

SDS 940 OLDS DIAGNOSTIC SYSTEM

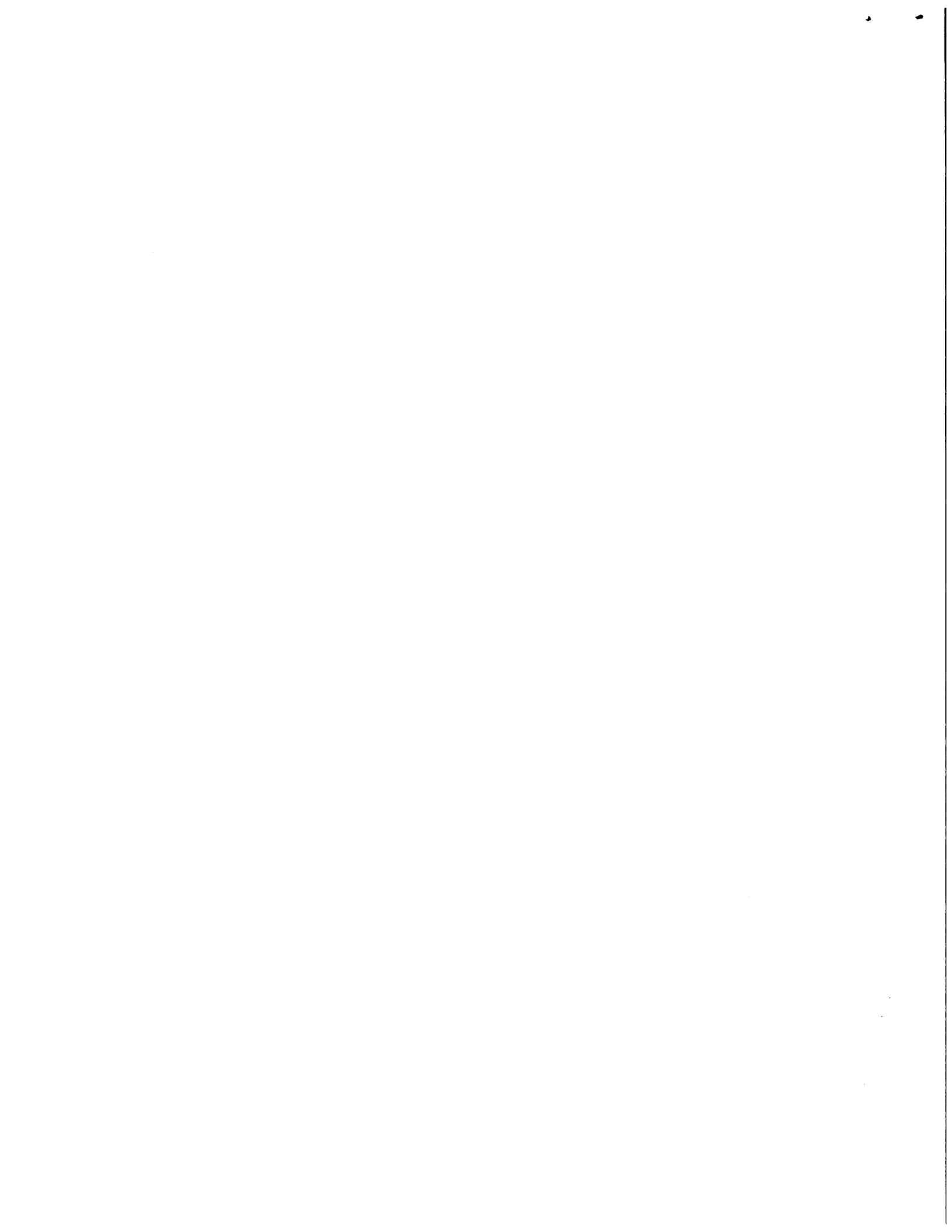
CONTROL MONITOR LISTING

SDS 870029-51A

February 1969



SCIENTIFIC DATA SYSTEMS • 701 South Aviation Boulevard • El Segundo, Calif., 90245 • 213/772-4511



00060	0	43	00300	BRM	INT60	TMCC C ZERO COUNT
00061	0	43	00302	BRM	INT61	TMCC C END OF RECORD
00062	0	43	00304	BRM	INT62	TMCC D ZERO COUNT
00063	0	43	00306	BRM	INT63	TMCC D END OF RECORD
00064	0	43	00310	BRM	INT64	DACC E ZERO COUNT
00065	0	43	00312	BRM	INT65	DACC E END OF RECORD
00066	0	43	00314	BRM	INT66	DACC F ZERO COUNT
00067	0	43	00316	BRM	INT67	DACC F END OF RECORD
00070	0	43	00320	BRM	INT70	DACC G ZERO COUNT
00071	0	43	00322	BRM	INT71	DACC G END OF RECORD
00072	0	43	00324	BRM	INT72	DACC H ZERO COUNT
00073	0	43	00326	BRM	INT73	DACC H END OF RECORD
00074	0	43	00330	BRM	INT74	CLOCK SYNC
00075	0	61	00407	MIN	TIME	CLOCK PULSE
00076	0	43	00334	BRM	INT76	ILLEGAL INTERRUPT
00077	0	43	00336	BRM	INT77	ILLEGAL INTERRUPT

PROGRAM OPERATOR LINKAGES

00100	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 100
00101	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 101
00102	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 102
00103	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 103
00104	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 104
00105	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 105
00106	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 106
00107	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 107
00110	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 110
00111	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 111
00112	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 112
00113	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 113
00114	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 114
00115	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 115
00116	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 116
00117	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 117
00120	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 120
00121	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 121
00122	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 122
00123	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 123
00124	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 124
00125	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 125
00126	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 126
00127	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 127
00130	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 130
00131	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 131
00132	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 132
00133	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 133
00134	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 134
00135	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 135
00136	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 136
00137	0	43	00450	BRM	DIVERT	PROGRAM OPERATOR 137

*
* RECEIVERS FOR INTERRUPTS AND TRAPS *
*

00240	0	00	00000	INT30	PZE	
00241	0	43	00450	I30	BRM	DIVERT
00242	0	00	00000	INT31	PZE	
00243	0	43	00450	I31	BRM	DIVERT
00244	0	00	00000	INT32	PZE	
00245	0	43	00450	I32	BRM	DIVERT
00246	0	00	00000	INT33	PZE	
00247	0	43	00450	I33	BRM	DIVERT
00250	0	00	00000	INT34	PZE	
00251	0	43	00450	I34	BRM	DIVERT
00252	0	00	00000	INT35	PZE	
00253	0	43	00450	I35	BRM	DIVERT
00254	0	00	00000	INT36	PZE	CONTROL PANEL INTERRUPT
00255	0	01	00307	BRU	PWR0N	RESTART LAST FUNCTION
00256	0	00	00000	INT37	PZE	
00257	0	01	00316	BRU	PWR0FF	
00260	0	00	00000	YTRP40	PZE	
00261	0	43	00450	T40	BRM	DIVERT
00262	0	00	00000	TRP41	PZE	
00263	0	43	00450	T41	BRM	DIVERT
00264	0	00	00000	TRP42	PZE	
00265	0	43	00450	T42	BRM	DIVERT
00266	0	00	00000	TRP43	PZE	
00267	0	43	00450	T43	BRM	DIVERT
00270	0	00	00000	TRP44	PZE	
00271	0	43	00450	T44	BRM	DIVERT
00272	0	00	00000	INT45	PZE	
00273	0	43	00450	I45	BRM	DIVERT
00274	0	00	00000	XINT56	PZE	
00275	0	43	00450	I56	BRM	DIVERT
00276	0	00	00000	XINT57	PZE	
00277	0	43	00450	I57	BRM	DIVERT

00300	0	00	00000	INT60	PZE	
00301	0	43	00450	I60	BRM	DIVERT
00302	0	00	00000	INT61	PZE	
00303	0	43	00450	I61	BRM	DIVERT
00304	0	00	00000	INT62	PZE	
00305	0	43	00450	I62	BRM	DIVERT
00306	0	00	00000	INT63	PZE	
00307	0	43	00450	I63	BRM	DIVERT
00310	0	00	00000	INT64	PZE	
00311	0	43	00450	I64	BRM	DIVERT
00312	0	00	00000	INT65	PZE	
00313	0	43	00450	I65	BRM	DIVERT
00314	0	00	00000	INT66	PZE	
00315	0	43	00450	I66	BRM	DIVERT
00316	0	00	00000	INT67	PZE	
00317	0	43	00450	I67	BRM	DIVERT
00320	0	00	00000	INT70	PZE	
00321	0	43	00450	I70	BRM	DIVERT
00322	0	00	00000	INT71	PZE	
00323	0	43	00450	I71	BRM	DIVERT
00324	0	00	00000	INT72	PZE	
00325	0	43	00450	I72	BRM	DIVERT
00326	0	00	00000	INT73	PZE	
00327	0	43	00450	I73	BRM	DIVERT
00330	0	00	00000	INT74	PZE	
00331	0	43	00450	I74	BRM	DIVERT
00332	0	00	00000	FLAGS	PZE	
00333	0	00	00000		PZE	
00334	0	00	00000	INT76	PZE	
00335	0	43	00450	I76	BRM	DIVERT
00336	0	00	00000	INT77	PZE	
00337	0	43	00450	I77	BRM	DIVERT

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*
* SYSTEM PARAMETER TABLE
*
00340 0 20 02401 SIMA NBP SIM SYSTEM IDENTIFIER MESSAGE ADDRESS
00341 0 20 02404 SAMA NBP SAM SYSTEM ABSTRACT MESSAGE ADDRESS
00342 0 20 03277 SVM A NBP SVM SYSTEM VARIABLE MESSAGE ADDRESS
00343 0 10 00400 SBCW EIGHT UAW SYSTEM OUTPUT CODE WORD
00344 0 00 00000 PZE
00345 0 00 00000 PZE
00346 0 00 00663 SLIST PZE ILREQ
00347 0 00 00000 STA PZE 0 SYSTEM BRANCH ADDRESS
*
* UNIT PARAMETER TABLE
*
00350 0 00 00000 UIMA PZE 0 UNIT IDENTIFIER MESSAGE ADDRESS
00351 0 00 00000 UAMA PZE 0 UNIT ABSTRACT MESSAGE ADDRESS
00352 0 00 00000 UVMA PZE 0 UNIT VARIABLE MESSAGE ADDRESS
00353 0 00 00000 UBCW PZE 0 UNIT OUTPUT CODE WORD
00354 0 00 00000 UID PZE
00355 77777777 FA* DATA 77777777
00356 0 00 01216 PZE ULIST
00357 0 00 00554 UTA PZE UENTRY=1 UNIT BRANCH ADDRESS=1

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*
* FUNCTION PARAMETER TABLE
*
00360 0 00 00000 FIMA PZE 0 FUNCTION IDENTIFIER MESSAGE ADDRESS
00361 0 00 00000 FAMA PZE 0 FUNCTION ABSTRACT MESSAGE ADDRESS
00362 0 00 00000 FVMA PZE 0 FUNCTION VARIABLE MESSAGE ADDRESS
00363 0 00 00000 FBCW PZE 0 FUNCTION OUTPUT CODE WORD
00364 0 00 00000 NEXT PZE
00365 0 00 00000 FID PZE
00366 0 00 01234 PZE FLIST
00367 0 00 00513 FTA PZE FENTRY=1 FUNCTION BRANCH ADDRESS=1
*
* OBJECT PARAMETER TABLE
*
00370 0 01 00430 RIMA ONE OBJECT PRINT CONTENTS OF OBJECT FOR IDENT.
00371 0 20 03321 RAMA NBP RAM OBJECT ABSTRACT MESSAGE ADDRESS
00372 0 20 03441 RVMA NBP RVM OBJECT VARIABLE MESSAGE ADDRESS
00373 0 10 00410 RBCW EIGHT AREG OBJECT OUTPUT CODE WORD
00374 0 00 00000 PZE
00375 0 00 00000 PZE
00376 0 00 00663 PZE ILREQ
00377 0 00 00430 PZE OBJECT OBJECT BRANCH ADDRESS

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*
* SYSTEM VARIABLE TABLE
*
00400 67004005 UAW DATA 67004005 UNIT ACCESS WORD
00401 00044000 STATUS DATA 00044000 ERROR DEVICE(0) INTER ENAB(3) RTC(6)
00402 00000000 LOCKS DATA 00000000 UNIT AND FUNCTION LOCKS
00403 20001000 RADSIZ DATA 20001000 RAD SIZES FOR ALL CHANNELS
00404 00004000 DSCSIZ DATA 00004000 DISC SIZES FOR ALL CHANNELS
00405 00001007 SYSIZE DATA 00000007 SYSTEM SIZE WORD
00406 00000000 SEED DATA 00000000 RANDOM NUMBER SEED
00407 00000000 TIME DATA 00000000 VALUE OF REAL TIME CLOCK WHEN IMPLEMENTED
*
* OBJECT VARIABLE TABLE
*
00410 00000000 AREG DATA 00000000 CONTENTS OF ACCUMULATOR
00411 00000000 RREG DATA 00000000 CONTENTS OF EXTENDED ACCUMULATOR
00412 00001000 XREG DATA 00000000 CONTENTS OF INDEX REGISTER
00413 00000000 RVRFLB DATA 00000000 CONTENTS OF OVERFLOW FLIP-FLOP(BIT 2)
00414 00000000 ERRORS DATA 00000000 TOTAL NUMBER OF SYSTEM ERRORS
00415 00000000 RL1 DATA 00000000 CONTENTS OF USER RELABELING REGISTER 1
00416 00001000 PL2 DATA 00000000 CONTENTS OF USER RELABELING REGISTER 2
00417 00000000 RL4 DATA 00000000 CONTENTS OF MONITOR RELABELING REGISTER
*
* LINKAGES TO UNIT AND FUNCTION
*
00420 0 00 00000 UNIT PZE 0
00421 0 61 00420 MIN UNIT
00422 0 61 00555 BRU UENTRY
00423 0 00 00000 UCNTR PZE
*
00424 0 00 00000 FUNCTN PZE 0
00425 0 61 00424 MIN FUNCTN
00426 0 61 00514 BRU FENTRY
00427 0 00 00000 FCNTR PZE

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*
* OBJECT SUB ROUTINES
*
00430 0 00 00000 OBJECT PZE 0
00431 0 40 20040 BPT4 TEST FOR CONTROL ENTRY REQUEST
00432 0 43 00665 BRM CONTROL ENTER CONTROL
00433 0 51 00430 BRR OBJECT
*
00434 0 00 00000 END PZE 0
00435 0 40 20040 BPT1 TEST FOR LOOP ON OBJECT ROUTINE
00436 0 01 00431 BRU YES
00437 0 51 00434 BRR END
*
00440 0 00 00000 RETURN PZE 0
00441 0 02 20001 EOM RESET OVERFLOW
00442 0 61 00440 MIN POINT TO NOP WITH RETURN ADDRESS
00443 0 76 00440 LDA RETURN
00444 0 14 00624 ETR #37777
00445 0 16 00625 MRG #00100000
00446 0 35 00431 STA DIVERT*1
00447 0 51 00440 BRR RETURN
*
00450 0 00 00000 DIVERT PZE 0
00451 0 00 00000 PZE 0
*
00452 0 00 00000 DONE PZE 0
00453 0 01 00626 BRU LAST LAST FUNCTION TEST
*
00454 0 00 00000 REPORT PZE 0
00455 0 01 00501 BRU RENTRY ENTER REPORT SUBROUTINE
*
00456 0 00 00000 FDONE PZE 0
00457 0 01 00606 BRU FLAST

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*
* ERROR SUB ROUTINE
*
00460 0 60 00000  ERROR PZE 0
00461 0 40 20100  BPT3
00462 0 61 00474  BRU INCERR TEST TO INHIBIT ERROR OUTPUT
00463 0 43 01432  BRM NORMAL INHIBIT ERROR OUTPUT
00464 0 40 20100  LINK BPT3 SAVE REGISTERS
00465 0 61 00473  BRU INCERR=1
00466 0 61 00460  MIN ERROR
00467 0 76*00467  LDA+ ERROR PICK UP OUTPUT CODE WORD
00470 0 43 01567  BRM OUTPUT OUTPUT ERROR MESSAGE
00471 0 72 03626  SKA #40000000 TEST FOR LINKING
00472 0 61 00464  BRU LINK
00473 0 43 01453  BRM RESET RESTORE REGISTERS
00474 0 61 00414  INCERR MIN INCREMENT ERROR COUNTER
00475 0 40 20200  BPT2 TEST TO REPORT ON ERRORS
00476 0 51 00460  BRR ERROR NO=EXIT
00477 0 43 00465  BRM CONTRL GO TO CONTRL TO REPORT ON ERRORS
00500 0 51 00460  BRR ERROR

*
* USER OUTPUT SUB-ROUTINE
*
00501 0 62 22000  RENTRY ERM 22000 TO 940 MODE
00502 0 43 01432  BRM NORMAL SAVE MACHINE STATUS
00503 0 61 00454  RLINK MIN REPORT POINT TO CODE WORD
00504 0 76*00454  LDA+ REPORT PICK UP OUTPUT CODE WORD
00505 0 40 20100  BPT3 TEST TO INHIBIT ERROR OUTPUT
00506 0 61 00512  BRU RLINK1 YES
00507 0 43 01567  BRM BUTPUT OUTPUT MESSAGE
00510 0 72 03626  SKA #40000000 TEST FOR LINKING
00511 0 61 00503  BRU RLINK
00512 0 43 01453  RLINK1 BRM RESET RESTORE REGISTERS
00513 0 51 00454  BRR REPORT
    
```

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*
* FUNCTION INITIALIZER ROUTINE
*
00514 0 62 22000  RENTRY ERM 22000
00515 0 43 01432  BRM NORMAL NORMALIZE MACHINE
00516 0 43 02130  BRM INTCLR CLEAR OUT INTERRUPTS
00517 0 76 00424  LDA FUNCTN
00520 0 14 03627  ETR #7737777
00521 0 35 00424  STA FUNCTN
00522 0 75*00424  LDB+ FUNCTN PICK UP PARAMETER TABLE POINTER
00523 0 71 03630  LDX #360 SET DESTINATION ADDRESS
00524 0 76 03631  LDA #37777772 CONTRL WORD = MOVE 6 WORDS
00525 0 43 00443  BRM MOVER MOVE 6 WORDS FROM (FPT) TO FIMA
00526 0 76 03632  LDA #37777740
00527 0 75 03633  LDB #100
00530 0 71 03634  LDX #200
00531 0 43 00643  BRM MVER MOVE BRM DIVERT TO EXT INTS
00532 0 76 03635  LDA #40404040
00533 0 35 00415  STA RL1
00534 0 35 00416  STA RL2
00535 0 76 03636  LDA #0607
00536 0 35 00417  STA RL4
00537 0 76 03637  LDA #06100407
00540 0 35 00275  STA 75 SET UP RTC CELL
00541 0 76 03640  LDA #INT64**300000
00542 0 35 00264  STA 64
00543 0 76 03641  LDA #INT66**300000
00544 0 35 00266  STA 66
00545 0 76 03642  LDA #INT31**300000
00546 0 35 00231  STA 31
00547 0 76 00402  LDA LOCKS
00550 0 35 02157  STA FIW
00551 0 76 00265  LDA FID FUNCTION IDENTIFIER
00552 0 72 00255  SKA FAK ACTIVATION TEST
00553 0 61 00621  BRU ACTFUN ACTIVATE FUNCTION
00554 0 61*00264  BRU+ NEXT DO NOT ACTIVATE FUNCTION
    
```

BLDS3	TAP=3.0	01/17	07136	PAGE 15	
00555	0 02 22000	UENTRY	EBM	22000	TO 940 MODE
00556	0 76 00577		LDA	ACCESS	
00557	0 35 00001		STA	1	STARTING BRANCH
00560	0 43 01432		BRM	NORMAL	NORMALIZE MACHINE
00561	0 43 02130		BRM	INTCLR	CLEAR OUT INTERRUPTS
00562	0 76 00420		LDA	UNIT	
00563	0 14 03627		ETR	#7737777	
00564	0 35 00420		STA	UNIT	CLEAN UP MARK WORD
00565	0 75 00420		LDB	UNIT	
00566	0 71 03643		LDX	#350	
00567	0 76 03631		LDA	#37777772	CONTROL WORD, MOVE 6 WORDS
00570	0 43 00443		BRM	MOVER	MOVE UNIT PARAMETERS
00571	0 76 00402		LDA	LOCKS	
00572	0 35 02372		STA	UIW	
00573	0 76 00354		LDA	UID	
00574	0 72 00400		SKA	JAW	ACTIVATION TEST
00575	0 01 00401		BRU	HAROLD	GIVE UID MESSAGE
00576	0 43 01743	DISMIS	BRM	RTO	HEAD TAPE, SKIP IF EOF
00577	0 01 00400	ACCESS	BRU	4000	START UNIT
00600	0 01 00576		BRU	DISMIS	HEAD FIRST UNIT
00601	0 40 20040	HAROLD	BPT		
00602	0 01 00441		BRU	ACTVAT	DONT GIVE ID MESSAGE
00603	0 76 00350		LDA	UIA	
00604	0 43 01567		BRM	OUTPUT	OUTPUT ID MESSAGE
00605	0 01 00441		BRU	ACTVAT	ACTIVATE UNIT

BLDS3	TAP=3.0	01/17	07136	PAGE 16	
00606	0 02 22000	FLAST	EBM	22000	TO 940 MODE
00607	0 43 01432		BRM	NORMAL	NORMALIZE MACHINE
00610	0 43 02130		BRM	INTCLR	CLEAR OUT ANY INTERRUPTS
00611	0 76 00402		LDA	LOCKS	
00612	0 72 03644		SKA	#4000	SKIP IF NOT LOCKED
00613	0 01 00421		BRU	ACTFUN	
00614	0 76 02357		LDA	FIW	
00615	0 55 03645		ADD	#=1	SUBTRACT 1
00616	0 72 03644		SKA	#4000	SKIP IF NOT DONE
00617	0 01 00364		BRU	NEXT	GET NEXT FUNCTN
00620	0 35 02357		STA	FIW	
00621	0 61 00427	ACTFUN	MIN	FCNTR	
00622	0 76 00401		LDA	STATUS	
00623	0 72 03646		SKA	#400000	SKIP IF NO RTC
00624	0 02 20100		EBM	20100	ARM RTC
00625	0 51 00424		BRR	FUNCTN	
00626	0 02 22000	LAST	EBM	22000	TO 940 MODE
00627	0 43 01432		BRM	NORMAL	NORMALIZE MACHINE
00630	0 43 02130		BRM	INTCLR	CLEAR OUT INTERRUPTS
00631	0 76 00402		LDA	LOCKS	
00632	0 72 03626		SKA	#40000000	SKIP IF NOT LOCKED
00633	0 01 00641		BRU	ACTVAT	
00634	0 76 02372		LDA	UIW	
00635	0 55 03647		ADD	#77770000	SUBTRACT 10000
00636	0 72 03626		SKA	#40000000	SKIP IF NOT DONE
00637	0 01 00576	LOAD	BRU	DISMIS	
00640	0 35 02372		STA	UIW	NEW UIW COUNT
00641	0 61 00423	ACTVAT	MIN	UCNTR	
00642	0 51 00420		BRR	UNIT	START UP UNIT

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```
*
* MOVES DATA FROM LOC IN XREG TO LOC IN BREG. COUNT IN AREG.
*
00643 0 00 00001  MOVER PZE 1
00644 0 36 02360  STB FROM SET FROM ADDRESS
00645 0 37 02371  STX TO SET TO ADDRESS
00646 0 35 02353  STA COUNT SET NUMBER OF WORDS TO BE MOVED
00647 0 75 02360  MOVE LDB FROM
00650 0 61 02360  MIN FROM MOVE
00651 0 36 02371  STB TO
00652 0 61 02371  MIN TO
00653 0 61 02353  MIN COUNT
00654 0 52 02353  SKN COUNT FINISHED
00655 0 61 02447  BRU MOVE NO
00656 0 61 02443  BRR MOVER

00657 0 76 03450  ILUNIT LDA #NSUMSG+2000000
00660 0 61 00662  BRU **2
00661 0 76 03451  ILFJNC LDA #NBFMSG+2000000
00662 0 61 00664  BRU **2
00663 0 76 03452  ILREQ LDA #RE3MSG+2000000
00664 0 61 01210  BRU SETMSG
```

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```
*
* CONTROL ROUTINE
*
00665 0 00 00001  CONTROL PZE 1
00666 0 43 01432  BRM NORMAL NORMALIZE MACHINE STATUS
00667 0 71 03453  LDX **2000
00670 0 40 00040  BPT4 TEST BREAKPOINT 4
00671 0 61 00670  BRU **1 HANG ON BREAKPOINT 4
00672 0 41 00670  BRX **2
00673 0 76 03454  CONLUP LDA #0 SET TYPEWRITER AS
00674 0 35 02355  STA DEVICE SELECTED DEVICE
00675 0 76 03455  LDA #CONSYM+2000000
00676 0 43 01567  BRM OUTPUT OUTPUT CONTROL SYMBOL(=)
00677 0 43 01510  BRM INPUT INPUT CONTROL CHARACTERS(S,U,F,O,T,M,E)
00700 0 76 02375  LDA #ORDIN
00701 0 14 03456  ETR #3
00702 0 55 03457  ADD **3
00703 0 17 03445  EOR **1
00704 0 35 02365  STA SRCODE EDIT SOURCE CODE
00705 0 76 03460  LDA #CONSPC+2000000
00706 0 43 01567  BRM OUTPUT OUTPUT SPACE AS A SUCCESS INDICATOR
00707 0 76 02352  LDA CHARIN INPUT CHAR
00710 0 17 03461  EOR #47 TEST FOR P
00711 0 72 03462  SKA #77
00712 0 61 00753  BRU 0 NOT P
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00713	0 76 00401	P	LDA	STATUS	
00714	0 72 03663		SKA	#4	SKIP IF NOT 940
00715	0 01 00721		BRU	RBL0K	OK TO RELABL
00716	0 76 02375		LDA	*BRDIN	
00717	0 14 03624		ETR	#37777	GET ADDRESS
00720	0 01 00741		BRU	RBDONE	BRU OVER RELABELING
00721	0 76 02375	RBL0K	LDA	*BRDIN	
00722	0 66 21013		RCY	110	GET RL BYTE
00723	0 14 03664		ETR	#37	
00724	0 75 03654		LDR	#0	
00725	0 71 03665		LDX	#7	
00726	0 35 02377		STA	*K1	SAVE RL BYTE
00727	0 61 02377	RBL0P	*IN	*K1	INCREMENT RL BYTE
00730	0 67 21004		LCY	6	
00731	0 16 02377		*RG	*K1	
00732	0 14 03666		ETR	#37373737	EXTRACT OFF FLAG BITS
00733	0 41 00727		BRX	RBL0P	BUILD 8 RL BYTES
00734	0 67 21030		LCY	30	EXCHANGE A AND B
00735	0 71 03636		LDX	#0607	RL4
00736	0 43 01267		BRM	SETREL	
00737	0 76 02375		LDA	*BRDIN	GET CONTROL WORD
00740	0 14 03667		ETR	#3777	GET PAGE ADDRESS
00741	0 35 02377	RBDONE	STA	*K1	
00742	0 76 02375		LDA	*BRDIN	
00743	0 66 21003		RCY	3	PUT COUNT IN OP CODE
00744	0 14 03670		ETR	#01700000	
00745	0 73 03671		SKG	#01000000	IS COUNT GREATER THAN 8
00746	0 01 00750		BRU	#2	NO , OK
00747	0 76 03671		LDA	#01000000	SET COUNT TO 8
00750	0 16 03672		*RG	#40000	SET IA BIT
00751	0 16 02377		*RG	*K1	PUT ON ADDRESS
00752	0 01 01200		BRU	*PS	

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00753	0 72 03673	*	SKA	#76	TEST FOR 0 (OBJECT LEVEL SELECTION)
00754	0 01 00766		BRU	U	NOT 0
00755	0 71 03674		LDX	#30	
00756	0 43 01510		BRM	INPUT	INPUT CHARB(I,A,V,T)
00757	0 43 01123		BRM	LEVEL	PROCESS REQUEST
00760	0 76 02375		LDA	*BRDIN	GET ADDRESS
00761	0 72 03645		SKA	#1	SKIP IF 0
00762	0 01 00764		BRU	#2	
00763	0 01 01105		BRU	SETEXT	GO TO START OF LAST OBJECT TEST
00764	0 55 03645		ADD	#1	SUBTRACT 1
00765	0 01 01106		BRU	SETEXT+1	

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00766	0 17 03475	U	EGR	#23	
00767	0 72 03462		SKA	#77	TEST FOR U
00770	0 01 01020		BRU	5	NOT U
00771	0 71 03676		LDX	#10	UNIT LEVEL
00772	0 43 01523		BRM	DINPUT	INPUT NEXT CHAR
00773	0 43 01123		BRM	LEVEL	PROCESS NEXT CHAR
00774	0 76 00402		LDA	LOCKS	
00775	0 14 03477		ETR	#77773777	REMOVE FUNCTION LOCK
00776	0 16 03626		MRG	#40000000	SET UNIT LOCK
00777	0 35 00402		STA	LOCKS	
01000	0 43 01115		BRM	CONVRT	GET UID
01001	0 72 00400		SKA	UAW	
01002	0 01 01004		BRU	**2	
01003	0 01 00457		BRU	ILUNIT	UNIT NOT IN UAW
01004	0 72 00354		SKA	UID	SKIP IF NOT PRESENT UNIT
01005	0 01 01105		BRU	SETEXT	EXIT
01006	0 35 00354		STA	UID	SAVE NEW UID
01007	0 43 01735		BRM	REWIND	REWIND TAPE AND SCAN OVER CONTROL
01010	0 43 01743	GETU	BRM	RTO	READ FIRST UNIT
01011	0 01 01013		BRU	**2	READ OK
01012	0 01 00457		BRU	ILUNIT	COULD NOT FIND UNIT
01013	0 71 00001		LDX	4001	GET OPT POINTER
01014	0 76 00354		LDA	UID	GET NEW UID
01015	2 72 00004		SKA	4,2	SKIP IF NOT CORRECT UNIT
01016	0 01 00001		BRU	4000	START UNIT
01017	0 01 01010		BRU	GETU	GET ANOTHER UNIT

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01020	0 17 03700	S	EGR	#6	TEST FOR S (SYSTEM LEVEL SELECTION)
01021	0 72 03462		SKA	#77	
01022	0 01 01033		BRU	T	NOT S
01023	0 71 03454		LDX	#0	
01024	0 43 01510		BRM	INPUT	INPUT (I,AV,T)
01025	0 43 01123		BRM	LEVEL	PROCESS REQUEST
01026	0 76 00402		LDA	LOCKS	
01027	0 14 03701		ETR	#37773777	REMOVE UNIT AND FUNCTION LOCKS
01030	0 35 00402		STA	LOCKS	
01031	0 43 01735		BRM	REWIND	RETURN TAPE TO BEGINNING
01032	0 01 00576		BRU	DISMIS	
01033	0 72 03473	*	SKA	#76	TEST FOR T (TRANSFER)
01034	0 01 01052	T	BRU	F	NOT T
01035	0 76 00375		LDA	#BRDIN	
01036	0 72 03645		SKA	#*1	TEST FOR RETURN OR HALT AND TRANSFER
01037	0 01 01041		BRU	**2	
01040	0 01 01111		BRU	EXIT	
01041	0 16 03425	SETHLT	MRG	#100000	MAKE INTO A BRANCH
01042	0 35 01051		STA	XFER	
01043	0 76 03702		LDA	#RTCSFF+2000000	
01044	0 43 01567		BRM	OUTPUT	
01045	0 76 03703		LDA	#HANDT*1	
01046	0 01 01106		BRU	SETEXT*1	
01047	0 02 20000	* HANDT	EBM	20200	DISARM RTC
01050	0 00 00000		HLT		
01051	0 00 00000	XFER	PZE		

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```
01052 0 17 03704 F EOR #44
01053 0 72 03662 SKA #77 SKIP IF F
01054 0 01 01007 BRU EDIT
01055 0 71 03705 LDX #20 FUNCTION LEVEL
01056 0 43 01823 BRM DINPUT GET NEXT CHAR
01057 0 43 01123 BRM LEVEL PROCESS NEXT CHAR
01060 0 76 01402 LDA LOCKS
01061 0 16 03704 MRG #40004000 SET UNIT AND FUNCTION LOCKS
01062 0 35 01402 STA LOCKS
01063 0 43 01115 BRM CONVRT GET FID
01064 0 72 01265 SKA FID SKIP IF NOT PRESENT FUNCTION
01065 0 01 01105 BRU SETEXT
01066 0 35 01265 STA FID
01067 0 71 02472 LDX #40000 PUT BIT 9 IN X
01070 0 77 01420 EAX* UNIT PUT UNIT MARK IN X
01071 0 37 02356 GETF STX FADDR
01072 0 37 01051 STX XFER
01073 0 43 01245 BRM FFIND
01074 0 01 02661 BRU IFFUNC COULD NOT FIND FUNCTION
01075 2 76 01005 LDA 5,2 GET FID
01076 0 72 01265 SKA FID SKIP IF NOT CORRECT FUNCTION
01077 0 01 01103 BRU G80DF
01100 2 77 01204 EAX* 4,2 GET NEXT FUNCTION START
01101 2 77 37777 EAX* -1,2 SUBTRACT 1
01102 0 01 01071 BRU GETF LOOK FOR NEXT FUNCTION
01103 0 35 01265 G80DF STA FAW
01104 0 01 01105 BRU SETEXT START FUNCTN
```

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```
01105 0 76 01051 SETEXT LDA XFER
01106 0 14 03424 ETR #37777
01107 0 16 02413 MRG #VRFLO
01110 0 35 02465 STA CONTRL
01111 0 76 03707 EXIT LDA #CONVRT*02000000
01112 0 43 01867 BRM OUTPUT
01113 0 43 01453 BRM RESET
01114 0 51 02465 BRR CONTRL
*
* CONVERT A DECIMAL NUMBER INTO A BIT POSITION
*
01118 0 01 00002 CONVRT PZE 2
01116 0 71 02375 LDX #9RCIN SET NUMBER INTO INDEX REG
01117 0 76 03426 LDA #40000000
01120 0 75 03454 LDB #0
01121 2 66 20000 RCV 0,2 CONVERT DECIMAL NUMBER TO BIT POSITION
01122 0 51 01115 BRR CONVRT
*
* PROCESSES THE REQUESTS FOR S,U F AND 0
*
01123 0 00 00002 LEVEL PZE 2 PROCESS I,A,V AND T REQUESTS
01124 0 72 03710 SKA #75 TEST FOR T (LEVEL TRANSFER)
01125 0 01 01131 BRU V NOT T
01126 2 76 01247 LDA STA,2 SET TRANS TO SPECIFIED LEVEL
01127 0 35 01051 STA XFER
01130 0 51 01123 BRR LEVEL EXIT LEVEL
```

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```
*
01131 0 72 03711 V SKA #73 TEST FOR V (OUTPUT VARIABLES)
01132 0 01 01175 BRU A NOT V
01133 2 76 00342 LDA SVMA,2 PICK UP VARIABLES MESSAGE ADDRESS
01134 0 43 01567 BRM OUTPUT OUTPUT HEADING
01135 2 76 00343 LDA SBC#,2 PICK UP OUTPUT CODE WORD
01136 0 43 01567 BRM OUTPUT OUTPUT DISPLAY
01137 0 14 03424 ETR #37777
01140 0 35 02345 STA ADDRESS SAVE ADDRESS
01141 2 75 00343 LDB SBC#,2 PICK UP OUTPUT CODE WORD
01142 0 67 20011 LCY 9 SHIFT MODIFY COUNT INTO A REG
01143 0 14 03662 ETR #77
01144 0 35 02354 STA COWNT COWNT
01145 0 60 02354 MODIFY SKR COWNT DECREMENT COUNT
01146 0 01 01147 BRU #+1
01147 0 53 02354 SKN COWNT TEST COUNT > 0
01150 0 01 01152 BRU WINPUT YES
01151 0 01 00473 BRU CONLUP

*
01152 0 43 01510 WINPUT BRM INPUT INPUT MODIFICATIONS (* BR #)
01153 0 17 03712 EBR #12
01154 0 72 03662 COMMA SKA #77 TEST FOR COMMA
01155 0 01 01167 BRU PERIOD NOT COMMA
01156 0 76 02375 LDA #BROIN
01157 0 72 03445 SKA #+1 TEST FOR NO CHANGE BITS
01160 0 01 01168 BRU CHANGE CHANGE BITS PRESENT=00 NOT SPACE
01161 0 02 02441 ESM 2641 TYPE 4 CHAR MODE
01162 0 12 03435 #1W #40404040 4 DASHES
01163 0 12 03435 #1W #40404040 4 MORE DASHES
01164 0 02 14700 EBM 14000 TERMINATE OUTPUT
01165 0 17*02345 CHANGE EBR. ADDRESS CHANGE SELECTED BITS
01166 0 01 01172 BRU STORE
```

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```
*
01167 0 72 03664 PERIOD SKA #37 TEST FOR PERIOD
01170 0 01 00473 BRU CONLUP NOT PERIOD
01171 0 76 02375 LDA WORDIN
01172 0 35*02345 STORE STA. ADDRESS STORE WORD
01173 0 61 02345 MIN ADDRESS INCREMENT ADDRESS
01174 0 01 01145 BRU MODIFY

*
01175 0 72 03664 A SKA #37 TEST FOR A (OUTPUT ABSTRACT)
01176 0 01 01203 BRU I NOT A
01177 2 76 00341 LDA SAMA,2 PICK UP ABSTRACT MESSAGE ADDRESS
01200 0 75 00401 MPB LDB STATUS
01201 0 36 02355 STB DEVICE SET DEVICE FOR ERROR COMMUNICATIONS
01202 0 01 01210 BRU SETMSG

*
01203 0 72 03713 I SKA #27 TEST FOR I (OUTPUT IDENTIFIER MESSAGE)
01204 0 01 01212 BRU L NOT I
01205 0 76 03460 LDA #CONSPC*2000000
01206 0 43 01567 BRM OUTPUT OUTPUT SPACE
01207 2 76 00340 LDA SIMA,2 PICK UP IDENTIFIER MESSAGE ADDRESS
01210 0 43 01567 SETMSG BRM OUTPUT OUTPUT SELECTED LEVEL REQUEST
01211 0 01 00673 BRU CONLUP
```

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01212	0 17	03714	L	EOR	#22	
01213	0 72	03A62		SKA	#77	SKIP IF L
01214	0 01	0CA63		BRU	ILREQ	
01215	2 01	0C3A6		BRU*	SLIST,2	
*						
01216	0 76	03715	ULIST	LDA	#CONTRL	
01217	0 35	03665		STA	CONTRL	
01220	0 76	0C401		LDA	STATUS	
01221	0 35	02355		STA	DEVICE	SET ERROR DEVICE
01222	0 76	03A54		LDA	#0	
01223	0 35	03A54		STA	UID	
01224	0 43	01735		BRM	REWIND	
01225	0 43	01743	LSTRDR	BRM	RTD	HEAD NEXT UNIT
01226	0 01	01230		BRU	#*2	READ BK
01227	0 01	0C673		BRU	CONLUP	
01230	0 71	04001		LDX	4001	
01231	2 76	0C000		LDA	0,2	UIM ADDRESS
01232	0 43	01567		BRM	OUTPUT	
01233	0 01	01225		BRU	LSTRDR	
*						
01234	0 71	03716	FLIST	LDX	#44000	START OF SEARCH
01235	0 37	02354		STX	FADDR	
01236	0 76	0C401		LDA	STATUS	
01237	0 35	02355		STA	DEVICE	SET ERROR DEVICE
01240	0 43	01245	LSTSCN	BRM	FFIND	
01241	0 01	01A73		BRU	CONLUP	
01242	2 76	0C000		LDA	0,2	GET FID
01243	0 43	01567		BRM	OUTPUT	OUTPUT FID
01244	0 01	01240		BRU	LSTSCN	GET NEXT FID

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01245	0 00	0C000	FFIND	PZE		
01246	0 71	02356		LDX	FADDR	
01247	0 76	03A45		LOB	#*1	
01250	0 76	03717		LDA	#FUNCTN+*300000	
01251	2 70	0C000		SKM	0,2	
01252	0 41	01251		BRX	#*1	
01253	0 41	01255		BRX	#*2	
01254	0 51	01245		BRR	FFIND	DONE
01255	0 37	02356		STX	FADDR	SAVE ADDRESS
01256	2 77	0C000		EAX*	0,2	GET PRT POINTER
01257	0 61	01245		MIN	FFIND	
01260	0 51	01245		BRR	FFIND	EXIT SKIPPING


```

*
*   SET RELABELING REGISTERS WITH RL1, RL2, AND RL4
*
01261 0 00 00000 RELABL PZE
01262 0 76 00415 LDA RL1
01263 0 75 00416 LDB RL2
01264 0 71 00417 LDX RL4
01265 0 43 01267 BRM SETREL
01266 0 51 01261 BRR RELABL

*
01267 0 00 00000 SETREL PZE
01270 0 06 20332 EDD 20332 SET EM REGISTERS
01271 0 35 02766 STA RRR
01272 0 76 00401 LDA STATUS
01273 0 72 03463 SKA ** SKIP IF NOT 940
01274 0 01 01276 BRU **2
01275 0 51 01267 BRR SETREL
01276 0 02 20400 EGM 20400
01277 0 13 02766 PBT RRR
01300 0 36 02766 STB RRR
01301 0 02 21000 EGM 21000
01302 0 13 02766 PBT RRR
01303 0 37 02766 STX RRR
01304 0 02 21400 EGM 21400
01305 0 13 02766 PBT RRR
01306 0 51 01267 BRR SETREL

```

```

*
*   EDITS EXISTING SYSTEM ON TAPE 0 ONT9 TAPE 1
*
01307 0 17 03456 EDIT EBR #03
01310 0 72 03462 SKA #77 SKIP IF E
01311 0 01 01372 BRU C
01312 0 43 01523 BRM DINPUT GET UNIT ID
01313 0 43 01115 BRM CONVRT
01314 0 35 00354 STA UID
01315 0 76 03720 LDA #ILREQ=1
01316 0 35 01051 STA XFER
01317 0 53 02365 SKN SRCODE
01320 0 43 01735 BRM REWIND
01321 0 43 02022 BRM BEGIN1 WRITE CONTROL ON TAPE
01322 0 53 02365 ELOOP SKN SRCODE SKIP IF MAG TAPE 0
01323 0 01 01325 BRU **2
01324 0 01 01342 BRU GETSRC
01325 0 43 01743 BRM RTO
01326 0 01 01330 BRU **2 READ OK
01327 0 01 01415 BRU EOF READ EOF, WRITE EOF AND REWIND
01330 0 71 04001 LDX 4001
01331 2 76 00004 LDA #2 GET UNIT ID
01332 0 72 00354 SKA UID SKIP IF IT IS NOT UNIT
01333 0 01 01342 BRU GETSRC GET SOURCE
01334 0 76 00401 CENTRY LDA STATUS
01335 0 35 02355 STA DEVICE LIST ON ERROR DEVICE
01336 2 76 00000 LDA 0,2 GET UIM ADDRESS
01337 0 43 01567 BRM SUTPUT
01340 0 43 02063 BRM AT1 WRITE UNIT ON TAPE 1
01341 0 01 01322 BRU ELOOP GET NEXT UNIT

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01342  0 71 02365  GETSRC  LDX  SRCODE
01343  0 74 03721          LDA  #3204000
01344  0 35 02367          STA  START
01345  0 74 03722          LDA  #3237777
01346  0 35 02370          STA  STPR
01347  0 43 01504          BRM  #CHECK
01350  2 01 01352          BRU  **2/2
01351  0 01 01355          BRU  MTOF
01352  0 01 01362          BRU  PTF0
01353  0 01 01364          BRU  CRF0
01354  0 01 01473          BRU  CBNLUP

01355  0 40 10410  *MTOF  SKS  10410  MAG TAPE 0 READY
01356  0 01 01360          BRU  **2
01357  0 01 01355          BRU  **2
01360  0 02 03410          ERM  3610  HEAD MT 0
01361  0 01 01367          BRU  FILL

01362  0 02 02404  *PTF0  ERM  2604
01363  0 01 01367          BRU  FILL

01364  0 40 12006  *CRF0  SKS  12006  CARD READER READY
01365  0 01 01364          BRU  **1
01366  0 02 03406          ERM  3606  HEAD CARD BIN

01367  0 71 03465  *FILL  LDX  **7
01370  0 32 01002          BRU  2
01371  0 01 01002          BRU  2

```

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01372  0 17 03700  C  ERM  #06
01373  0 72 03462          SKA  #77  SKIP IF C
01374  0 01 01402          BRU  ~
01375  0 43 01523          BRM  DINPUT  GET UID
01376  0 43 01115          BRM  CONVRT  MAKE UID
01377  0 35 02354          STA  UID
01400  0 71 04001  BACKIN  LDX  4001
01401  0 01 01334          BRU  CENTRY
01402  0 17 03723  M  ERM  #67
01403  0 72 03462          SKA  #77  SKIP IF M
01404  0 01 01424          BRU  B
01405  0 74 02375          LDA  #BRDIN  GET ADDRESS
01406  0 14 03424          ETR  #37777  EXTRACT ADDRESS
01407  0 35 02345          STA  ADDRESS  SAVE FOR MODIFY
01410  0 74 03476          LDA  #10
01411  0 35 02354          STA  CONVRT  SAVE FOR MODIFY
01412  0 74 03707          LDA  #CONVRT*2000000
01413  0 43 01567          BRM  OUTPUT
01414  0 01 01445          BRU  #MODIFY  ALLOW EIGHT WORDS TO BE CHANGED
01415  0 43 02450  FOF  BRM  RDY1  WAIT FOR TAPE 1 READY
01416  0 02 02451          ERM  2051  WRITE TAPE 1 FORWARD
01417  0 12 03724          M1W  #17000000  WRITE EOF
01420  0 02 14000          ERM  14000  TERMINATE OUTPUT
01421  0 43 02450          BRM  RDY1  WAIT FOR TAPE 1 READY
01422  0 02 14011          ERM  14011  REWIND TAPE 1
01423  0 01 01473          BRU  CBNLUP
01424  0 17 03725  B  ERM  #66
01425  0 72 03445          SKA  **1
01426  0 01 03463          BRU  1LREQ
01427  0 43 01761          BRM  RDY0  CHECK TAPE 0 READY
01430  0 02 07430          ERM  7630  BACK SPACE TAPE 0
01431  0 01 01342          BRU  GETSRC  GET SRC CODE

```

*
*
* NORMALIZE MACHINE STATUS

01432	0	00	00002	NORMAL	PZE	2		
01433	0	43	01472		BRM	PUT		STORE REGISTERS
01434	0	76	01432		LDA	NORMAL		TEST FOR OVERFLOW
01435	0	14	03726		ETR	#50000000		
01436	0	35	00413		STA	OVRFL0		SAVE OVERFLOW
01437	0	76	00401		LDA	STATUS		SET INTERRUPT INDICATORS IN STATUS
01440	0	14	03727		ETR	#40444444		EXTRACT OFF INT ENABLE INDICATOR
01441	0	40	20002		SKS	20002		TEST INTERRUPTS ENABLED
01442	0	16	03730		MRG	#40000000		YES-SET INDICATION BIT 3
01443	0	35	00401		STA	STATUS		SAVE INDICATORS
01444	0	76	03435		LDA	#40404040		
01445	0	76	03435		LDB	#40404040		
01446	0	71	03436		LDX	#06C7		
01447	0	43	01267		BRM	SETREL		NORMALIZE RELABELING
01450	0	02	20004		EDM	20004		DISABLE INTERRUPTS
01451	0	02	20200		EDM	20200		DISARM RTC
01452	0	51	01432		BRR	NORMAL		

*
*
* RESTORE MACHINE STATUS

01453	0	00	00002	RESET	PZE	2		
01454	0	43	01261		BRM	RELABL		RESTORE RELABELING
01455	0	76	00401		LDA	STATUS		INTERRUPT INDICATORS
01456	0	72	03646		SKA	#40000000		TEST FOR CLOCK PULSE OPTION
01457	0	02	20100		EDM	20100		ARM CLOCK PULSE INTERRUPT
01460	0	72	03730		SKA	#40000000		TEST FOR INTERRUPTS ENABLED
01461	0	02	20002		EDM	20002		ENABLE INTERRUPTS
01462	0	35	02355		STA	DEVICE		SET ERROR REPORTING DEVICE
01463	0	76	01453		LDA	RESET		
01464	0	14	03624		ETR	#37777		
01465	0	16	00413		MRG	OVRFL0		
01466	0	35	01453		STA	RESET		RESTORE OVERFLOW STATUS
01467	0	43	01477		BRM	GET		LOAD REGISTERS
01470	0	02	20001		EDM	20001		RESET OVERFLOW
01471	0	51	01453		BRR	RESET		

```

*
* STORE THE REGISTERS
*
01472 0 00 00004 PUT PZE 4
01473 0 35 00410 STA AREG
01474 0 36 00411 STB BREG
01475 0 37 00412 STX XREG
01476 0 51 01472 BRR PUT
*
* RESTORE THE REGISTERS
*
01477 0 00 00004 GET PZE 4
01500 0 76 00410 LDA AREG
01501 0 75 00411 LDB BREG
01502 0 71 00412 LDX XREG
01503 0 51 01477 BRR GET
*
* WAIT FOR W-BUFFER TO COME READY
*
01504 0 00 00000 WCHECK PZE
01505 0 40 21000 SKS 21000 W BUFFER READY
01506 0 01 01505 BRU **1
01507 0 51 01504 BRR WCHECK
    
```

```

*
* INPUT ROUTINE
*
01510 0 00 00003 INPUT PZE 3
01511 0 76 01510 LDA INPUT
01512 0 35 01523 STA DINPUT SET INPUT EXIT THRU DINPUT
01513 0 76 03454 LDA #0 INITIALIZE WORDIN WITH 0
01514 0 #3 01554 BRM IN INPUT ONE CHARACTER
01515 0 72 03731 SKA #70 TEST FOR OCTAL DIGIT
01516 0 01 01530 BRU NODIG NOT AN OCTAL DIGIT
01517 0 66 20003 RCY 3
01520 0 76 02375 LDA WORDIN
01521 0 67 20003 LCY 3
01522 0 01 01555 BRU DIGIT
*
* DECIMAL INPUT ROUTINE
*
01523 0 00 00003 DINPUT PZE 3
01524 0 76 03454 LDA #0 INITIALIZE WITH 0
01525 0 #3 01554 BRM IN INPUT ONE CHAR
01526 0 73 03732 SKG #9 TEST FOR DECIMAL DIGIT
01527 0 01 01545 BRU DECIMAL YES
01530 0 17 03733 NODIG EBR #40 TEST FOR DASH=FORMAT CHAR
01531 0 72 03462 SKA #77
01532 0 01 01534 BRU NODASH NOT A DASH
01533 0 01 01556 BRU SPACE DASH
*
01534 0 17 03734 NODASH EBR #52 TEST FOR A SPACE
01535 0 72 03462 SKA #77
01536 0 01 01540 BRU NOSPC NOT A SPACE
01537 0 01 01556 BRU SPACE
    
```

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```
*
01540 0 17 03711 N0SPC EOR #73 TEST FOR SLASH
01541 0 72 03662 SKA #77
01542 0 51 01523 BRR DINPUT NOT A DIGIT, DASH, SPACE OR SLASH
01543 0 76 03654 LDA #0
01544 0 01 01555 BRU DIGIT
*
01545 0 76 02375 DECMAL LDA WORDIN
01546 0 75 03454 LDB #0
01547 0 67 20002 LCY 2
01550 0 55 02375 ADD WORDIN
01551 0 67 20001 LCY 1
01552 0 55 02352 ADD CHARIN
01553 0 01 01555 BRU DIGIT
*
* CHARACTER INPUT ROUTINE
*
01554 0 00 00004 IN PZE 4
01555 0 35 02375 DIGIT STA WORDIN UPDATE WORDIN
01556 0 40 21000 SPACE SKS 21000 CHANNEL READY TEST
01557 0 01 01556 BRU #1
01560 0 02 02001 EBM 2001 HEAD TYPEWRITER#ONE CHARACTER MODE
01561 0 32 02352 XIM CHARIN
01562 0 02 00000 EBM 0 DISCONNECT TYPEWRITER
01563 0 76 02352 LDA CHARIN PICK UP INPUT CHARACTER
01564 0 14 03662 ETR #77
01565 0 35 02352 STA CHARIN
01566 0 51 01554 BRR IN
```

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```
*
* OUTPUT ROUTINE
*
01567 0 00 00003 OUTPUT PZE 3
01570 0 37 02400 STX *K2
01571 0 35 02374 STA WORD SAVE CODE WORD
01572 0 14 03735 ETR #7777777 EXTRACT ALL BUT REL BIT
01573 0 72 03672 SKA #40000 SKIP IF NOT MAPPED
01574 0 17 03736 EBR #40040000 TAKE OUT IA BIT AND INSERT REL BIT
01575 0 35 02346 STA ADDRESS
01576 0 76 03654 LDA #0 PICK UP ZERO CHAR
01577 0 43 01706 BRM #N TURN ON SELECTED OUTPUT DEVICE
01600 0 75 02346 REGOUT LDB ADDRESS PICK UP OUTPUT CODE WORD
01601 0 67 20004 LCY 4 SHIFT BIT 4 OF CODE WORD INTO SIGN BIT
01602 0 36 02347 STB BCD BCD=0 OF CODE WORD IS A NOP
01603 0 67 20005 LCY 5 SHIFT COUNT INTO A REG
01604 0 14 03737 ETR #377
01605 0 35 02353 SETCNT STA COUNT
01606 0 53 02347 RCDYST SKN BCD TEST FOR BCD OUTPUT
01607 0 01 01614 BRU BINARY NOT BCD
01610 0 76 02346 GETWRD LDA ADDRESS PICK UP WORD
01611 0 43 01636 BRM WORDOUT OUTPUT WORD
01612 0 61 02346 MIN ADDRESS INCREMENT ADDRESS
01613 0 01 01606 BRU BCDYST
```


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```
*
* MAG TAPE 0 READ DRIVER
*
01743 0 00 00002 RT0 PZE 2 HEAD TAPE UNIT 0
01744 0 43 01761 BRM RDYC
01745 0 02 03610 ERM 3610 READ FORWARD
01746 0 43 01774 BRM READ READ ONE UNIT
01747 0 51 01743 BRR RT0 NORMAL EXIT
01750 0 01 01754 BRU TAPERR CHANNEL ERROR
01751 0 43 01735 BRM REWIND REWIND TAPE 0
01752 0 61 01743 MIN RT0
01753 0 51 01743 BRR RT0

*
01754 0 76 03754 TAPERR LDA #TERM*2000000 MAG TAPE ERROR MESSAGE
01755 0 43 01867 BRM OUTPUT
01756 0 43 00465 BRM CONTRL
01757 0 02 07430 ERM 7630 SCAN REVERSE BINARY & CHAR MODE
01760 0 01 01744 BRU RT0+1

*
* TEST MAG TAPE 0 READY
*
01761 0 00 00003 RDYC PZE 3 TEST TAPE UNIT 0 READY FOR READ
01762 0 40 14010 SKS 14010 TEST FOR FILE PROTECTED
01763 0 01 01770 BRU TAP0
01764 0 76 03755 LDA #TERM1+2000000
01765 0 43 01867 BRM OUTPUT
01766 0 43 00465 BRM CONTRL
01767 0 01 01762 BRU RDYC+1
01770 0 40 10410 TAP0 SKS 10410 UNIT 0 READY
01771 0 40 21000 SKS 21000 BUFFER READY
01772 0 01 01770 BRU **2
01773 0 51 01761 BRR RDYC
```

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```
*
* READS DIAT FORMATED INPUT DATA
*
01774 0 00 00003 READ PZE 3
01775 0 32 01002 WIM 2 READ WIM 3
01776 0 40 21000 SKS 21000 TEST FOR END OF FILE
01777 0 01 02002 BRU READER NOT END OF FILE
02000 0 61 01774 MIN READ
02001 0 01 02020 BRU MINRD

*
02002 0 32 00003 READER WIM 3 READ WIM 4
02003 0 32 00004 WIM 4 READ BRU 2
02004 0 32 02067 WIM START SAVE FIRST WIM
02005 0 32 02067 WIM START
02006 0 76 02070 READON LDA STOP SAVE STOP
02007 0 32 02070 WIM STOP
02010 0 75 02070 LDB STOP
02011 0 32 02070 WIM STOP
02012 0 40 21000 SKS 21000 TEST FOR LAST WORD OF DATA
02013 0 01 02006 BRU READON
02014 0 36 02070 STB STOP
02015 0 35 02070 STA STOP
02016 0 61 02070 MIN STOP SAVE LAST WIM
02017 0 40 21000 SKS 20010 INCREMENT ADDRESS OF LAST WIM
02020 0 61 01774 MINRD MIN READ CHANNEL ERROR TEST
02021 0 51 01774 BRR READ CHANNEL ERROR
```


*
* MAG TAPE 1 CONTROL WRITE DRIVER
*

02022	0 00 00002	REGIN1	PZE	2	WRITES 0LDS ONTO MAG TAPE UNIT 1
02023	0 43 01472		BRM	PUT	
02024	0 76 02022		LDA	BEGIN1	
02025	0 35 02063		STA	WT1	SET RETURN FROM WT1
02026	0 76 00401		LDA	STATUS	
02027	0 14 03756		ETR	#40444004	REMOVE INT EN, AND WDT BITS
02030	0 16 03716		MRG	#00044000	FORCE DSC AND RAD WRITE PROTECT BITS
02031	0 35 00401		STA	STATUS	
02032	0 76 03654		LDA	#0	
02033	0 35 00332		STA	FLAGS	CLEAR FLAGS
02034	0 35 00406		STA	SEED	CLEAR SEED
02035	0 35 00407		STA	TIME	CLEAR TIME
02036	0 75 03757		LDB	#3200030	WIM 30
02037	0 36 02767		STB	START	INITIALIZE START
02040	0 76 03721		LDA	#3204000	WIM 4000
02041	0 35 02770		STA	STSP	INITIALIZE STOP
02042	0 71 03760		LDX	#1	SET ERASE OPERATION
02043	0 43 02750		BRM	RDY1	
02044	0 02 14711		ERM	14011	REWIND TAPE UNIT 1
02045	0 76 00637		LDA	LOAD	BRU DISMIS
02046	0 35 02750		STA	BRANCH	
02047	0 01 02771		BRU	SETRTY	

*
* TEST MAG TAPE 1 READY
*

02050	0 00 00004	RDY1	PZE	4	TEST TAPE UNIT 1 READY FOR WRITE
02051	0 40 14711		SKS	14011	TEST FOR FILE PROTECT RING
02052	0 01 02757		BRU	TAP1	
02053	0 40 10411		SKS	10411	TEST MAG TAPE UNIT 1 READY
02054	0 40 21000		SKS	21000	TEST CHANNEL READY
02055	0 01 02753		BRU	**2	
02056	0 51 02750		BRR	RDY1	
02057	0 76 03761	TAP1	LDA	#TERM2+2000000	

02060	0 43 01567	BRM	SUTPUT
02061	0 43 00665	BRM	CONTRL
02062	0 01 02051	BRU	RDY1+1

```

*
*
*   MAG TAPE 1 UNIT WRITE DRIVER
02063 0 00 00003 NT1 PZE 3 WRITE MAG TAPE UNIT 1
02064 0 43 01472 BRM PUT SAVE REGISTERS
02065 0 76 00577 LDA ACCESS BRU #000
02066 0 35 02350 STA BRANCH
02067 0 71 03654 AGAIN LDX #0 SET WRITE OPERATION
02070 0 75 03762 LDB #77777770 SET 9 RETRYS
02071 0 36 02364 SETRTY STB RETRY
02072 0 76 02367 GETADR LDA START PICK UP STARTING ADDRESS
02073 0 35 02346 STA ADDRESS
02074 0 76 02370 LDA STBP PICK UP LAST ADDRESS
02075 0 43 02350 BRM R0Y1
02076 2 23 02126 EXU #PER,2 WRITE (X#0) OR ERASE (X#1)
02077 0 12 02763 MIN #3200003 WIM 3
02100 0 12 02764 MIN #3200004 WIM 4
02101 0 12 02765 MIN #100002 BRU 2
02102 0 12 02346 WRTLUP MIN ADDRESS OUTPUT WIM ADDRESS
02103 0 12 02346 MIN ADDRESS OUTPUT CONTENTS OF ADDRESS
02104 0 61 02346 MIN ADDRESS INCREMENT ADDRESS
02105 0 73 02346 SKG ADDRESS TEST FOR LAST ADDRESS
02106 0 01 02110 BRU #+2 LAST ADDRESS
02107 0 01 02102 BRU WRTLUP NOT LAST ADDRESS
02110 0 01 02350 MIN BRANCH RETURN BRANCH
02111 0 02 14000 EBM 14000 TERMINATE OUTPUT
02112 0 43 02050 BRM R0Y1
02113 0 40 20010 SKS 20010 TEST FOR CHANNEL ERROR
02114 0 01 02121 BRU WRTERR YES
02115 0 53 02364 SKN RETRY TEST FOR NINTH RETRY
02116 0 01 02167 BRU AGAIN YES
02117 0 43 01477 BRM GET
02120 0 51 02063 BRR #T1

```

```

*
*
*   SCAN REVERSE BINARY
02121 0 02 07431 WRTERR EBM 7631 INCREMENT RETRY COUNTER
02122 0 61 02364 MIN RETRY TEST FOR NINTH RETRY
02123 0 53 02364 SKN RETRY NINTH RETRY-ERASE THE TAPE
02124 0 71 02760 LDX #1
02125 0 01 02172 BRU GETADR
*
*   WRITE FORWARD BINARY & CHAR MODE
02126 0 02 03451 #PER EBM 3651 ERASE FORWARD BINARY & CHAR MODE
02127 0 02 03471 EBM 3671
*
*   ENABLE INTERRUPTS
02130 0 00 00000 INTCLR PZE RETURN
02131 0 43 00440 BRM #+2
02132 0 20 02134 NSP 20002
02133 0 02 20002 EBM STATUS
02134 0 76 02401 LDA #4 SKIP IF NOT 940
02135 0 72 03463 SKA #+2
02136 0 11 02140 BRI #+1
02137 0 01 02140 BRU #+1
02140 0 20 02140 NSP #
02141 0 02 20004 EBM 20004 DISABLE INTERRUPTS
02142 0 51 02130 BRR INTCLR

```

```

*
* PRIVILEGED INSTRUCTION TRAP HANDLER
*
TRP40 PZE
02143 0 00 00000 STA AREG SAVE A REGISTER
02144 0 35 00410 LDA TRP40 PICK UP MARK
02145 0 76 02143 STA XTRP40 SET TRAP ADDRESS TO PROCEED DIVERT ENTRY
02146 0 35 00260 ETR *7777777 REMOVE REL AND OVFLD BITS
02147 0 14 03735 STA TRP40 MONITOR MODE RETURN ADDRESS
02150 0 35 02143 SKA *34000 TEST FOR TRAP BELOW 4000
02151 0 72 03766 BRU PIT TRAP OCCURRED BELOW 4000
02152 0 01 02166 LDA RL1 TRAP OCCURRED ABOVE 4000
02153 0 76 00415 SKA *3700000 GET REL REG 0
02154 0 72 03743 BRU PIT CHECK REL REG 0 : 0
02155 0 01 02166 SKR TRP40 NO=TRAP OCCURRED ABOVE 4000
02156 0 60 02143 BRU **1 POINT TO MARKED LOCATION
02157 0 01 02160 LDA* TRP40 PICK UP MARK
02160 0 76*02143 ETR *7777777 REMOVE REL AND OVFLD BITS
02161 0 14 03735 STA TRP40 RESTORE MARK
02162 0 35*02143 STA USERTR SAVE LOCATION OF USER TRANSITION
02163 0 35 02143 LDA AREG RESTORE A REGISTER
02164 0 76 00410 BRR TRP40 RETURN TO PRIV INST IN MONITOR MODE
02165 0 51 02143

*
PIT LDA AREG RESTORE A REGISTER
02166 0 76 00410 BRU T40
02167 0 01 00261

```

```

*
* CPU PARITY INTERRUPT HANDLER
*
INT56 PZE
02170 0 00 00000 STA *K0
02171 0 35 02176 LDA STATUS
02172 0 76 00401 SKA *4 SKIP IF NOT 940
02173 0 72 03A63 BRU **2 CLEAR PARITY INTERRUPT
02174 0 11 02176 BRU* **1 CLEAR PARITY INTERRUPT
02175 0 01*02176 PARPTR PZE NOPAR
02176 0 00 02177 NOPAR STX WK1 SAVE X
02177 0 37 02377 LDX INT56
02200 0 71 02170 STX XINT56
02201 0 37 00274 LDX *PARMSG=1
02202 0 71 03767 STX PARPTR SET NEXT PARITY TO REPORT ERROR
02203 0 37 02176 LDX MPMSG
02204 0 71 02230 STX PARMSG SET MONITOR MODE PARITY MESSAGE
02205 0 37 02221 LDX *40000
02206 0 71 03A72 EAX 0/2
02207 2 77 00000 BRX **1 ADDRESS ALL OF MEMORY IN MONITOR MODE
02210 0 41 02207 LDX UPMSG
02211 0 71 02231 STX PARMSG SET USER MODE PARITY MESSAGE
02212 0 37 02221 LDX *40000
02213 0 71 03A72 EAX 0/6
02214 6 77 00000 BRX **1 ADDRESS ALL OF MEMORY IN USER MODE
02215 0 41 02214 LDX FPMSG
02216 0 71 02232 STX PARMSG SET FALSE PARITY MESSAGE
02217 0 37 02221

```

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02220	0	43	00460	BRM	ERROR	REPORT PARITY
02221	0	00	00000	PARMSG PZE		
02222	2	20	03527	NBP	PARERR,2	
02223	0	71	03770	LDX	#NOPAR	RESTORE PARITY POINTER
02224	0	37	02176	STX	PARPTR	RESTORE A
02225	0	76	02176	LDA	#K0	RESTORE X
02226	0	71	02177	LDX	#K1	
02227	0	01	00275	BRU	156	
				*		
02230	4	20	03505	MPMSG NBP	#ONPAR,4	
02231	4	20	03514	UPMSG NBP	#SRPAR,4	
02232	0	20	03522	FPMSG NBP	FLSPAR	

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				*		
				*	I/O PARITY INTERRUPT HANDLER	
				*		
02233	0	00	00000	INT57 PZE		
02234	0	02	12000	EDM	12000	
02235	0	33	02303	PIN	PIN#	W CHANNEL INTERLACE
02236	0	35	02376	STA	#K0	
02237	0	76	00403	LDA	RADSIZ	
02240	0	16	00404	PRG	DSCSIZ	BITS TO TELL WHICH CHANNELS ARE THERE
02241	0	72	03771	SKA	#70000000	SKIP IF NO E CHANNEL
02242	0	01	02244	BRU	**2	
02243	0	01	02246	BRU	**3	
02244	0	06	12000	EDD	12000	
02245	0	33	02305	PIN	PINE	E CHANNEL INTERLACE WORD
02246	0	72	03772	SKA	#07000000	SKIP IF NO F CHANNEL
02247	0	01	02251	BRU	**2	
02250	0	01	02253	BRU	**3	
02251	0	06	12100	EDD	12100	
02252	0	33	02306	PIN	PINF	F CHANNEL INTERLACE WORD
02253	0	72	03731	SKA	#00000070	SKIP IF NO Y CHANNEL
02254	0	01	02256	BRU	**2	
02255	0	01	02260	BRU	**3	
02256	0	02	12100	EDM	12100	
02257	0	33	02304	PIN	PINY	Y CHANNEL INTERLACE WORD
02260	0	76	02233	LDA	INT57	
02261	0	35	00276	STA	XINT57	SET ADDRESS TO PRECEDE DIVERT ENTRY

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```
02262 0 43 00454 BRM REPORT
02263 4 20 03543 NOP IOPAR,4
02264 0 04 02303 FOUR PINX
02265 0 43 00460 BRM ERROR
02266 0 20 03623 NOP CONRET
02267 0 76 03654 LDA #0
02270 0 35 02303 STA PINX
02271 0 35 02304 STA PINY
02272 0 35 02305 STA PINE
02273 0 35 02306 STA PINF
02274 0 76 00401 LDA STATUS
02275 0 72 03733 SKA #40
02276 0 11 02300 BRI I57EXT
02277 0 01 02300 BRU I57EXT
02300 0 20 02300 I57EXT NOP *
02301 0 76 02376 LDA #40
02302 0 01 00277 BRU I57
```

SKIP IF NOT 940

```
02303 0 00 00000 PINX PZE
02304 0 00 00000 PINY PZE
02305 0 00 00000 PINE PZE
02306 0 00 00000 PINF PZE
```

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```
*
* POWER ON INTERRUPT HANDLER
*
02307 0 76 00354 PWRON LDA UID
02310 0 75 00365 LDB FID
02311 0 71 00430 LDX OBJECT
02312 0 43 00460 BRM ERROR
02313 4 20 03571 NOP PWRPAL,4
02314 2 20 03602 NOP UFFOE,2
02315 0 01 00514 BRU FENTRY RESTART FUNCTION

*
02316 0 43 02331 PWROFF BRM DISCON
02317 0 71 03472 LDX #40000
02320 0 67 00060 LCY 480
02321 0 41 02320 BRX #1
02322 0 76 00354 LDA UID
02323 0 75 00365 LDB FID
02324 0 71 00430 LDX OBJECT
02325 0 43 00460 BRM ERROR
02326 4 20 03575 NOP PWRPAL,4
02327 2 20 03602 NOP UFFOE,2
02330 0 01 00514 BRU FENTRY

*
02331 0 00 00003 DISCON PZE 3
02332 0 02 20004 EBM 20004 DISABLE INTERRUPTS
02333 0 02 20200 EBM 20200 DISARM CLOCK PULSE INTERRUPT
02334 0 02 00000 EBM 0 DISCONNECT W
02335 0 02 00100 EBM 100 DISCONNECT Y
02336 2 02 00000 EBM 0,2 DISCONNECT C
02337 2 02 00100 EBM 100,2 DISCONNECT D
02340 0 06 00000 EBD 0 DISCONNECT E
02341 0 06 00100 EBD 100 DISCONNECT F
02342 2 06 00000 EBD 0,2 DISCONNECT G
02343 2 06 00100 EBD 100,2 DISCONNECT H
02344 0 51 02331 BRR DISCON
```

*
* CONSTANTS AND WORKING STORAGE FOR DIAGNOSTIC CONTROL PROGRAM
*

02345	0	00	00000	ADDRESS	PZE	
02346	0	00	00000	ADDRESS	PZE	
02347	0	00	00000	BCD	PZE	
02350	0	00	00000	BRANCH	PZE	
02351	0	00	00000	CHAR	PZE	
02352	0	00	00000	CHARIN	PZE	
02353	0	00	00000	COUNT	PZE	
02354	0	00	00000	CBWNT	PZE	
02355	0	00	00000	DEVICE	PZE	
02356	0	00	00000	FADDR	PZE	0
02357	0	00	00000	FIW	PZE	
02360	0	00	00000	FRBM	PZE	
02361	0	00	00000	IPCHAR	PZE	
02362	0	00	00000	LIST	PZE	
02363	0	05	00410	REGADD	FIVE	AREG
02364	0	00	00000	RETRY	PZE	
02365	0	00	00000	SRCODE	PZE	
02366	0	00	00000	RRR	PZE	
02367	0	00	00000	START	PZE	
02370	0	00	00000	STOP	PZE	
02371	0	00	00000	TO	PZE	
02372	0	00	00000	UIW	PZE	
02373	0	00	00000	USERTR	PZE	
02374	0	00	00000	WORD	PZE	
02375	0	00	00000	WORDIN	PZE	
02376	0	00	00000	WK0	PZE	
02377	0	00	00000	WK1	PZE	
02400	0	00	00000	WK2	PZE	

*
* DIAGNOSTIC CONTROL PROGRAM MESSAGES
*

02401	52464324	SIM	BCD	' 0LDS 3.0''
02402	62120333			
02403	00371212			
02404	52523226	SAM	BCD	' FOR UNIT, FUNCTION OR OBJECT ABSTRACTS TYPE =U A,=F A OR =0 A.'
02405	46511264			
02406	45316373			
02407	12266445			
02410	23633146			
02411	45124451			
02412	12462241			
02413	25236312			
02414	21226263			
02415	51212263			
02416	62126370			
02417	47251240			
02420	64122173			
02421	40261221			
02422	12465112			
02423	40461221			
02424	33121212			
02425	52622563	BCD		' SET SYSTEM VARIABLES AND TYPE LT FOR AUTO TEST.'
02426	12627062			
02427	63254412			
02430	65215131			
02431	21224225			
02432	62122145			
02433	24126370			
02434	47251240			
02435	63122446			
02436	51122164			
02437	63461263			
02440	25626333			
02441	52522251	BCD		' BREAK POINT SETTINGS; BPT; SET=LOOP ON OBJECT PROGRAM'

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02442	25214212			
02443	47463145			
02444	63126225			
02445	63633145			
02446	27621552			
02447	22476301			
02450	12121212			
02451	62256313			
02452	43444447			
02453	12444512			
02454	46224125			
02455	23631247			
02456	51462751			
02457	21441212			
02460	52224763	BCD	' BPT2	SET=NO STOP ON ERRORS.'
02461	02121212			
02462	12622563			
02463	13454612			
02464	62634447			
02465	12464512			
02466	25515146			
02467	51623312			
02470	52224763	BCD	' BPT3	SET=INHIBIT ERROR OUTPUT.'
02471	03121212			
02472	12622563			
02473	13314530			
02474	31223163			
02475	12255151			
02476	46511246			
02477	64634764			
02500	63331212			
02501	52224763	BCD	' BPT4	TOGGLE=00 TO CONTROL OR KILL OUTPUT.'
02502	04126346			
02503	27274325			
02504	13274412			
02505	63461223			

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02506	46456351			
02507	46431246			
02510	51124231			
02511	43431246			
02512	64634764			
02513	63331212			
02514	52526270	BCD	'	SYNTAX: LEVEL SELECTION(1ST CHAR);'
02515	45632167			
02516	15524325			
02517	65254712			
02520	62254325			
02521	23633146			
02522	45740162			
02523	63122330			
02524	21513456			
02525	52621362	BCD	'	S=SYSTEM U=UNIT F=FUNCTION B=OBJECT'
02526	70626325			
02527	44526413			
02530	64453163			
02531	52261326			
02532	64452363			
02533	31464552			
02534	46134422			
02535	41252363			
02536	52631351	BCD	'	T=RETURN TRANSFER XXXXT=HALT AND TRANSFER TO XXXXX'
02537	25636451			
02540	45126351			
02541	21456226			
02542	25515267			
02543	67676767			
02544	63133021			
02545	43631221			
02546	45741263			
02547	51214562			
02550	26255112			
02551	63461267			

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02552	67676767		
02553	52706767	BCD	' YXXXXXX=MEMORY PRINT OUT Y WORDS FROM XXXXXX.'
02554	67676767		
02555	47134425		
02556	44465170		
02557	12475131		
02560	45631246		
02561	64631270		
02562	12664651		
02563	24621226		
02564	51464412		
02565	67676767		
02566	67673212		
02567	52676767	BCD	' XXXXX=MEMORY MODIFY AT LOC XXXXX'
02570	67674413		
02571	44254446		
02572	51701244		
02573	46243126		
02574	70122163		
02575	12434423		
02576	12676767		
02577	67671212		
02600	52524447	BCD	' OPERATION REQUESTS(2ND CHAR); I=IDENTIFY A=ABSTRACT'
02601	25512163		
02602	31464412		
02603	51255464		
02604	25626362		
02605	74024424		
02606	12233021		
02607	51345452		
02610	31133124		
02611	25456231		
02612	26705221		
02613	13212262		
02614	63512123		
02615	63121212		

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02616	52651365	BCD	' V=VARIABLES DISPLAY AND MODIFY'
02617	21513121		
02620	22432562		
02621	12243162		
02622	47432170		
02623	12214524		
02624	12444424		
02625	31267112		
02626	52522126	BCD	' AFTER CHANGING; SYSTEM VARIABLES = IDLE, START, RUN'
02627	63255112		
02630	23302145		
02631	27314527		
02632	15526270		
02633	62632444		
02634	12652151		
02635	31212243		
02636	25621240		
02637	12312443		
02640	25731262		
02641	63215163		
02642	73125164		
02643	45121212		
02644	52644531	BCD	' UNIT VARIABLES = DO A UNIT TRANSFER'
02645	63126521		
02646	51312122		
02647	43256212		
02650	40122446		
02651	12211264		
02652	45316312		
02653	63512145		
02654	62262551		
02655	52266445	BCD	' FUNCTION VARIABLES = DO A FUNCTION TRANSFER'
02656	23633146		
02657	45126421		
02660	51312122		
02661	43256212		

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02662	*0122446		
02663	12211226		
02664	64452363		
02665	31464512		
02666	63512145		
02667	62262551		
02670	52121212		
02671	52121240	BCD	' *S T=AUTO MODE *U XXT=TRANS TO UNIT XX'
02672	62126313		
02673	21646346		
02674	12444424		
02675	25521212		
02676	42641267		
02677	67631363		
02700	51214562		
02701	12634612		
02702	64453163		
02703	12676712		
02704	52121240	BCD	' *F XXT=TRANS TO FUNCTION XX'
02705	26126767		
02706	63131351		
02707	21456212		
02710	63461226		
02711	64452363		
02712	31464512		
02713	67671212		
02714	52121240	BCD	' *B XXXXXT=TRANS TO OBJECT AT XXXXX'
02715	46126767		
02716	67676763		
02717	13635121		
02720	45621263		
02721	46124422		
02722	41252363		
02723	12216312		
02724	67676767		
02725	67121212		

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02726	52121240	BCD	' *B T=RESTART PRESENT OBJECT TEST *U L=UNIT LIST'
02727	46126313		
02730	51256263		
02731	21516312		
02732	47512462		
02733	25456312		
02734	44224125		
02735	23631263		
02736	25626352		
02737	12124064		
02740	12431364		
02741	45316312		
02742	43316263		
02743	52121240	BCD	' *F L=FUNCTION LIST'
02744	26124313		
02745	26644523		
02746	63314445		
02747	12433162		
02750	63121212		
02751	52522330	BCD	' *CHARACTERS FOR MODIFYING VARIABLES'
02752	21512123		
02753	63255162		
02754	12264451		
02755	12444424		
02756	31267331		
02757	45271265		
02760	21513121		
02761	22432562		
02762	52611323	BCD	' /*CLEAR DIGITS **STORE WORD **SPACES(=) OVER WORD'
02763	43252151		
02764	12243127		
02765	31636252		
02766	33136263		
02767	46512512		
02770	66465124		
02771	52731362		

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02772	47212325		
02773	62744734		
02774	12466525		
02775	51126646		
02776	51241212		
02777	52526270	BCD	' SYSTEM VARIABLES, '
03000	62632544		
03001	12652151		
03002	31212243		
03003	25625612		
03004	52642166	BCD	' UAW * BITS ARE UNITS TO BE ACTIVATED, '
03005	12121212		
03006	13122231		
03007	62621221		
03010	51251264		
03011	45316262		
03012	12634412		
03013	22251221		
03014	23633165		
03015	21632524		
03016	33121212		
03017	52121200	BCD	' 0 CPU 1 CPU EX 2 FPAU 3 MEM1 4 MEM2 5 MEM3'
03020	12122247		
03021	64521212		
03022	01121223		
03023	47641225		
03024	67521212		
03025	02122447		
03026	21645212		
03027	12031212		
03030	44254401		
03031	52121204		
03032	12124425		
03033	44025212		
03034	12051212		
03035	44234403		

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03036	52121202	BCD	' 12 RAD E 15 RAD W 21 DISC W 23 CTE'
03037	12125121		
03040	24122452		
03041	12010212		
03042	12512124		
03043	12665212		
03044	02011212		
03045	24316223		
03046	12665212		
03047	02031212		
03050	23632512		
03051	52626221	BCD	' STATUS * BIT 0 * ERRORS TO LINE PR, '
03052	63646212		
03053	13121222		
03054	31631200		
03055	12131225		
03056	51514451		
03057	62126246		
03060	12433145		
03061	25124751		
03062	73121212	BCD	' 3 * INT ENABLED, 6 * RTC ON, 9 * DISC WRITE PROTECT, '
03063	52121212		
03064	12121212		
03065	12120212		
03066	13123145		
03067	63122245		
03070	21224225		
03071	24731206		
03072	12131251		
03073	63231246		
03074	45731211		
03075	12131224		
03076	31422212		
03077	66513163		
03100	25124751		
03101	46632523		

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03102	63731212		
03103	52121212	BCD	' 12 = RAD WRITE PROTECT, 21 = 940'
03104	12121212		
03105	12120102		
03106	12131251		
03107	21241266		
03110	51316325		
03111	12475146		
03112	63252363		
03113	73120201		
03114	12131211		
03115	04001212		
03116	52643166	BCD	' UIW/FIW = BIT 0 LOCKS UNITS, BIT 12 LOCKS FUNCTIONS'
03117	61263166		
03120	12121312		
03121	22316312		
03122	00124346		
03123	23426212		
03124	64453163		
03125	62731222		
03126	31631201		
03127	02124346		
03130	23426212		
03131	26644823		
03132	63314445		
03133	62121212		
03134	52121212	BCD	' BITS 1=11 = UIW, BITS 13-23 = FIW'
03135	12121212		
03136	12121212		
03137	22316312		
03140	12014001		
03141	01121312		
03142	64316673		
03143	12223163		
03144	62120103		
03145	40020312		

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03146	13122631		
03147	66121212		
03150	52512124	BCD	' RADSIZ = OCTAL DIGIT MULTIPLES OF 2M CHARS BY CHANNEL.'
03151	62317112		
03152	13124623		
03153	63214312		
03154	24312731		
03155	63124464		
03156	43633147		
03157	43256212		
03160	46261202		
03161	44122330		
03162	21516212		
03163	22701223		
03164	30214545		
03165	25433212		
03166	52121212	BCD	' E = 0=2 = 012=14'
03167	12122512		
03170	13120040		
03171	02126612		
03172	13010240		
03173	01041212		
03174	52246223	BCD	' DSCSIZ = OCTAL DIGIT MULTIPLES OF 8 DISCS BY CHANNEL.'
03175	62317112		
03176	13124623		
03177	63214312		
03200	24312731		
03201	63124464		
03202	43633147		
03203	43256212		
03204	46261210		
03205	12243162		
03206	23621222		
03207	70122330		
03210	21454525		
03211	43331212		

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03322 31212745
03323 46626731
03324 23124425
03325 62622127
03326 25122646
03327 51442163
03330 12316212
03331 21126231
03332 27452143
03333 12452144
03334 25731221
03335 12242162
03336 30122145
03337 24121212
03340 52444624
03341 64432512
03342 43462121
03343 63314445
03344 62126225
03345 47215121
03346 63252412
03347 22701223
03350 46444421
03351 62731243
03352 46273123
03353 12432170
03354 46646212
03355 52472127
03356 25124551
03357 12314512
03360 47215125
03361 45623352
03362 52627245
03363 63216715
03364 52404612
03365 31136370

BCD ' MODULE LOCATIONS SEPARATED BY COMMAS, LOGIC LAYOUT'

BCD ' PAGE NR IN PARENS. SYNTAX'

BCD ' =0 I-TYPES LOCATION OF OBJECT PROGRAM'

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03366 47256212
03367 43462321
03370 63314445
03371 12462612
03372 46224125
03373 23631247
03374 51462751
03375 21441212
03376 52404412
03377 21134422
03400 41252363
03401 12212262
03402 63512123
03403 63524446
03404 12651346
03405 22412523
03406 63126421
03407 51312122
03410 43256212
03411 52404412
03412 67676767
03413 67631363
03414 51214562
03415 26255112
03416 63461243
03417 46231267
03420 67676767
03421 52404612
03422 63136351
03423 21456226
03424 25511263
03425 46124751
03426 25622545
03427 63124422
03430 41252363
03431 12632562

BCD ' =0 A=OBJECT ABSTRACT =0 V=OBJECT VARIABLES'

BCD ' =0 XXXXXT=TRANSFER TO LOC XXXXX'

BCD ' =0 T=TRANSFER TO PRESENT OBJECT TEST. OBJECT VARIABLES ARE'

0LDS3	TAP=3.0	01/17	07136	PAGE 73				
03542	37121212							
03543	52316146	10PAR	BCD		' I/O PARITY'			
03544	12472151							
03545	3167012							
03546	52121266		BCD		' WCHAN YCHAN ECHAN FCHAN ''			
03547	23302145							
03550	12121212							
03551	70233021							
03552	45121212							
03553	12232330							
03554	21451212							
03555	12122623							
03556	30214552							
03557	37121212							
03560	52314343	NOUMSG	BCD		' ILLEGAL UNIT''			
03561	25272143							
03562	12644531							
03563	63371212							
03564	52314343	NOFMSG	BCD		' ILLEGAL FUNCTION''			
03565	25272143							
03566	12266445							
03567	23633146							
03570	45371212							
03571	52474666	PWRFAL	BCD		' POWER FAILURE''			
03572	25511226							
03573	21314364							
03574	51253712							
03575	52262143	P0FINT	BCD		' FALSE PWR OFF INT''			
03576	62251247							
03577	66511246							
03600	26261231							
03601	45633712							
03602	52121264	UF00E	BCD		' UID FID OBJECT OVERFLOW ERRORS ''			
03603	31241212							
03604	12121212							
03605	26312412							

0LDS3	TAP=3.0	01/17	07136	PAGE 74				
03606	12121212							
03607	46224125							
03610	23631212							
03611	46652551							
03612	26434666							
03613	12122551							
03614	51465162							
03615	52371212							
03616	52516323	RTC0FF	BCD		' RTC OFF''			
03617	12462426							
03620	37121212							
03621	52403712	CONSYM	BCD		' ''			
03622	12371212	CONSPC	BCD		' ''			
03623	52371212	CONRET	BCD		' ''			

END

LITERALS USED:
03624 00037777
03625 00100000
03626 40000000
03627 07737777
03630 00000000
03631 37777772
03632 37777740
03633 00001000
03634 00000000
03635 40404040
03636 00000007
03637 06100007
03640 04300010
03641 04300014
03642 04300042
03643 00000000
03644 00000000
03645 77777777
03646 00400000
03647 77770000
03650 02000000
03651 02000000
03652 02000000
03653 77770000
03654 00000000
03655 02000000
03656 00000000
03657 77777777
03660 02000000
03661 00000000
03662 00000000
03663 00000000
03664 00000000
03665 77777771

03666 37373737
03667 00003777
03670 01700000
03671 01000000
03672 00040000
03673 00000076
03674 00000030
03675 00000023
03676 00000010
03677 77773777
03700 00000006
03701 37773777
03702 02000016
03703 00000046
03704 00000044
03705 00000020
03706 40004000
03707 02000023
03710 00000075
03711 00000073
03712 00000012
03713 00000027
03714 00000022
03715 00000065
03716 00000000
03717 04300024
03720 00000062
03721 03204000
03722 03237777
03723 00000067
03724 17000000
03725 00000066
03726 00000000
03727 40444444
03730 04000000
03731 00000070

03732 00000011
 03733 00000040
 03734 00000052
 03735 07777777
 03736 40040000
 03737 00000077
 03740 37700000
 03741 00177777
 03742 44444440
 03743 37000000
 03744 77000000
 03745 20000000
 03746 25000000
 03747 60000000
 03750 00777777
 03751 00000007
 03752 12000000
 03753 77400000
 03754 02000464
 03755 02000470
 03756 40444004
 03757 00200030
 03760 00000001
 03761 02000477
 03762 77777770
 03763 03200003
 03764 03200004
 03765 00100002
 03766 00030000
 03767 00000220
 03770 00000177
 03771 70000000
 03772 07000000

3773 CELLS USED BY PROGRAM

LOCAL SYMBOLS SED *

ACCESS	577*	ACTFUL	621*	ACTVAT	641*
ADDRESS	2346*	ADDRESS	2345*	AGAIN	2067*
AREG	410*	A	1175*	BACKIN	N 1400*
BCD	2347*	BCDST	1606*	BEGIN	2022*
BINARY	1614*	BRANCH	2350*	BREG	411*
B	1424*	CENTRY	1330*	CHANGE	1165*
CHAR	2351*	CHARIN	2352*	COMMA	N 1154*
CONLUP	673*	CONRET	3623*	CONSYM	3621*
CONSPC	3622*	CONTRL	665*	CONVRT	1115*
COUNT	2353*	COUNT	2354*	CRFO	1364*
C	1372*	DECIMAL	1545*	DEVICE	2355*
DIGIT	1555*	DINPUT	1523*	DISCON	2331*
DISMIS	576*	DIVERT	450*	DONE	N 452*
DSCSIZ	404*	EDIT	1307*	ELoop	1322*
END	434*	EBF	1415*	ERROR	460*
ERRORS	414*	EXIT	1111*	FADDR	2356*
FAMA	N 361*	FAW	355*	FCNTR	427*
FD9NE	N 455*	FENTRY	514*	FFIND	1245*
FID	365*	FILL	1367*	FIMA	N 360*
FIX	2357*	FLAGS	332*	FLAST	606*
FLIST	1234*	FLSPAR	3522*	FOCK	N 363*
FORMAT	1665*	FPMSG	2232*	FROM	2360*
FTA	N 367*	FUNCT	424*	FVMA	N 362*
F	1052*	GET	1477*	GETADR	2072*
GETF	1071*	GETSRC	1342*	GETU	1010*
GETARD	1610*	GOODP	1103*	HANDT	1047*
HARBLD	601*	I30	241*	I31	N 243*
I32	N 245*	I33	N 247*	I34	N 251*
I35	N 253*	I45	N 273*	I56	275*
I57	277*	I5EXT	2300*	I60	N 301*
I61	N 303*	I62	N 305*	I63	N 307*

I64	N	311+	I65	N	313+	I66	N	315+
I67	N	317+	I70	N	321+	I71	N	323+
I72	N	325+	I73	N	327+	I74	N	331+
I76	N	335+	I77	N	337+	ILFUNC		661+
ILREQ		663+	ILUNIT		657+	INCERR		474+
IIPUT		1510+	INT30		240+	INT31		242+
I T32		244+	INT33		246+	INT34		250+
I T35		252+	INT36		254+	INT37		256+
I T45		272+	INT56		2170+	INT57		2233+
INT60		300+	INT61		302+	INT62		304+
INT63		306+	INT64		310+	INT65		312+
INT66		314+	INT67		316+	INT70		320+
INT71		322+	INT72		324+	INT73		326+
I T74		330+	INT76		334+	INT77		336+
I T CLR		1130+	IN		1554+	IPAR		3543+
IPCHAR		1161+	I		1203+	LAST		626+
LCY		1176+	LEVEL		1123+	LINK		464+
LIST		1362+	LOAD		637+	LOCKS		402+
LSTRDS		1225+	LSTSCR		1240+	L		1212+
ME DS		1620+	MINRD		2020+	MODIFY		1145+
MPAR		2525+	MSVER		643+	MOVE		647+
MPMSG		2230+	MP		1200+	MTOF		1355+
M		1422+	NEXT		364+	NBDASH		1534+
NDIG		1530+	NBMSG		3564+	NBP		2177+
NORMAL		1432+	NBSPC		1540+	NBMSG		3560+
PAR		1321+	PARA		371+	NBJECT		430+
PIA		370+	PN		1706+	PCW	N	373+
PRR		1126+	PUTLUP		1640+	OUTPUT		1567+
PR		1441+	PVMA		372+	OVRFLO		413+
S		753+	PARERR		3527+	PARMSG		2221+
PARPTR		2176+	PERIOD		1167+	PINE		2305+
PILE		2376+	FIN		2303+	PINY		2304+
PII		1164+	PBFINT		3575+	PKLDBP		1716+
PFC		1362+	PUT		1472+	PWRPAL		3571+
P KBF		2314+	PWRAN		2307+	P	N	713+
RADSI2		423+	RBDANE		741+	RBLCK		721+

RBLDBP		727+	RDYS		1761+	RDY1		2050+
READ		1774+	READR		2002+	READON		2006+
REGADD		1363+	REGOUT		1600+	RELABL		1261+
RETRY		501+	REPRT		484+	REQMSG		3463+
RESET		1453+	RETRY		2364+	RETURN		440+
RL IND		1735+	RL1		415+	RL2		416+
RL		417+	RLINK		503+	RLINK1		512+
RR		2266+	RTO		1743+	RTCOFF		3616+
SAN		2404+	SAMA		341+	SEED		406+
SETADR		1704+	SETCNT		1605+	SETEXT		1105+
SETHLT		1041+	SETMSG		1210+	SETRTY		2071+
SETREG		1661+	SETREL		1267+	SJM		2401+
SMA		340+	SLIST		346+	SCH		343+
SPACE		1556+	SRCODE		2365+	STA		347+
START		2367+	STATUS		401+	STOP		2370+
STRS		1172+	SVM		3277+	SVMA		342+
SVSIZE		405+	S		1020+	T40		261+
T41		263+	T42		265+	T43	N	267+
T4		271+	TAPC		1770+	TAP1		2057+
TAPERR		1754+	TERM		3464+	TERM1		3470+
TERM2		1477+	TERMSP		1651+	TIME		407+
TS		2371+	TRP40		2143+	TRP41		262+
TRP42		264+	TRP43		266+	TRP44		270+
TYPE		1731+	T		1033+	UAMA	N	351+
UAM		400+	UCNTR		423+	UENTRY		555+
UPRE		2602+	UID		354+	UIMA		350+
U7		2372+	ULIST		1216+	UNIT		420+
UCX		353+	UPMSG		2231+	USERTR		2373+
USRPAR		3514+	UTA		357+	UVMA	N	352+
U		766+	V		1131+	WCHECK		1504+
XINPUT		1152+	XKO		2376+	WK1		2377+
XK2		2400+	XRD		2374+	WORDIN		2375+
XOUTPUT		1434+	XRTERR		2121+	XNTLUP		2102+
XTI		2063+	XFER		1051+	XINT56		274+
XINT57		276+	XREG		412+	XTRP40		260+