAKE FULL RESPONSIBILITY FOR THE ABOVE.	1313.
				4526	*	1314.
				4527	*	1315.
				4528	* EQUATES FOR CLEAR TYPES	1316.
	00080			4529	CLRFCLR EQU X'80'	1317.
	00040			4531	CLRFZERO EQU X'40'	1318.
	00020			4533	CLRFPAGE EQU X'20'	1319.
	00001			4535	CLRBANR EQU X'01'	1320.
				4537	*	1321.
	00770			4538	CLEAR EQU *	1322.
				4540	*	1323.
				4541	* CLEAR THE SCREEN	1324.
				4542	*	1325.
				4543	ST A,CLRFLG	1326.
	000770	321021		4545	ROT LC,2	1327.
	000773	1717		4547	LODI B,' '	1328.
	000775	0620		4549	JMP NC,CLEARIT	1329.
	000777	D2CC07		4551	PUSH AF	1330.
	00077A	F5		4553	LD HL,NXTDISA	1331.
	00077B	2A0A21		4555	LODI DE,SCRNSIZE-EXLINES	1332.
	00077E	11D3F6		4557	CALL SUBWRP	1333.
	000781	CDC808		4559	PUSH HL	1334.
	000784	E5		4561	LOD BC,HL	1335.
	000785	444D		4563	LODI HL,-ITEXT	1336.
	000787	2100BC		4565	LODI DE,EXLINES	1337.
	00078A	11E214		4567	CALL CIRCLEFN	1338.
	00078D	CDE508		4569	IF NC	1339.
	000790	DAAB07		4572	LODI BC,ITEXT	1340.
	000793	010044		4574	LODI HL,-EXLINES	1341.
	000796	211EEB		4576	LODI DE,1	1342.
	000799	110100		4578	LOOP ,	1343.
			0079C	4581	XCH HL,(SP)	1344.
	00079C	E3		4583	LOD A,M	1345.
	00079D	7E		4585	ST A,(BC)	1346.
	00079E	02		4587	CALL ADDWRP	1347.
	00079F	CDBD08				

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0007A2	03			4589	INC BC	INCREMENT OTHER POINTER 1348.
0007A3	E3			4591	XCH HL,(SP)	1349.
0007A4	19			4593	ADD HL,DE	1350.
0007A5	D29C07			4595	END UNTIL,C	1351.
			007A8	4597		
0007A8	C3C807			4599	ELSE ,	IN THIS CASE, START AT THE BOTTOM 1352.
			007AB	4601		
0007AB	E1			4602	POP HL	1353.
0007AC	11E214			4604	LODI DE,EXLINES	MOVE POINTER 1354.
0007AF	CDBD08			4606	CALL ADDWRP	TO BOTTOM OF PAGE 1355.
0007B2	E5			4608	PUSH HL	1356.
0007B3	21E214			4610	LODI HL,EXLINES	HL IS ALSO COUNTER 1357.
0007B6	01E258			4612	LODI BC,ITEXT+EXLINES	1358.
0007B9	11FFFF			4614	LODI DE,-1	1359.
			007BC	4616	LOOP ,	DO THE LOOP 1360.
0007BC	E3			4619	XCH HL,(SP)	1361.
0007BD	7E			4621	LOD A,M	1362.
0007BE	02			4623	ST A,(BC)	MOVE THE STUFF 1363.
0007BF	CDC808			4625	CALL SUBWRP	DECREMENT HL IN RIGHT WAY 1364.
0007C2	E3			4627	XCH HL,(SP)	1365.
0007C3	0B			4629	DEC BC	1366.
0007C4	19			4631	ADD HL,DE	1367.
0007C5	DABC07			4633	END UNTIL,NC	1368.
			007C8	4635		
			007C8	4637	END ,	THATS ALL 1369.
0007C8	E1			4640	POP HL	1370.
0007C9	F1			4642	POP AF	GET FLAG 1371.
0007CA	0600			4644	LODI B,0	1372.
				4646	*	1373.
			007CC	4647	* CLEARIT EQU *	1374.
				4649	ROT LC	SEE IF JUST PAGE CLEAR 1375.
0007CC	17			4649	ROT LC	1375.
0007CD	D2F507			4651	JMP NC,CLEARIT2	NO, FULL MEMORY CLEAR 1376.
0007D0	2A0A21			4653	LD HL,NXTDISA	PLACE TO CLEAR FROM 1377.
0007D3	220E21			4655	ST HL,SIMDISA	SAVE THE SCREEN ADDR FOR 4023 STUFF 1378.
0007D6	EB			4657	XCH HL,DE	1379.
0007D7	214BF4			4659	LODI HL,-SCRNSIZE	AMOUNT TO CLEAR 1380.
0007DA	78			4661	LOD A,B	THING TO CLEAR TO, 1381.
0007DB	010100			4663	LODI BC,1	THING TO INCREMENT BY 1382.
			007DE	4665	EQU *	LOOP TO CLEAR A PAGE 1383.
0007DE	12			4667	ST A,(DE)	STORE THE CLEAR CHAR 1384.
0007DF	EB			4669	XCH HL,DE	GET THE LOCATION IN HL 1385.
0007E0	09			4671	ADD HL,BC	ADD 1 TO IT 1386.
0007E1	D2E707			4673	IF C,'LD HL,TEXT'	IF NOW AT TOP, WRAP PROPERLY 1387.
0007E4	2A8221			4676		
			007E7	4677		
			007E7	4678		
0007E7	EB			4680	XCH HL,DE	PUT THAT BACK 1388.
0007E8	09			4682	ADD HL,BC	UPDATE COUNT 1389.
0007E9	D2DE07			4684	JMP NC,CLRPAG	NOT DONE YET 1390.
0007EC	2A0A21			4686	LD HL,NXTDISA	JUST CLEAR CURRENT SCREEN 1391.
0007EF	221221			4688	ST HL,CURSLOC	AND MAKE THAT NEWCURSOR LOC 1392.
0007F2	C35508			4690	JMP LVCLR	GO AND LEAVE 1393.
0007F5	2A8A21			4692	LD HL,WASTED	1394.
0007F8	CDD408			4694	CALL MINUSHL	1395.
0007FB	114BF4			4696	LODI DE,-SCRNSIZE	1396.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0007FE	19			4698	ADD HL,DE	1397.
0007FF	220A21			4700	ST HL,NXTDISA	1398.
000802	220E21			4702	ST HL,SIMDISA	1399.
000805	220C21			4704	ST HL,SAVDISA	1400.
				4706	* THIS IS THE SUPER FAST CLEAR LOOP. IT DOES DOUBLE STORES	1401.
				4707	* USING THE STACK	1402.
				4708	*	1403.
000808	3A1121			4709	LD A,MODEBITS	1404.
00080B	F642			4711	IORI QUICKMD+SCRNBLNK	1405.
00080D	D380			4713	OUT MODESET	1406.
00080F	78			4715	LOD A,B	1407.
000810	B7			4717	ORA A	1408.
000811	2A8A21			4719	LD HL,WASTED	1409.
000814	228821			4721	ST HL,TEXTBOT	1410.
000817	2A8421			4723	LD HL,MTEXT	1411.
00081A	228621			4725	ST HL,TEXTTOP	1412.
00081D	C22308			4727	JMP NZ,GOCLR	1413.
000820	2110A7			4729	LODI HL,-GRAPHEVN	1414.
000823	E5			4731	GOCLR PUSH HL	1415.
000824	210000			4733	LODI HL,0	1416.
000827	39			4735	ADD HL,SP	1417.
000828	222921			4737	ST HL,SAVSTK	1418.
				4739	*	1419.
00082B	48			4740	LOD C,B	1420.
00082C	11ECFF			4742	LODI DE,-20	1421.
00082F	E1			4744	POP HL	1422.
000830	E5			4746	PUSH HL	1423.
000831	19			4748	ADD HL,DE	1424.
000832	3F			4750	CMC	1425.
000833	7C			4752	LOD A,H	1426.
000834	1F			4754	ROT RC	1427.
000835	67			4756	LOD H,A	1428.
000836	7D			4758	LOD A,L	1429.
000837	1F			4760	ROT RC	1430.
000838	6F			4762	LOD L,A	1431.
000839	11FFFF			4764	LODI DE,-1	1432.
00083C	310000			4766	LODI SP,0	1433.
				4768	*	1434.
		0083F		4769	CLEARLP EQU *	1435.
00083F	C5			4771	PUSH BC	1436.
000840	19			4773	ADD HL,DE	1437.
000841	DA3F08			4775	JMP C,CLEARLP	1438.
				4777	*	1439.
000844	2A2921			4778	LD HL,SAVSTK	1440.
000847	F9			4780	LOD SP,HL	1441.
				4782	*	1442.
				4783	*	1443.
000848	E1			4784	POP HL	1444.
000849	CDD408			4786	CALL MINUSHL	1445.
00084C	78			4788	LOD A,B	1446.
00084D	1E14			4790	LODI E,20	1447.
		0084F		4792	CLEARLP2 EQU *	1448.
00084F	77			4794	ST A,(HL)	1449.
000850	1D			4796	DEC E	1450.
000851	23			4798	INC HL	1451.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000852	C24F08			4800	JMP NZ,CLEARLP2	1452.
				4802	*	1453.
		00855		4803	LVCLR EQU *	1454.
000855	214605			4805	LODI HL,CHL1TAB	1455.
000858	220821			4807	ST HL,NXTCHL1	1456.
00085B	3A1121			4809	LD A,MODEBITS	1457.
00085E	D380			4811	OUT MODESET	1458.
000860	3E20			4813	LODI A,' '	1459.
000862	321721			4815	ST A,CURSCHAR	1460.
000865	97			4817	SUB A	1461.
000866	321421			4819	ST A,CURSX	XPOS=0 1462.
000869	321521			4821	ST A,CURSX2	TABS OFFSET=0 1463.
00086C	211021			4823	LODI HL,CLRFLG	1464.
00086F	7E			4825	LOD A,M	1465.
000870	3600			4827	LODI M,0	1466.
000872	1F			4829	ROT RC	BANNER WANTED? 1467.
000873	D0			4831	RET NC	1468.
000874	2A8A21			4833	LD HL,WASTED	GET BOTTOM ADDRESS 1469.
000877	CDD408			4835	CALL MINUSHL	TAKE MINUS OF IT 1470.
00087A	11AFFF			4837	LODI DE,-LINESIZE	1471.
00087D	19			4839	ADD HL,DE	SUBTRACT ONE LINE 1472.
00087E	E5			4841	PUSH HL	SAVE THAT FOR FUTURE 1473.
00087F	19			4843	ADD HL,DE	1474.
000880	19			4845	ADD HL,DE	AND SUBTRACT TWICE MORE. 1475.
				4847	* PRINT CHARACTER SET	1476.
000881	97			4848	SUB A	1477.
000882	77			4850	RESETCL LOD M,A	1478.
000883	23			4852	INC HL	1479.
000884	3C			4854	INC A	1480.
000885	F28208			4856	JMP NS,RESETCL	1481.
000888	110A00			4858	LODI DE,10	1482.
00088B	19			4860	ADD HL,DE	1483.
00088C	11A808			4862	LODI DE,DATE	PRINT OUT HELPFUL MESSAGE 1484.
00088F	0612			4864	LODI B,18	FOR FXR 1485.
000891	1A			4866	DODATE LD A,(DE)	GET A CHAR 1486.
000892	77			4868	ST A,(HL)	PUT IT ON SCREEN 1487.
000893	13			4870	INC DE	MOVE POINTER 1488.
000894	23			4872	INC HL	AND MOVE OTHER POINTER 1489.
000895	05			4874	DEC B	DECREMENT COUNT 1490.
000896	C29108			4876	JMP NZ,DODATE	CONTINUE TIL DONE 1491.
000899	F3			4878	DI ,	DISABLE TO CLEAR BUFFERS 1492.
00089A	CD6A06			4880	CALL CLRBUFS	GO EMPTY RECIEVE AND XMIT BUFS 1493.
00089D	E1			4882	POP HL	GET BACK BOTTOM-LINESIZE 1494.
00089E	221221			4884	ST HL,CURSLOC	1495.
0008A1	3EBF			4886	LODI A,X'BF'	GET HELP='?'+X'80' 1496.
0008A3	CDBF02			4888	CALL CHARPROC	1497.
0008A6	FB			4890	EI ,	1498.
0008A7	C9			4892	RET ,	1499.
0008A8	417373656D626C65			4894	DATE CHAR 'ASSEMBLED'	1500.
0008B0	6420			4896		
0008B2	30382F33312F3737			4897	CHAR '&SYSDATE'	1501.
				4899	*****	1502.
0008BA	115100			4900	ADDWRP81 LODI DE,LINESIZE	ADDS 81 TO HL WITH WRAP AROUND 1503.
0008BD	19			4902	ADDWRP ADD HL,DE	ACTUALLY YOU CAN ADD ANYTHING 1504.
0008BE	D0			4904	RET NC	RETURN IF IT'S UNDER X'10000' 1505.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0008BF	3A8321			4906	LD A,TEXT+1	IF NOT WRAP TO TEXT 1506.
0008C2	84			4908	ADD H	ADD ON LEFTOVER 1507.
0008C3	67			4910	LOD H,A	1508.
0008C4	C9			4912	RET ,	AND GO BACK 1509.
				4914	*****	1510.
0008C5	11AFFF			4915	SUBWRP81 LODI DE,-LINESIZE	VERY SIMILAR TO ABOVE ROUTINE 1511.
0008C8	19			4917	SUBWRP ADD HL,DE	IN FACT THERE ARE ONLY TRIVIAL 1512.
0008C9	3A8321			4919	LD A,TEXT+1	DIFFERENCES 1513.
0008CC	BC			4921	CMP H	WHICH I'M SURE YOU CAN FIGURE OUT 1514.
0008CD	C8			4923	RET Z	IN A RELATIVELY SHORT PERIOD 1515.
0008CE	D8			4925	RET C	OF TIME... 1516.
0008CF	2F			4927	CMA ,	SAY FIVE OR SIX HOURS. 1517.
0008D0	3C			4929	INC A	JUST KIDDING REALLY. 1518.
0008D1	84			4931	ADD H	DON'T YOU HATE--- 1519.
0008D2	67			4933	LOD H,A	1520.
0008D3	C9			4935	RET ,	"FUNNY" DOCUMENTATION. 1521.
				4937	*****	1522.
0008D4	7C			4938	MINUSHL LOD A,H	THIS ROUTINE COMPLEMENTS HL 1523.
0008D5	2F			4940	CMA ,	IN THE 2'S FASHION 1524.
0008D6	67			4942	LOD H,A	WE JUST COMPLEMENTED H 1525.
0008D7	7D			4944	LOD A,L	NOW DO L 1526.
0008D8	2F			4946	CMA ,	1527.
0008D9	6F			4948	LOD L,A	1528.
0008DA	23			4950	INC HL	AND INCREMENT THE RESULT 1529.
0008DB	C9			4952	RET ,	1530.
				4954	*****	1531.
0008DC	CDD408			4955	NEGADDWR CALL MINUSHL	THIS ADDS 81 TO A NUMBER 1532.
0008DF	CDBA08			4957	CALL ADDWRP81	WHICH IS STORED IN MINUS FORMAT 1533.
0008E2	C3D408			4959	JMP MINUSHL	LIKE TEXTTOP AND TEXTBOT 1534.
				4961	*****	1535.
0008E5	C5			4962	CIRCLEFN PUSH BC	SNEAKY JEZ ROUTINE TO FIGURE OUT 1536.
0008E6	E3			4964	XCH HL,(SP)	IF X<Y<=X+Z (X+Z IS WRAP SUM) 1537.
				4966	*	OR IF Y<=X+Z<X OR IF X+Z<X<Y 1538.
				4967	*	THIS IS THE WAY TO CHECK FOR 1539.
				4968	*	WRAPAROUND CONDITIONS LIKE 1540.
				4969	*	WHETHER TEXTOP IS ON THE CURRENT 1541.
				4970	*	PAGE (FOR EXAMPLE). 1542.
0008E7	CDBD08			4971	CALL ADDWRP	UPON CALLING, BC=X,DE=Z,HL=-Y 1543.
0008EA	D1			4973	POP DE	AT THIS POINT, BC=X,DE=-Y,HL=X+Z 1544.
0008EB	7C			4975	LOD A,H	NOW WE COMPARE X AND X+Z 1545.
0008EC	90			4977	SUB B	ASSUMING THAT Z<X'FOO'-TEXT 1546.
0008ED	F5			4979	PUSH AF	(WHICH IS TRUE WHENEVER I CALL IT) 1547.
0008EE	19			4981	ADD HL,DE	SAVE FLAG AND COMPUTE (X+Z)-Y 1548.
0008EF	F5			4983	PUSH AF	SAVE THAT FLAG TOO. 1549.
0008F0	EB			4985	XCH HL,DE	NOW WE ADD X AND -Y 1550.
0008F1	09			4987	ADD HL,BC	1551.
0008F2	9F			4989	SBB A	COPY CARRY TO ALL BITS IN A 1552.
0008F3	D1			4991	POP DE	PUT OLD FLAGS INTO E 1553.
0008F4	AB			4993	XOR E	AND XOR WITH RECENTEST FLAG 1554.
0008F5	D1			4995	POP DE	THERE ARE THREE RESULTS TO BE 1555.
0008F6	AB			4997	XOR E	COMBINED 1556.
0008F7	0F			4999	ROT R	PUT RESULT IN CARRY FLAG... 1557.
0008F8	C9			5001	RET ,	AND GO BACK HOME. 1558.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				5004	*****	1560.
				5005	* RESET, PART II	1561.
				5006	*	1562.
		008F9		5007	RESETII EQU *	1563.
0008F9	327B21			5009	ST A,TYPE	1564.
0008FC	D3A6			5011	OUT MODESET2	1565.
0008FE	3E01			5013	LODI A,1	1566.
000900	321D21			5015	ST A,SCRCTR RESET SCROLL COUNTER	1567.
000903	3A3121			5017	LD A,FLAGS	1568.
000906	E67E			5019	ANDI X'FF'-TABREF-FULLDUPL	1569.
000908	CA1809			5021	IF NZ	1570.
00090B	97			5024	SUB A	1571.
00090C	323121			5026	ST A,FLAGS	1572.
00090F	323621			5028	ST A,CNTLOMD	1573.
000912	210000			5030	LODI HL,0	1574.
000915	221E21			5032	ST HL,TIME	1575.
		00918		5034	END	1576.
		00918		5036		
				5038	LODI A,HTABSEND+SPEED0	1577.
000918	3EA0			5040	ST A,XMITBITS	1578.
00091A	324221			5042	LODI A,B'01100110' INITIAL UART SPEED OF 9600(RCV&XMIT)	1579.
00091D	3E66			5044	OUT URTSPEED	1580.
00091F	D38E			5046	ST A,CURSPEED	1581.
000921	324321			5048	INP SCRWHEEL GET WHEEL CONTENTS	1582.
000924	DB83			5050	ANDI X'FE' KILL LOW BIT---NO ANCHOVIES	1583.
000926	E6FE			5052	ST A,PREVSCRLL AND STORE IT	1584.
000928	323421			5054	LODI HL,CHGENROM+13+1	1585.
00092B	210E28			5056	ST HL,GRPCSET	1586.
00092E	228021			5058	LODI HL,KEYDEF SET DEFAULT FOOADDR	1587.
000931	217D03			5060	ST HL,FOOADDR	1588.
000934	222F21			5062	LODI HL,ROMINT SET INT. HANDLER TO ROM	1589.
000937	213E00			5064	ST HL,INTROUT	1590.
00093A	220021			5066	LODI HL,CHL1TAB SAVE STARTING NXTCHL1	1591.
00093D	214605			5068	ST HL,NXTCHL1	1592.
000940	220821			5070	LODI HL,ITEXT SAVE INITIAL WRAP VALUE	1593.
000943	210044			5072	ST HL,TEXT	1594.
000946	228221			5074	LODI HL,-IWASTED-SCRNSIZE	1595.
000949	213DF4			5076	ST HL,SAVDISA SAVE FOR 'UNHOME'	1596.
00094C	220C21			5078	ST HL,SIMDISA	1597.
00094F	220E21			5080	LODI HL,-ITEXT AND MINUS IT TOO, FOR CONVENIENCE	1598.
000952	2100BC			5082	ST HL,MTEXT	1599.
000955	228421			5084	ST HL,TEXTTOP CAUSE IT'S EASIER THAT WAY.	1600.
000958	228621			5086	LODI HL,IWASTED	1601.
00095B	210E00			5088	ST HL,TEXTBOT	1602.
00095E	228821			5090	ST HL,WASTED	1603.
000961	228A21			5092	LODI A,X'C9' SAVE A RETURN AT GRPDRAW+2	1604.
000964	3EC9			5094	ST A,GRPDRAW+2 SO WE WON'T HAVE TO DO IT LATER.	1605.
000966	328E21			5096	SETCCBS CCBSET GETCHR,CP=DISPL,EP=GETCHAR	1606.
		00969		5098		
000969	3E7E			5099		
00096B	325820			5100		
00096E	219309			5101		
000971	228220			5102		
000974	3E00			5103		
000976	325B20			5104	CCBSET DISPL,CS=GETCHR,EP=TXMOD	1607.
000979	3E26					

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
00097B	320020			5106		
00097E	21DA10			5107		
000981	222A20			5108		
000984	3E58			5109		
000986	320220			5110		
000989	21E809			5111	LODI HL,GETBUF	INITIALIZE TEXT SOURCE 1608.
00098C	223221			5113	ST HL,SOURCE	TO GETBUF 1609.
00098F	318420			5115	LODI SP,GETCHRST	INITIALIZE STACK FOR COROUTINES 1610.
000992	FB			5117	EI .	ENABLE + DROP THROUGH TO GETCHAR 1611.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				5120	*****	1613.
				5121	*	1614.
				5122	* GETCHR---THE COROUTINE WHICH SUPPLIES CHARACTERS	1615.
				5123	*	1616.
				5124	* GET CHARACTER FROM CURRENT SOURCE. ROUTINE IS INVOKED	1617.
				5125	* USING THE RESUME MACRO. THE CHARACTER IS RETURNED	1618.
				5126	* IN THE A REGISTER. IT RETURNS (BY DOING A RESUME OF	1619.
				5127	* ITS CHARACTER PROCESSOR (I.E. CP) .	1620.
				5128	* IT DOES A CALL INDIRECT OF 'SOURCE' TO GET	1621.
				5129	* THE CHARACTER	1622.
				5130	*	1623.
				5131	*	1624.
				5132	*	1625.
				5133	*****	1626.
		00993		5134	GETCHAR EQU * GET A CHAR FROM SOMEBODY	1627.
000993	2A3221			5136	CALL@ SOURCE	1628.
000996	CD0007			5138		
000999	57			5139	LOD D,A	1629.
00099A	211821			5141	LODI HL,PREVCHAR	1630.
00099D	4E			5143	LOD C,M	1631.
00099E	3A1921			5145	LD A,ESCCHAR	1632.
0009A1	B9			5147	CMP C	1633.
0009A2	CA470A			5149	JMP Z,DOHOSTCD	1634.
0009A5	BA			5151	CMP D	1635.
0009A6	CAE109			5153	JMP Z,SAVEPREV	1636.
0009A9	79			5155	LOD A,C	1637.
0009AA	FEA1			5157	CMPI X'21'+X'80'	1638.
0009AC	CA210A			5159	JMP Z,CHGESC	1639.
0009AF	FED5			5161	CMPI X'55'+X'80'	1640.
0009B1	CA280A			5163	JMP Z,CHGUART	1641.
0009B4	7A			5165	LOD A,D	1642.
0009B5	B7			5167	ORA A	1643.
0009B6	F2D509			5169	JMP NS,SENDCHAR	1644.
0009B9	21BE09			5171	LODI HL,GTCHRTAB	1645.
0009BC	CD2E07			5173	CALL SEARCH	1646.
0009BF	E9			5175	JMP (HL)	1647.
		009BE		5177	GTCHRTAB CMDEF 91,STATOUT	1648.
				5179		
0009C0	910A56			5180	CMDEF BF,HLPINIT	1649.
0009C3	BF0A6C			5182	CMDEF FF,BUFINIT	1650.
0009C6	FF0A7B			5184	CMDEF 8E,SHIFTOUT	1651.
0009C9	8E0AA1			5186	CMDEF 8F,SHIFTIN	1652.
0009CC	8F0AAC			5188	CMDEF 93,CHARSET	1653.
0009CF	930A8D			5190	CMDEF 00,SENDCHAR	1654.
0009D2	0009D5			5192	***	1655.
				5193	***	1656.
				5194	***	1657.
		009D5		5195	SENDCHAR EQU * SEND CHAR ALONG	1658.
0009D5	21FAFF			5197	RESUME GETCHR,CP	1659.
0009D8	39			5199		
0009D9	225820			5200		
0009DC	2E5B			5201		
0009DE	CD0107			5202		
0009E1	7A			5203	SAVEPREV LOD A,D	1660.
0009E2	321821			5205	ST A,PREVCHAR	1661.

LDC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT
0009E5	C39309			5207	JMP U,GETCHAR AND LOOP

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1662.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				5210	*****	1664.
				5211	*	1665.
				5212	* GETBUF -- THE ENABLED WAIT LOOP -- DEFAULT CHARACTER SOURCE	1666.
				5213	*	1667.
				5214	*****	1668.
				5215	*	1669.
		009E8		5216	GETBUF LOOP	1670.
		009F7		5219		
		009E8		5220		
0009E8	3A1021			5221	LD A,CLRFLG	1671.
0009EB	B7			5223	IOR A	1672.
0009EC	FC7007			5225	CALL S,CLEAR	1673.
0009EF	CDF709			5227	CALL BUFCHK	1674.
0009F2	D8			5229	RET C	1675.
0009F3	76			5231	HLT	1676.
0009F4	C3E809			5233	END	1677.
		009F7		5235	*****	1678.
				5237	*****	1678.
				5238	*	1679.
				5239	* BUFCHK --- LOOKS AT THE RECEIVE BUFFER, IF THERE IS A CHAR,	1680.
				5240	* IT RETURNS WITH THE CARRY FLAG ON AND THE CHAR	1681.
				5241	* IN THE A REG. OTHERWISE THE CARRY FLAG IS OFF.	1682.
				5242	* DESTROYS: A, HL	1683.
				5243	*	1684.
				5244	*****	1685.
0009F7	F3			5245	BUFCHK DI ,	1686.
0009F8	2A0221			5247	LD HL,GETPTR	1687.
0009FB	3A0421			5249	LD A,PUTPTR	1688.
0009FE	BD			5251	CMP L	1689.
0009FF	C2090A			5253	IF Z	1690.
000A02	3A0521			5256	LD A,PUTPTR+1	1691.
000A05	BC			5258	CMP H	1692.
000A06	CA1F0A			5260	JMP Z,BUFRET	1693.
		00A09		5262	END	1694.
		00A09		5264		
000A09	23			5266	INC HL	1695.
000A0A	7C			5268	LOD A,H	1696.
000A0B	FE44			5270	CMPI BUFEND,<	1697.
000A0D	C2130A			5272	IF Z,'LODI HL,BUFFER'	1698.
000A10	210041			5275		
		00A13		5276		
		00A13		5277		
000A13	220221			5279	ST HL,GETPTR	1699.
000A16	7E			5281	LOD A,M	1700.
000A17	2A0621			5283	LD HL,BUFCNT	1701.
000A1A	2B			5285	DEC HL	1702.
000A1B	220621			5287	ST HL,BUFCNT	1703.
000A1E	37			5289	STC	1704.
000A1F	FB			5291	BUFRET EI ,	1705.
000A20	C9			5293	RET U	1706.
				5295	*****	1707.
				5296	*	1708.
				5297	* VARIOUS ROUTINES JUMPED TO BY THE GETCHAR ESCAPE PROCESSOR.	1709.
				5298	*	1710.
				5299	*****	1711.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				5300 *		1712.
		00A21		5301 CHGESC	EQU *	1713.
000A21	7A			5303	LOD A,D	1714.
000A22	321921			5305	ST A,ESCCHAR	1715.
000A25	C33A0A			5307	JMP CUSRET	1716.
				5309 *		1717.
				5310 *		1718.
				5311 *	CHANGE USART SPEED	1719.
				5312 *		1720.
		00A28		5313 CHGUART	EQU *	1721.
000A28	7A			5315	LOD A,D	1722.
000A29	CD0907			5317	CALL HEXIN	1723.
000A2C	DA420A			5319	JMP C,SPDERR	1724.
000A2F	57			5321	LOD D,A	1725.
000A30	07070707			5323	ROT L,4	1726.
000A34	B2			5325	IOR D	1727.
000A35	D38E			5327	OUT URTSPEED	1728.
000A37	324321			5329	ST A,CURSPEED	1729.
000A3A	1600			5331 CUSRET	LODI D,0	1730.
000A3C	CDDE0B			5333	CALL UNDOSEMI	1731.
000A3F	C3E109			5335	JMP SAVEPREV	1732.
000A42	D386			5337 SPDERR	OUT BELL	1733.
000A44	C33A0A			5339	JMP CUSRET	1734.
		00A47		5341 DOHOSTCD	EQU *	1735.
				5343 *	* THIS LETS THE HOST ISSUE LOCAL FUNCTIONS	1736.
				5344 *	* THIS IS DONE BY DOING AN <ESC><FN>	1737.
				5345 *		1738.
				5346 *	* WE DO IT BY SIMULATING A INTERRUPT.	1739.
000A47	97			5347	SUB A	1740.
000A48	321821			5349	ST A,PREVCHAR	1741.
				5351 *		1742.
000A4B	7A			5352	LOD A,D	1743.
000A4C	F680			5354	IORI X'80'	1744.
000A4E	F3			5356	DI ,	1745.
000A4F	CDBF02			5358	CALL CHARPROC	1746.
000A52	FB			5360	EI ,	1747.
000A53	C39309			5362	JMP GETCHAR	1748.
000A56	3A2521			5364 STATOUT	LD A,PATSTAT	1749.
000A59	CD4107			5366	CALL SENDBYTE	1750.
000A5C	3E00			5368	LODI A,0	1751.
000A5E	322521			5370	ST A,PATSTAT	1752.
000A61	3E0D			5372	LODI A,@CR	1753.
000A63	57			5374	LOD D,A	1754.
000A64	F3			5376	DI ,	1755.
000A65	CDDA02			5378	CALL KEYDOIT	1756.
000A68	FB			5380	EI ,	1757.
000A69	C39309			5382	JMP GETCHAR	1758.
000A6C	21840A			5384 HLPINIT	LODI HL,PUTTER	1759.
000A6F	223221			5386	ST HL,SOURCE	1760.
000A72	21001C			5388	LODI HL,HELPIFNO	1761.
000A75	222B21			5390	ST HL,POINTER	1762.
000A78	C39309			5392	JMP U,GETCHAR	1763.
000A7B	21E809			5394 BUFINIT	LODI HL,GETBUF	1764.
000A7E	223221			5396	ST HL,SOURCE	1765.
000A81	C39309			5398	JMP U,GETCHAR	1766.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000A84	2A2B21			5400	PUTTER LD HL,POINTER	PUTIT JUST RETURNS THE NEXT 1767.
000A87	7E			5402	LDD A,M	CHARACTER IN MEMORY AND 1768.
000A88	23			5404	INC HL	UPDATES POINTER. IT IS NOT 1769.
000A89	222B21			5406	ST HL,POINTER	SELF-TERMINATING, SO BE WARNED 1770.
000A8C	C9			5408	RET U	TERMINATION OCCURS AT AN X'FF' 1771.
000A8D	3A1121			5410	CHARSET LD A,MODEBITS	CHANGE FROM ONE CHAR SET TO ANOTHER 1772.
000A90	EE20			5412	XORI NOROMCHR	SEE WHICH ONE WE'RE USING 1773.
000A92	D380			5414	OUT MODESET	AND DO OPPOSITE 1774.
000A94	321121			5416	ST A,MODEBITS	SAVE THAT 1775.
000A97	3A4621			5418	LD A,SHIFTMD	SEE IF IN SHIFTOUT MODE 1776.
000A9A	B7			5420	ORA A	1777.
000A9B	CAB00A			5422	JMP Z,SHIFTIN2	IF NOT, GO COMPUTE GCHARSET 1778.
000A9E	C39309			5424	JMP GETCHAR	IF SO WE ARE DONE. 1779.
000AA1	3E80			5426	SHIFTOUT LODI A,X'80'	CHANGE TO SHIFTOUT MODE 1780.
000AA3	324621			5428	ST A,SHIFTMD	THIS ONE DON'T DO MUCH 1781.
000AA6	210E38			5430	SHFTOUT2 LODI HL,CHGENRAM+X'800'+13+1	BUT IT DO STORE NEW CHAR SET 1782.
000AA9	C3BE0A			5432	JMP GCHARSET	ADDRESS FOR GRAPH MODE 1783.
000AAC	97			5434	SHIFTIN SUB A	HERE WE JUST CLEAR SHIFTMD 1784.
000AAD	324621			5436	ST A,SHIFTMD	1785.
000AB0	3A1121			5438	SHIFTIN2 LD A,MODEBITS	SEE IF WE ARE USING NO ROM CHR SETS 1786.
000AB3	E620			5440	ANDI NOROMCHR	1787.
000AB5	210E28			5442	LODI HL,CHGENROM+13+1	GET DEFAULT CHAR SET OFFSET 1788.
000AB8	CABE0A			5444	JMP Z,GCHARSET	AND DO IT IF IT'S RIGHT 1789.
000ABB	210E30			5446	LODI HL,CHGENRAM+13+1	GET THE OTHER ONE INSTEAD 1790.
000ABE	228021			5448	GCHARSET ST HL,GRPCSET	AND STORE IT. 1791.
000AC1	C39309			5450	JMP GETCHAR	1792.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				5453	*****	1794.
				5454	*	1795.
				5455	* THE ONE THE ONLY THE ORIGINAL	1796.
				5456	* LOADER BY YOURS TRULY,WHAT'S HIS NAME.	1797.
				5457	*	1798.
				5458	*****	1799.
000AC4	0E1A			5459	LOADST LODI C,@SUB FIRST DISPLAY A RIGHT ARROW	1800.
000AC6	3A2521			5461	LD A,PATSTAT MODIFY STATUS TO SHOW PATCHING	1801.
000AC9	F601			5463	ORAI PATCHING	1802.
000ACB	322521			5465	ST A,PATSTAT	1803.
000ACE	CD660B			5467	CALL BYTEIN GET A HEX BYTE,OUTPUT UPARROW	1804.
000AD1	B7			5469	ORA A SEE IF LENGTH 0	1805.
000AD2	CA3F0B			5471	JMP Z,LOADEND IF SO, QUIT	1806.
000AD5	322721			5473	ST A,PATCNT FIRST BYTE IS THE COUNT	1807.
000ADB	322621			5475	ST A,PATCKSM START CHECKSUM GOING	1808.
000ADB	CD660B			5477	CALL BYTEIN	1809.
000ADE	57			5479	LOD D,A HIGH ORDER ADDRESS	1810.
000ADF	3A2621			5481	LD A,PATCKSM	1811.
000AE2	82			5483	ADD D MODIFY CHECKSUM	1812.
000AE3	322621			5485	ST A,PATCKSM AND STORE IT BACK	1813.
000AE6	CD660B			5487	CALL BYTEIN GET LOW ORDER ADDRESS	1814.
000AE9	5F			5489	LOD E,A	1815.
000AEA	3A2621			5491	LD A,PATCKSM	1816.
000AED	83			5493	ADD E MODIFY CKECKSUM	1817.
000AEE	322621			5495	ST A,PATCKSM	1818.
000AF1	CD660B			5497	CALL BYTEIN GET TYPE	1819.
000AF4	B7			5499	ORA A SHOULD BE 0	1820.
000AF5	C2C90B			5501	JMP NZ,TIMTYP	1821.
000AF8	79			5503	LOD A,C	1822.
000AF9	21FAFF			5505	RESUME LOADER,CP PUT OUT SYNC CHAR	1823.
000AFC	39			5507		
000AFD	222C20			5508		
000B00	2E2F			5509		
000B02	CD0107			5510		
000B05	0E16			5511	LODI C,@SYN	1824.
000B07	CD660B			5513	LOADING CALL BYTEIN THE MAIN LOOP	1825.
000B0A	12			5515	ST A,(DE)	1826.
000B0B	47			5517	LOD B,A SEE IF IT STUCK	1827.
000B0C	1A			5519	LD A,(DE)	1828.
000B0D	B8			5521	CMP B	1829.
000B0E	C4BE0B			5523	CALL NZ,NOSTICK IF NOT, TELL USER	1830.
000B11	3A2621			5525	LD A,PATCKSM	1831.
000B14	80			5527	ADD B	1832.
000B15	322621			5529	ST A,PATCKSM MODIFY CHECKSUM	1833.
000B18	210100			5531	LODI HL,1	1834.
000B1B	19			5533	ADD HL,DE	1835.
000B1C	545D			5535	LOD DE,HL	1836.
000B1E	3A2721			5537	LD A,PATCNT	1837.
000B21	3D			5539	DEC A	1838.
000B22	322721			5541	ST A,PATCNT MODIFY COUNT	1839.
000B25	C2070B			5543	JMP NZ,LOADING ANC CONTINUE IF NOT DONE	1840.
000B28	CD660B			5545	CALL BYTEIN GET CHECK BYTE	1841.
000B2B	47			5547	LOD B,A	1842.
000B2C	3A2621			5549	LD A,PATCKSM	1843.
000B2F	80			5551	ADD B	1844.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000B30	CA3D0B			5553	JMP Z,LOADOK	QUIT IF CHECKSUM IS ZERO 1845.
000B33	3A2521			5555	LD A,PATSTAT	IT AINT SO MODIFY STATUS 1846.
000B36	F610			5557	ORAI CKSMERR	1847.
000B38	D386			5559	OUT BELL	RING BELL 1848.
000B3A	322521			5561	ST A,PATSTAT	1849.
000B3D	161B			5563	LOADOK LODI D,@ESC	DISPLAY ESCAPE AFTER PATCH 1850.
000B3F	79			5565	LOADEND LOD A,C	1851.
000B40	21FAFF			5567	RESUME LOADER,CP	1852.
000B43	39			5569		
000B44	222C20			5570		
000B47	2E2F			5571		
000B49	CD0107			5572		
000B4C	3E00			5573	CCBSET GETCHR,CP=DISPL	WE IS DONE SO REMOVE THE PATCHER 1853.
000B4E	325B20			5575		
000B51	3E58			5576	CCBSET DISPL,CS=GETCHR	FROM THE PROCESSING CHAIN 1854.
000B53	320220			5578		
000B56	CDDE0B			5579	CALL UNDOSEMI	UNDO SEMILOCAL MODE 1855.
000B59	7A			5581	LOD A,D	DISPLAY A LEFT ARROW 1856.
000B5A	21FAFF			5583	RESUME LOADER,CP	AND LEAVE 1857.
000B5D	39			5585		
000B5E	222C20			5586		
000B61	2E2F			5587		
000B63	CD0107			5588		
000B66	79			5589	BYTEIN LOD A,C	GET BACK CHAR 1858.
000B67	21FAFF			5591	RESUME LOADER,CP	PROCESS IT 1859.
000B6A	39			5593		
000B6B	222C20			5594		
000B6E	2E2F			5595		
000B70	CD0107			5596		
000B73	21FAFF			5597	RESUME LOADER,CS	AND GET NEXT ONE 1860.
000B76	39			5599		
000B77	222C20			5600		
000B7A	2E2E			5601		
000B7C	CD0107			5602		
000B7F	4F			5603	LOD C,A	SAVE IT 1861.
000B80	CD0907			5605	CALL HEXIN	CONVERT TO HEX 1862.
000B83	DAAD0B			5607	JMP C,ABEND	IF CARRY IS SET ITS NOT HEX 1863.
000B86	07070707			5609	ROT L,4	MOVE IT OVER 1864.
000B8A	47			5611	LOD B,A	AND SAVE FIRST DIGIT 1865.
000B8B	79			5613	LOD A,C	RETRIEVE CHAR 1866.
000B8C	21FAFF			5615	RESUME LOADER,CP	AND PROCESS 1867.
000B8F	39			5617		
000B90	222C20			5618		
000B93	2E2F			5619		
000B95	CD0107			5620		
000B98	21FAFF			5621	RESUME LOADER,CS	CONTINUE 1868.
000B9B	39			5623		
000B9C	222C20			5624		
000B9F	2E2E			5625		
000BA1	CD0107			5626		
000BA4	4F			5627	LOD C,A	SAVE NEXT CHAR 1869.
000BA5	CD0907			5629	CALL HEXIN	1870.
000BA8	DAAD0B			5631	JMP C,ABEND	RETURN IF NOT HEX 1871.
000BAB	80			5633	ADD B	NOW WE HAVE THE FULL BYTE 1872.
000BAC	C9			5635	RET	1873.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000BAD	E1			5637	ABEND POP HL	POP RETURN ADDRESS 1874.
000BAE	3A2521			5639	NOGOOD LD A,PATSTAT	NOT HEX CHAR, MODIFY STATUS 1875.
000BB1	F640			5641	ORAI NOTHEX	1876.
000BB3	322521			5643	ST A,PATSTAT	1877.
000BB6	D386			5645	OUT BELL	AND SOUND HORN 1878.
000BB8	51			5647	LOD D,C	DISPLAY CHAR AFTER ESCAPE 1879.
000BB9	0E1B			5649	LODI C,@ESC	1880.
000BBB	C33F0B			5651	JMP LOADEND	TERMINATE PATCHING 1881.
000BBE	3A2521			5653	NOSTICK LD A,PATSTAT	BYTE DID NOT STAY 1882.
000BC1	F608			5655	ORAI PATFAIL	1883.
000BC3	322521			5657	ST A,PATSTAT	1884.
000BC6	D386			5659	OUT BELL	INFORM USER 1885.
000BC8	C9			5661	RET U	AND RETURN 1886.
000BC9	FE03			5663	TIMTYP CMPI 3	ARE WE PATCHING TIME? 1887.
000BCB	111E21			5665	LODI DE,TIME	GET LOCATION IN CASE 1888.
000BCE	CAF80A			5667	JMP Z,TYP0K	WE ARE, SO GO DO IT.. 1889.
000BD1	3A2521			5669	BADTYP LD A,PATSTAT	TYPE NOT VALID 1890.
000BD4	F620			5671	ORAI TYPERR	1891.
000BD6	322521			5673	ST A,PATSTAT	1892.
000BD9	D386			5675	OUT BELL	1893.
000BDB	C33D0B			5677	JMP LOADOK	1894.
000BDE	3A2821			5679	UNDOSEMI LD A,LCLMODE	THIS SHIFTS OUT OF SEMILOCAL MODE 1895.
000BE1	E604			5681	ANDI NORCV	SEE IF REAL LOCAL MODE SET 1896.
000BE3	3E06			5683	LODI A,NORCV+NOSEND	1897.
000BE5	C2E90B			5685	JMP NZ,UNDOIT	IF SO STORE THOSE FLAGS BACK 1898.
000BE8	97			5687	SUB A	IF NOT JUST CLEAR IT 1899.
000BE9	322821			5689	UNDOIT ST A,LCLMODE	SO STORE WHATEVER IT IS. 1900.
000BEC	C9			5691	RET U	AND RETURN TO PAPA 1901.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				5694	*****	1903.
				5695	* THE PRINTING ROUTINE	1904.
				5696	* SENDS CHARACTERS TO THE VERSATEC	1905.
				5697	* WORKS IN GRAPH OR TEXT MODE	1906.
				5698	* USES LOADER'S CCB.	1907.
				5699	* RESIDES IN THE 6TH PROM.	1908.
				5700	* IS VERY LONG	1909.
				5701	*****	1910.
		00046		5702	VERSSIZE EQU 70 SIZE OF VERSATEC PRINTER	1911.
		00095		5704	SPINIT EQU 149 INITIAL SPACE LENGTH	1912.
		00034		5706	NUMLINES EQU 52 NUMBER OF LINES TO A PAGE	1913.
				5708	*****	1914.
000BED	97			5709	PRINTEP SUB A CLEAR OUT A	1915.
000BEE	325F21			5711	ST A,CONTCHAR AND CLEAR FLAGS	1916.
000BF1	3A1121			5713	LD A,MODEBITS	1917.
000BF4	E610			5715	IF 'ANDI GRAPHMD',NZ SEE IF ITS GRAPH MODE	1918.
000BF6	CA330C			5718		
000BF9	219158			5719	LODI HL,ITEXT+EXLINES-LINESIZE IF SO, PUT CURSOR	1919.
000BFC	221221			5721	ST HL,CURSLOC IN A GOOD PLACE IN TEXT MODE	1920.
000BFF	212D4D			5723	LODI HL,ITEXT+EXLINES-SCRNSIZE	1921.
000C02	220A21			5725	ST HL,NXTDISA PUT SCREEN IN A GOOD PLACE TOO.	1922.
000C05	3EFE			5727	LODI A,X'FE' AND TELL GRAPHMODE TO QUIT	1923.
000C07	21FAFF			5729	RESUME LOADER,CP	1924.
000C0A	39			5731		
000C0B	222C20			5732		
000C0E	2E2F			5733		
000C10	CD0107			5734		
000C13	21B70E			5735	LODI HL,PROMPT1+1 GET PROMPT ADDR	1925.
000C16	CD1C0E			5737	CALL PSHOWIT DISPLAY	1926.
000C19	CDBE0D			5739	CALL PGETNUM GET REPLY	1927.
000C1C	79			5741	LOD A,C PUT IN A REGISTER	1928.
000C1D	3D			5743	DEC A	1929.
000C1E	325E21			5745	ST A,COLUMN1 AND STORE IN THE RIGHT PLACE	1930.
000C21	5F			5747	LOD E,A	1931.
000C22	3E8C			5749	LODI A,X'8C' GO BACK TO GRAPH MODE	1932.
000C24	21FAFF			5751	RESUME LOADER,CP	1933.
000C27	39			5753		
000C28	222C20			5754		
000C2B	2E2F			5755		
000C2D	CD0107			5756		
000C30	C34E0C			5757	ELSE , DO THIS IF IN TEXT MODE	1934.
		00C33		5759		
000C33	21B60E			5760	LODI HL,PROMPT1 GET ADDR OF FIRST PROMPT	1935.
000C36	CD1C0E			5762	CALL PSHOWIT AND DISPLAY IT	1936.
000C39	CDBE0D			5764	CALL PGETNUM GET HIS REPLY	1937.
000C3C	79			5766	LOD A,C USE THE NUMERICAL PART	1938.
000C3D	3D			5768	DEC A GET OFFSET FROM COLUMN 1	1939.
000C3E	325E21			5770	ST A,COLUMN1 AND STORE IT AWAY	1940.
000C41	5F			5772	LOD E,A	1941.
000C42	21C90E			5774	LODI HL,PROMPT2 NOW DO NEXT PROMPT	1942.
000C45	CD1C0E			5776	CALL PSHOWIT DISPLAY	1943.
000C48	CDBE0D			5778	CALL PGETNUM GET THE ANSWER	1944.
000C4B	325F21			5780	ST A,CONTCHAR	1945.
		00C4E		5782	END	1946.
000C4E	7B			5785	LOD A,E	1947.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000C4F	D60B			5787	SUBI LINESIZE-VERSSIZE	SEE HOW MANY LEFTOVER SPACES 1948.
000C51	326021			5789	ST A,EXCESS	SAVE THAT 1949.
000C54	7B			5791	LOD A,E	1950.
000C55	D651			5793	SUBI LINESIZE	1951.
000C57	2F			5795	CMA	1952.
000C58	3C			5797	INC A	A=LINESIZE-OFFSET 1953.
				5799 *		SET C TO NUMBER OF CHARS TO DO 1954.
000C59	FE46			5800	IF 'CMPI VERSSIZE',NC,'LODI A,VERSSIZE'	1955.
000C5B	DA600C			5803		
000C5E	3E46			5804		
		00C60		5805		
		00C60		5806		
000C60	326221			5808	ST A,CHARNUM	1956.
000C63	CD7F0C			5810	CALL PRINTDO	CALL PRINTING ROUTINE. 1957.
000C66	CDDE0B			5812	CALL UNDOSEMI	UNDO SEMILOCAL MODE 1958.
000C69	3E58			5814	CCBSET DISPL,CS=GETCHR	1959.
000C6B	320220			5816		
000C6E	3E00			5817	CCBSET GETCHR,CP=DISPL	1960.
000C70	325B20			5819		
000C73	21FAFF			5820	RESUME LOADER,CS	1961.
000C76	39			5822		
000C77	222C20			5823		
000C7A	2E2E			5824		
000C7C	CD0107			5825		
				5826	*****	1962.
				5827	*	1963.
				5828	*	1964.
				5829	THE BELOW IS A CALLABLE ROUTINE.	1965.
				5830	IT ASSUMES THAT THE VALUE IN COLUMN1 IS THE	1966.
				5831	DESIRED STARTING OFFSET(CURSX) AND THAT THE VALUE	1967.
				5832	IN CONTCHAR IS THE DESIRED VALUE	1968.
				5833	(THATS LOWERCASE 'Y' IF YOU WANT CONTINUATION LINES, AND	1969.
				5834	ANYTHING ELSE IF YOU DON'T.)	1970.
				5835	*****	1971.
		00C7F		5835	PRINTDO EQU *	1972.
000C7F	D3BE			5837	OUT PARRESET	RESET THE OUTPUT LINE 1973.
000C81	3E95			5839	LODI A,SPINIT	STORE NORMAL SPACE LENGTH 1974.
000C83	326121			5841	ST A,SPLN	1975.
000C86	3E28			5843	LODI A,X'28'	1976.
000C88	326321			5845	ST A,ADDNUM	SET DEFAULTS 1977.
000C8B	3E08			5847	LODI A,X'08'	1978.
000C8D	326421			5849	ST A,ORNUM	1979.
000C90	3A1121			5851	LD A,MODEBITS	GO INTO QUICKMODE AND BLNK 1980.
000C93	F642			5853	ORAI SCRNBLENK+QUICKMD	1981.
000C95	D380			5855	OUT MODESET	AND DO IT 1982.
000C97	47			5857	LOD B,A	SAVE THE MODEBITS 1983.
000C98	E610			5859	ANDI GRAPHMD	SEE IF WE IN GRAPH MODE 1984.
000C9A	C2720E			5861	JMP NZ,GRAPHIT	IF SO GO DO THAT ROUTINE 1985.
000C9D	78			5863	LOD A,B	RECOVER MODEBITS 1986.
000C9E	216321			5865	LODI HL,ADDNUM	1987.
000CA1	E620			5867	ANDI NOROMCHR	IF WE DO ONLY RAM CHARS, 1988.
000CA3	CAAB0C			5869	IF NZ	THEN MODIFY THE STUFF IN 1989.
000CA6	361E			5872	LODI M,30	ADDNUM AND ORNUM. 1990.
000CA8	23			5874	INC HL	THEY ARE ADJACENT 1991.
000CA9	3600			5876	LODI M,0	ALLOWING THIS SORT OF HACK. 1992.
		00CAB		5878	END	

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000CAB	CD350E		00CAB	5880		
000CAE	2A0A21			5882	CALL SPACES	AND PUT ONE OUT 1993.
000CB1	3A5E21			5884	LD HL,NXTDISA	GET TOP OF SCREEN ADDR 1994.
000CB4	5F			5886	LD A,COLUMN1	OFFSET BY PROPER AMOUNT 1995.
000CB5	1600			5888	LD E,A	DO A DOUBLE REGISTER 1996.
000CB7	CDBD08			5890	LODI D,0	WRAPAROUND ADD. 1997.
				5892	CALL ADDWRP	1998.
				5894	*****	1999.
			00CBA	5895	PRINTIT LOOP ,	THIS LOOP PRINTS THE 2000.
			00D6E	5898		
			00CBA	5899		
				5900	*	TEXT(DUH) 2001.
000CBA	3E34			5901	LODI A,NUMLINES	DO NUM LINES TO A PAGE 2002.
			00CBC	5903	LOOP ,	THIS LOOP DOES ONE LINE 2003.
				5906	*	OF TEXT 2004.
000CBC	F5			5907	PUSH AF	SAVE THE COUNTER 2005.
000CBD	06F3			5909	LODI B,-CHARHITE	2006.
			00CBF	5911	LOOP ,	THIS LOOP DOES ONE RASTER 2007.
				5914	*	LINE 2008.
				5915	*	SEE IF HE'S READY FOR US 2009.
000CBF	CD540E			5916	CALL PWAIT	2010.
000CC2	3A6221			5918	LD A,CHARNUM	2011.
000CC5	4F			5920	LD C,A	C HAS RIGHT NUMBER OF CHARS NOW 2012.
000CC6	CD780D			5922	CALL SENDLOOP	2013.
000CC9	CD9F0D			5924	CALL ENDLINE	2014.
000CCC	04			5926	INC B	INCREMENT RASTER LINE COUNTER 2015.
000CCD	C2BF0C			5928	END UNTIL,Z	2016.
			00CD0	5930		
000CD0	3A6021			5932	LD A,EXCESS	2017.
000CD3	B7			5934	DRA A	2018.
000CD4	F24A0D			5936	IF M	2019.
000CD7	2F			5939	CMA ,	PUT CHAR COUNT IN C 2020.
000CD8	3C			5941	INC A	GOTTA TAKE COMPLEMENT OF EXCESS 2021.
000CD9	4F			5943	LD C,A	2022.
000CDA	3A5F21			5945	LD A,CONTCHAR	SEE IF WE DO CONTINUATION 2023.
				5947	*	LINES 2024.
000CDD	D679			5948	SUBI 'Y'	2025.
000CDF	C24A0D			5950	IF Z	IF YES, 2026.
000CE2	114600			5953	LODI DE,VERSSIZE	2027.
000CE5	CDBD08			5955	CALL ADDWRP	2028.
000CE8	110100			5957	LODI DE,1	WE CHECK FOR NON-BLANK 2029.
				5959	*	CHARACTERS 2030.
000CEB	B7			5960	DRA A	CLEAR CARRY FLAG 2031.
000CEC	F5			5962	PUSH AF	AND SAVE IT 2032.
			00CED	5964	LOOP ,	IN THE CURRENT LINE OF TEXT 2033.
000CED	7E			5967	LD A,M	AND SEE IF ITS A NON 2034.
				5969	*	BLANK CHAR 2035.
000CEE	FE20			5970	CMPI ' ,'	2036.
000CF0	CAF60C			5972	IF NZ,'POP AF;STC , ;PUSH AF'	2037.
000CF3	F1			5975		
000CF4	37			5976		
000CF5	F5			5977		
			00CF6	5978		
			00CF6	5979		
000CF6	CDBD08			5981	CALL ADDWRP	NOW INCREMENT HL 2038.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000CF9	0D			5983	DEC C	2039.
000CFA	C2ED0C			5985	END UNTIL,Z	2040.
		00CFD		5987		
000CFD	3A6021			5989	LD A,EXCESS	2041.
000D00	5F			5991	LOD E,A	2042.
000D01	16FF			5993	LODI D,-1	2043.
000D03	CDC808			5995	CALL SUBWRP	2044.
000D06	F1			5997	POP AF	2045.
000D07	D2440D			5999	IF C	IF THERE WAS A NONBLANK CHAR, CHARHITE RASTERS AS USUAL
000D0A	06F3			6002	LODI B,-CHARHITE	2047.
		00D0C		6004	LOOP	2048.
000D0C	CD540E			6007	CALL PWAIT	2049.
000D0F	11E00E			6009	LODI DE,PLUSCHAR	PRINT CONTINUATION CHAR FIRST
000D12	7B			6011	LOD A,E	2051.
000D13	80			6013	ADD B	2052.
000D14	C60D			6015	ADDI CHARHITE	2053.
000D16	5F			6017	LOD E,A	2054.
000D17	1A			6019	LD A,(DE)	NOW WE HAVE A PIECE OF IT
000D18	D3B6			6021	OUT PAROUT	OUTPUT IT.
000D1A	3A6021			6023	LD A,EXCESS	FIND OUT HOW LONG THE LINE IS
000D1D	2F			6025	CMA ,	THE LENGTH IS MINUS EXCESS
000D1E	3C			6027	INC A	2058.
000D1F	4F			6029	LOD C,A	2059.
000D20	CD780D			6031	CALL SENDLOOP	2060.
000D23	3A6021			6033	LD A,EXCESS	FIGURE OUT HOW MANY BLANKS
000D26	5F			6035	LOD E,A	SAVE EXCESS
000D27	C645			6037	ADDI VERSSIZE-1	TO PUT OUT
000D29	2F			6039	CMA ,	2064.
000D2A	3C			6041	INC A	2065.
000D2B	CD4B0E			6043	CALL BLANKS	AND DO IT.
000D2E	16FF			6045	LODI D,-1	NOW MOVE HL BACK
000D30	CDC808			6047	CALL SUBWRP	BY RIGHT AMOUNT
000D33	04			6049	INC B	2067.
000D34	C20C0D			6051	END UNTIL,Z	2068.
		00D37		6053		2069.
000D37	F1			6055	POP AF	GET COUNT
000D38	3D			6057	DEC A	DECREMENT
000D39	C2430D			6059	IF Z	IF IT IS NOW ZERO,
000D3C	3E88			6062	LODI A,SPINIT-CHARHITE	REMEMBER
000D3E	326121			6064	ST A,SPLN	TO PUT OUT LESS SPACE
000D41	3E01			6066	LODI A,1	2072.
		00D43		6068	END	2073.
		00D43		6070		2074.
000D43	F5			6072	PUSH AF	2075.
		00D44		6074	END	2076.
		00D44		6076		2077.
000D44	11BAFF			6078	LODI DE,-VERSSIZE	2078.
000D47	CDC808			6080	CALL SUBWRP	2079.
		00D4A		6082	END	2080.
		00D4A		6084		2081.
		00D4A		6086	END	2082.
		00D4A		6088		2083.
000D4A	444D			6090	LOD BC,HL	PUT PLACE IN BC
000D4C	2A1221			6092	LD HL,CURSLOC	GET CURSOR LOCATION
000D4F	CDD408			6094	CALL MINUSHL	GET NEGATIVE OF IT

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000D52	11A200			6096	LODI DE,2*LINESIZE	READY TO CHECK 2088.
000D55	CDE508			6098	CALL CIRCLEFN	DO CHECK 2089.
000D58	DA6E0D			6100	EXITIF C,PRINTIT	IF CURSOR IS ON NEXT LINE,QUIT 2090.
000D5B	6069			6102	LOD HL,BC	OTHERWISE GET BACK THE PLACE 2091.
000D5D	CDBA08			6104	CALL ADDWRP81	GO TO NEXT LINE 2092.
000D60	F1			6106	POP AF	2093.
000D61	3D			6108	DEC A	DECREMENT COUNTER 2094.
000D62	CD5C0E			6110	CALL ENDCHK	2095.
000D65	C2BC0C			6112	END UNTIL,Z	2096.
			00D68	6114		
000D68	CD350E			6116	CALL SPACES	PUT OUT PHONEY FORMFEED 2097.
000D6B	C3BA0C			6118	END	2098.
			00D6E	6120		
000D6E	F1			6122	POP AF	2099.
000D6F	CD350E			6124	PRINTEND CALL SPACES	PUT OUT SPACES 2100.
000D72	3A1121			6126	LD A,MODEBITS	WE ARE NOW DONE, SO 2101.
000D75	D380			6128	OUT MODESET	UNDO THE QUICKMODE AND BLNK 2102.
000D77	C9			6130	RET U	RETURN TO WHOEVER CALLED US 2103.
				6132	*****	2104.
			00D78	6133	SENDLOOP LOOP ,	THIS LOOP DOES ONE CHARACTER 2105.
			00D9E	6136		
			00D78	6137		
000D78	7E			6138	LOD A,M	A NOW HAS ASCII CODE OF CHAR 2106.
000D79	07070707			6140	ROT L,4	GET HIGH ORDER PART OF IT 2107.
000D7D	5F			6142	LOD E,A	SAVE IN E 2108.
000D7E	E60F			6144	ANDI X'0F'	HERE IS THE HIGH ORDER PART 2109.
000D80	E5			6146	PUSH HL	SAVE THE POINTER 2110.
000D81	216321			6148	LODI HL,ADDNUM	AND GET ADDRESS OF ADDNUM 2111.
000D84	86			6150	ADD M	ADD IT. 2112.
000D85	23			6152	INC HL	GET ORNUM 2113.
000D86	B6			6154	ORA M	AND OR IT. 2114.
000D87	E1			6156	POP HL	ALL DONE. 2115.
000D88	57			6158	LOD D,A	SAVE IN D 2116.
000D89	7B			6160	LOD A,E	NOW GET BACK THE ROTATED CHAR 2117.
000D8A	E6F0			6162	ANDI X'F0'	GET LOW ORDER PART 2118.
000D8C	80			6164	ADD B	AND SUBTRACT RASTER 2119.
				6166	*	LINE OFFSET 2120.
000D8D	C60D			6167	ADDI CHARHITE	2121.
000D8F	5F			6169	LOD E,A	NOW DE HAS FULL ADDRESS 2122.
000D90	1A			6171	LD A,(DE)	SO GET THE BIT PATTERN 2123.
000D91	2F			6173	CMA ,	COMPLEMENT 2124.
000D92	D3B6			6175	OUT PAROUT	AND OUTPUT 2125.
000D94	110100			6177	LODI DE,1	NOW WE MUST INCREMENT HL 2126.
000D97	CDBD08			6179	CALL ADDWRP	BUT DO IT IN CIRCULAR FASHION 2127.
000D9A	0D			6181	DEC C	DECREMENT COUNTER 2128.
000D9B	C2780D			6183	END UNTIL,Z	AND END LOOP 2129.
			00D9E	6185		
000D9E	C9			6187	RET U	2130.
				6189	*****	2131.
000D9F	3A6021			6190	ENDLINE LD A,EXCESS	GET NUMBER OF BLANKS TO PUT 2132.
000DA2	B7			6192	IOR A	SEE IF NEGATIVE 2133.
000DA3	FAB70D			6194	IF P	IF NOT, THEN DO THEM 2134.
000DA6	C44B0E			6197	CALL NZ,BLANKS	2135.
				6199	*	RAN INTO THE EDGE OF THE VGT 2136.
000DA9	3A5E21			6200	LD A,COLUMN1	SO NOW COMPUTE HOW FAR WE WENT 2137.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000DAC	D651			6202	SUBI LINESIZE	2138.
000DAE	5F			6204	LOD E,A	2139.
000DAF	16FF			6206	LODI D,-1	2140.
000DB1	CDC808			6208	CALL SUBWRP	2141.
000DB4	C3BD0D			6210	ELSE ,	2142.
		00DB7		6212		
				6213	*	
000DB7	11BAFF			6214	LODI DE,-VERSSIZE	2143.
000DBA	CDC808			6216	CALL SUBWRP	2144.
		00DBD		6218	END	2146.
000DBD	C9			6221	RET U	2147.
				6223	*****	2148.
000DBE	21FAFF			6224	PGETNUM RESUME LOADER,CS	2149.
000DC1	39			6226		
000DC2	222C20			6227		
000DC5	2E2E			6228		
000DC7	CD0107			6229		
000DCA	57			6230	LOD D,A	2150.
000DCB	21FAFF			6232	RESUME LOADER,CP	2151.
000DCE	39			6234		
000DCF	222C20			6235		
000DD2	2E2F			6236		
000DD4	CD0107			6237		
000DD7	7A			6238	LOD A,D	2152.
000DD8	CD0D0E			6240	CALL DECIN	2153.
000DDB	D2E30D			6242	IF C	2154.
000DDE	0E01			6245	LODI C,1	2155.
000DE0	C30C0E			6247	ELSE ,	2156.
		00DE3		6249		
		00DE3		6250	LOOP	2157.
000DE3	4F			6253	LOD C,A	2158.
000DE4	21FAFF			6255	RESUME LOADER,CS	2159.
000DE7	39			6257		
000DE8	222C20			6258		
000DEB	2E2E			6259		
000DED	CD0107			6260		
000DF0	57			6261	LOD D,A	2160.
000DF1	21FAFF			6263	RESUME LOADER,CP	2161.
000DF4	39			6265		
000DF5	222C20			6266		
000DF8	2E2F			6267		
000DFA	CD0107			6268		
000DFD	7A			6269	LOD A,D	2162.
000DFE	CD0D0E			6271	CALL DECIN	2163.
000E01	D8			6273	RET C	2164.
000E02	47			6275	LOD B,A	2165.
000E03	79			6277	LOD A,C	2166.
000E04	87			6279	ADD A	2167.
000E05	87			6281	ADD A	2168.
000E06	81			6283	ADD C	2169.
000E07	87			6285	ADD A	2170.
000E08	80			6287	ADD B	2171.
000E09	C3E30D			6289	END	2172.
		00E0C		6291		
		00E0C		6293	END	2173.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000E0C	C9			6296	RET U	GO HOME WHEN WE EXIT 2174.
				6298	*****	2175.
000E0D	FE30			6299	DECIN CMPI '0'	LESS THAN '0'? 2176.
000E0F	DA1A0E			6301	JMP C,BAD	IF SO, IT'S NO GOOD 2177.
000E12	FE3A			6303	CMPI ':'	GREATER THAN '9'? 2178.
000E14	D21A0E			6305	JMP NC,BAD	IF SO, IT'S BAD 2179.
000E17	D630			6307	SUBI '0'	CONVERT TO NUMBER 2180.
000E19	C9			6309	RET U	AND RETURN 2181.
000E1A	37			6311	BAD STC ,	IF BAD, SET CARRY FLAG 2182.
000E1B	C9			6313	RET U	AND GO HOME 2183.
				6315	*****	2184.
		00E1C		6316	PSHOWIT LOOP ,	DISPLAYS A STRING OF CHARS 2185.
		00E34		6319		
		00E1C		6320		
000E1C	7E			6321	LOD A,M	GET THE CHAR 2186.
000E1D	FEFF			6323	CMPI X'FF'	SEE IF WE STOP 2187.
000E1F	C8			6325	RET Z	IF SO, RETURN 2188.
000E20	444D			6327	LOD BC,HL	OTHERWISE SAVE POINTER 2189.
000E22	21FAFF			6329	RESUME LOADER,CP	AND DISPLAY 2190.
000E25	39			6331		
000E26	222C20			6332		
000E29	2E2F			6333		
000E2B	CD0107			6334		
000E2E	6069			6335	LOD HL,BC	GET POINTER BACK 2191.
000E30	23			6337	INC HL	AND INCREMENT 2192.
000E31	C31C0E			6339	END	2193.
		00E34		6341		
000E34	C9			6343	RET U	GO HOME 2194.
				6345	*****	2195.
000E35	3A6121			6346	SPACES LD A,SPLN	GET NUMBER OF LINES OF BLANKS 2196.
000E38	47			6348	LOD B,A	PUT COUNT IN B 2197.
		00E39		6350	LOOP ,	2198.
				6353	*	SEE IF HE'S READY FOR US 2199.
000E39	CD540E			6354	CALL PWAIT	2200.
000E3C	3E46			6356	LODI A,VERSSIZE	GET NUMBER OF BLANKS IN A 2201.
000E3E	CD4B0E			6358	CALL BLANKS	AND DO THEM 2202.
000E41	05			6360	DEC B	DECREMENT LINE COUNTER 2203.
000E42	C2390E			6362	END UNTIL,Z	2204.
		00E45		6364		
000E45	3E95			6366	LODI A,SPINIT	PUT BACK NORMAL SPACE LENGTH 2205.
000E47	326121			6368	ST A,SPLN	2206.
000E4A	C9			6370	RET U	RETURN WHEN DONE 2207.
				6372	*****	2208.
000E4B	4F			6373	BLANKS LOD C,A	C IS NOW NUMBER OF BLANKS 2209.
000E4C	97			6375	SUB A	CLEAR A 2210.
		00E4D		6377	LOOP 'OUT PAROUT; DEC C',UNTIL,Z	2211.
000E4D	D386			6380		
000E4F	0D			6381		
000E50	C24D0E			6382		
		00E53		6383		
000E53	C9			6385	RET U	2212.
				6387	*****	2213.
		00E54		6388	PWAIT LOOP 'INP PARIN; ANDI PRTREADY',WHILE,Z	2214.
		00E5B		6391		
		00E54		6392		

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000E54	DB87			6393		
000E56	E601			6394		
000E58	CA540E			6395		
		00E5B		6396		
000E5B	C9			6398	RET U	2215.
				6400	*****	2216.
		00E5C		6401	ENDCHK EQU *	2217.
000E5C	F5E5			6403	PUSH AF,HL	2218.
000E5E	CDF709			6405	CALL BUFCHK	2219.
000E61	D2690E			6407	JMP NC,QUITCHK	2220.
000E64	FE58			6409	CMPI 'X'	2221.
000E66	CA6C0E			6411	IF NZ	2222.
000E69	E1F1			6414	QUITCHK POP HL,AF	2223.
000E6B	C9			6416	RET U	2224.
		00E6C		6418	END	2225.
		00E6C		6420		
000E6C	E1E1E1			6422	POP HL,HL,HL	2226.
000E6F	C36F0D			6424	JMP PRINTEND	2227.
				6426	*****	2228.
000E72	2141AA			6427	GRAPHIT LODI HL,GRAPHODD	2229.
000E75	06FF			6429	LODI B,255	2230.
000E77	3A5E21			6431	LD A,COLUMN1	2231.
000E7A	85			6433	ADD L	2232.
000E7B	6F			6435	LOD L,A	2233.
000E7C	7C			6437	LOD A,H	2234.
000E7D	CE00			6439	ADCI 0	2235.
000E7F	67			6441	LOD H,A	2236.
000E80	3A6221			6443	RELOAD LD A,CHARNUM	2237.
000E83	4F			6445	LOD C,A	2238.
000E84	CD540E			6447	CALL PWAIT	2239.
000E87	7E			6449	ODDLINE LD A,(HL)	2240.
000E88	D3B6			6451	OUT PAROUT	2241.
000E8A	23			6453	INC HL	2242.
000E8B	0D			6455	DEC C	2243.
000E8C	C2870E			6457	JMP NZ,ODDLINE	2244.
000E8F	CD9F0D			6459	CALL ENDLINE	2245.
000E92	11AFAE			6461	LODI DE, -(GRAPHODD-GRAPHEVN)	2246.
000E95	19			6463	ADD HL,DE	2247.
000E96	3A6221			6465	LD A,CHARNUM	2248.
000E99	4F			6467	LOD C,A	2249.
000E9A	CD540E			6469	CALL PWAIT	2250.
000E9D	7E			6471	EVENLOOP LD A,(HL)	2251.
000E9E	D3B6			6473	OUT PAROUT	2252.
000EA0	23			6475	INC HL	2253.
000EA1	0D			6477	DEC C	2254.
000EA2	C29D0E			6479	JMP NZ,EVENLOOP	2255.
000EA5	CD5C0E			6481	CALL ENDCHK	2256.
000EA8	05			6483	DEC B	2257.
000EA9	CA6F0D			6485	JMP Z,PRINTEND	2258.
000EAC	CD9F0D			6487	CALL ENDLINE	2259.
000EAF	11A251			6489	LODI DE, GRAPHODD-GRAPHEVN+LINE SIZE	2260.
000EB2	19			6491	ADD HL,DE	2261.
000EB3	C3800E			6493	JMP RELOAD	2262.
				6495	*****	2263.
000EB6	0D			6496	PROMPT1 CHAR @CR, 'STARTING COLUMN?'	2264.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000EB7	5354415254494E47			6498		
000EBF	20434F4C554D4E3F			6499		
000EC7	20			6500		
000EC8	FF			6501	DC X'FF'	2265.
000EC9	2020434F4E54494E			6502	PROMPT2 CHAR ' CONTINUATION LINES? '	2266.
000ED1	554154494F4E204C			6504		
000ED9	494E45533F20			6505		
000EDF	FF			6506	DC X'FF'	2267.
000EE0	7454744447005754			6507	PLUSCHAR DC X'74547444470057545751770000'	2268.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				6509	*****	2270.
				6510	*	2271.
				6511	* HEXER--- A COROUTINE TO PROCESS A HEX LOCATION	2272.
				6512	*	2273.
				6513	*****	2274.
000EED	010022			6514	HEXEP LODI BC,X'2200'	2275.
000EF0	57			6516	HEXLOOP LOD D,A	2276.
000EF1	6069			6518	LOD HL,BC	2277.
000EF3	CD5E07			6520	CALL HEXSTR	2278.
000EF6	7A			6522	LOD A,D	2279.
000EF7	DA170F			6524	JMP C,READY	2280.
000EFA	444D			6526	LOD BC,HL	2281.
000EFC	21FAFF			6528	RESUME HEXER,CP	2282.
000EFF	39			6530		
000F00	228420			6531		
000F03	2E87			6532		
000F05	CD0107			6533		
000F08	21FAFF			6534	RESUME HEXER,CS	2283.
000F0B	39			6536		
000F0C	228420			6537		
000F0F	2E86			6538		
000F11	CD0107			6539		
000F14	C3F00E			6540	JMP HEXLOOP	2284.
		00F17		6542	READY EQU *	2285.
				6544	ST HL,HEXADDR	2286.
				6546	RESUME HEXER,CP	2287.
				6548		
				6549		
				6550		
				6551		
				6552	LOD A,D	2288.
				6554	CMPI 'S'	2289.
				6556	JMP Z,GETNUM	2290.
				6558	CMPI 'P'	2291.
				6560	JMP Z,SHOWIT	2292.
				6562	CMPI 'J'	2293.
				6564	JMP Z,GOTHERE	2294.
				6566	HEXABEND OUT BELL	2295.
				6568	HEXEXIT CALL UNDOSEMI	2296.
		00F3B		6570	UNDUN CCBSET DISPL,CS=GETCHR	2297.
				6572		
				6573		
				6574	CCBSET GETCHR,CP=DISPL	2298.
				6576		
				6577	RESUME HEXER,CS	2299.
				6579		
				6580		
				6581		
				6582		
				6583	GETNUM RESUME HEXER,CS	2300.
				6585		
				6586		
				6587		
				6588		
				6589	LOD D,A	2301.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000F5E	21FAFF			6591	RESUME HEXER,CP	AND DISPLAY IT 2302.
000F61	39			6593		
000F62	228420			6594		
000F65	2E87			6595		
000F67	CD0107			6596		
000F6A	7A			6597	LOD A,D	GET CHAR BACK 2303.
000F6B	CD0907			6599	CALL HEXIN	MAKE IT INTO HEX DIGIT 2304.
000F6E	DA360F			6601	JMP C,HEXABEND	IT ISN'T ONE, GO COMPLAIN 2305.
000F71	B7			6603	DRA A	SEE IF IT'S ZERO 2306.
000F72	C2770F			6605	JMP NZ,NOTZERO	NO GO START DISPLAY 2307.
000F75	3E10			6607	LODI A,16	IT IS, MAKE IT 16 2308.
000F77	57			6609	NOTZERO LOD D,A	SAVE THIS NUMBER 2309.
000F78	CDB80F			6611	SHOWIT CALL HEXCRLF	PUT OUT A CRLF 2310.
000F7B	78			6613	LOD A,B	DISPLAY THE ADDRESS 2311.
000F7C	CD2810			6615	CALL HEXDISP	ONE BYTE AT A TIME 2312.
000F7F	79			6617	LOD A,C	GET THE OTHER HALF 2313.
000F80	CD2810			6619	CALL HEXDISP	DISPLAY THAT TOO 2314.
000F83	CD2110			6621	CALL SPACE	LEAVE SOME ROOM FOR VISIBILITY 2315.
000F86	1E10			6623	LODI E,16	AND SET UP DISPLAY LOOP 2316.
000F88	3E20			6625	DISLOOP LODI A,' '	1 SPACE BETWEEN BYTES 2317.
000F8A	21FAFF			6627	RESUME HEXER,CP	SHOW THAT 2318.
000F8D	39			6629		
000F8E	228420			6630		
000F91	2E87			6631		
000F93	CD0107			6632		
000F96	0A			6633	LD A,(BC)	GET THE BYTE 2319.
000F97	CD2810			6635	CALL HEXDISP	DISPLAY IT 2320.
000F9A	3E70			6637	LODI A,'P'	SEE IF WE'RE PATCHING 2321.
000F9C	BA			6639	CMP D	(D HAS 'P' IF WE ARE) 2322.
000F9D	CCE40F			6641	CALL Z,PATCHIT	IF SO GO DO PATCHING 2323.
000FA0	DAB20F			6643	JMP C,HEXDONE	IF CARRY GOT SET WE END DISPLAY 2324.
000FA3	03			6645	INC BC	INCREMENT ADDRESS 2325.
000FA4	1D			6647	DEC E	DECREMENT COUNT 2326.
000FA5	C2880F			6649	JMP NZ,DISLOOP	AND CONTINUE 2327.
000FA8	3E70			6651	LODI A,'P'	IF PATCHING WE DO ANOTHER LINE 2328.
000FAA	BA			6653	CMP D	
000FAB	CA780F			6655	JMP Z,SHOWIT	
000FAE	15			6657	DEC D	IF NOT DECREMENT LINE COUNT 2331.
000FAF	C2780F			6659	JMP NZ,SHOWIT	AND DO ANOTHER ANY WAY 2332.
000FB2	CDB80F			6661	HEXDONE CALL HEXCRLF	COUNT WAS ZERO, WE END HEXIT 2333.
000FB5	C3380F			6663	JMP HEXEXIT	
000FB8	3E0D			6665	HEXCRLF LODI A,@CR	DISPLAY A CR 2335.
000FBA	321821			6667	ST A,PREVCHAR	
000FBD	21FAFF			6669	RESUME HEXER,CP	
000FC0	39			6671		2337.
000FC1	228420			6672		
000FC4	2E87			6673		
000FC6	CD0107			6674		
000FC9	3E0A			6675	LODI A,@LF	AND A LF 2338.
000FCB	21FAFF			6677	RESUME HEXER,CP	2339.
000FCE	39			6679		
000FCF	228420			6680		
000FD2	2E87			6681		
000FD4	CD0107			6682		
000FD7	C9			6683	RET .	RETURN 2340.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
000FD8	CDDE0B			6685	GOTHERE CALL UNDOSEMI	COME HERE IF 'J' WAS TYPED 2341.
000FDB	2A2D21			6687	CALL@ HEXADDR	GO TO THAT ADDRESS 2342.
000FDE	CD0007			6689		
000FE1	C33B0F			6690	JMP UNDUN	SEMILOCAL ALREADY UNDONE, GO HOME 2343.
000FE4	D5			6692	PATCHIT PUSH DE	THIS IS THE PATCHING ROUTINE 2344.
000FE5	3E88			6694	LODI A,@BS+X'80'	FIRST WE MOVE THE CURSOR BACK 2345.
000FE7	1E02			6696	LODI E,2	TWO SPACES 2346.
000FE9	CD9C10			6698	CALL PUTREP	BY CALLING PUTREP 2347.
000FEC	21FAFF			6700	RESUME HEXER,CS	THEN WE GET A CHARACTER 2348.
000FEF	39			6702		
000FF0	228420			6703		
000FF3	2E86			6704		
000FF5	CD0107			6705		
000FF8	CD5210			6706	CALL HEXERCHK	SEE IF IT IS HEX 2349.
000FFB	DA1C10			6708	JMP C,BLOOEY	IT WAS NOT, GO COMPLAIN 2350.
000FFE	07070707			6710	ROT L,4	IT WAS , SAVE IT AWAY 2351.
001002	57			6712	LOD D,A	IN D 2352.
001003	21FAFF			6714	RESUME HEXER,CS	AND GET ANOTHER ONE 2353.
001006	39			6716		
001007	228420			6717		
00100A	2E86			6718		
00100C	CD0107			6719		
00100F	CD5210			6720	CALL HEXERCHK	DO THE SAME RIGAMAROLE 2354.
001012	DA1C10			6722	JMP C,BLOOEY	AS BEFORE 2355.
001015	82			6724	ADD D	AND ADD IN THE OTHER DIGIT 2356.
001016	D1			6726	POP DE	GET BACK THE OLD DE 2357.
001017	02			6728	ST A,(BC)	STORE THE NEW VALUE 2358.
001018	0A			6730	LD A,(BC)	AND GET BACK WHATEVER IS THERE 2359.
001019	C32810			6732	JMP HEXDISP	GO DISPLAY THAT 2360.
00101C	D386			6734	BLOOEY OUT BELL	COMPLAINT DEPT. 2361.
00101E	D1			6736	POP DE	WE MUST POP DE 2362.
00101F	37			6738	STC ,	SET THE CARRY 2363.
001020	C9			6740	RET ,	AN RETURN 2364.
001021	1E04			6742	SPACE LODI E,4	DISPLAY 4 SPACES 2365.
001023	3E20			6744	LODI A,' '	
001025	C39C10			6746	JMP PUTREP	
001028	F5			6748	HEXDISP PUSH AF	SAVE THE CHAR 2367.
001029	E6F0			6750	ANDI X'F0'	GET FIRST DIGIT 2368.
00102B	07070707			6752	ROT L,4	
00102F	CD6907			6754	CALL HEXOUT	CONVERT TO DISPLAY CODE 2370.
001032	21FAFF			6756	RESUME HEXER,CP	2371.
001035	39			6758		2372.
001036	228420			6759		
001039	2E87			6760		
00103B	CD0107			6761		
00103E	F1			6762	POP AF	GET CHAR AGAIN 2373.
00103F	E60F			6764	ANDI X'0F'	SECOND DIGIT 2374.
001041	CD6907			6766	CALL HEXOUT	2375.
001044	21FAFF			6768	RESUME HEXER,CP	AND SHOW IT 2376.
001047	39			6770		
001048	228420			6771		
00104B	2E87			6772		
00104D	CD0107			6773		
001050	B7			6774	ORA A	RESET CARRY FOR RETURN TO DISLOOP 2377.
001051	C9			6776	RET ,	2378.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 16.41 08/31/77	
001052	FE20			6778	HEXERCHK	CMPI ' ,	PATCH CHAR PROCESSOR.. WAS IT SPACE	2379.
001054	CA6B10			6780		JMP Z,ONESPACE	GO DO SPACE ITF SUCH	2380.
001057	D20907			6782		JMP NC,HEXIN	IF CARRY SET IT'S NOT CTRL CHAR	2381.
00105A	FE08			6784		CMPI @BS	IT WARN'T NO SPACE SEE IF BS	2382.
00105C	CA7E10			6786		JMP Z,BACKUP	YES GO DO IT.	2383.
00105F	FE0A			6788		CMPI @LF	SEE IF LINE FEED ETC...	2384.
001061	CAB110			6790		JMP Z,DOWNLINE		2385.
001064	FE0B			6792		CMPI @VT		2386.
001066	CAC510			6794		JMP Z,UPLINE		2387.
001069	37			6796		STC ,	NOT VALID CHAR	2388.
00106A	C9			6798		RET ,		2389.
00106B	E1			6800	ONESPACE	POP HL	IT'S A SPACE POP RETURN ADDRESS	2390.
00106C	1E02			6802		LODI E,2	PUT OUT A COUPLE SPACES	2391.
00106E	F680			6804		ORAI X'80'	(COMMAND SPACES)	2392.
001070	CD9C10			6806		CALL PUTREP		2393.
001073	D1			6808		POP DE	POP THE OLD DE	2394.
001074	7B			6810		LOD A,E	AND SEE IF WE WRAP AROUND	2395.
001075	FE01			6812		CMPI 1		2396.
001077	C0			6814		RET NZ	NO WE DON'T SO RETURN TO DISLOOP	2397.
001078	E1			6816		POP HL	YES SO POP ANOTHER RETURN ADDRESS	2398.
001079	03			6818		INC BC	INCREMENT BC "BY HAND"	2399.
00107A	C3780F			6820		JMP SHOWIT	AND START ALL OVER	2400.
00107D	C9			6822		RET ,	GO TELL USER HE BLEW IT	2401.
00107E	1E04			6824	BACKUP	LODI E,4	DO SOME BACKSPACES	2402.
001080	F680			6826		ORAI X'80'		2403.
001082	CD9C10			6828		CALL PUTREP		2404.
001085	E1			6830		POP HL	POP THE RETURN ADDRESS	2405.
001086	D1			6832		POP DE	AND THE OLD DE	2406.
001087	1C			6834		INC E	INCREMENT COUNT	2407.
001088	1C			6836		INC E	TWICE SINCE IT GETS DECREMENTED	2408.
001089	3E12			6838		LODI A,18	CHECK FOR WRAPAROUND	2409.
00108B	BB			6840		CMP E		2410.
00108C	C29810			6842		JMP NZ,NOTOOFAR	NO WRAP	2411.
00108F	1E21			6844		LODI E,33	WE DID SO PUT OUT A BUNCH OF BS'S	2412.
001091	3E88			6846		LODI A,@BS+X'80'		2413.
001093	CD9C10			6848		CALL PUTREP		2414.
001096	1E02			6850		LODI E,2	AND SETUP COUNT FOR END OF LINE	2415.
001098	0B			6852	NOTOOFAR	DEC BC	NOW DEC ADDRESS	2416.
001099	0B			6854		DEC BC	TWICE SINCE IT'S INCREMENTED ALSO	2417.
00109A	B7			6856		ORA A	RESET CARRY FLAG	2418.
00109B	C9			6858		RET ,	AND RETURN	2419.
00109C	D5			6860	PUTREP	PUSH DE	SAVE DE	2420.
00109D	57			6862		LOD D,A	SAVE THE CHAR WHICH WE REPEAT	2421.
00109E	7A			6864	PUTREP1	LOD A,D	GET IT	2422.
00109F	21FAFF			6866		RESUME HEXER,CP	SHOW IT	2423.
0010A2	39			6868				
0010A3	228420			6869				
0010A6	2E87			6870				
0010A8	CD0107			6871				
0010AB	1D			6872		DEC E	DECREMENT COUNT	2424.
0010AC	C29E10			6874		JMP NZ,PUTREP1	AND KEEP GOINT	2425.
0010AF	D1			6876		POP DE	POP OLD DE	2426.
0010B0	C9			6878		RET ,	AND GO HOME	2427.
0010B1	1E01			6880	DOWNLINE	LODI E,1	GO DOWN A LINE, PUT OUT LF	2428.
0010B3	CD9C10			6882		CALL PUTREP		2429.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0010B6	3E88			6884	LODI A,@BS+X'80'	AND A BS 2430.
0010B8	CD9C10			6886	CALL PUTREP	2431.
0010BB	E1			6888	POP HL	POP RETURN ADDRESS 2432.
0010BC	D1			6890	POP DE	AND OLD DE 2433.
0010BD	1C			6892	INC E	MODIFY COUNT 2434.
0010BE	210F00			6894	LODI HL,15	AND ADDRESS 2435.
0010C1	09			6896	ADD HL,BC	2436.
0010C2	444D			6898	LOD BC,HL	ASAVE IT BACK 2437.
0010C4	C9			6900	RET ,	2438.
0010C5	1E01			6902	UPLINE LODI E,1	GO UP A LINE (JUST LIKE ABOVE) 2439.
0010C7	CD9C10			6904	CALL PUTREP	2440.
0010CA	3E88			6906	LODI A,@BS+X'80'	2441.
0010CC	CD9C10			6908	CALL PUTREP	2442.
0010CF	E1			6910	POP HL	2443.
0010D0	D1			6912	POP DE	2444.
0010D1	1C			6914	INC E	2445.
0010D2	21EFFF			6916	LODI HL,-17	2446.
0010D5	09			6918	ADD HL,BC	2447.
0010D6	444D			6920	LOD BC,HL	2448.
0010D8	3F			6922	CMC ,	2449.
0010D9	C9			6924	RET ,	2450.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				6927	*****	2452.
				6928	*	2453.
				6929	* THE DISPLAY COROUTINE...	2454.
				6930	*	2455.
				6931	*****	2456.
		010DA		6932	TXTMOD EQU *	2457.
0010DA	211721			6934	LODI HL,CURSCHAR	2458.
0010DD	56			6936	LOD D,M	2459.
0010DE	2A1221			6938	LD HL,CURSLOC	2460.
0010E1	72			6940	LOD M,D	2461.
0010E2	E5			6942	PUSH HL	2462.
0010E3	B7			6944	IOR A	2463.
0010E4	CA2A11			6946	JMP Z,NODOCHAR	2464.
0010E7	F21611			6948	JMP NS,TXTCTL	2465.
0010EA	21F010			6950	LODI HL,CMDTAB2	2466.
0010ED	CD2E07			6952	CALL SEARCH	2467.
0010F0	E3			6954	XCH HL,(SP)	2468.
0010F1	C9			6956	RET U	2469.
		010F0		6958	CMDTAB2 CMDEF 8C,GOGRAPH	2470.
0010F2	8C1588			6960		
0010F5	C71FFD			6961	CMDEF C7,GODRAG	2471.
		01FFD		6963	GODRAG EQU &VGTVER+X'1FFD'	2472.
				6965	CMDEF 88,KEY@BSND	2473.
0010FB	881382			6967	CMDEF 8D,KEY@CR	2474.
0010FE	8A1371			6969	CMDEF 8A,KEY@LF	2475.
001101	8B13E0			6971	CMDEF 8B,KEY@VT	2476.
001104	A2124E			6973	CMDEF A2,TYPBTAB	2477.
001107	991261			6975	CMDEF 99,TYPHTAB	2478.
00110A	891310			6977	CMDEF 89,KEYHTABN	2479.
00110D	92132F			6979	CMDEF 92,KEYBTABN	2480.
001110	A01166			6981	CMDEF A0,CURMOTSP	2481.
001113	0015E3			6983	CMDEF 00,TXTEND	2482.
001116	FE0D			6985	TXTCTL CMPI @CR	2483.
001118	CA4713			6987	JMP Z,KEY@CR2	2484.
00111B	57			6989	LOD D,A	2485.
00111C	3A3521			6991	LD A,CRLF0VR	2486.
00111F	47			6993	LOD B,A	2487.
001120	97			6995	SUB A	2488.
001121	323521			6997	ST A,CRLF0VR	2489.
001124	7A			6999	LOD A,D	2490.
001125	FE7F			7001	CMPI X'7F'	2491.
001127	C22E11			7003	IF Z	2492.
00112A	E1			7006	NODCCHAR POP HL	2493.
00112B	C3E315			7008	JMP TXTEND	2494.
		0112E		7010	END	2495.
		0112E		7012		
				7014	CMPI X'20'	2496.
00112E	FE20			7016	JMP NS,TXTCHAR	2497.
001130	F26011			7018	LODI HL,CMDTAB3	2498.
001133	213911			7020	CALL SEARCH	2499.
001136	CD2E07			7022	XCH HL,(SP)	2500.
001139	E3			7024	RET U	2501.
00113A	C9			7026	CMDTAB3 CMDEF 1D,GOGRAPHC	2502.
		01139		7028		
00113B	1D1577			7029	CMDEF 0A,KEY@LF2	2503.
00113E	0A135D					

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
001141	1C13E6			7031	CMDEF 1C,SIM4023	2504.
001144	081377			7033	CMDEF 08,KEY@BS	2505.
001147	0813E0			7035	CMDEF 08,KEY@VT	2506.
00114A	091304			7037	CMDEF 09,KEYHTAB	2507.
00114D	12130A			7039	CMDEF 12,KEYBTAB	2508.
001150	141554			7041	CMDEF 14,KEYHYPER	2509.
001153	1F15DB			7043	CMDEF 1F,SETNECHO	2510.
001156	1115E3			7045	CMDEF 11,TXTEND	2511.
001159	071572			7047	CMDEF 07,DOBELL	2512.
00115C	00115F			7049	CMDEF 00,TXTCHAR2	2513.

ALIGNS CURSOR TO COL 41 OF LINE
(CNTL SHIFT Q)
DO NOT DISPLAY @DC1
RING BELL
NOT FOUND

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SCURCE STATEMENT	ASM H V 05 16.41 08/31/77
				7052 *		2515.
				7053 *	STORE CHARACTER AND ADJUST CURSOR	2516.
				7054 *		2517.
00115F	E5			7055	TXTCHAR2 PUSH HL FOR THE POP LATER	2518.
001160	214621			7057	TXTCHAR LODI HL,SHIFTMD	2519.
001163	B6			7059	IOR M	2520.
001164	E1			7061	POP HL	2521.
001165	77			7063	LOD M,A	2522.
001166	110100			7065	CURMOTSP LODI DE,1	2523.
001169	CDBD08			7067	CALL ADDWRP	2524.
00116C	3A1521			7069	LD A,CURSX2	2525.
00116F	3C			7071	INC A	2526.
001170	321521			7073	ST A,CURSX2	2527.
001173	FEA2			7075	CMPI 2*LINESIZE	2528.
001175	DA7F11			7077	JMP C,NOTWRAP	2529.
001178	97			7079	TABWRAP2 SUB A	2530.
001179	321521			7081	ST A,CURSX2	2531.
00117C	C38B11			7083	JMP TABWRAP3	2532.
00117F	3A1421			7085	NOTWRAP LD A,CURSX	2533.
001182	3C			7087	INC A	2534.
001183	321421			7089	ST A,CURSX	2535.
001186	FE51			7091	CMPI LINESIZE	2536.
001188	FA0B12			7093	JMP S,KEYCUIROK	2537.
		0118B		7095	TABWRAP3 EQU *	2538.
00118B	97			7097	SUB A	2539.
00118C	321421			7099	ST A,CURSX	2540.
00118F	3D			7101	DEC A	2541.
001190	323521			7103	ST A,CRLFOVR	2542.
001193	321821			7105	ST A,PREVCHAR	2543.
001196	7C			7107	KEYINCY LOD A,H	2544.
001197	B7			7109	DRA A	2545.
001198	C29F11			7111	JMP NZ,NOUPDATE	2546.
00119B	3A8321			7113	LD A,TEXT+1	2547.
00119E	67			7115	LOD H,A	2548.
00119F	221221			7117	NOUPDATE ST HL,CURSLOC	2549.
0011A2	CDC508			7119	CALL SUBWRP81	2550.
0011A5	444D			7121	LOD BC,HL	2551.
0011A7	2A8821			7123	LD HL,TEXTBOT	2552.
0011AA	115100			7125	LODI DE,LINESIZE	2553.
0011AD	CDE508			7127	CALL CIRCLEFN	2554.
0011B0	D2EF11			7129	JMP NC,NOMOVE	2555.
0011B3	2A8821			7131	LD HL,TEXTBOT	2556.
0011B6	CDDC08			7133	CALL NEGADDWR	2557.
0011B9	228821			7135	ST HL,TEXTBOT	2558.
0011BC	2A8621			7137	LD HL,TEXTTOP	2559.
0011BF	C5			7139	PUSH BC	2560.
0011C0	444D			7141	LOD BC,HL	2561.
0011C2	2A0A21			7143	LD HL,NXTDISA	2562.
0011C5	09			7145	ADD HL,BC	2563.
0011C6	11FFFF			7147	LODI DE,X'FFFF'	2564.
0011C9	19			7149	ADD HL,DE	2565.
0011CA	D4DC04			7151	CALL NC,SCRUPDD	2566.
0011CD	2A0C21			7153	LD HL,SAVDISA	2567.
0011D0	09			7155	ADD HL,BC	2568.
0011D1	11FFFF			7157	LODI DE,X'FFFF'	2569.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0011D4	19			7159	ADD HL,DE	2570.
				7161 *	IF IT WAS THEN MOVE THE 'UNHOME' ADDRESS DOWN ONE LINE	2571.
0011D5	DAE111			7162	IF NC, 'LD HL,SAVDISA;CALL ADDWRP81;ST HL,SAVDISA'	2572.
0011D8	2A0C21			7165		
0011DB	CDBA08			7166		
0011DE	220C21			7167		
		011E1		7168		
		011E1		7169		
0011E1	6069			7171	LOD HL,BC	2573.
0011E3	C1			7173	POP BC	2574.
0011E4	CDDC08			7175	CALL NEGADDWR	2575.
0011E7	228621			7177	ST HL,TEXTTOP	2576.
0011EA	3EFF			7179	LODI A,-1	2577.
0011EC	321821			7181	ST A,PREVCHAR	2578.
0011EF	2A0A21			7183	NOMCVE LD HL,NXTDISA	2579.
0011F2	11B50B			7185	LODI DE,SCRNSIZE	2580.
0011F5	CDBD08			7187	CALL ADDWRP	2581.
0011F8	CDD408			7189	CALL MINUSHL	2582.
0011FB	115100			7191	LODI DE,LINESIZE	2583.
0011FE	CDE508			7193	CALL CIRCLEFN	2584.
001201	DCD804			7195	CALL C,SCRUP	2585.
001204	6069			7197	LOD HL,BC	2586.
001206	CDBA08			7199	CALL ADDWRP81	2587.
001209	444D			7201	LOD BC,HL	2588.
00120B	221221			7203	KEYCUIROK ST HL,CURSLOC	2589.
00120E	3A1821			7205	LD A,PREVCHAR	2590.
001211	3C			7207	INC A	2591.
001212	C23912			7209	JMP NZ,KEYCURST	2592.
001215	1600			7211	LODI D,0	2593.
001217	3A1421			7213	LD A,CURSX	2594.
00121A	D651			7215	SUBI LINESIZE	2595.
00121C	2F			7217	CMA	2596.
00121D	3C			7219	INC A	2597.
00121E	5F			7221	LOD E,A	2598.
00121F	CDBD08			7223	CALL ADDWRP	2599.
001222	1E01			7225	LODI E,1	2600.
001224	3E51			7227	LODI A,LINESIZE	2601.
001226	3620			7229	KEYCRLF LODI M,' '	2602.
001228	19			7231	ADD HL,DE	2603.
001229	D22F12			7233	IF C, 'LD HL,TEXT'	2604.
00122C	2A8221			7236		
		0122F		7237		
		0122F		7238		
00122F	3D			7240	DEC A	2605.
001230	C22612			7242	JMP NZ,KEYCRLF	2606.
001233	97			7244	SUB A	2607.
001234	321821			7246	ST A,PREVCHAR	2608.
001237	6069			7248	LOD HL,BC	2609.
001239	7E			7250	KEYCURST LOD A,M	2610.
00123A	321721			7252	ST A,CURSCHEAR	2611.
00123D	367F			7254	LODI M,@DEL	2612.
00123F	FE7F			7256	CMPI @DEL	2613.
001241	C24612			7258	JMP NZ,KEYCURTM	2614.
001244	3620			7260	LODI M,' '	2615.
001246	3E08			7262	KEYCURTM LODI A,CURSTIME	2616.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT
001248	321621			7264	ST A,CURSCTR
00124B	C3E315			7266	JMP TXTEND

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2617.
2618.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 16.41 08/31/77
00124E	CD9E12			7269	TYPBTAB	CALL SENDBT	2620.
001251	3D			7271	TYPBTAB2	DEC A	2621.
001252	2A1221			7273		LD HL,CURSLOC	2622.
001255	CA7912			7275		JMP Z,ABENDTAB	2623.
001258	F27713			7277		JMP NS,KEY@BS	2624.
00125B	CD7E12			7279		CALL DESTBTAB	2625.
				7281	*		2626.
00125E	C33912			7282		JMP KEYCURST	2627.
001261	CDD112			7284	TYPHTAB	CALL SENDHT	2628.
001264	3D			7286	TYPHTAB2	DEC A	2629.
001265	2A1221			7288		LD HL,CURSLOC	2630.
001268	CA7912			7290		JMP Z,ABENDTAB	2631.
00126B	FA7312			7292		IF NS	2632.
00126E	3620			7295		LODI M,' '	2633.
001270	C36611			7297		JMP CURMOTSP	2634.
				7299	*		2635.
		01273		7300		END	2636.
		01273		7302			
				7304		CALL DESTHTAB	2637.
001273	CD8E12			7306		JMP WRAPQ	2638.
001276	C32213			7308	ABENDTAB	OUT BELL	2639.
001279	D386			7310		JMP KEYCURST	2640.
00127B	C33912			7312	*		2641.
				7313	*		2642.
		0127E		7314	DESTBTAB	EQU *	2643.
00127E	11FFFF			7316		LODI DE,-1	2644.
		01281		7318		LOOP ,	2645.
				7321		LODI M,' '	2646.
001281	3620			7323		CALL SUBWRP	2647.
001283	CDC808			7325		DEC B	2648.
001286	05			7327		END UNTIL,Z	2649.
001287	C28112			7329			
		0128A		7331		ST HL,CURSLOC	2650.
00128A	221221			7333		RET U	2651.
00128D	C9			7335	*		2652.
		0128E		7336	DESTHTAB	EQU *	2653.
00128E	110100			7338		LODI DE,1	2654.
		01291		7340		LOOP ,	2655.
				7343		LODI M,' '	2656.
001291	3620			7345		CALL ADDWRP	2657.
001293	CDBD08			7347		DEC B	2658.
001296	05			7349		END UNTIL,Z	2659.
001297	C29112			7351			
		0129A		7353		ST HL,CURSLOC	2660.
00129A	221221			7355		RET U	2661.
00129D	C9			7357	*		2662.
				7358	SEENBT	CALL BTAB	2663.
00129E	CDF714			7360		DEC A	2664.
0012A1	3D			7362		IF Z	2665.
0012A2	C2AA12			7365		INC A	2666.
0012A5	3C			7367		ST A,XMCNT	2667.
0012A6	324021			7369		RET U	2668.
0012A9	C9			7371		END	2669.
		012AA		7373			
		012AA		7375		IF NS,'LOD E,A'	2670.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0012AD	5F			7378		
			012AE	7379		
			012AE	7380		
0012AE	3C			7382	INC A	AND RESTORE A 2671.
0012AF	4F			7384	LOD C,A	NOW SAVE THAT 2672.
0012B0	3A4221			7386	LD A,XMITBITS	AND CHECK THE FLAG 2673.
0012B3	E610			7388	IF 'ANDI BTABSEND',NZ	IF IT IS ON, WE SEND THEM 2674.
0012B5	CAC512			7391		
0012B8	3E12			7392	LODI A,X'12'	AS REVERSE TABS 2675.
0012BA	324121			7394	ST A,XMCHAR	2676.
0012BD	3E02			7396	LODI A,2	AND DO JUST ONE... 2677.
0012BF	324021			7398	ST A,XMCNT	2678.
0012C2	C3CF12			7400	ELSE ,	IF NOT, DO BACKSPACES 2679.
			012C5	7402		
0012C5	3E08			7403	LODI A,@BS	2680.
0012C7	324121			7405	ST A,XMCHAR	2681.
0012CA	78			7407	LOD A,B	AND GET THE COUNT FROM B 2682.
0012CB	3C			7409	INC A	INCREMENT BY 1 2683.
0012CC	324021			7411	ST A,XMCNT	AND SAVE IT AWAY. 2684.
			012CF	7413	END	2685.
0012CF	79			7416	LOD A,C	GET THE RETURNED VALUE BACK 2686.
0012D0	C9			7418	RET U	AND RETURN 2687.
				7420	*	2688.
0012D1	CD8E14			7421	CALL HTAB	GET THE POSITION 2689.
0012D4	3D			7423	DEC A	CHECK FLAG AS OCHECK FLAG AS ABOVE 2690.
0012D5	C2DD12			7425	IF Z	IF NOW ZERO, 2691.
0012D8	3C			7428	INC A	SET IT BACK 2692.
0012D9	324021			7430	ST A,XMCNT	AND STORE THAT AS COUNT 2693.
0012DC	C9			7432	RET U	AND RETURN 2694.
			012DD	7434	END	2695.
			012DD	7436		
0012DD	FAE112			7438	IF NS,'LOD E,A'	2696.
0012E0	5F			7441		
			012E1	7442		
			012E1	7443		
0012E1	3C			7445	INC A	RESTORE RETURNED VALUE 2697.
0012E2	4F			7447	LOD C,A	SAVE IT 2698.
0012E3	3A4221			7449	LD A,XMITBITS	AND CHECK THE FLAG 2699.
0012E6	E620			7451	IF 'ANDI HTABSEND',NZ	IF ITS ON 2700.
0012E8	CAF812			7454		
0012EB	3E09			7455	LODI A,@HT	THEN SEND A TAB 2701.
0012ED	324121			7457	ST A,XMCHAR	2702.
0012F0	3E02			7459	LODI A,2	EXACTLY ONE OF THEM 2703.
0012F2	324021			7461	ST A,XMCNT	2704.
0012F5	C30213			7463	ELSE ,	IF ITS OFF, 2705.
			012F8	7465		
0012F8	3E20			7466	LODI A,@SP	THEN SEND SPACES 2706.
0012FA	324121			7468	ST A,XMCHAR	2707.
0012FD	7B			7470	LOD A,E	THE RIGHT NUMBER OF THEM 2708.
0012FE	3C			7472	INC A	2709.
0012FF	324021			7474	ST A,XMCNT	2710.
			01302	7476	END	2711.
001302	79			7479	LOD A,C	GET RETURN VALUE BACK 2712.
001303	C9			7481	RET U	2713.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				7484	*****	2715.
				7485	*	2716.
				7486	*	2717.
		01304		7487	KEYHTAB EQU * HORIZONTAL TAB	2718.
				7489	*	2719.
001304	CD8E14			7490	CALL HTAB GO TAB	2720.
001307	C36412			7492	JMP TYPHTAB2 AND DO OTHER STUFF ABOVE	2721.
				7494	*	2722.
00130A	CDF714			7495	KEYBTAB CALL BTAB AS ABOVE	2723.
00130D	C35112			7497	JMP TYPBTAB2	2724.
				7499	*	2725.
				7500	*	2726.
001310	CD8E14			7501	KEYHTABN CALL HTAB NON-DESTRUCTIVE TAB	2727.
001313	3D			7503	DEC A CHECK RETURN	2728.
001314	2A1221			7505	LD HL,CURSLOC	2729.
001317	CA7912			7507	JMP Z,ABENDTAB IF NO TAB,RING BELL	2730.
00131A	F22C13			7509	IF S IF WEARE DOING THEM,	2731.
00131D	1600			7512	LODI D,0 MOVE CURSOR RIGHT AMOUNT	2732.
00131F	CDBD08			7514	CALL ADDWRP	2733.
001322	3A1821			7516	WRAPQ LD A,PREVCHAR CHECK FOR WRAPAROUND	2734.
001325	3C			7518	INC A	2735.
001326	CA9611			7520	JMP Z,KEYINCY IF SD, THEN GO DO WRAPPING	2736.
				7522	*	2737.
001329	C30812			7523	JMP KEYCUROK OTHERWISE EXIT NORMALLY	2738.
		0132C		7525	END	2739.
		0132C		7527		
00132C	C36611			7529	JMP CURMOTSP OTHERWISE JUST MOVE ONE SPACE	2740.
				7531	*	2741.
00132F	CDF714			7532	KEYETABN CALL BTAB GET TAB POSITION	2742.
001332	3D			7534	DEC A CHECK FLAG AS ABOVE	2743.
001333	2A1221			7536	LD HL,CURSLOC	2744.
001336	CA7912			7538	JMP Z,ABENDTAB SAME STUFF AS ABOVE	2745.
001339	F24413			7540	IF S	2746.
00133C	16FF			7543	LODI D,-1	2747.
00133E	CDC808			7545	CALL SUBWRP	2748.
001341	C30812			7547	JMP KEYCUROK	2749.
		01344		7549	END	2750.
		01344		7551		
001344	C38213			7553	JMP KEY@BSND	2751.
				7555	*	2752.
				7556	*	2753.
				7557	*	2754.
				7558	KEY@CR2 POP HL GET CURSLOC	2755.
001347	E1			7560	KEY@CR EQU * LOC=LOC-X	2756.
001348	547D	01348		7562	LOD DA,HL	2757.
00134A	211421			7564	LODI HL,CURSX	2758.
00134D	96			7566	SUB M	2759.
00134E	6F			7568	LOD L,A	2760.
00134F	7A			7570	LOD A,D	2761.
001350	DE00			7572	SBBI 0	2762.
001352	67			7574	LOD H,A	2763.
001353	97			7576	SUB A X=0	2764.
001354	321421			7578	ST A,CURSX	2765.
001357	321521			7580	ST A,CURSX2	2766.
00135A	C30812			7582	JMP KEYCUROK	2767.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				7584 *		2768.
				7585 *	LINEFEED	2769.
				7586 *		2770.
00135D	545D			7587 KEY@LF2	LOD DE,HL	2771.
00135F	211821			7589	LODI HL,PREVCHAR	2772.
001362	7E			7591	LOD A,M	2773.
001363	FE0D			7593	CMPI @CR	2774.
001365	C26F13			7595	JMP NZ,NOTCRLF	2775.
001368	78			7597	LOD A,B	2776.
001369	B7			7599	IOR A	2777.
00136A	FAE315			7601	JMP S,TXTEND	2778.
00136D	36FF			7603 SETFLAG	LODI M,X'FF'	2779.
00136F	626B			7605 NOTCRLF	LOD HL,DE	2780.
001371	CDBA08			7607 KEY@LF	CALL ADDWRP81	2781.
001374	C39611			7609	JMP KEYINCY	2782.
					REMEMBER CURSLDC	
					AND GET PREVIOUS CHAR	
					SEE IF IT'S A CR	
					IF NOT DON'T SET FLAG	
					GET OLD CRLF0VR	
					SEE IF IT WAS EMPTY	
					NO, SO DO CRLF SEQUENCE	
					SET THE FLAG	
					AND KEEP GOING	
					GO INCREMENT Y	

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				7612 *		2784.
				7613 *	BACKSPACE	2785.
				7614 *		2786.
001377	11FFFF			7615 KEY@BS	LODI DE,-1	2787.
00137A	CDC808			7617	CALL SUBWRP	2788.
00137D	3620			7619	LODI M,' '	2789.
00137F	C38813			7621	JMP NOBACK	2790.
001382	11FFFF			7623 KEY@BSND	LODI DE,-1	2791.
001385	CDC808			7625	CALL SUBWRP	2792.
001388	3A1521			7627 NOBACK	LD A,CURSX2	2793.
00138B	B7			7629	ORA A	2794.
00138C	C29413			7631	IF Z	2795.
00138F	3EA1			7634	LODI A,2*LINE SIZE-1	2796.
001391	C39513			7636	ELSE 'DEC A'	2797.
		01394		7638		
001394	3D			7639		
		01395		7640		
001395	321521			7642	ST A,CURSX2	2798.
001398	3A1421			7644	LD A,CURSX	2799.
00139B	3D			7646	DEC A	2800.
00139C	321421			7648	ST A,CURSX	2801.
00139F	F20B12			7650	JMP NS,KEYCUROK	2802.
0013A2	3E50			7652	LODI A,LINE SIZE-1	2803.
0013A4	321421			7654	ST A,CURSX	2804.
0013A7	221221			7656 KEYDECY	ST HL,CURSLOC	2805.
0013AA	444D			7658	LOD BC,HL	2806.
0013AC	2A8421			7660	LD HL,MTEXT	2807.
0013AF	09			7662	ADD HL,BC	2808.
0013B0	DAB813			7664	JMP C,NOUPDAT2	2809.
0013B3	444D			7666	LOD BC,HL	2810.
0013B5	221221			7668	ST HL,CURSLOC	2811.
0013B8	2A8621			7670 NOUPDAT2	LD HL,TEXTTOP	2812.
0013BB	115100			7672	LODI DE,LINE SIZE	2813.
0013BE	CDE508			7674	CALL CIRCLEFN	2814.
0013C1	D2CC13			7676	JMP NC,NOABORT	2815.
0013C4	6069			7678	LOD HL,BC	2816.
0013C6	CDBA08			7680	CALL ADDWRP81	2817.
0013C9	C30B12			7682	JMP KEYCUROK	2818.
0013CC	2A0A21			7684 NOABORT	LD HL,NXTDISA	2819.
0013CF	CDD408			7686	CALL MINUSHL	2820.
0013D2	115100			7688	LODI DE,LINE SIZE	2821.
0013D5	CDE508			7690	CALL CIRCLEFN	2822.
0013D8	DCC004			7692	CALL C,SCRDOWN	2823.
0013DB	6069			7694	LOD HL,BC	2824.
0013DD	C30B12			7696	JMP KEYCUROK	2825.
				7698 *		2826.
				7699 *	REVERSE LINEFEED	2827.
				7700 *		2828.
0013E0	CDC508			7701 KEY@VT	CALL SUBWRP81	2829.
0013E3	C3A713			7703	JMP KEYDECY	2830.
				7705 *		2831.
				7706 *		2832.
				7707 *		2833.
				7708 *		2834.
		013E6		7709 SIM4023	EQU *	2835.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0013E6	21FAFF			7711	RESUME DISPL,CS	2836.
0013E9	39			7713		
0013EA	220020			7714		
0013ED	2E02			7715		
0013EF	CD0107			7716		
0013F2	C6E0			7717	ADDI -32	2837.
0013F4	321421			7719	ST A,CURSX	2838.
0013F7	321521			7721	ST A,CURSX2	2839.
0013FA	4F			7723	LOD C,A	2840.
0013FB	0600			7725	LODI B,0	2841.
0013FD	21FAFF			7727	RESUME DISPL,CS	2842.
001400	39			7729		
001401	220020			7730		
001404	2E02			7731		
001406	CD0107			7732		
001409	C6E0			7733	ADDI -32	2843.
00140B	6F			7735	LOD L,A	2844.
00140C	2600			7737	LODI H,0	2845.
00140E				7739	MULT 81	2846.
00140E	545D			7741		
001410	29			7742		
001411	29			7743		
001412	29			7744		
001413	29			7745		
001414	EB			7746		
001415	19			7747		
001416	EB			7748		
001417	29			7749		
001418	29			7750		
001419	19			7751		
00141A	09			7752	ADD HL,BC	2847.
00141B	EB			7754	XCH HL,DE	2848.
00141C	2A1221			7756	LD HL,CURSLOC	2849.
00141F	3A1721			7758	LD A,CURSCAR	2850.
001422	77			7760	ST A,(HL)	2851.
001423	2A0E21			7762	LD HL,SIMDISA	2852.
				7764 *		2853.
001426	CDBD08			7765	CALL ADDWRP	2854.
001429	221221			7767	ST HL,CURSLOC	2855.
00142C	C3E315			7769	JMP TXTEND	2856.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				7772	*****	2858.
				7773	* HORIZONTAL TAB SUPPORT	2859.
				7774	*****	2860.
				7775	*	2861.
				7776	*	2862.
		0142F		7777	RESETTAB EQU *	2863.
				7779	*	2864.
00142F	3A3121			7780	LD A,FLAGS	2865.
001432	E6FE			7782	ANDI 255-TABREF	2866.
001434	323121			7784	ST A,FLAGS	2867.
001437	323621			7786	ST A,CNTLOMD	2868.
00143A	C9			7788	RET ,	2869.
				7790	*	2870.
				7791	*	2871.
		0143B		7792	GETTBYTE EQU *	2872.
				7794	LD A,CURSX2	2873.
00143E	114F14			7796	LODI DE,DODAX	2874.
001441	47			7798	LOD B,A	2875.
001442	E607			7800	ANDI X'07'	2876.
001444	83			7802	ADD E	2877.
001445	5F			7804	LOD E,A	2878.
001446	3E00			7806	LODI A,0	2879.
001448	8A			7808	ADC D	2880.
001449	57			7810	LOD D,A	2881.
00144A	CD5714			7812	CALL GETTAB	2882.
00144D	1A			7814	LD A,(DE)	2883.
00144E	C9			7816	RET ,	2884.
				7818	*	2885.
		0144F		7819	DODAX DS 0X	2886.
00144F				7821		
00144F	80			7822	DC X'80'	2887.
001450	40			7823	DC X'40'	2888.
001451	20			7824	DC X'20'	2889.
001452	10			7825	DC X'10'	2890.
001453	08			7826	DC X'08'	2891.
001454	04			7827	DC X'04'	2892.
001455	02			7828	DC X'02'	2893.
001456	01			7829	DC X'01'	2894.
				7830	*	2895.
		01457		7831	GETTAB EQU *	2896.
001457	214921			7833	LODI HL,HTABTAB	2897.
00145A	78			7835	LOD A,B	2898.
00145B	E6F8			7837	ANDI X'F8'	2899.
00145D	0F0F0F			7839	ROT R,3	2900.
001460	4F			7841	LOD C,A	2901.
001461	85			7843	ADD L	2902.
001462	6F			7845	LOD L,A	2903.
001463	3E00			7847	LODI A,0	2904.
001465	8C			7849	ADC H	2905.
001466	67			7851	LOD H,A	2906.
001467	C9			7853	RET ,	2907.
				7855	*	2908.
				7856	*	2909.
		01468		7857	SETTAB EQU *	2910.
001468	CD3B14			7859	CALL GETTBYTE	2911.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
00146B	B6			7861	IOR M	A HAS MASK 2912.
00146C	77			7863	ST A,(HL)	SAVE IT BACK 2913.
00146D	C9			7865	RET .	AND GO HOME 2914.
				7867	*	2915.
				7868	*	2916.
		0146E		7869	CLRSTAB EQU *	2917.
00146E	CD3B14			7871	CALL GETTBYTE	GET POSITION 2918.
001471	EEFF			7873	XORI X'FF'	INVERT MASK TO DO A CLEAR 2919.
001473	A6			7875	AND M	AND IN MEMORY TO DO THE CLEAR 2920.
001474	77			7877	ST A,(HL)	SAVE ITY BACK 2921.
001475	C9			7879	RET .	AND GO HOME 2922.
				7881	*	2923.
				7882	*	2924.
		01476		7883	CLRATAB EQU *	CLEARs ALL THE TABS 2925.
001476	214921			7885	LODI HL,HTABTAB	GET ADD OF TAB TABLE 2926.
001479	1E15			7887	LODI E,21	NUMBER OF BYTE S IN TABLE 2927.
00147B	97			7889	SUB A	CHAR TO STORE 2928.
		0147C		7891	CLRTABLP EQU *	2929.
00147C	77			7893	ST A,(HL)	CLEAR CHAR 2930.
00147D	1D			7895	DEC E	DEC COUNT 2931.
00147E	23			7897	INC HL	UPDATE POINTER 2932.
00147F	C27C14			7899	JMP NZ,CLRTABLP	NO DONE? THEN CONTINUE 2933.
001482	3A3121			7901	LD A,FLAGS	SET FOR TAB CLEAR DONE 2934.
001485	F601			7903	IORI TABREF	2935.
001487	323121			7905	ST A,FLAGS	AND SAVE 2936.
00148A	323621			7907	ST A,CNTLOMD	AND SAVE FOR CNTLSHIFT O FAKE 2937.
00148D	C9			7909	RET .	ELSE-DONE THEN GO HOME 2938.
				7911	*	2939.
		0148E		7912	HTAB EQU *	HORIZONTAL TAB 2940.
				7914	*	2941.
				7915	*	2942.
00148E	3A3121			7916	LD A,FLAGS	SEE IF A CLEAR HAS BEEN DONE 2943.
001491	E601			7918	ANDI TABREF	2944.
001493	3E02			7920	LODI A,2	SSET FOR NO TABS COMPLETION 2945.
001495	0601			7922	LODI B,1	2946.
001497	C8			7924	RET Z	NO TABS HAVE BEEN SET- IGNORE 2947.
001498	3A1521			7926	LD A,CURSX2	GET CURRETN OFFSET 2948.
00149B	FEA1			7928	CMPI 2*LINE SIZE-1	2949.
00149D	D2D114			7930	JMP NC,TABWRAP	2950.
0014A0	3C			7932	INC A	BUMP IT TO NEXT CHARACTER 2951.
0014A1	47			7934	LOD B,A	SAVE THAT 2952.
0014A2	CD5714			7936	CALL GETTAB	GET CURRENT WORD IN TAB TABLE 2953.
0014A5	79			7938	LOD A,C	GET THAT NUMBER FROM C 2954.
0014A6	D615			7940	SUBI 21	CHANGE TO DISTANT FROM END 2955.
0014A8	57			7942	LOD D,A	SAVE THAT 2956.
0014A9	78			7944	LOD A,B	GET XOFFSET 2957.
0014AA	E607			7946	ANDI X'07'	JUST WANT LOW THREE BITS 2958.
0014AC	47			7948	LOD B,A	SAVE DISTANCE FROM BEG 2959.
0014AD	D608			7950	SUBI 8	MAKE IT DISTANCE FROM END OF BYTE 2960.
0014AF	5F			7952	LOD E,A	SAVE THAT 2961.
0014B0	0E00			7954	LODI C,0	COUNT OF NUMBER CHARACTERS MOVED 2962.
0014B2	78			7956	LOD A,B	GET DISTANCE FROM BEGGINING 2963.
0014B3	B7			7958	IOR A	SEE IF ZERO 2964.
0014B4	CAC014			7960	JMP Z,DUTTAB	YES, DONT SHIFT 2965.
0014B7	7E			7962	LD A,(HL)	GET FIRST BYTE 2966.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 16.41 08/31/77
			014B8	7964	TABSHIFT	EQU *	2967.
0014B8	07			7966		ROT L	SHIFT IT
0014B9	05			7968		DEC B	2968.
0014BA	C2B814			7970		JMP NZ,TABSHIFT	SEE IF DONE
0014BD	C3C114			7972		JMP TABLOOP	2969.
			014C0	7974	OUTTAB	EQU *	2970.
0014C0	7E			7976		LD A,(HL)	THIS IS THE LOOP
			014C1	7978	TABLOOP	EQU *	LOD TAB TABLE BYTE
0014C1	0C			7980		INC C	2972.
0014C2	07			7982		ROT L	2973.
0014C3	DAD414			7984		JMP C,FOUNDTAB	2974.
0014C6	1C			7986		INC E	INC NUMBER CHARACTERS TABED OVER
0014C7	FAC114			7988		JMP S,TABLOOP	CHK FOR A TAB STOP
0014CA	1EF8			7990		LODI E,-8	GOT THE TAB
0014CC	14			7992		INC D	CHK FOR END OF BYTE
0014CD	23			7994		INC HL	GO TO NEXT CHAR
0014CE	FAC014			7996		JMP S,OUTTAB	RESTORE POSITION COINT
0014D1	3E01			7998	TABWRAP	LODI A,X'01'	CHECK FOR END OF TAB TABLE
0014D3	C9			8000		RET ,	BUT BUMP POINTER ANYWAY
			014D4	8002	FOUNDTAB	EQU *	NOT AT END OF TABLE
0014D4	3A1521			8004		LD A,CURSX2	INDICATES WRAPAROUND
0014D7	81			8006		ADD C	GO HOME
0014D8	321521			8008		ST A,CURSX2	WE GO A TAB
0014DB	3A1421			8010		LD A,CURSX	GET OLD X POSITION
0014DE	81			8012		ADD C	ADD IN AMOUNT MOVED
0014DF	FE51			8014		CMPI LINESIZE	SAVE THAT
0014E1	DAF014			8016		IF NC	AND MODIFY OTHER OFFSET
0014E4	D651			8019		SUBI LINESIZE	2991.
0014E6	47			8021		LOD B,A	2992.
0014E7	3EFF			8023		LODI A,-1	2993.
0014E9	323521			8025		ST A,CRLF0VR	2994.
0014EC	321821			8027		ST A,PREVCHAR	2995.
0014EF	78			8029		LOD A,B	2996.
			014F0	8031		END ,	2997.
			014F0	8033			2998.
0014F0	321421			8035		ST A,CURSX	FOR LINEFEED LATER
0014F3	59			8037		LOD E,C	3000.
0014F4	41			8039		LOD B,C	3001.
0014F5	97			8041		SUB A	3002.
0014F6	C9			8043		RET ,	3003.
				8045	*		AND GO BACK TO CALLER
				8046	*		3004.
0014F7	3A3121			8047	ETAB	LD A,FLAGS	3005.
0014FA	E601			8049		ANDI TABREF	LOOKS LIKE HTAB
0014FC	3E02			8051		LODI A,2	3007.
0014FE	0601			8053		LODI B,1	3008.
001500	C8			8055		RET Z	3009.
001501	3A1521			8057		LD A,CURSX2	3010.
001504	B7			8059		ORA A	3011.
001505	CA3015			8061		JMP Z,BTABWRAP	3012.
001508	3D			8063		DEC A	3013.
001509	47			8065		LOD B,A	3014.
00150A	CD5714			8067		CALL GETTAB	3015.
00150D	51			8069		LOD D,C	3016.
00150E	78			8071		LOD A,B	3017.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 16.41 08/31/77
00150F	E607			8073		ANDI X'07'	3021.
001511	47			8075		LOD B,A	3022.
001512	2F			8077		CMA ,	3023.
001513	5F			8079		LOD E,A	3024.
001514	0E00			8081		LODI C,0	3025.
001516	7E			8083		LD A,(HL)	3026.
001517	07			8085	BTABSHIF	ROT L	3027.
001518	05			8087		DEC B	3028.
001519	F21715			8089		JMP NS,BTABSHIF	3029.
00151C	C32015			8091		JMP BTABLOOP	3030.
00151F	7E			8093	OUTBTAB	LD A,(HL)	3031.
		01520		8095	BTABLOOP	EQU *	3032.
001520	0C			8097		INC C	3033.
001521	0F			8099		ROT R	3034.
001522	DA3315			8101		JMP C,FOUNBTAB	3035.
001525	1C			8103		INC E	3036.
001526	FA2015			8105		JMP S,BTABLOOP	3037.
001529	1EF8			8107		LODI E,-8	3038.
00152B	15			8109		DEC D	3039.
00152C	2B			8111		DEC HL	3040.
00152D	F21F15			8113		JMP NS,OUTBTAB	3041.
001530	3E01			8115	ETABWRAP	LODI A,X'01'	3042.
001532	C9			8117		RET U	3043.
001533	3A1521			8119	FOUNBTAB	LD A,CURSX2	3044.
001536	91			8121		SUB C	3045.
001537	321521			8123		ST A,CURSX2	3046.
00153A	3A1421			8125		LD A,CURSX	3047.
00153D	91			8127		SUB C	3048.
00153E	F24815			8129		IF S	3049.
001541	C651			8132		ADDI LINESIZE	3050.
001543	16FF			8134		LODI D,-1	3051.
001545	C34A15			8136		ELSE 'LODI D,0'	3052.
		01548		8138			
001548	1600			8139			
		0154A		8140			
00154A	321421			8142		ST A,CURSX	3053.
00154D	41			8144		LOD B,C	3054.
00154E	79			8146		LOD A,C	3055.
00154F	2F			8148		CMA ,	3056.
001550	3C			8150		INC A	3057.
001551	5F			8152		LOD E,A	3058.
001552	7A			8154		LOD A,D	3059.
001553	C9			8156		RET U	3060.
				8158	*		3061.
				8159	* HYPERTAB-	MOVES CURSOR TO COL 41 NO MATTER WHERE IT IS	3062.
				8160	* ON THE LINE.	IS USEFUL FOR TWO COLUMN TEXT- MAYBE.	3063.
				8161	*		3064.
001554	CD5A15			8162	KEYHYPER	CALL HYPERSUB	3065.
001557	C30B12			8164		JMP KEYCUROK	3066.
		0155A		8166	HYPERSUB	EQU *	3067.
00155A	EB			8168		XCH HL,DE	3068.
00155B	211421			8170		LODI HL,CURSX	3069.
00155E	97			8172		SUB A	3070.
00155F	96			8174		SUB M	3071.
001560	3D			8176		DEC A	3072.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
001561	3629			8178	LODI M,LINESIZE/2+1	CENTER OF SCREEN 3073.
001563	23			8180	INC HL	POINT TO CURSX2 3074.
001564	3629			8182	LODI M,LINESIZE/2+1	STORE THE SAME 3075.
001566	212900			8184	LODI HL,LINESIZE/2+1	3076.
001569	85			8186	ADD L	GET OFFSET FROM CENTER 3077.
00156A	6F			8188	LOD L,A	3078.
00156B	3EFF			8190	LODI A,X'FF'	3079.
00156D	8C			8192	ADC H	3080.
00156E	67			8194	LOD H,A	3081.
00156F	19			8196	ADD HL,DE	ADD OFFSET TO CURSLOC 3082.
001570	23			8198	INC HL	3083.
001571	C9			8200	RET ,	3084.
				8202	*	3085.
001572	D386			8203	DOBELL OUT BELL	SOUND BELL 3086.
001574	C3E315			8205	JMP TXTEND	AND GET ANOTHER 3087.
				8207	*	3088.
				8208	*	3089.
		01577		8209	GOGRAPHC EQU *	ENTER GMODE AND DOES A CLEAR 3090.
001577	3A3721			8211	LD A,ALLOWGMD	FIRST SEE IF WE IS ALLOWED TO ENTER 3091.
00157A	B7			8213	IOR A	GMODE BOSS. IF NOT WE MUST NOT 3092.
00157B	C2E315			8215	JMP NZ,TXTEND	DO IT LIKE THE MAN ASKED. 3093.
00157E	3EC0			8217	LODI A,X'CO'	3094.
001580	321021			8219	ST A,CLRFLG	3095.
001583	061D			8221	LODI B,@GS	INDICATES TO GO DO GRAPH 3096.
001585	C38A15			8223	JMP GOGRPH2	3097.
				8225	*	3098.
		01588		8226	GOGRAPH EQU *	HERE TO ENTER GMODE 3099.
001588	0600			8228	LODI B,0	INDICATES DON'T GO DO GRAPHICS 3100.
		0158A		8230	GOGRPH2 EQU *	3101.
00158A	3A1121			8232	LD A,MODEBITS	GET OLD MODEBITS 3102.
00158D	F610			8234	IORI GRAPHMD	MAKE SURE IT IS ON 3103.
00158F	321121			8236	ST A,MODEBITS	SAVE IT 3104.
001592	D380			8238	OUT MODESET	AND PU IT OUT 3105.
001594	212D4D			8240	LODI HL,ITEXT+EXLINES-SCRNSIZE	RE-INITIALIZE NXTDISA 3106.
001597	220A21			8242	ST HL,NXTDISA	IN CASE HE WANTS TO LOOK 3107.
				8244	*	AT THE PAGE WE STORED. 3108.
00159A	C3F215			8245	JMP U,ALPHA	AND GO DO GRAPHICS 3109.
00159D	3A1121			8247	LD A,MODEBITS	GET CURRENT MODE 3110.
0015A0	E6EF			8249	ANDI X'EF'	GET RID OF GRAPH BIT 3111.
0015A2	321121			8251	ST A,MODEBITS	AND STORE IT BACK 3112.
0015A5	D380			8253	OUT MODESET	PUT IT OUT 3113.
0015A7	C3E315			8255	JMP U,TXTEND	AND GO TO TEXT MODE 3114.
				8257	*	3115.
				8258	*	3116.
				8259	*	3117.
		015AA		8260	NOGMODE EQU *	DON'T ALLOW ENTRY INTO GRAPHMODE 3118.
0015AA	323721			8262	ST A,ALLOWGMD	3119.
0015AD	C9			8264	RET ,	NZ=DON'T ALLOW GRAPH MDE 3120.
				8266	*	3121.
				8267	*	3122.
		015AE		8268	YESGMODE EQU *	ALLOW ENTRY INTO GRAPHMODE 3123.
0015AE	97			8270	SUB A	Z= ALLOW 3124.
0015AF	323721			8272	ST A,ALLOWGMD	3125.
0015B2	C9			8274	RET ,	3126.
				8276	*	3127.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				8277 *		3128.
				8278 *		3129.
		015B3		8279 BRGINT EQU *	SET BAUD RATE INTERNAL	3130.
0015B3	3A1121			8281 LD A,MODEBITS		3131.
0015B6	E6F3			8283 ANDI 255-URTCLOCK	SET THOSE BITS TO ZERO	3132.
0015B8	D380			8285 OUT MODESET	PUT THEM OUT	3133.
0015BA	321121			8287 ST A,MODEBITS	AND SAVE THEM	3134.
0015BD	C9			8289 RET ,	AND LEAVE	3135.
				8291 *		3136.
				8292 *		3137.
				8293 *		3138.
		015BE		8294 BRGEXT EQU *	SET BAUD RATE FOR EXTERNAL CLOCK	3139.
0015BE	3A1121			8296 LD A,MODEBITS	GET THE MODEBITS	3140.
0015C1	F60C			8298 IDRI URTCLOCK	OR IN THE BITS	3141.
0015C3	D380			8300 OUT MODESET	PUT THEM OUT TO HARDWARE	3142.
0015C5	321121			8302 ST A,MODEBITS	SAVE THEM	3143.
0015C8	C9			8304 RET ,	AND GO HOME	3144.
				8306 *		3145.
				8307 *		3146.
				8308 *		3147.
		015C9		8309 SETURTX1 EQU *	X 1 CLOCK FOR UART	3148.
0015C9	3E57			8311 LODI A,URTINTRS	UART INTERNAL RESET	3149.
0015CB	D341			8313 OUT URTCTL		3150.
0015CD	3E79			8315 LODI A,URTX1MD		3151.
0015CF	D341			8317 OUT URTCTL	AND SAVE THEM	3152.
0015D1	C9			8319 RET ,	AND GO HOME	3153.
				8321 *		3154.
				8322 *		3155.
				8323 *		3156.
				8324 *		3157.
		015D2		8325 SETURTX6 EQU *	X 16 CLOCK FOR UART (NORMAL MODE)	3158.
0015D2	3E57			8327 LODI A,URTINTRS	UART INTERNAL RESET	3159.
0015D4	D341			8329 OUT URTCTL		3160.
0015D6	3E7A			8331 LODI A,URTMODE		3161.
0015D8	D341			8333 OUT URTCTL	AND SAVE THEM	3162.
0015DA	C9			8335 RET ,	AND GO HOME	3163.
				8337 *		3164.
				8338 *		3165.
				8339 *		3166.
				8340 *		3167.
		015DB		8341 SETNECHO EQU *	SET FOR CTLSHIFT 0 NO ECHO	3168.
0015DB	3A3121			8343 LD A,FLAGS		3169.
0015DE	F680			8345 IDRI FULLDUPL	FAKE FULLDUPLEX	3170.
0015E0	323121			8347 ST A,FLAGS	AND SAVE THEM BACK	3171.
0015E3	21FAFF			8349 TXTEND RESUME DISPL,CS	NOW GET ANOTHER CHAR	3172.
0015E6	39			8351		
0015E7	220020			8352		
0015EA	2E02			8353		
0015EC	CD0107			8354		
0015EF	C3DA10			8355 JMP U,TXTMOD	AND GO BACK TO BEGINNING	3173.
				8357 *		3174.
				8358 *		3175.
				8359 *		3176.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				8361	*****	3178.
				8362	*****	3179.
				8363	* THIS IS IT	3180.
				8364	* WHAT YOU ASK?	3181.
				8365	* WHY, THE TEKTRONIX GRAPH SIMULATOR	3182.
				8366	*	3183.
				8367	*****	3184.
		015F2		8368	ALPHA DS 0X	3185.
0015F2				8370		
0015F2	97			8371	SUB A	3186.
0015F3	321521			8373	ST A,CURSX2 CLEAR OUT TAB OFFSET	3187.
0015F6	321421			8375	ST A,XOFF AND REGULAR OFFSET	3188.
0015F9	321721			8377	ST A,CURSCHAR CLEAR OUT CURSOR CHARACTER	3189.
0015FC	21F606			8379	LODI HL,TOPOFF+(7*LINESIZE) PLACE TO PUT CHARACTERS AT	3190.
0015FF	227721			8381	ST HL,CHARPOS	3191.
001602	78			8383	LOD A,B GET ENTRYFLAG	3192.
001603	FE1D			8385	CMPI @GS IS IT GRAPHIC SHIFT	3193.
001605	CA6318			8387	JMP Z,GRAPH YES. GO DO GRAPHICS	3194.
				8389	*	3195.
		01608		8390	ALPHA2 DS 0X	3196.
001608				8392		
001608	2A1221			8393	LD HL,CURSLOC GET OLD CURSOR LOC	3197.
00160B	EB			8395	XCH HL,DE PUT INTO DE	3198.
00160C	2A7721			8397	LD HL,CHARPOS GET NEW CHARACTER POS	3199.
00160F	01F058			8399	LODI BC,GRAPHEVN OFFSET FOR CURSOR	3200.
001612	09			8401	ADD HL,BC ADD IN OFFSET	3201.
001613	7E			8403	LD A,(HL)	3202.
001614	47			8405	LOD B,A	3203.
001615	221221			8407	ST HL,CURSLOC AND PUT IT CURSOR POSITION WORD	3204.
001618	3A1721			8409	LD A,GRPOLDLC PUT THE OLD CHAR THERE	3205.
00161B	12			8411	ST A,(DE) DONE HERE IN CASE OF INTERRUPT	3206.
00161C	78			8413	LOD A,B	3207.
00161D	321721			8415	ST A,GRPOLDLC	3208.
001620	21FAFF			8417	RESUME DISPL,CS	3209.
001623	39			8419		
001624	220020			8420		
001627	2E02			8421		
001629	CD0107			8422		
00162C	FEFE			8423	ALPHACHK CMPI X'FE'	3210.
00162E	CA9D15			8425	JMP Z,GOTEXT YES GO DO TEXT MODE	3211.
001631	21B6C9			8427	LODI HL,X'C9B6'	3212.
001634	228C21			8429	ST HL,GRPDRAW RESETPOINT DRAWING TO IOR MODE	3213.
001637	FE99			8431	CMPI X'99'	3214.
001639	CA8B16			8433	JMP Z,GTYPHT SEE IF INTERNAL TYPED TAB	3215.
00163C	FEA2			8435	CMPI X'A2'	3216.
00163E	CA9116			8437	JMP Z,GTYPBT IF SO, GO DO APPROPRIATE STUFF	3217.
001641	E67F			8439	ANDI X'7F'	3218.
001643	CA0816			8441	JMP Z,ALPHA2 NO GET RID OF HIGH BIT	3219.
001646	FE7F			8443	CMPI X'7F'	3220.
001648	CA0816			8445	JMP Z,ALPHA2 IGNORE DEL ALSO	3221.
00164B	FE20			8447	CMPI X'20'	3222.
00164D	F20717			8449	JMP NS,GRPNCTRL SEE IF CONTROL CHAR	3223.
001650	215516			8451	LODI HL,CMDTAB4 NO GO DISPLAY IT	3224.
001653	CD2E07			8453	CALL SEARCH	3225.
001656	E9			8455	JMP (HL)	3226.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 16.41 08/31/77
			01655	8457	CMDTAB4	CMDEF 1D,GRAPH	3227.
001657	1D1863			8459			
00165A	0C15F2			8460		CMDEF 0C,ALPHA	3228.
00165D	0A1792			8462		CMDEF 0A,LINEFEED	3229.
001660	091697			8464		CMDEF 09,GRPHTAB	3230.
001663	1216B6			8466		CMDEF 12,GRPB TAB	3231.
001666	1F1608			8468		CMDEF 1F,ALPHA2	3232.
001669	111608			8470		CMDEF 11,ALPHA2	3233.
00166C	011608			8472		CMDEF 01,ALPHA2	3234.
00166F	14177C			8474		CMDEF 14,GRPDC4	3235.
001672	0D1681			8476		CMDEF 0D,GRAPHCAR	3236.
001675	07178D			8478		CMDEF 07,GRPBELL	3237.
001678	0816D0			8480		CMDEF 08,GRPBS	3238.
00167B	0B16F5			8482		CMDEF 0B,GRPRL	3239.
00167E	001707			8484		CMDEF 00,GRPNCTRL	3240.
001681	97			8486	GRAPHCAR	SUB A	CARRIAGE RET.
001682	321521			8488		ST A,CURSX2	CLEAR OUT TAB OFFSET
001685	CD6717			8490		CALL GRPCR	DO RESETTING ROUTINE
001688	C30816			8492		JMP ALPHA2	AND GO GET ANOTHER
00168B	CDD112			8494	GTYPHT	CALL SENDHT	CALL XMITTING ROUTINE
00168E	C39A16			8496		JMP GRPHTAB2	AND GO DO OTHER STUFF
001691	CD9E12			8498	GTYPBT	CALL SENDBT	AS IN GTYPHT
001694	C3B916			8500		JMP GRPB TAB2	
001697	CD8E14			8502	GRPHTAB	CALL HTAB	GO FIND TAB
00169A	3D			8504	GRPHTAB2	DEC A	CHECK RETURNED VALUE
00169B	CA8D17			8506		JMP Z,GRPBELL	IF ZERO, NO TABS LEFT
00169E	3E20			8508		LODI A,' '	ASSUME TABS NOT BEING USED
0016A0	F20717			8510		JMP NS,GRPNCTRL	CORRECT... GO DO SPACE
0016A3	1600			8512		LODI D,0	WRONG... ADD IN OFFSET
0016A5	2A7721			8514		LD HL,CHARPOS	GET CURRENT POSITION
0016A8	19			8516		ADD HL,DE	
0016A9	3A1821			8518		LD A,PREVCHAR	NOW CHECK FOR LINEFEED
0016AC	3C			8520		INC A	
0016AD	C28217			8522		JMP NZ,GRPSTCUR	NO LINEFEED, GO STORE
				8524	*		NEW PLACE
0016B0	01E601			8525		LODI BC,6*LINESIZE	
0016B3	C39817			8527		JMP LINEFEE2	DO A LINEFEED
0016B6	CDF714			8529	GRPB TAB	CALL BTAB	GO FINED REVERSE TAB
0016B9	3D			8531	GRPB TAB2	DEC A	CHECK RETURNED VALUE
0016BA	CA8D17			8533		JMP Z,GRPBELL	IF ZERO, NO TAB TO THE LEFT
0016BD	2A7721			8535		LD HL,CHARPOS	GET CURSOR POSITION
0016C0	16FF			8537		LODI D,-1	AND SUBTRACT RIGHT AMOUNT
0016C2	19			8539		ADD HL,DE	
0016C3	F2D016			8541		IF S	IF THE RETURN WAS 0 OR -1,
0016C6	3C			8544		INC A	CHECK TO SEE WHICH IT WAS
0016C7	F28217			8546		JMP NS,GRPSTCUR	IF TAB OK, GO STORE NEW PLACE
0016CA	111AFE			8548		LODI DE,-6*LINESIZE	WE MUST GO UP A LINE
0016CD	C3FB16			8550		JMP GRPRL2	
		016D0		8552		END	
		016D0		8554			
0016D0	11FFFF			8556	GRPBS	LODI DE,-1	
0016D3	211521			8558		LODI HL,CURSX2	
0016D6	7E			8560		LD A,M	
0016D7	D601			8562		SUBI 1	DECREMENT BY 1
0016D9	D2DE16			8564		IF C,'LODI A,2*LINESIZE-1' AND WRAP IF NECESSARY	

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0016DC	3EA1			8567		
		016DE		8568		
		016DE		8569		
0016DE	77			8571	LOD M,A	3280.
0016DF	2B			8573	DEC HL	3281.
0016E0	7E			8575	LOD A,M	3282.
0016E1	3D			8577	DEC A	3283.
0016E2	F2EA16			8579	JMP NS,GRPBSOK	3284.
0016E5	1119FE			8581	LODI DE, -(6*LINESIZE)-1	3285.
0016E8	3E50			8583	LODI A,LINESIZE-1	3286.
		016EA		8585	GRPBSOK DS 0X	3287.
0016EA				8587		
0016EA	77			8588	LOD M,A	3288.
0016EB	2A7721			8590	LD HL,CHARPOS	3289.
0016EE	19			8592	ADD HL,DE	3290.
0016EF	227721			8594	ST HL,CHARPOS	3291.
0016F2	C30816			8596	JMP ALPHA2	3292.
0016F5	2A7721			8598	GRPRL LD HL,CHARPOS	3293.
0016F8	11C9FD			8600	LODI DE, -(7*LINESIZE)	3294.
0016FB	19			8602	GRPRL2 ADD HL,DE	3295.
0016FC	227721			8604	ST HL,CHARPOS	3296.
0016FF	7C			8606	LOD A,H	3297.
001700	B7			8608	IOR A	3298.
001701	F20816			8610	JMP NS,ALPHA2	3299.
001704	C3F215			8612	JMP ALPHA	3300.
		01707		8614	GRPNCTRL DS 0X	3301.
001707				8616		
001707	2A8021			8617	LD HL,GRPCSET	3302.
00170A	07070707			8619	ROT L,4	3303.
00170E	57			8621	LOD D,A	3304.
00170F	E6F0			8623	ANDI X'F0'	3305.
001711	B5			8625	IOR L	3306.
001712	4F			8627	LOD C,A	3307.
001713	7A			8629	LOD A,D	3308.
001714	E607			8631	ANDI X'07'	3309.
001716	B4			8633	IOR H	3310.
001717	47			8635	LOD E,A	3311.
001718	2A7721			8637	LD HL,CHARPOS	3312.
00171B	E5			8639	PUSH HL	3313.
00171C	97			8641	SUB A	3314.
00171D	327D21			8643	ST A,EVENODD	3315.
		01720		8645	GENLOOP LOOP ,	3316.
		01748		8648		
		01720		8649		
001720	3A7D21			8650	LD A,EVENODD	3317.
001723	EE80			8652	XORI X'80'	3318.
001725	F22E17			8654	IF S	3319.
001728	1141AA			8657	LODI DE,GRAPHODD	3320.
00172B	C33517			8659	ELSE	3321.
		0172E		8661		
00172E	11AFFF			8662	LODI DE, -LINESIZE	3322.
001731	19			8664	ADD HL,DE	3323.
001732	11F058			8666	LODI DE,GRAPHEVN	3324.
		01735		8668	END	3325.
001735	327D21			8671	ST A,EVENODD	3326.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
001738	E5			8673	PUSH HL	3327.
001739	19			8675	ADD HL,DE	3328.
00173A	0A			8677	LD A,(BC)	3329.
00173B	2F			8679	CMA ,	3330.
00173C	CD8C21			8681	CALL GRPDRAW	3331.
00173F	77			8683	LOD M,A	3332.
001740	E1			8685	POP HL	3333.
001741	0B			8687	DEC BC	3334.
001742	79			8689	LOD A,C	3335.
001743	E60F			8691	ANDI X'0F'	3336.
001745	C22017			8693	END UNTIL,Z	3337.
		01748		8695		
001748	E1			8697	POP HL	3338.
001749	23			8699	GSPACE INC HL	3339.
00174A	227721			8701	ST HL,CHARPOS	3340.
00174D	211521			8703	LODI HL,CURSX2	3341.
001750	7E			8705	LOD A,M	3342.
001751	3C			8707	INC A	3343.
001752	FEA2			8709	CMPI 2*LINESIZE	3344.
001754	DA5817			8711	IF NC,'SUB A'	3345.
001757	97			8714		
		01758		8715		
		01758		8716		
001758	77			8718	LOD M,A	3346.
001759	2B			8720	DEC HL	3347.
00175A	34			8722	INC M	3348.
00175B	7E			8724	LOD A,M	3349.
00175C	FE51			8726	CMPI LINESIZE	3350.
00175E	C20816			8728	JMP NZ,ALPHA2	3351.
001761	CD6717			8730	GRPARND CAL GRPCR	3352.
001764	C39217			8732	JMP LINEFEED	3353.
		01767		8734	GRPCR DS 0X	3354.
				8736		
001767	2A7721			8737	LD HL,CHARPOS	3355.
00176A	EB			8739	XCH HL,DE	3356.
00176B	3A1421			8741	LD A,XOFF	3357.
00176E	2F			8743	CMA ,	3358.
00176F	6F			8745	LOD L,A	3359.
001770	26FF			8747	LODI H,X'FF'	3360.
001772	23			8749	INC HL	3361.
001773	19			8751	ADD HL,DE	3362.
001774	227721			8753	ST HL,CHARPOS	3363.
001777	97			8755	SUB A	3364.
001778	321421			8757	ST A,XOFF	3365.
00177B	C9			8759	RET ,	3366.
		0177C		8761	GRPDC4 DS 0X	3367.
				8763		
00177C	2A7721			8764	LD HL,CHARPOS	3368.
00177F	CD5A15			8766	CALL HYPERSUB	3369.
001782	227721			8768	GRPSTCUR ST HL,CHARPOS	3370.
001785	3E01			8770	LODI A,1	3371.
001787	321621			8772	ST A,CURSCTR	3372.
00178A	C30816			8774	JMP ALPHA2	3373.
00178D	D386			8776	GRPBELL OUT BELL	3374.
00178F	C30816			8778	JMP ALPHA2	3375.

MAKE SURE CURSOR TURNS ON
BY MAKING COUNTER 1

LDC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT
				8780 *	
				8781 *	

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3376.
3377.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
			01792	8783	LINEFEED DS 0X	3379.
001792				8785		
001792	013702			8786	LODI BC,7*LINESIZE	3380.
001795	2A7721			8788	LD HL,CHARPOS GET LIN POSITION	3381.
001798	EB			8790	LINEFEE2 XCH HL,DE	3382.
001799	21D9B1			8792	LODI HL,-247*LINESIZE SEE IF WE ARE AT BOTTOM	3383.
00179C	19			8794	ADD HL,DE SUM THE TWO	3384.
00179D	7C			8796	LOD A,H	3385.
00179E	B7			8798	IOR A	3386.
00179F	F2F215			8800	JMP NS,ALPHA WE ARE OVER	3387.
0017A2	6069			8802	LOD HL,BC	3388.
0017A4	19			8804	ADD HL,DE MOVE DOWN A LINE	3389.
0017A5	227721			8806	ST HL,CHARPOS AND SAVE IT	3390.
0017A8	C30816			8808	JMP ALPHA2	3391.
				8810	*****	3392.
				8811	*****	3393.
				8812	*****	3394.
		017AB		8813	SHIFT DS 0X	3395.
0017AB				8815		
0017AB	97			8816	SUB A CLEAR A	3396.
0017AC	7A			8818	LOD A,D LOAD D	3397.
0017AD	1F			8820	ROT RC ROTATE AND SAVE CARR Y IS 0	3398.
0017AE	57			8822	LOD D,A	3399.
0017AF	7B			8824	LOD A,E LOAD E	3400.
0017B0	1F			8826	ROT RC SHIFT LOW PART	3401.
0017B1	5F			8828	LOD E,A SAVE IT	3402.
0017B2	C9			8830	RET , AND LEAVE	3403.
				8832	*****	3404.
				8833	*****	3405.
				8834	*****	3406.
		017B3		8835	ETOELoad DS 0X	3407.
0017B3				8837		
0017B3	46			8838	LOD B,M	3408.
0017B4	23			8840	INC HL	3409.
0017B5	4E			8842	LOD C,M	3410.
0017B6	23			8844	INC HL	3411.
0017B7	56			8846	LOD D,M	3412.
0017B8	23			8848	INC HL	3413.
0017B9	5E			8850	LOD E,M	3414.
0017BA	C9			8852	RET ,	3415.
				8854	*****	3416.
				8855	*****	3417.
				8856	*****	3418.
		017BB		8857	BTOESAVE DS 0X	3419.
0017BB				8859		
0017BB	70			8860	LOD M,B	3420.
0017BC	23			8862	INC HL	3421.
0017BD	71			8864	LOD M,C	3422.
0017BE	23			8866	INC HL	3423.
0017BF	72			8868	LOD M,D	3424.
0017C0	23			8870	INC HL	3425.
0017C1	73			8872	LOD M,E	3426.
0017C2	C9			8874	RET ,	3427.
				8876	*****	3428.
				8877	*****	3429.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				8878	*****	3430.
				8879	*	3431.
				8880	* SCOPLOAD - ROUTINE POSITIONS GRAPHMODE 'POINT' AT	3432.
				8881	* THE POSITION INDICATED BY BC AND DE.	3433.
				8882	* BC HAS X COORIDINATE (RANGE = 0 TO 647)	3434.
				8883	* DE HAS Y CORRIDINATE (RANGE = 0 TO 480)	3435.
				8884	* ORIGIN IS LOWER LEFT HAND CORNER.	3436.
				8885	* (N.B. NO SCISSORING IS PERFORMED, SO THAT	3437.
				8886	* COORIDINATES > 647 OR 480 WILL DO WIERD	3438.
				8887	* THINGS, EXCEPT THAT Y CAN GO TO 512.)	3439.
				8888	*	3440.
				8889	*****	3441.
		017C3		8890	SCOPLOAD DS 0X	3442.
0017C3				8892		
0017C3	7B			8893	LOD A,E	3443.
0017C4	0F			8895	ROT R	3444.
0017C5	E680			8897	ANDI X'80'	3445.
0017C7	327D21			8899	ST A,EVENODD	3446.
0017CA	CDAB17			8901	CALL SHIFT	3447.
0017CD	3EFF			8903	LODI A,255	3448.
0017CF	93			8905	SUB E	3449.
0017D0	6F			8907	LOD L,A	3450.
0017D1	2600			8909	LODI H,0	3451.
0017D3				8911	MULT 81	3452.
0017D3	545D			8913		
0017D5	29			8914		
0017D6	29			8915		
0017D7	29			8916		
0017D8	29			8917		
0017D9	EB			8918		
0017DA	19			8919		
0017DB	EB			8920		
0017DC	29			8921		
0017DD	29			8922		
0017DE	19			8923		
0017DF	227721			8924	ST HL,CHARPOS	3453.
				8926	*	3454.
				8927	* NOW WE DO THE X PART	3455.
				8928	*	3456.
				8929	*	3457.
0017E2	50			8930	LOD D,B	3458.
0017E3	59			8932	LOD E,C	3459.
0017E4	7B			8934	LOD A,E	3460.
0017E5	E607			8936	ANDI X'07'	3461.
0017E7	214F14			8938	LODI HL,DODAX	3462.
0017EA	85			8940	ADD L	3463.
0017EB	6F			8942	LOD L,A	3464.
0017EC	3E00			8944	LODI A,0	3465.
0017EE	8C			8946	ADC H	3466.
0017EF	67			8948	LOD H,A	3467.
0017F0	7E			8950	LOD A,M	3468.
0017F1	327E21			8952	ST A,XMASK	3469.
0017F4	CDAB17			8954	CALL SHIFT	3470.
0017F7	CDAB17			8956	CALL SHIFT	3471.
0017FA	CDAB17			8958	CALL SHIFT	3472.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0017FD	7B			8960	LOD A,E	3473.
0017FE	321421			8962	ST A,XOFF	3474.
001801	2A7721			8964	LD HL,CHARPOS	3475.
001804	19			8966	ADD HL,DE	3476.
001805	227721			8968	ST HL,CHARPOS	3477.
001808	C9			8970	RET ,	3478.
				8972	*****	3479.
				8973	*****	3480.
				8974	*****	3481.
		01809		8975	XYPTINC DS 0X	3482.
001809				8977		
				8978	*****THIS IS THE REALLY IMPORTANT ROUTINE	3483.
				8979	***IT INCREMENTS AND DECREMENTS X AND Y	3484.
				8980	***** DEPENDING ON THE CONTENTS OF A	3485.
				8981	** 02 DEC Y (THAT MEANS UP)	3486.
				8982	** 03 INC Y (THAT OBVIOUSLY MEANS DOWN ALSO)	3487.
				8983	** 08 INC X	3488.
				8984	** 0C DEC X	3489.
				8985	** YOU CAN DO BOTH X AND Y AT THE SAME TIME	3490.
				8986	*	3491.
001809	C5			8987	PUSH BC	3492.
00180A	E5			8989	PUSH HL	3493.
00180B	D5			8991	PUSH DE	3494.
00180C	4F			8993	LOD C,A	3495.
00180D	45			8995	LOD B,L	3496.
		0217D		8997	DRAGEVOD EQU EVENODD	3497.
		02177		8999	DRAGXY EQU CHARPOS	3498.
		0217E		9001	DRAGBIT EQU XMASK	3499.
				9003	LD HL,DRAGXY	3500.
				9005	ANDI X'0C'	3501.
				9007	JMP Z,DRAGDOY	3502.
				9009	LOD A,B	3503.
				9011	JMP PE,DRAG1	3504.
				9013	ROT R	3505.
				9015	JMP NC,DRAG2	3506.
				9017	INC HL	3507.
				9019	DRAG2 LOD B,A	3508.
				9021	DRAGDOY LOD A,C	3509.
				9023	ANDI X'03'	3510.
				9025	LD A,DRAGEVOD	3511.
				9027	JMP Z,DRAGSPOT	3512.
				9029	JMP PD,DRAG3	3513.
				9031	XORI X'80'	3514.
				9033	JMP NS,DRAG5	3515.
				9035	LODI DE,LINESIZE	3516.
				9037	JMP DRAG6	3517.
				9039	DRAG3 XORI X'80'	3518.
				9041	JMP S,DRAG5	3519.
				9043	LODI DE,-LINESIZE	3520.
				9045	DRAG6 ADD HL,DE	3521.
				9047	DRAG5 ST A,DRAGEVOD	3522.
				9049	DRAGSPOT ST HL,DRAGXY	3523.
				9051	LODI DE,GRAPHEVN	3524.
				9053	IOR A	3525.
00184A	F25018			9055	JMP NS,DRAG4	3526.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM H V 05 16.41 08/31/77
00184D	1141AA			9057		LODI DE,GRAPHODD	3527.
001850	19			9059	DRAG4	ADD HL,DE	3528.
001851	78			9061		LOD A,B	3529.
001852	CD8C21			9063		CALL GRPDRAW	3530.
001855	77			9065		LOD M,A	3531.
001856	D1			9067		POP DE	3532.
001857	E1			9069		POP HL	3533.
001858	68			9071		LOD L,B	3534.
001859	C1			9073		POP BC	3535.
00185A	C9			9075		RET ,	3536.
00185B	07			9077	DRAG1	ROT L	3537.
00185C	D21F18			9079		JMP NC,DRAG2	3538.
00185F	2B			9081		DEC HL	3539.
001860	C31F18			9083		JMP DRAG2	3540.
				9085	*		3541.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				9087	*****	3543.
				9088	*****	3544.
				9089	*****HERE IS THE GRAPHING STUFF	3545.
				9090	*****	3546.
				9091	*****	3547.
		01863		9092	GRAPH DS 0X	3548.
001863				9094		
001863	2A1221			9095	LD HL,CURSLOC	3549.
001866	EB			9097	XCH HL,DE	3550.
001867	210000			9099	LODI HL,0 (ASSUMES ROM AT LOCATION 0)	3551.
00186A	221221			9101	ST HL,CURSLOC MOVE CURSOR OFF SCREEN	3552.
00186D	7C			9103	LOD A,H	3553.
00186E	327F21			9105	ST A,MARGIN SET MARGIN A LEFT	3554.
001871	3A1721			9107	LD A,GRPOLD	3555.
001874	12			9109	ST A,(DE)	3556.
001875	97			9111	SUB A	3557.
001876	321721			9113	ST A,GRPOLD	3558.
001879	CDBB13			9115	CAL GRAPHPT GET A POINT IN TEKXXX	3559.
00187C	CD0619			9117	CAL GRAPHCON CONVERT TO 10 BIT NOS. IN BCDE	3560.
00187F	216921			9119	LODI HL,GRAPHPOS DRAW A DARK VECTOR (IE JUST SAVE	3561.
001882	CDBB17			9121	CALL BTOESAVE NEW COORDS)	3562.
001885	CDC317			9123	CAL SCOPLOAD	3563.
				9125	*	3564.
				9126	* DRAW DARK VECTORS	3565.
				9127	*	3566.
		01888		9128	GRAPHLP DS 0X	3567.
001888				9130		
001888	CDBB13			9131	CAL GRAPHPT GET NEXT POINT IN TEKXXX	3568.
00188B	CD0619			9133	CAL GRAPHCON CONVERT TO 10 BIT NOS. IN BCDE	3569.
00188E	217321			9135	LODI HL,GRAPHTEM SAVE IN TEMPORAY	3570.
001891	CDBB17			9137	CALL BTOESAVE	3571.
001894	216C21			9139	LODI HL,GRAPHPOS+3 ADDRESS CURRENT POSITION	3572.
001897	7B			9141	LOD A,E FORM DELTA X, DELTA Y	3573.
001898	96			9143	SUB M	3574.
001899	5F			9145	LOD E,A	3575.
00189A	7A			9147	LOD A,D *	3576.
00189B	2D			9149	DEC L	3577.
00189C	9E			9151	SBB M	3578.
00189D	57			9153	LOD D,A	3579.
00189E	79			9155	LOD A,C **	3580.
00189F	2D			9157	DEC L	3581.
0018A0	96			9159	SUB M	3582.
0018A1	4F			9161	LOD C,A	3583.
0018A2	78			9163	LOD A,B *	3584.
0018A3	2D			9165	DEC L	3585.
0018A4	9E			9167	SBB M	3586.
0018A5	47			9169	LOD B,A	3587.
0018A6	CD4119			9171	CAL VECTOR NOW DRAW A REAL VECTOR	3588.
0018A9	217321			9173	LODI HL,GRAPHTEM RETRIEVE THE FINAL COORDS	3589.
0018AC	CDB317			9175	CALL BTOELOAD	3590.
0018AF	216921			9177	LODI HL,GRAPHPOS SAVE AS CURRENT POSITION	3591.
0018B2	CDBB17			9179	CALL BTOESAVE	3592.
0018B5	CDC317			9181	CAL SCOPLOAD ALSO LOAD INTO HARDWARE	3593.
				9183	* THE ABOVE IS NOT STRICTLY NECESSARY, SINCE 'VECTOR' SHOULD HAVE	3594.
				9184	* CORRECTLY UPDATED THE HARDWARE REGISTERS. IT PAYS TO BE CAUTIOUS,	3595.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0018B8	C38818			9185	* HOWEVER, SINCE ANY ERROR IS CUMULATIVE.	3596.
				9186	JMP GRAPHLP CONTINUE UNTIL GRAPH MODE IS ENDED	3597.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				9189 *		3599.
				9190 *	GRAPHPT: GET GRAPH POINT COORDS FROM BUFFER & PUT IN TEKXXX	3600.
				9191 *		3601.
0018BB	0E01			9192	GRAPHPT LODI C,1	3602.
		018BD		9194	GRAPHNEX DS 0X	3603.
				9196		
0018BD				9197	RESUME DISPL,CS	3604.
0018C0	21FAFF			9199		
0018C1	39			9200		
0018C4	220020			9201		
0018C6	2E02			9202		
0018C9	CD0107			9203	CMPI X'20'	3605.
0018CB	FE20			9205	JMP P,NOTCTL	3606.
0018CE	F2D718			9207	CMPI @SI	3607.
0018D0	FE0F			9209	JMP Z,ALTGRP	3608.
0018D3	CAFD18			9211	POP HL	3609.
0018D4	E1			9213	JMP ALPHACHK	3610.
0018D4	C32C16			9215	NOTCTL LOD B,A	3611.
0018D7	47			9217	LODI HL,TEKYHI	3612.
0018D8	216721			9219	ROT LC,2	3613.
0018DB	1717			9221	JMP C,GRAPHLOW	3614.
0018DD	DAE918			9223	DEC C	3615.
0018E0	0D			9225	JMP Z,GRAPHST	3616.
0018E1	CAF218			9227	LODI L,TEKXHI,>	3617.
0018E4	2E65			9229	JMP GRAPHST	3618.
0018E6	C3F218			9231	GRAPHLOW DEC C	3619.
0018E9	0D			9233	LODI L,TEKXLOW,>	3620.
0018EA	2E66			9235	ROT LC	3621.
0018EC	17			9237	JMP NC,GRAPHST	3622.
0018ED	D2F218			9239	LODI L,TEKXLOW,>	3623.
0018F0	2E68			9241	GRAPHST LOD A,B	3624.
0018F2	78			9243	ANDI X'1F'	3625.
0018F3	E61F			9245	LOD M,A	3626.
0018F5	77			9247	LODI A,TEKXLOW,>	3627.
0018F6	3E66			9249	SUB L	3628.
0018F8	95			9251	JMP NZ,GRAPHNEX	3629.
0018F9	C2BD18			9253	RET	3630.
0018FC	C9			9255	ALTGRP LODI HL,X'A62F'	3631.
0018FD	212FA6			9257	ST HL,GRPDRAW	3632.
001900	228C21			9259	JMP GRAPHNEX	3633.
001903	C3BD18			9261 *		3634.
				9262 *		3635.
				9263 *	GRAPHCON: CONVERT 5 BIT COORDS AT TEKXXX TO 10 BIT IN BCDE	3636.
				9264 *		3637.
001906	216521			9265	GRAPHCON LODI HL,TEKXHI	3638.
001909	CD0F19			9267	CAL GRAPHCNV	3639.
00190C	42			9269	LOD B,D	3640.
00190D	4B			9271	LOD C,E	3641.
00190E	2C			9273	INC L	3642.
00190F	7E			9275	GRAPHCNV LOD A,M	3643.
001910	0F0F0F			9277	ROT R,3	3644.
001913	5F			9279	LOD E,A	3645.
001914	E603			9281	ANDI X'03'	3646.
001916	57			9283	LOD D,A	3647.
001917	2C			9285	INC L	3648.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
001918	7B			9287	LOD A,E	3649.
001919	E6E0			9289	ANDI X'E0'	3650.
00191B	86			9291	ADD M	3651.
00191C	5F			9293	LOD E,A	3652.
00191D	3A7B21			9295	LD A,TYPE	3653.
001920	FE42			9297	CMPI 'B'	3654.
001922	C8			9299	RET Z	3655.
001923	FE53			9301	CMPI 'S'	3656.
001925	C22D19			9303	JMP NZ,SCALNORM	3657.
001928	13			9305	INC DE	3658.
001929	CDAB17			9307	CALL SHIFT	3659.
		0192C		9309	DS 0X	3660.
00192C				9311		
00192C	C9			9312	RET ,	3661.
		0192D		9314	EQU *	3662.
00192D	62			9316	LOD H,D	3663.
00192E	6B			9318	LOD L,E	3664.
00192F	29			9320	ADD HL,HL	3665.
001930	29			9322	ADD HL,HL	*4 3666.
001931	19			9324	ADD HL,DE	*5 3667.
001932	EB			9326	XCH HL,DE	3668.
001933	CDAB17			9328	CALL SHIFT	3669.
001936	CDAB17			9330	CALL SHIFT	3670.
001939	13			9332	INC DE	3671.
00193A	CDAB17			9334	CALL SHIFT	3672.
00193D	216621			9336	LODI HL,TEKXLOW	3673.
001940	C9			9338	RET ,	3674.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				9342 *		3677.
				9343 *		3678.
				9344 *	VECTOR DRAW A VECTOR TO ANY POINT ON THE SCREEN.	3679.
				9345 *		3680.
				9346 *	SIGNED DELTA X (DX) IS IN BC	3681.
				9347 *	SIGNED DELTA Y (DY) IS IN DE	3682.
				9348 *		3683.
		01941		9349	VECTOR DS 0X	3684.
001941				9351		
	00008			9352	INCX EQU X'08' INCREMENT X COORD	3685.
	0000C			9354	DECX EQU X'0C' DECREMENT X COORD	3686.
	00002			9356	INCY EQU X'02' INCREMENT Y COORD	3687.
	00003			9358	DECY EQU X'03' DECREMENT Y COORD	3688.
				9360 *		3689.
				9361 *	FIRST MAKE BOTH DELTAS POSITIVE, AND INSURE DX GE DY	3690.
				9362 *	UPPER H WILL CONTAIN 'DY' CNTRL BITS, LOWER H 'DX'	3691.
				9363 *		3692.
001941	2628			9364	LODI H, INCX+16*INCY ASSUME BOTH POSITIVE	3693.
001943	78			9366	LOD A,B TEST SIGN OF X	3694.
001944	B7			9368	IOR A *	3695.
001945	F25219			9370	JMP NS, TESTY ALREADY POSITIVE	3696.
001948	262C			9372	LODI H, DECX+16*INCY NEGATIVE: RESET CTRL BITS	3697.
00194A	3E00			9374	LODI A,0 AND NEGATE X	3698.
00194C	91			9376	SUB C	3699.
00194D	4F			9378	LOD C,A	3700.
00194E	3E00			9380	LODI A,0	3701.
001950	98			9382	SBB B	3702.
001951	47			9384	LOD B,A	3703.
001952	7A			9386	TESTY LOD A,D TEST SIGN OF Y	3704.
001953	B7			9388	IOR A	3705.
001954	F26319			9390	JMP NS, TESTBIG ALREADY POSITIVE...	3706.
001957	7C			9392	LOD A,H CHANGE CTRL BITS TO DEC Y	3707.
001958	F630			9394	IORI 16*DECY	3708.
00195A	67			9396	LOD H,A	3709.
00195B	3E00			9398	LODI A,0 AND NEGATE Y	3710.
00195D	93			9400	SUB E	3711.
00195E	5F			9402	LOD E,A	3712.
00195F	3E00			9404	LODI A,0	3713.
001961	9A			9406	SBB D	3714.
001962	57			9408	LOD D,A	3715.
001963	78			9410	TESTBIG LOD A,B IS Y GT X?	3716.
001964	92			9412	SUB D	3717.
001965	DA7019			9414	JMP C, YBIG YES...	3718.
001968	C27C19			9416	JMP NZ, XBIG NO...	3719.
00196B	79			9418	LOD A,C TEST FURTHER:	3720.
00196C	93			9420	SUB E	3721.
00196D	D27C19			9422	JMP NC, XBIG NO...	3722.
001970	7C			9424	YBIG LOD A,H EXCHANGE CTRL BITS FOR 'DX','DY'	3723.
001971	0F0F0F0F			9426	ROT R,4	3724.
001975	67			9428	LOD H,A	3725.
001976	78			9430	LOD A,B EXCHANGE HIGH-ORDER DELTAS	3726.
001977	42			9432	LOD B,D	3727.

001978 57

9434

LOD D.A

3728.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
001979	79			9436	LOD A,C	EXCHANGE LOW-ORDER DELTAS 3729.
00197A	4B			9438	LOD C,E	3730.
00197B	5F			9440	LOD E,A	3731.
		0197C		9442	DS 0X	3732.
00197C				9444		
				9445	*	3733.
				9446	*	3734.
				9447	*	3735.
				9448	*	3736.

DIVIDE THE INTERVAL INTO HALVES OR QUARTERS SO THAT BOTH
 DELTAS ARE LT 256.
 (NOTE: THIS IMPLIES THAT FOR EXACT RESULTS, DELTAS OVER 511

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				9449 *	SHOULD BE DIVISIBLE BY 4, AND THOSE OVER 255 SHOULD BE	3737.
				9450 *	DIVISIBLE BY 2. IF THIS STRICTURE IS IGNORED, HOWEVER,	3738.
				9451 *	THIS MAXIMUM TOTAL ERROR PER VECTOR IS ONLY 3 UNITS OVER	3739.
				9452 *	THE FULL LENGTH.	3740.
				9453 *		3741.
00197C	2E01			9454	LODI L,1	TENTATIVELY SET FOR 1 SEGMENT
00197E	78			9456	REDUCE LOD A,B	IS DX GT 255?
00197F	B7			9458	IOR A	(ALSO CLR CARRY FOR LATER)
001980	CA9619			9460	JMP Z,NOTOOBIG	NO - FNE
				9462 *	* PRECEEDING CODE INSURED DX GE DY, SO DY GT 255 NEEDN'T BE CHECKED.	3746.
001983	78			9463	LOD A,B	SHIFT DX (BC) RIGHT 1 BIT
001984	1F			9465	ROT RC	(CARRY MUST BE CLEAR)
001985	47			9467	LOD B,A	
001986	79			9469	LOD A,C	
001987	1F			9471	ROT RC	
001988	4F			9473	LOD C,A	
001989	AF			9475	XOR A	SHIFT DY (DE) RIGHT 1 BIT
00198A	7A			9477	LOD A,D	
00198B	1F			9479	ROT RC	
00198C	57			9481	LOD D,A	
00198D	7B			9483	LOD A,E	
00198E	1F			9485	ROT RC	
00198F	5F			9487	LOD E,A	
001990	7D			9489	LOD A,L	DOUBLE THE SEGMENT(REPEAT) COUNT
001991	07			9491	ROT L	
001992	6F			9493	LOD L,A	
001993	C37E19			9495	JMP REDUCE	TRY AGAIN (MAX OF 2 TIMES)
001996	45			9497	NOTOOBIG LOD B,L	SAVE REPEAT COUNT IN B
001997	7C			9499	LOD A,H	GET CTRL BITS
001998	0F0F0F0F			9501	ROT R,4	SAVE X-Y EXCHANGED COPY
00199C	57			9503	LOD D,A	
00199D	7C			9505	LOD A,H	GET 'X' CTRL BITS
00199E	E60F			9507	ANDI X'0F'	*
0019A0	327A21			9509	ST A,DIREC2	*
0019A3	B2			9511	IOR D	GET X+Y CTRL BITS
0019A4	E60F			9513	ANDI X'0F'	*
0019A6	327921			9515	ST A,DIREC1	
0019A9	216D21			9517	LODI HL,#QUADS	
0019AC	70			9519	LOD M,B	
0019AD	2A7E21			9521	LD HL,XMASK	
		019B0		9523	LOOP0 DS 0X	
0019B0				9525		
0019B0	AF			9526	XOR A	SET HL = -X/2
0019B1	91			9528	SUB C	
0019B2	C2B919			9530	JMP NZ,DNPLT	IF ZERO, DX=DY=0; ONLY DRAW A POINT
0019B5	97			9532	SUB A	
0019B6	C30918			9534	JMP XYPTINC	
0019B9	1F			9536	DNPLT ROT RC	
0019BA	57			9538	LOC D,A	
0019BB	61			9540	LOD H,C	H = DX (LOOP COUNT)
				9542 *		3786.
				9543 *	ALL THE DISTASTEFUL INITIALIZATION IS OVER, NOW	3787.
				9544 *	DO THE ZIPPY LOOP TO DRAW THE LINE	3788.
				9545 *		3789.
		019BC		9546	LOOP1 DS 0X	3790.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
0019BC				9548		
0019BC	7A			9549	LOD A,D	BD=BD+DY (HERE C=DX, E=DY) 3791.
0019BD	83			9551	ADD E	3792.
0019BE	57			9553	LOD D,A	3793.
0019BF	D2E119			9555	JMP NC,STILLNEG	3794.
0019C2	91			9557	SUB C	HL=HL-DX 3795.
0019C3	57			9559	LOD D,A	3796.
				9561	* INCREMENT(DECREMENT) X(Y) AND Y(X) BOTH.	3797.
0019C4	3A7921			9562	LD A,DIREC1	3798.
0019C7	CD0918			9564	OUTSCOPE CALL XYPTINC	3799.
0019CA	25			9566	DEC H	LOOP FOR DX TIMES 3800.
0019CB	C2BC19			9568	JMP NZ,LOOP1	3801.
0019CE	3A6D21			9570	LD A,#QUADS	3802.
0019D1	D601			9572	SUBI 1	3803.
0019D3	C2DB19			9574	IF Z,'LOD A,L; ST A,XMASK; RET'	3804.
0019D6	7D			9577		
0019D7	327E21			9578		
0019DA	C9			9579		
		019DB		9580		
		019DB		9581		
0019DB	326D21			9583	ST A,#QUADS	3805.
0019DE	C3B019			9585	JMP LOOP0	NO - DO NEXT 3806.
				9587	* INCREMENT(DECREMENT) X(Y) ONLY	3807.
		019E1		9588	STILLNEG DS 0X	3808.
				9590		
0019E1				9591	LD A,DIREC2	3809.
0019E1	3A7A21			9593	JMP OUTSCOPE	(COULD SAVE JMP BY DUPL. INSTRS.) 3810.
0019E4	C3C719			9595	*	3811.

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
				9597 *		3813.
				9598 *	'HELP' TEXT FOR THE VGT	3814.
				9599 *		3815.
0019E7			01C00	9600	ORG X'1C00'	3816.
001C00	0D0A			9602	CHAR @CR,@LF	3817.
001C02	2A2A2A205374616E			9604	CHAR '*** STANFORD - SLAC VIDEO GRAPHICS TERMINAL (V18) ***'	3818.
001C0A	666F7264202D2053			9606		
001C12	4C4143202056696A			9607		
001C1A	656F204772617068			9608		
001C22	696373205465726D			9609		
001C2A	696E616C20285631			9610		
001C32	3829202A2A2A			9611		
001C38	0D0A0D0A			9612	CHAR @CR,@LF,@CR,@LF	3819.
001C3C	436F6D6D616E6473			9614	CHAR 'COMMANDS ARE <CMD> PRESSED WITH:',@DC4	3820.
001C44	20617265203C434D			9616		
001C4C	443E207072657373			9617		
001C54	656420776974683A			9618		
001C5C	14			9619		
001C5D	28205E203D203C43			9620	CHAR '(= <CTRL>)',@CR,@LF,@CR,@LF	3821.
001C65	54524C3E2029			9622		
001C6B	0D0A0D0A			9623		
001C6F	5343524F4C4C494E			9624	CHAR 'SCROLLING:',@DC4,'GRAPH MODE:',@CR,@LF	3822.
001C77	473A			9626		
001C79	14			9627		
001C7A	4752415048204D4F			9628		
001C82	44453A			9629		
001C85	0D0A			9630		
001C87	3A202D2070616765			9631	CHAR ': - PAGE DOWN',@DC4,'G - ENTER',@CR,@LF	3823.
001C8F	20646F776E			9633		
001C94	14			9634		
001C95	67202D20656E7465			9635		
001C9D	72			9636		
001C9E	0D0A			9637		
001CA0	3B202D2070616765			9638	CHAR '; - PAGE UP',@DC4,'N - LEAVE',@CR,@LF	3824.
001CA8	207570			9640		
001CAB	14			9641		
001CAC	6E202D206C656176			9642		
001CB4	65			9643		
001CB5	0D0A			9644		
001CB7	5C202D206C696E65			9645	CHAR ' - LINE DOWN QUICK',@DC4,'L - ENTER + CLR'	3825.
001CBF	20646F776E207175			9647		
001CC7	69636B			9648		
001CCA	14			9649		
001CCB	5E6C202D20456E74			9650		
001CD3	6572202B20636C72			9651		
001CDB	0D0A			9652	CHAR @CR,@LF,'@ - UP QUICK',@DC4,'K - LEAVE + CLR',@CR,@LF	3826.
001CDD	40202D2075702071			9654		
001CE5	7569636B			9655		
001CE9	14			9656		
001CEA	6B202D204C656176			9657		
001CF2	65202B20636C72			9658		
001CF9	0D0A			9659		
001CFB	6F202D2075702073			9660	CHAR 'O - UP SLOW',@DC4,'Y - ENABLE',@CR,@LF	3827.
001D03	6C6F77			9662		
001D06	14			9663		

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
001D07	59202D20456E6162			9664		
001D0F	6C65			9665		
001D11	0D0A			9666		
001D13	70202D20646F776E			9667	CHAR 'P - DOWN SLOW',@DC4,'N - DISABLE',@CR,@LF	3828.
001D1B	20736C6F77			9669		
001D20	14			9670		
001D21	4E202D2044697361			9671		
001D29	626C65			9672		
001D2C	0D0A			9673		
001D2E	5D202D20686F6D65			9674	CHAR ' - HOME DISPLAY TO CURSOR',@DC4,'S,M,B - SCALE'	3829.
001D36	20646973706C6179			9676		
001D3E	20746F2063757273			9677		
001D46	6F72			9678		
001D48	14			9679		
001D49	532C4D2C42202D20			9680		
001D51	5363616C65			9681		
001D56	0D0A			9682	CHAR @CR,@LF,' - UNHOME',@DC4,'TABS:',@CR,@LF	3830.
001D58	5B202D20756E686F			9684		
001D60	6D65			9685		
001D62	14			9686		
001D63	544142533A			9687		
001D68	0D0A			9688		
001D6A	6D202D2070757420			9689	CHAR 'M - PUT CURSOR DN SCREEN',@DC4,'1 - SET, 2 - CLR'	3831.
001D72	637572736F72206F			9691		
001D7A	6E2073637265656E			9692		
001D82	14			9693		
001D83	31202D205365742C			9694		
001D8B	2032202D20436C72			9695		
001D93	0D0A			9696	CHAR @CR,@LF,'CURSOR MOTION:',@DC4,'3 - CLR ALL + ENABLE'	3832.
001D95	435552534F52204D			9698		
001D9D	4F54494F4E3A			9699		
001DA3	14			9700		
001DA4	33202D20436C7220			9701		
001DAC	616C6C202B20656E			9702		
001DB4	61626C65			9703		
001DB8	0D0A			9704	CHAR @CR,@LF	3833.
001DBA	3C53503E2C3C4253			9706	CHAR '<SP>,<BS>,<HT>, R,<LF>, K,<CR>',@DC4	3834.
001DC2	3E2C3C48543E2C5E			9708		
001DCA	722C3C4C463E2C5E			9709		
001DD2	6B2C3C43523E			9710		
001DD8	14			9711		
001DD9	34202D2053657420			9712	CHAR '4 - SET 4013 TABS',@CR,@LF,'OTHERS:',@CR,@LF	3835.
001DE1	3430313320746162			9714		
001DE9	73			9715		
001DEA	0D0A			9716		
001DEC	4F5448455253203A			9717		
001DF4	0D0A			9718		
001DF6	63202D20436C7220			9719	CHAR 'C - CLR SCREEN',@DC4,'V - INV. VIDEO',@CR,@LF	3836.
001DFE	73637265656E			9721		
001E04	14			9722		
001E05	56202D20496E762E			9723		
001E0D	20566964656F			9724		
001E13	0D0A			9725		
001E15	51202D2074797065			9726	CHAR 'Q - TYPE AHEAD',@DC4	3837.
001E1D	206168656164			9728		

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
001E23	14			9729		
001E24	43202D20586D6974			9730	CHAR 'C - XMIT NORMAL',@CR,@LF	3838.
001E2C	206E6F726D616C			9732		
001E33	0D0A			9733		
001E35	46202D2046756C6C			9734	CHAR 'F - FULL DUPLEX',@DC4	3839.
001E3D	204475706C6578			9736		
001E44	14			9737		
001E45	48202D2048616C66			9738	CHAR 'H - HALF DUPLEX',@CR,@LF	3840.
001E4D	204475706C6578			9740		
001E54	0D0A			9741		
001E56	4C202D204C6F6361			9742	CHAR 'L - LOCAL',@DC4,'R - REMOTE',@CR,@LF	3841.
001E5E	6C			9744		
001E5F	14			9745		
001E60	52202D2072656D6F			9746		
001E68	7465			9747		
001E6A	0D0A			9748		
001E6C	74202D2074696D65			9749	CHAR 'T - TIME',@DC4	3842.
001E74	14			9751		
001E75	3F202D2068656C70			9752	CHAR '? - HELP',@CR,@LF	3843.
001E7D	0D0A			9754		
001E7F	5578202D20536574			9755	CHAR 'UX - SET BAUD RATE TO X',@DC4	3844.
001E87	2042617564205261			9757		
001E8F	746520746F2078			9758		
001E96	14			9759		
001E97	2178202D20636867			9760	CHAR 'X - CHG <ESC> TO X',@CR,@LF	3845.
001E9F	203C4553433E2074			9762		
001EA7	6F2078			9763		
001EAA	0D0A			9764		
001EAC	72202D2042756620			9765	CHAR 'R - BUF RESET',@DC4	3846.
001EB4	5265736574			9767		
001EB9	14			9768		
001EBA	3C4553433E3C7878			9769	CHAR '<ESC><XXX>=<CMD-XXX>',@CR,@LF	3847.
001EC2	783E3D3C434D442D			9771		
001ECA	7878783E			9772		
001ECE	0D0A			9773		
001ED0	58202D2031362078			9774	CHAR 'X - 16 X CLOCK',@DC4,'W - 1 X CLOCK',@CR,@LF	3848.
001ED8	20636C6F636B			9776		
001EDE	14			9777		
001EDF	57202D2031207820			9778		
001EE7	636C6F636B			9779		
001EEC	0D0A			9780		
001EEE	49202D20496E742E			9781	CHAR 'I - INT. CLOCK',@DC4,'E - EXT. CLOCK',@CR,@LF	3849.
001EF6	20636C6F636B			9783		
001EFC	14			9784		
001EFD	45202D204578742E			9785		
001F05	20636C6F636B			9786		
001F0B	0D0A			9787		
001F0D	5E77202D20506174			9788	CHAR 'W - PATCH MEMORY',@DC4	3850.
001F15	6368206D656D6F72			9790		
001F1D	79			9791		
001F1E	14			9792		
001F1F	68202D2050726F63			9793	CHAR 'H - PROCESS HEX LOCATION',@CR,@LF	3851.
001F27	6573732068657820			9795		
001F2F	6C6F636174696F6E			9796		
001F37	0D0A			9797		

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM H V 05 16.41 08/31/77
001F39	5E6E202D20557365			9798	CHAR ' N - USE ALTERNATE CHAR SET',@DC4	3852.
001F41	20616C7465726E61			9800		
001F49	7465206368617220			9801		
001F51	736574			9802		
001F54	14			9803		
001F55	5E6F202D20557365			9804	CHAR ' O - USE NORMAL CHAR SET',@CR,@LF	3853.
001F5D	206E6F726D616C20			9806		
001F65	6368617220736574			9807		
001F6D	0D0A			9808		
001F6F	5E73202D20436861			9809	CHAR ' S - CHANGE CHAR SET',@DC4	3854.
001F77	6E67652063686172			9811		
001F7F	20736574			9812		
001F83	14			9813		
001F84	50202D2043616C6C			9814	CHAR ' P - CALL VERSATEC PRINTER',@CR,@LF	3855.
001F8C	2056657273617465			9816		
001F94	63207072696E7465			9817		
001F9C	72			9818		
001F9D	0D0A			9819		
001F9F	65202D20456E6162			9820	CHAR ' E - ENABLE AUTO UART SPEED',@DC4	3856.
001FA7	6C65204175746F20			9822		
001FAF	5561727420537065			9823		
001FB7	6564			9824		
001FB9	14			9825		
001FBA	64202D2044697361			9826	CHAR ' D - DISABLE',@CR,@LF	3857.
001FC2	626C65			9828		
001FC5	0D0A			9829		
001FC7	FF			9830	DC X'FF'	3858.
				9831	END	3859.002

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#QUADS	00001	0000216D	2134	9518 9518 9518 9571 9571 9571 9584 9584 9584
@@I10	00001	00000181	2774	2737 2737 2737
@@I100	00001	000012AA	7372	7364 7364 7364
@@I102	00001	000012AE	7379	7377 7377 7377
@@I103	00001	000012CF	7414	7401 7401 7401
@@I104	00001	000012C5	7402	7391 7391 7391
@@I107	00001	000012DD	7435	7427 7427 7427
@@I109	00001	000012E1	7442	7440 7440 7440
@@I110	00001	00001302	7477	7464 7464 7464
@@I111	00001	000012F8	7465	7454 7454 7454
@@I114	00001	0000132C	7526	7511 7511 7511
@@I116	00001	00001344	7550	7542 7542 7542
@@I117	00001	00001395	7640	7637 7637 7637
@@I118	00001	00001394	7638	7633 7633 7633
@@I12	00001	0000017E	2769	2744 2744 2744
@@I121	00001	000014F0	8032	8018 8018 8018
@@I122	00001	0000154A	8140	8137 8137 8137
@@I123	00001	00001548	8138	8131 8131 8131
@@I126	00001	000016D0	8553	8543 8543 8543
@@I128	00001	000016DE	8568	8566 8566 8566
@@I13	00001	0000017E	2766	2759 2759 2759
@@I131	00001	00001735	8669	8660 8660 8660
@@I132	00001	0000172E	8661	8656 8656 8656
@@I135	00001	00001758	8715	8713 8713 8713
@@I137	00001	000019DB	9580	9576 9576 9576
@@I14	00001	00000179	2760	2751 2751 2751
@@I17	00001	000001D9	2867	2839 2839 2839 2849 2849 2849
@@I18	00001	000001CA	2850	2825 2825 2825
@@I20	00001	0000037B	3371	3362 3362 3362
@@I21	00001	00000377	3363	3358 3358 3358
@@I23	00001	000007C8	4638	4600 4600 4600
@@I24	00001	000007AB	4601	4571 4571 4571
@@I31	00001	000007E7	4677	4675 4675 4675
@@I33	00001	00000918	5035	5023 5023 5023
@@I37	00001	00000A09	5263	5255 5255 5255
@@I39	00001	00000A13	5276	5274 5274 5274
@@I40	00001	00000C4E	5783	5758 5758 5758
@@I41	00001	00000C33	5759	5718 5718 5718
@@I44	00001	00000C60	5805	5803 5803 5803
@@I46	00001	00000CAB	5879	5871 5871 5871
@@I54	00001	00000D4A	6087	5938 5938 5938
@@I56	00001	00000D4A	6083	5952 5952 5952
@@I60	00001	00000CF6	5978	5974 5974 5974
@@I62	00001	00000D44	6075	6001 6001 6001
@@I66	00001	00000D43	6069	6061 6061 6061
@@I69	00001	00000DBD	6219	6211 6211 6211
@@I70	00001	00000DB7	6212	6196 6196 6196
@@I72	00001	00000E0C	6294	6248 6248 6248
@@I73	00001	00000DE3	6249	6244 6244 6244
@@I86	00001	00000E6C	6419	6413 6413 6413
@@I88	00001	0000112E	7011	7005 7005 7005
@@I9	00001	000001E2	2878	2773 2773 2773 2788 2788 2788
@@I90	00001	000011E1	7168	7164 7164 7164
@@I92	00001	0000122F	7237	7235 7235 7235
@@I94	00001	00001273	7301	7294 7294 7294

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
OSYN	00001	00000016	1577	5512 5512
OTE1	00001	00000158	2731	2905 2905 2905 2915 2915 2915 4155 4155 4155
OTOCR	00001	0001E8	2899	4136 4136 4136
OTODC1	00001	000001F2	2907	2368 2368 2368 4145 4145 4145
OVT	00001	0000000B	1566	6793 6793
00362	00001	00000050	1874	1875
ABEND	00001	000BAD	5638	5608 5608 5608 5632 5632 5632
ABENDTAB	00001	001279	7309	7276 7276 7276 7291 7291 7291 7508 7508 7508 7539 7539 7539
ADDNUM	00001	00002163	2102	5846 5846 5846 5866 5866 5866 6149 6149 6149
ADDWRP	00001	0008BD	4903	3775 3775 3775 4024 4024 4024 4588 4588 4588 4607 4607 4607 4972 4972 4972
				5893 5893 5893 5956 5956 5956 5982 5982 5982 6180 6180 6180 7068 7068 7068
				7188 7188 7188 7224 7224 7224 7346 7346 7346 7515 7515 7515 7766 7766 7766
ADDWRP81	00001	0008BA	4901	3744 3744 3744 4958 4958 4958 6105 6105 6105 7166 7166 7166 7200 7200 7200
				7608 7608 7608 7681 7681 7681
ALLOWGMD	00001	00002137	2030	2386 2386 2386 3646 3646 3646 3665 3665 3665 8212 8212 8212 8263 8263 8263
				8273 8273 8273
ALPHA	00001	000015F2	8369	8246 8246 8246 8461 8613 8613 8613 8801 8801 8801
ALPHACHK	00001	00162C	8424	9214 9214 9214
ALPHA2	00001	00001608	8391	8442 8442 8442 8446 8446 8446 8469 8471 8473 8493 8493 8493 8597 8597 8597
				8611 8611 8611 8729 8729 8729 8775 8775 8775 8779 8779 8779 8809 8809 8809
ALTGRP	00001	0018FD	9256	9210 9210 9210
BACKUP	00001	00107E	6825	6787 6787 6787
BAD	00001	000E1A	6312	6302 6302 6302 6306 6306 6306
BADHEX	00001	00072C	4392	4364 4364 4364 4372 4372 4372 4380 4380 4380 4384 4384 4384
BELL	00001	00000086	1682	3014 3014 3014 3232 3232 3232 5338 5338 5560 5560 5646 5646 5660 5660 5676
				5676 6567 6567 6735 6735 7309 7309 8204 8204 8777 8777
BLANKS	00001	000E4B	6374	6044 6044 6044 6198 6198 6198 6359 6359 6359
BLOOEY	00001	00101C	6735	6709 6709 6709 6723 6723 6723
BRGEXT	00001	000015BE	8295	3445
BRGINT	00001	000015B3	8280	3453
BRKSTATE	00001	00002124	1952	2960 2960 2960 2981 2981 2981
BTAB	00001	0014F7	8048	7359 7359 7359 7496 7496 7496 7533 7533 7533 8530 8530 8530
BTABLOOP	00001	00001520	8096	8092 8092 8092 8106 8106 8106
BTABSEND	00001	00000010	2064	7389 7389
BTABSHIF	00001	001517	8086	8090 8090 8090
BTABWRAP	00001	001530	8116	8062 8062 8062
BTOELoad	00001	000017B3	8836	9176 9176 9176
BTOESAVE	00001	000017BB	8858	9122 9122 9122 9138 9138 9138 9180 9180 9180
BUFCHK	00001	0009F7	5246	2336 5228 5228 5228 6406 6406 6406
BUFCNT	00001	00002106	1887	2929 2929 2929 3329 3329 3329 3333 3333 3333 5284 5284 5284 5288 5288 5288
BUFEND	00001	00004400	2250	3303 5271
BUFFER	00001	00004100	2247	2921 2921 2921 3307 3307 3307 5275 5275 5275
BUFINIT	00001	000A7B	5395	5183
BUFRET	00001	000A1F	5292	5261 5261 5261
BYTEIN	00001	000B66	5590	5468 5468 5468 5478 5478 5478 5488 5488 5488 5498 5498 5498 5514 5514 5514
				5546 5546 5546
CHARHITE	00001	0000000D	1815	2510 2510 2536 2536 2563 2563 2588 2588 5910 5910 6003 6003 6016 6016 6063
				6063 6168 6168
CHARNUM	00001	00002162	2099	5809 5809 5809 5919 5919 5919 6444 6444 6444 6466 6466 6466
CHARPOS	00001	00002177	2145	8382 8382 8382 8398 8398 8398 8515 8515 8515 8536 8536 8536 8591 8591 8591
				8595 8595 8595 8599 8599 8599 8605 8605 8605 8638 8638 8638 8702 8702 8702
				8738 8738 8738 8754 8754 8754 8765 8765 8765 8769 8769 8769 8789 8789 8789
				8807 8807 8807 8925 8925 8925 8965 8965 8965 8969 8969 8969 9000
CHARPROC	00001	000002BF	3137	2328 4889 4889 4889 5359 5359 5359
CHARSET	00001	000A8D	5411	5189

SYMBOL	LEN	VALUE	DEFN	REFERENCES	ASM H V 05 16.41 08/31/77															
CHGENRAM	00001	00003000	1620	5431	5431	5431	5447	5447	5447											
CHGENROM	00001	00002800	1618	2171	5055	5055	5055	5443	5443	5443										
CHGESC	00001	00000A21	5302	5160	5160	5160														
CHGUART	00001	00000A28	5314	5164	5164	5164														
CHKATTN	00001	00013F	2699	2683	2683	2683														
CHKKBRD	00001	000117	2661	2635	2635	2635	2649	2649	2649	2657	2657	2657								
CHLINE1	00001	00000087	1684	2438	2438															
CHLITAB	00007	000546	3877	3810	3810	3814	3814	3824	3824	3851	3851	3855	3855	4806	4806	4806	5067	5067		
				5067																
CIRCLEFN	00001	0008E5	4963	3970	3970	3970	4568	4568	4568	6099	6099	6099	7128	7128	7128	7194	7194	7194		
				7675	7675	7675	7691	7691	7691											
CKSMERR	00001	00000010	1964	5558	5558															
CLEAR	00001	00000770	4539	2331	5226	5226	5226													
CLEARIT	00001	000007CC	4648	4550	4550	4550														
CLEARIT2	00001	0007F5	4693	4652	4652	4652														
CLEARLP	00001	0000083F	4770	4776	4776	4776														
CLEARLP2	00001	0000084F	4793	4801	4801	4801														
CLRATAB	00001	00001476	7884	3435																
CLRBUFS	00001	0000066A	4212	2362	2362	2362	3465	4881	4881	4881	4881									
CLRFLG	00001	00002110	1902	2366	2366	2366	3576	3576	3576	3586	3586	3586	3606	3606	3606	3654	3654	3654		
				4544	4544	4544	4824	4824	4824	5222	5222	5222	8220	8220	8220					
CLRGRPH	00001	0000045F	3582	3534	3534	3534	3572	3572	3572											
CLRPAG	00001	000007DE	4666	4685	4685	4685														
CLRSCREEN	00001	0000044F	3561	3401																
CLRSTAB	00001	0000146E	7870	3433																
CLRTABLP	00001	0000147C	7892	7900	7900	7900														
CMDDOIT	00001	0002C6	3153	3084	3084	3084														
CMDKEY	00001	00000080	1737	3147	3147															
CMDTAB	00001	00000380	3386	3155	3155	3155														
CMDTAB2	00001	000010F0	6959	6951	6951	6951														
CMDTAB3	00001	00001139	7027	7019	7019	7019														
CMDTAB4	00001	00001655	8458	8452	8452	8452														
CMPLOOP	00001	000007D	2472	2478	2478	2478														
CNTLOMD	00001	00002136	2027	3287	3287	3287	3693	3693	3693	5029	5029	5029	7787	7787	7787	7908	7908	7908		
COLUMN1	00001	0000215E	2087	5746	5746	5746	5771	5771	5771	5887	5887	5887	6201	6201	6201	6432	6432	6432		
CONTCHAR	00001	0000215F	2090	5712	5712	5712	5781	5781	5781	5946	5946	5946								
COPY	00001	000687	4251	3417	3419	3421	3425													
CPURAM	00001	00002000	1614	1826	2221															
CPURAMSZ	00001	00000400	1616	2221																
CRCNT	00001	00002144	2069	2841	2841	2841	2899	2899	2899	2952	2952	2952	3259	3259	3259					
CRLFOVR	00001	00002135	2024	6992	6992	6992	6998	6998	6998	7104	7104	7104	8026	8026	8026					
CURCH1	00001	00010C	2651	2645	2645	2645														
CURMOTSP	00001	001166	7066	6982	7298	7298	7298	7530	7530	7530	7530									
CURSCHAR	00001	00002117	1923	2180	2651	2651	2651	4016	4016	4016	4030	4030	4030	4816	4816	4816	6935	6935		
				6935	7253	7253	7253	7759	7759	7759	8378	8378	8378							
CURSCTR	00001	00002116	1920	2631	2631	2631	7265	7265	7265	8773	8773	8773								
CURSLOC	00001	00002112	1908	2639	2639	2639	3616	3616	3616	3944	3944	3944	4014	4014	4014	4026	4026	4026		
				4689	4689	4689	4885	4885	4885	5722	5722	5722	6093	6093	6093	6939	6939	6939		
				7118	7118	7118	7204	7204	7204	7274	7274	7274	7289	7289	7289	7332	7332	7332		
				7354	7354	7354	7506	7506	7506	7537	7537	7537	7657	7657	7657	7669	7669	7669		
				7757	7757	7757	7768	7768	7768	8394	8394	8394	8408	8408	8408	9096	9096	9096		
				9102	9102	9102														
CURSPPEED	00001	00002143	2066	3341	3341	3341	3360	3360	3360	5047	5047	5047	5330	5330	5330					
CURSTIME	00001	00000008	2204	2637	2637	2637	7263	7263												
CURSX	00001	00002114	1911	2157	3950	3950	3950	4034	4034	4034	4820	4820	4820	7086	7086	7086	7090	7090		

SYMBOL	LEN	VALUE	DEFN	REFERENCES	ASM H V 05 16.41 08/31/77														
SCRDWNS	00001	00050C	3794	3497															
SCRDWNSD	00001	000516	3804	2594	2594	2594													
SCRNBLNK	00001	00000040	1690	4712	4712	5854	5854												
SCRNSIZE	00001	000008B5	1807	3773	3773	3773	3946	3946	3946	3968	3968	3968	4022	4022	4022	4556	4556	4556	
				4660	4660	4660	4697	4697	4697	5075	5075	5075	5724	5724	5724	7186	7186	7186	
				8241	8241	8241													
SCRPTIME	00001	00000030	2214	4056	4056	4085	4085												
SCRQTIME	00001	00000004	2210	3707	3707	3733	3733												
SCRSTIME	00001	00000006	2212	3800	3800	3837	3837												
SCRUP	00001	0004D8	3738	2526	2526	2526	3857	3857	3857	4060	4060	4060	7196	7196	7196				
SCRUPDO	00001	0004DC	3742	7152	7152	7152													
SCRUPQ	00001	0004CE	3727	3393															
SCRUPS	00001	00052B	3831	3495															
SCRUPSDO	00001	000535	3841	2542	2542	2542													
SCRWHEEL	00001	00000083	1568	2470	2470	2474	2474	5049	5049										
SEARCH	00001	00072E	4407	3157	3157	3157	5174	5174	5174	6953	6953	6953	7021	7021	7021	8454	8454	8454	
SEARCHLP	00001	00072F	4409	4423	4423	4423													
SEMILCL	00001	0006F0	4321	4230	4230	4230	4298	4298	4298										
SENDBT	00001	00129E	7359	7270	7270	7270	8499	8499	8499										
SENDRYTE	00001	000741	4438	5367	5367	5367													
SENDCHAR	00001	000009D5	5196	5170	5170	5170	5191												
SENDHT	00001	0012D1	7422	7285	7285	7285	8495	8495	8495										
SENDISA	00001	000074	2459	2447	2447	2447	2455	2455	2455										
SENDLOOP	00001	00000D78	6137	5923	5923	5923	6032	6032	6032										
SENDOK	00001	0001B4	2827	2816	2816	2816													
SETCCBS	00001	00000969	5097	3499															
SETCHL1	00001	00005A	2438	2434	2434	2434													
SETDC1	00001	000273	3044	3038	3038	3038													
SETFULL	00001	0004AA	3687	3447															
SETFULL2	00001	0004AF	3691	3685	3685	3685													
SETHALF	00001	0004A2	3681	3451															
SETLCL	00001	00000613	4101	3489															
SETNECHO	00001	000015DB	8342	7044															
SETRMT	00001	0000061C	4114	3501															
SETSIMCR	00001	00031E	3259	3250	3250	3250													
SETTAB	00001	00001468	7858	3431															
SETURTX1	00001	000015C9	8310	3473															
SETURTX6	00001	000015D2	8326	3475															
SHIFT	00001	000017AB	8814	8902	8902	8902	8955	8955	8955	8957	8957	8957	8959	8959	8959	9308	9308	9308	
				9329	9329	9329	9331	9331	9331	9335	9335	9335							
SHIFTIN	00001	000AAC	5435	5187															
SHIFTIN2	00001	000AB0	5439	5423	5423	5423													
SHIFTMD	00001	00002146	2077	2388	2388	2388	5419	5419	5419	5429	5429	5429	5437	5437	5437	7058	7058	7058	
SHIFTOUT	00001	000AA1	5427	5185															
SHOWIT	00001	000F78	6612	6561	6561	6561	6656	6656	6656	6660	6660	6660	6821	6821	6821				
SHOWTIME	00001	000553	3884	3403															
SHDWTIM1	00001	000560	3894	3928	3928	3928													
SIMCR	00001	0001C0	2841	2831	2831	2831													
SIMDISA	00001	0000210E	1899	4656	4656	4656	4703	4703	4703	5079	5079	5079	7763	7763	7763				
SIM4023	00001	000013E6	7710	7032															
SDURCE	00001	00002132	2017	5114	5114	5114	5137	5137	5137	5387	5387	5387	5397	5397	5397				
SPACE	00001	001021	6743	6622	6622	6622													
SPACES	00001	000E35	6347	5883	5883	5883	6117	6117	6117	6125	6125	6125							
SPDERR	00001	000A42	5338	5320	5320	5320													
SPEEDO	00001	00000080	2058	3337	3337	4180	4180	4197	4197	5039	5039								

SYMBOL	LEN	VALUE	DEFN	REFERENCES	ASM H V 05 16.41 08/31/77													
UNDOSEMI	00001	0008DE	5680	5334 5334 5334	5580	5580	5580	5813	5813	5813	6569	6569	6569	6686	6686	6686		
UNDUN	00001	00000F3B	6571	6691 6691 6691														
UNHOME	00001	0005C1	4002	3395														
UPCHK	00001	0004F6	3769	3738 3738 3738	3841	3841	3841											
UPLINE	00001	0010C5	6903	6795 6795 6795														
URTBREAK	00001	0000000F	1716	2707 2707														
URTCLOCK	00001	0000000C	1694	8284 8284 8299	8299													
URTCTL	00001	00000041	1708	2356 2356 2360	2360	2709	2709	2991	2991	3018	3018	8314	8314	8318	8318	8330		
				8330 8334 8334														
URTINTRS	00001	00000057	1710	8312 8312 8328	8328													
URTMODE	00001	0000007A	1712	8332 8332														
URTRCV	00001	00000001	1660	3026 3026														
URTRERR	00001	00000038	1656	3010 3010														
URTRSBRK	00001	00000007	1718	2989 2989														
URTRSERR	00001	00000017	1720	2358 2358	3016	3016												
URTRXRDY	00001	00000002	1654	3004 3004														
URTSPEED	00001	0000008E	1724	3374 3374	5045	5045	5328	5328										
URTSTAT	00001	00000041	1650	2715 2715	3000	3000												
URTTXRDY	00001	00000001	1652	2717 2717														
URTXMT	00001	00000001	1722	2764 2764	2827	2827												
URTX1MD	00001	00000079	1714	2354 2354	8316	8316												
VECTOR	00001	00001941	9350	2327 9172	9172	9172												
VERSSIZE	00001	00000046	5703	5788 5788	5801	5801	5804	5804	5954	5954	5954	6038	6038	6079	6079	6079	6215	
				6215 6215 6357	6357													
VGT18	00001	00000000	1551	1826 1874 1874	2238	2350	2362	2362	2362	2366	2366	2366	2366	2368	2368	2368	2370	
				2370 2370 2378	2378	2378	2382	2382	2382	2384	2384	2384	2384	2386	2386	2386	2388	
				2388 2388 2390	2390	2390	2392	2392	2392	2397	2401	2401	2401	2421	2421	2421	2421	
				2430 2430 2434	2434	2434	2441	2441	2441	2443	2443	2443	2443	2447	2447	2447	2447	
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SYMBOL	LEN	VALUE	DEFN	REFERENCES	ASM H V 05 16.41 08/31/77										
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3315	3315	3315	3319	3319	3319	3325	3325	3325	3329	3329	3329	3333	3333	3333	
3335	3335	3335	3341	3341	3341	3360	3360	3360	3363	3371	3378	3378	3378	3387	
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4863	4863	4877	4877	4877	4881	4881	4881	4885	4885	4885	4889	4889	4889	4907	
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4972	4972	5010	5010	5010	5016	5016	5016	5018	5018	5018	5027	5027	5027	5029	
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SYMBOL	LEN	VALUE	DEFN	REFERENCES	ASM H V 05 16.41 08/31/77										
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5110	5110	5110	5112	5112	5112	5112	5114	5114	5114	5116	5116	5116	5137	5137	
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5160	5160	5160	5164	5164	5164	5164	5170	5170	5170	5172	5172	5172	5174	5174	
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5206	5206	5206	5208	5208	5208	5208	5218	5222	5222	5222	5222	5226	5226	5228	
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5264	5275	5275	5275	5276	5277	5280	5280	5280	5284	5284	5284	5288	5288	5288	
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5383	5383	5383	5385	5385	5385	5385	5387	5387	5387	5391	5391	5391	5393	5393	
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5680	5680	5680	5686	5686	5686	5686	5690	5690	5690	5712	5712	5712	5714	5714	
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6229	6229	6229	6235	6235	6235	6236	6236	6237	6237	6237	6237	6241	6241	6249	
6252	6258	6258	6258	6259	6259	6260	6260	6260	6260	6266	6266	6266	6267	6268	
6268	6268	6272	6272	6272	6291	6294	6302	6302	6302	6306	6306	6306	6318	6332	
6332	6332	6333	6333	6334	6334	6334	6341	6347	6347	6347	6347	6352	6355	6355	
6359	6359	6359	6364	6369	6369	6369	6369	6379	6383	6390	6396	6406	6406	6408	
6408	6408	6419	6420	6425	6425	6425	6425	6432	6432	6432	6444	6444	6444	6448	

SYMBOL	LEN	VALUE	DEFN	REFERENCES	ASM H V 05 16.41 08/31/77											
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6521	6525	6525	6525	6531	6531	6531	6532	6532	6533	6533	6533	6537	6537	6537		
6538	6538	6539	6539	6539	6541	6541	6541	6545	6545	6545	6549	6549	6549	6550		
6550	6551	6551	6551	6557	6557	6557	6561	6561	6561	6565	6565	6565	6569	6569		
6569	6572	6572	6573	6573	6573	6575	6575	6576	6576	6576	6580	6580	6580	6581		
6581	6582	6582	6582	6586	6586	6586	6587	6587	6588	6588	6588	6594	6594	6594		
6595	6595	6596	6596	6596	6600	6600	6600	6602	6602	6602	6606	6606	6606	6612		
6612	6612	6616	6616	6616	6620	6620	6620	6622	6622	6622	6630	6630	6630	6631		
6631	6632	6632	6632	6636	6636	6636	6642	6642	6642	6644	6644	6644	6650	6650		
6650	6656	6656	6656	6660	6660	6660	6662	6662	6662	6664	6664	6664	6668	6668		
6668	6672	6672	6672	6673	6673	6674	6674	6674	6680	6680	6680	6681	6681	6682		
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6699	6699	6703	6703	6703	6704	6704	6705	6705	6705	6707	6707	6707	6709	6709		
6709	6717	6717	6717	6718	6718	6719	6719	6719	6721	6721	6721	6723	6723	6723		
6733	6733	6733	6747	6747	6747	6755	6755	6755	6759	6759	6759	6760	6760	6761		
6761	6761	6767	6767	6767	6771	6771	6771	6772	6772	6773	6773	6773	6781	6781		
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6949	6949	6949	6951	6951	6951	6953	6953	6953	6960	6962	6964	6966	6968	6970		
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7134	7134	7134	7136	7136	7136	7138	7138	7138	7144	7144	7144	7152	7152	7152		
7154	7154	7154	7165	7165	7165	7166	7166	7166	7167	7167	7167	7168	7169	7176		
7176	7176	7178	7178	7178	7182	7182	7182	7184	7184	7184	7188	7188	7188	7190		
7190	7190	7194	7194	7194	7196	7196	7196	7200	7200	7200	7204	7204	7204	7206		
7206	7206	7210	7210	7210	7214	7214	7214	7224	7224	7224	7236	7236	7236	7237		
7238	7243	7243	7243	7247	7247	7247	7253	7253	7253	7259	7259	7259	7265	7265		
7265	7267	7267	7267	7270	7270	7270	7274	7274	7274	7276	7276	7276	7278	7278		
7278	7280	7280	7280	7283	7283	7283	7285	7285	7285	7289	7289	7289	7291	7291		
7291	7298	7298	7298	7301	7302	7305	7305	7305	7307	7307	7307	7311	7311	7311		
7320	7324	7324	7324	7329	7332	7332	7332	7342	7346	7346	7346	7351	7354	7354		
7354	7359	7359	7359	7368	7368	7368	7372	7373	7379	7380	7387	7387	7387	7395		
7395	7395	7399	7399	7399	7402	7406	7406	7406	7412	7412	7412	7414	7422	7422		
7422	7431	7431	7431	7435	7436	7442	7443	7450	7450	7450	7458	7458	7458	7462		
7462	7462	7465	7469	7469	7469	7475	7475	7475	7477	7491	7491	7491	7493	7493		
7493	7496	7496	7496	7498	7498	7498	7502	7502	7502	7506	7506	7506	7508	7508		
7508	7515	7515	7515	7517	7517	7517	7521	7521	7521	7524	7524	7524	7526	7527		
7530	7530	7530	7533	7533	7533	7537	7537	7537	7539	7539	7539	7546	7546	7546		
7548	7548	7548	7550	7551	7554	7554	7554	7565	7565	7565	7579	7579	7579	7581		
7581	7581	7583	7583	7583	7590	7590	7590	7596	7596	7596	7602	7602	7602	7608		
7608	7608	7610	7610	7610	7618	7618	7618	7622	7622	7622	7626	7626	7626	7628		
7628	7628	7638	7640	7643	7643	7643	7645	7645	7645	7649	7649	7649	7651	7651		
7651	7655	7655	7655	7657	7657	7657	7661	7661	7661	7665	7665	7665	7669	7669		
7669	7671	7671	7671	7675	7675	7675	7677	7677	7677	7681	7681	7681	7683	7683		
7683	7685	7685	7685	7687	7687	7687	7691	7691	7691	7693	7693	7693	7697	7697		
7697	7702	7702	7702	7704	7704	7704	7714	7714	7714	7715	7715	7716	7716	7716		
7720	7720	7720	7722	7722	7722	7730	7730	7730	7731	7731	7732	7732	7732	7757		

ASM H V 05 16.41 08/31/77

NO STATEMENTS FLAGGED IN THIS ASSEMBLY

OVERRIDING PARAMETERS- NOESD,TERM,LINECOUNT(115)
OPTIONS FOR THIS ASSEMBLYNODECK, OBJECT, LIST, XREF(SHORT), NORENT, NOTEST, BATCH, ALIGN, NOESD, NORLD, TERM, LINECOUNT(15),
FLAG(0), SYSPARM()
NO OVERRIDING DD NAMES4271 CARDS FROM SYSIN 1499 CARDS FROM SYSLIB
10833 LINES OUTPUT 143 CARDS OUTPUT

ASP JOB NO. = 0164

WEDNESDAY

AUGUST 31, 1977 (77.243)

INPUT STATEMENTS (INCLUDING DD *) = 004298

//MRDCG871 JOB MRD\$CG,888,CLASS=E,TIME=(1,30)

0.002

ELAPSED TIME ON MAIN = SYC (91) = 004.98, START TIME = 16.40.55

DDNAME = SYSMMSG

PRINTED ON PRT4

, LINES = 000156

DDNAME = ASM.MCS80.SYSTEM

PRINTED ON PRT4

, LINES = 000007

DDNAME = CLEANUP.OUT

PRINTED ON PRT4

, LINES = 006167

LINES OUTPUT FOR THIS JOB = 006330

CARDS FROM MAIN FOR THIS JOB = NONE