

DataGeneral

**DIAGNOSTIC
LISTING**

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LISTING

096-000346-03

PROGRAM

NOVA 3 SC MEMORY TEST

TAPE

095-000346-03

ABSTRACT

THE NOVA 3 SC MEMORY TEST CONSISTS OF A SERIES OF SC MEMORY TESTS AND A SIMPLE SUPERVISOR PROGRAM - THE DIAGNOSTIC LINKER. THE DIAGNOSTIC LINKER IS A PROGRAM DESIGNED TO "LINK" THE VARIETY OF SC MEMORY TESTS.

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18R02 M3SCT

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/...../
/ NAME: SCHEMST.SP / PART NUMBER: 094-000764 /
/...../
/ DESCRIPTION: SEMI-CONDUCTOR MEMORY TEST SOURCE /
/...../
/ REVISION HISTORY: /
/...../
/ REV. / DATE /
/ 00 / 03/05/76 /
/ 01 / 07/02/76 /
/ 02 / 10/08/76 /
/...../
/ COPYRIGHT (C) DATA GENERAL CORPORATION (DGC), 1976 /
/ ALL RIGHTS RESERVED. /
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0901 M3SCT MACRO REV 03.0A

10158130 10/08/76

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/...../
/ NAME: M3SCT.SP / PART NUMBER: 094-000759 /
/...../
/ DESCRIPTION: NOVA 3 SC-MEMORY TEST /
/...../
/ REVISION HISTORY: /
/...../
/ REV. / DATE /
/ 00 / 02/29/76 /
/ 01 / 03/05/76 /
/ 02 / 07/02/76 /
/ 03 / 10/08/76 /
/...../
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10003 N3SCT

01 NOVA 3 SC-MEMORY TEST
 02 ABSTRACT
 03 THE SC-MEMORY TEST CONSISTS OF A SERIES
 04 OF SC-MEMORY TESTS AND A SIMPLE
 05 SUPERVISOR PROGRAM. (THE DIAGNOSTIC LINKER)
 06
 07 THE DIAGNOSTIC LINKER IS A PROGRAM
 08 DESIGNED TO "LINK" THE VARIETY OF
 09 SC MEMORY TESTS.
 10
 11 MACHINE REQUIREMENTS
 12 NOVA 3 PROCESSOR
 13 4K OR MORE OF READ-WRITE MEMORY
 14 (ALLOWS FOR EXPANSION IN 1K INCREMENTS
 15 BUT MEMORY MUST BE CONTIGUOUS)
 16
 17 MAP OPTION (OPTIONAL)
 18 REAL TIME CLOCK (OPTIONAL)
 19 PARITY (OPTIONAL)
 20
 21 PREREQUISITES
 22 HARDWARE SETUP
 23 IF THE SC-MEMORY TO BE TESTED CONTAINS
 24 THE PARITY OPTION, THE JUMPERS TO FORCE
 25 INTERRUPTS INSTEAD OF HALTING MUST
 26 BE INSTALLED ON THE
 27 PARITY BOARD.
 28
 29 SOFTWARE PREREQUISITES
 30 THE NOVA3 LOGIC TEST, AND MMU DIAGNOSTIC (OPTIONAL)
 31 SHOULD HAVE
 32 BEEN RUN BEFORE ATTEMPTING THIS TEST.
 33
 34 SWITCH SETTINGS
 35 AUTO-SIZE AND GO START AT 200
 36 MANUAL SELECT/DELETE TESTS START AT 206
 37 IGNORE MAP START AT 210

10004 N3SCT

01 13.4 KEY ENTERED OPTIONS
 02
 03 KEY T SETS SWRG2 BIT 1 = 1
 04 WILL ALLOW THE OPERATOR TO
 05 SET LOWER LIMIT OF TEST (PHSLO)
 06 AND UPPER LIMIT OF TEST (PHSHI)
 07 VALUE ENTERED SHOULD BE
 08 A MODULO 1K DECIMAL NUMBER.
 09
 10 ENTERED LIMITS MUST!
 11 1. FALL WITHIN THE MEMORY LIMITS
 12 2. SIZED BY THE PROGRAM
 13 3. NOT INCLUDE AREA WHICH THE PROGRAM
 14 OCCUPIES.
 15 3. FOR PMSHI BE GREATER THAN OR EQUAL
 16 TO PMSLO OR THE LIMITS WILL NOT
 17 BE ACCEPTED.
 18
 19 EXAMPLES
 20 TO TEST AREA BETWEEN 10K
 21 AND 30K ENTER:
 22 (PMSLO/PHSHI) 16/31
 23
 24 TERMINATE INPUT LIMITS WITH A CARRIAGE
 25 RETURN.
 26
 27 KEY R SWR01 ENTER THE KEY PARAMETERS
 28 UNTIL A CR IS INPUTTED.
 29 EACH KEY WILL COMPLEMENT
 30 THE PREVIOUS SELECTION
 31 OF THE SAME KEY.
 32 KEY 1 SW1=1 CONTINUE FROM ERROR-NO LOOPING
 33 KEY 2 SW2=1 INHIBIT ALL TIO TYPEOUTS
 34 KEY 4 SW4=1 INHIBIT PASS # PRINTOUT
 35 KEY 5 SW5=1 ALSO USE LPT FOR PRINT OUTS
 36 KEY 6 SW6=1 HALT AFTER ERROR TYPEOUT
 37 TYPE ANY KEY TO CONTINUE
 38 WILL CAUSE MARCH/GALPAT/GALWREC TO USE
 39 ALL 115 DATA PATTERN ON EACH PASS.
 40 SWRG2 BIT 2 = 1
 41 PRINT PASSED FOR EACH TEST COMPLETED
 42 SUCCESSFULLY. SWRG2 BIT 1 = 1
 43 PRINTS STATUS OF EACH TEST WHICH
 44 HAS COMPLETED A PASS. SWRG2 BIT 15 = 1
 45 WILL SET SWREG TO DEFAULT MODE
 46 ALL BITS = 0
 47 AND WILL RESTART THE PROGRAM.
 48 LIST CURRENT OPERATING MODES
 49 WILL RESTART THE PROGRAM
 50 WITHOUT MODIFYING THE SWREG
 51
 52 WHERE (C) IS A CONTROL KEY

10085 NJ3CT

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01 OPERATING PROCEDURES
02 LOAD THE PROGRAM VIA THE BINARY LOADER
03 SET SWITCHES TO 1
04 288 FOR AUTO SIZE AND GO
05 286 FOR MANUAL SELECT/DELETE
06 218 FOR IGNORING THE MAP IF IT EXISTS
07
08
09 PRESS START
10 PROCESSOR WILL TYPE 1
11 NOVA3 SC-MEMORY TEST
12 MEM SIZE WIK'S MAP EXISTS (OR NOT)
13 PROGRAM RUN LIST
14 PROG# DESCRIPTION
15
16 IF START WAS 288 THE LIST OF
17 PROGRAMS TO BE RUN SEQUENTIALLY WILL
18 THEN BE LISTED AND THE TEST PROGRAM
19 WILL AUTO START.
20
21 NOTES RALPAT AND GALKREC WILL
22 NOT BE SELECTED ON AN AUTO START.
23
24 IF START WAS 286 LINKER WILL
25 PAUSE AT THE END OF EACH TEST
26 DESCRIPTION AND WAIT FOR KEYBOARD
27 INPUT. TYPING IN A SPACE WILL
28 ENABLE THAT TEST TO BE RUN.
29 TYPING IN ANY OTHER CHARACTER WILL
30 DELETE THAT TEST FROM BEING RUN
31
32 IF START WAS 218 THE PROGRAM WILL IGNORE THE
33 MAP IF IT EXISTS. MEMORY WILL BE ONLY SIZED AND
34 TESTED TO A MAXIMUM OF 32K.
35 THE PROCESSOR WILL THEN WAIT FOR THE OPERATOR TO SET
36 ANY BIT SWITCH OPTIONS. TEST WILL START
    AFTER PRESSING ANY CHARACTER ON THE KEYBOARD.

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10086 NJ3CT

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MOST ERRORS DETECTED BY EITHER
 THE INDIVIDUAL TESTS OR
 BY THE DIAGNOSTIC LINKER WILL
 RESULT IN AN ERROR TYPEOUT. SOME
 SMALL NUMBER OF HIGHLY IMPROBABLE
 ERRORS MAY RESULT IN A PROGRAM HALT
 IF THEY ARE OF A NATURE THAT THE LINKER
 CANNOT RECOVER FROM AND LOGICALLY PROCEED.

18889 NJ3CT

```
01 /
02 /
03 /
04 / TO DETERMINE PHYSICAL ADDRESS OF A LOCATION
05 / WHICH IS MAPPED SUBTRACT SCRLD FROM THE
06 / LOGICAL ADDRESS,ADD THE DIFFERENCE TO TSYLO
07 / EXPRESSED AS AN OCTAL ADDRESS.
08 /
09 / IF SW2=1 THE
10 / TEST WILL HALT WAITING FOR
11 / THE OPERATOR TO PRESS A KEY
    / ON THE CONSOLE
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18818 NJ3CT

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PROGRAM INITIALIZE

THE DIAGNOSTIC LINKER INITIALIZES ITSELF AND INDIVIDUAL TESTS IN THE FOLLOWING SEQUENCE:

1. SYSTEM IS RESET.
2. ANY OTHER NECESSARY CONSTANTS ARE INITIALIZED
3. MEMORY IS SIZED IN 1K INCREMENTS
4. LINKER THEN TYPES THE PROGRAM NAME AND REVISION LEVEL, SYSTEM SIZE, MAP OPTION INFORMATION ALONG WITH THE PROGRAM RUN LIST (AND WILL ALLOW THE OPERATOR TO SELECT OR DELETE SPECIFIC T IF START WAS 206 OR 210).

4.1 OPTION SELECTION

IF THE PROGRAM WAS NOT AUTOSTARTED (NOT LOC 206) THE LINKER WILL PRINT "OPTIONS?" AND WAIT FOR A CARRIAGE RETURN TO START EXECUTING THE TESTS. THIS ALLOWS THE OPERATOR TO SET UP THE KEY ENTRY OPTIONS INCLUDING KEY "T" WHICH ALLOWS SETTING OF MEMORY TEST AREA LIMITS.

18913 N38CT

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10010 WJSCT

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01 .MACRO NEXTT
02 /DEFINITION TO LINKR PARAMETERS FOLLOWS
03 LMFML=.
04 .LOC LPRG
05 A1,0R
06 LPRG=.
07 .LOC LMEML
08 R
09 ITEST ERR CTR THIS PASS
10 0 ITEST PASS COUNTER
11 0 ITEST ERROR COUNTER
12 A1,0R1 JMP A1,02 IEXECUTE ENTRY ADDRESS
13 R IWAIT SWITCH
14 A2 IMAXIMUM SEGMENT SIZE
15 .TXTE (A3)
16
17 .MACRO LCALL
18 **A1-PDECI+1R11+10R010
19
20
```

10020 WJSCT

```
01 /LTBL1-INIT SYSTEM DISPATCH TABLE
02 /END OF TABLE IS LRUNS
03 0R240 0R050R LTR11 LSYSR IRESET SYS
04 0R241 0R0744 LSIZE ISIZE MEMORY
05 0R242 0R1463 TINIT IINIT TESTS TO BE RUN
06 0R243 0R4155 LPRSL ILISTS TESTS TO BE RUN
07 0R244 0R0200 BTSHO IALLOW OPERATOR TO INPUT SWITCH OPTIONS
08 0R245 0R0221 LRUNS
09 0R246 0R0R0R 0
10 0R247 0R0R0R 0
11 /
12 /
13 /LTBL2-RUN SYS DISPATCH TABLE
14 0R250 0R1P04 LTR21 LRANP ISEQUENTIAL PROG SELECT
15 0R251 0R1535 SETHL ISET LN/MI MEMORY LIMITS IF BIT 0=1
16 0R252 0R1314 EXCTS IEXECUTE TEST
17 0R253 0R1632 LSTAT IADJUST RUN STATISTICA
18 0R254 0R0221 LRUNS
19 0R255 0R0R0R 0
20 0R256 0R0R0R 0
21 /
22 /
23 /BTSHO-ALLOW OPERATOR TO INPUT THE SWITCH OPTION BEFORE STARTING
24 /
25 /
26 0R257 0R0233 LAUTO
27 0R260 054302 BTSHO1 STA 3,BTSHO ISAVE ACS FOR RETURN
28 0R261 022257 LDA 0,BTSHO-1 IGET LAUTO SW
29 0R262 100R04 COM 0,0,0ZR IASKP IF NOT AUTOSTART
30 0R263 0R2302 JMP 0BTSHO IRETURN
31 0R264 0R0R71 JSR 0LMESS IPRINT OPERATOR MESSAGE
32 0R265 0R0116 TXT,4 ITEXT ADDRESS
33 0R266 0R0177 INTEN
34 0R267 020130 BT,CK1 LDA 0,LASTI ICK IF REQUESTED YET
35 0R270 101133 MOVZLN 0,0,0NC IASKP=REQUEST
36 0R271 0R0267 JMP ,-2 INOT YET
37 0R272 024303 LDA 1,0T,CR
38 0R273 106415 SUB# 0,1,0NR I=AS IT A CR?
39 0R274 0R0277 JMP ,+3 INOT YET
40 0R275 0R0237 JSR 0KEY,1 ISERVICE REQUEST
41 0R276 0R0267 JMP 0T,CK
42 0R277 102400 SUR 0,0
43 0R300 040130 STA 0,LASTI ICLR REQ, BIT
44 0R301 0R2302 JMP 0BTSHO IRETURN TO LINKR
45
46 0R302 0R0R0R BT0V31 0 ISAVE RETURN ADDRESS LOC.
47 0R303 100R15 BT,CR1 100R15
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18927 M35CT
01
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06 01772 054424 M37321 STA 3,XMS32
07 01773 12040A SUB 1,1 16FOR FIRST IK
08 01774 13W420 LDA 2,K1K 11777 FOR END OF IK
09 01775 133P0A ADD 1,2 1-CURRENT IK FIELD
10 01776 025P0P LDA 1,0,2 1GET CELL
11 01777 12080E COM 1,0 1CMNG BITS
12 01001 02100P STA 0,0,2 1-COM MEM EXISTS
13 01002 12240S LDA 1,0,2 1-COM MEM WILL SKIP
14 01003 08040F JMP M32Z 1-1ST WAS NONEXIST
15 01004 050411 STA 2,M32TEM
16 01005 043P0A LDA 1,0,2 1-RESTORE CELL
17 01006 02440F LDA 1,M32TF 1-AC1=LAST IK TOP ADDRESS
18 01007 12540P INC 1,1
19 01010 125133 MOVZL* 1,1,SNC 1-SKIP IF LAST CPLL =32K
20 01011 080763 JMP M3732+2 1-MOT DONE SIZING
21 01012 02640S M395Z1 LDA 0,M32TF 1-AC0=HIGHEST AVAIL.
22 01013 002403 JMP 0,M32Z
23 01014 001777 K1K1 1777
24 01015 00000P M32TE1 0
25 01016 00000P XMS321 0
18928 M35CT
01
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06 01017 054777 M32E1 STA 0,M35M32
07 01020 021135 LDA 0,PMSMX
08 01021 10140A INC 0,P
09 01022 10230P MOVZL 0,1
10 01023 125122 JMP M32X 1-SKIP IS NOT SIZED TO 128K
11 01024 08040E LDA 3,K76K 1-BITS FOR 32K MAP
12 01025 03411A MOV 0,1
13 01026 102P0P ADD 0,1
14 01027 16780P DOB 1,MAP
15 01030 06680E N1OP 2
16 01031 00330E LDA 2,0,3
17 01032 03140E COM 2,1 1-COMPLEMENT IT
18 01033 144P0A N1OP 2
19 01034 06030E STA 1,0,3 1-STORE COMP.
20 01035 04540E N1OP 2
21 01036 06030E LDA 1,0,3
22 01037 02540P N1OP 2 1-GET IT BACK
23 01040 00030E STA 2,0,3 1-RESTORE ORIGINAL CELL
24 01041 05140P SUB 2,1,SMP 1-SKIP IS CELL EXISTS
25 01042 14040S JMP M32X 1-MEM IS SIZED
26 01043 08040E STA 0,PMSMX 1-SAVE NEW TOP MEM
27 01044 040135 JMP M32E+2
28 01045 060754 LDA 0,PMSMX
29 01046 020135 M32X1 LDA 1,K76K
30 01047 02411A LDA 2,K37
31 01050 030107 ADD 1,2
32 01051 133P0P DOB 2,MAP
33 01052 07200E JMP 0,M35Z
34 01053 002743

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18927 M35CT
01
02
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06 01772 054424 M37321 STA 3,XMS32
07 01773 12040A SUB 1,1 16FOR FIRST IK
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09 01775 133P0A ADD 1,2 1-CURRENT IK FIELD
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17 01006 02440F LDA 1,M32TF 1-AC1=LAST IK TOP ADDRESS
18 01007 12540P INC 1,1
19 01010 125133 MOVZL* 1,1,SNC 1-SKIP IF LAST CPLL =32K
20 01011 080763 JMP M3732+2 1-MOT DONE SIZING
21 01012 02640S M395Z1 LDA 0,M32TF 1-AC0=HIGHEST AVAIL.
22 01013 002403 JMP 0,M32Z
23 01014 001777 K1K1 1777
24 01015 00000P M32TE1 0
25 01016 00000P XMS321 0
18928 M35CT
01
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06 01017 054777 M32E1 STA 0,M35M32
07 01020 021135 LDA 0,PMSMX
08 01021 10140A INC 0,P
09 01022 10230P MOVZL 0,1
10 01023 125122 JMP M32X 1-SKIP IS NOT SIZED TO 128K
11 01024 08040E LDA 3,K76K 1-BITS FOR 32K MAP
12 01025 03411A MOV 0,1
13 01026 102P0P ADD 0,1
14 01027 16780P DOB 1,MAP
15 01030 06680E N1OP 2
16 01031 00330E LDA 2,0,3
17 01032 03140E COM 2,1 1-COMPLEMENT IT
18 01033 144P0A N1OP 2
19 01034 06030E STA 1,0,3 1-STORE COMP.
20 01035 04540E N1OP 2
21 01036 06030E LDA 1,0,3
22 01037 02540P N1OP 2 1-GET IT BACK
23 01040 00030E STA 2,0,3 1-RESTORE ORIGINAL CELL
24 01041 05140P SUB 2,1,SMP 1-SKIP IS CELL EXISTS
25 01042 14040S JMP M32X 1-MEM IS SIZED
26 01043 08040E STA 0,PMSMX 1-SAVE NEW TOP MEM
27 01044 040135 JMP M32E+2
28 01045 060754 LDA 0,PMSMX
29 01046 020135 M32X1 LDA 1,K76K
30 01047 02411A LDA 2,K37
31 01050 030107 ADD 1,2
32 01051 133P0P DOB 2,MAP
33 01052 07200E JMP 0,M35Z
34 01053 002743

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18R20 NJJCT

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01 18RAMP-SELECT A PROGRAM TO RUN
02 /SCAN SWITCHES FOR NOT DELETED
03 /ENTER ANY TEST NOT DELETED
04 / IF NOT SELECT ANOTHER TEST
05 (RAMP) STA 3,PLR,13
06 LDA R,CURPR
07 LDA 2,TBL
08 ADD R,2
09 LRA 3,8,2
10 MOV 3,3,SNR
11 JMP LRL2
12 /START THRU LIST AGAIN
13 LDA 1,1,3
14 COR# 1,1,SNR
15 JMP LPSIE
16 /WAITING INT OR DISABLED?
17 /YES TRY NEXT TEST
18 /SETUP FOR THIS TEST
19 INC R,P
20 INC 2,2
21 JMP LRL1
22 /TRY NEXT TEST
23 DSZ PASSIN
24 JMP NTPAS
25 STA R,PASSVL
26 STA R,PASSIN
27 LDA R,ERTOT
28 MOV R,P,SZR
29 JMP LRL3
30 LDA R,SWREG
31 AND 1,LR,B4
32 AND 1,8,SZR
33 JMP LRL3
34 JSR R,NESS
35 PASSY
36 LDA 1,PASS
37 JSZ R,DECI
38 ISZ PASS
39 MOV R,P
40 LDA 3,4,5
41 LDA R,4,3
42 MOV R,8,SZR
43 JMP DTSRN
44 NTPASI SUB R,P
45 JMP LRAHP+2
46 /LARGO
47 LK,B4
48 LR,13
49 LR,53
50 /PASSY ,TXLE 1<15><1?PASS I
51 05215
52 04952
53 05152
54 06248

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18RJP NJJCT

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01 /DTOS RUN- CHECK FOR
02 /CAT/KITTEN AND IF AUTO-RUN
03 /CAT/KITTEN ALREADY STARTED?
04 /SKIP IS NOT STARTED
05 /DON'T START CAT IF ANY ERRORS
06 /CHECK IF WITH CAT/KITTEN
07 /SKIP IS CAT/KITTEN LOADED
08 /SET SWITCH
09 /SET DTOS STARTING ADDR.
10 /FORM CAT/KITTEN STARTING ADDR.
11 /START CAT/KITTEN
12 /AUTO RUN?
13 /SKIP IS AUTO-RUN
14 /RETURN TO DTOS IF ERRORS
15 /SET DTOS RETURN ADDR
16 /RETURN TO DTOS
17 /DTOSRNI
18 /AUTOK
19 /ERTOT
20 /R,8,SZR
21 /R,8,SZR
22 /R,8,SZR
23 /R,8,SZR
24 /R,8,SZR
25 /R,8,SZR
26 /R,8,SZR
27 /R,8,SZR
28 /R,8,SZR
29 /R,8,SZR
30 /R,8,SZR
31 /R,8,SZR
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18933 NJSCT
01 01276 087478 CO,EXI
02 01271 088482 JMR
03 01272 010416 JMR
04 01273 010415 JMR
05 01274 034114 JMR
06 01275 175885 JMR
07 01276 088483 JMR
08 01277 034126 JMR
09 01278 075882 JMR
10 01281 034486 JMR
11 01282 088177 JMR
12 01283 082465 JMR
13
14 01284 088088 JMR
15 01285 088088 JMR
16 01286 088088 JMR
17 01287 088088 JMR
18 01288 088088 JMR
19 01289 088088 JMR
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18934 NJSCT
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04 01314 054457 EXCTS: STA 3,EXC,J
05 01315 028457 LDA 0,K33
06 01316 014121 DSZ SEGT
07 01317 088481 JMP *+1
08 01320 024121 LDA 1,SEGMT
09 01321 122433 SUBZM 1,0,SNC
10 01322 185888 MOV 0,1
11 01323 044453 STA 1,EX,SG
12 01324 028136 LDA 0,PH8LO
13 01325 048148 STA 0,TSTLO
14 01326 187888 ADD 0,1
15 01327 038137 LDA 2,PH8MI
16 01328 132433 SUBZM 1,2,SNC
17 01331 088483 JMP *+3
18 01332 044141 STA 1,T8THI
19 01333 088482 JMP *+2
20 01334 058141 STA 2,T8THI
21
22 01335 038888 JMR
23 01336 151884 LDA 2,EX68
24 01337 088484 JMP PRDTS
25 01340 088482 LDA 2,EX68+2
26 01341 151885 MOV 2,2,SZR
27 01342 088482 JMP EXC,J
28 01343 038111 PRDTS:
29 01344 112433 SUBZM 0,2,SNC
30 01345 088415 JMP EXC,J
31 01346 024141 LDA 1,T8THI
32 01347 132432 ADCZM 1,2,SZC
33 01350 088412 JMP EXC,J
34 01351 112414 SUBM 0,2,SZR
35 01352 088485 JMP EXC,C
36 01353 132415 SUBM 1,2,SZR
37 01354 088418 JMP EXC,R
38 01355 018148 I8Z TSTLO
39 01356 088484 JMP EXC,J
40 01357 128888 EXC,C1
41 01358 138888 ADD 1,1
42 01359 138888 STA 2,T8THI
43
44 01362 088415 JMR LDMAP
45
46
47 01363 088412 JMR
48
49 01364 028141 JMR
50 01365 024137 EXC,R1
51 01366 188433 LDA 1,PH8MI
52 01367 082484 AUCZM 0,1,SNC
53 01370 181488 JMP EXC,C3
54 01371 024488 INC 0,0 JNOT YET
55 01372 088433 LDA 1,EX,SG
56 01373 088433 JMP EXC,L
57 01374 088433 EXC,C1
58 01375 088433 K33
59 01376 088433 ILTR: LSTRP
60

```

```

EXCTS=EXECUTE TEST SELECTED
ICONTROL MEMORY TEST LIMITS
IMAX USEABLE SEGMENT
ISEGMENT SIZE=1
IMAX SEGMENT FOR THIS TEST
I8KP IF SEGT <= 33
IUSE J3
I8AVE IT
I8ETUP LO LIMIT OF TEST
IADD SEGT TO LO LIMIT
IEND OF TESTABLE AREA
I8KP IS WITHIN MI LIMIT
I8ETUP MI LIMIT OF TEST
IUSE PH8MI IF T8TLO<SEGMT<PH8MI
ICHECK IF AUTO LOAN
I8KIP IS NOT AUTO
ICAT/KITZEN LOADED?
I8KP IS YES
I8O NEED TO PROTECT DTOS
I8ET DTOS=IK WORD
I8TSTLO <= DT8IK?
ILIMITS OK, CONTINUE
I8TSTMI = DTOS=IK
ILIMITS OK
I8TSTLO = DTOS=IK?
I8TSTMI = T8TLO = DTOS=IK ?
I8TSTLO<T8THI<DT8IK, DON'T USE IT
I8NC T8TLO TO DTOS,IK+1
ILIMITS NOW OK
I8T8IK=1
ADD 1,2
I8FIX T8THI TO DT8IK=1
I8SET UP SCRLD/MI LIMITS AND MAP IF IT IS TO BE USED
I8JR LDMAP
I8LOAD MAP AND ADJUST SCRLD/MI
ILIMITS ALL SET UP NOW EXECUTE THIS PASS OF TEST
I8JR 0,18TR
I8START TESTING
I8NO= SEE IF ALL TESTING AREA USED
LDA 1,T8THI
AUCZM 0,1,SNC
I8DONE ALL?
I8JMP EXC,C3
I8JMP EXC,C3
I8INC 0,0 JNOT YET
LDA 1,EX,SG
I8SET SEGT SIZE
I8CONTINUE TESTING

```

WR35 N3SCT

10MAP-LOAD MAP ENTRY TABLES AND ADJUST SCPL0/HI
IFOR THIS TEST PASS

LUMAP: STA 3,LD,93
LDA P,MPST
MOV P,P,SNR
JMP LD,NA
SUR 9,9
DOR P,MAP

I LOG R TO PHYS P

INAP CODE OF TEST ITSELF

LDA 1,PSTRT
MOV 1,10
MOVZ P,P
MOVZ P,0
LDA 1,K37
AND 1,P
MOV 0,1
ADDZ 1,1
ADD 0,1
DOR 1,2
INCS 0,1
ADDZ 1,1
LDA 2,PENDA
SURZ 1,2,5ZC
JMP LD,L2

ILOG = PHYSICAL

PLAST USED BY TEST
PC#0 IS MAPPED LAST ALREADY
ICONTINUE

10P30 N3SCT

I TEST AREA MARKED TO LOGICAL AREA 10000 UP TO 77777
LDA 1,TSTLN

LDA P,K4
MOV 0,2
ADDZ 2,2
STA 2,SCRLO
DOR 2,MAP
INC 9,9
INC 1,1
MOV 0,2
ADDZ 2,2
LDA 3,TSTHI
ADCZ 3,1,5NC
JMP LD,L3
ADC 1,1
ADD 1,2
STA 2,SCRHI

I-1 AC2
ISETUP SCRHI ADDRESS

01 01424 W24140
02 01425 W26100
03 01426 111300
04 01427 150120
05 01430 W50142
06 01431 135000 LD,L31
07 01432 W72002
08 01433 101400
09 01434 125400
10 01435 111300
11 01436 150120
12 01437 W34141
13 01440 160033
14 01441 W00770
15 01442 120000
16 01443 130000
17 01444 W50143

18937 NJSCT

01 01445 002401

02 01446 00080A LD.0331

JMP 0LD.03

0

18938 NJSCT

01

02

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16

INAP DOESN'T EXIST SO SIMPLY SET SCRLO/MI LIMITS
ITN TSTLO/MI

LD.NMI LDA R,TSTLO
MOV9 0,0
ADDZL 0,0
STA R,SCRLO
LDA R,TSTMI
INC 0,0
MOV9 0,0
ADDZL 0,R
AUC 1,1
ADD 1,0
STA R,SCRMI
JMP 0LD.03

ITSTLO * 1024 = SCRLO

I-1 ACB
I(TSTMI*1024)-1=SCRMI
I(RETURNS LIMITS SET

18R41 NJSCT

```

01
02
03 01005 054423 /LSTRP-START PROGRAM
04 01006 102400 /ENTER TEST SELECTED AT ITS EXECUTION ENTRY POINT
05 01007 048123 LSTRPT STA 3,L,SS3
06 01010 068104 SUB 0,0
07 01011 020116 STA 0,ITRR
08 01012 040417 MJOB PRTY
09 01013 111000 LDA 0,PSTR
10 01014 126000 STA 0,LS,11
11 01015 040375 MOV 0,2
12 01016 024114 SUB 1,1
13 01017 120005 STA 1,-3,2
14 01020 002411 LDA 1,MPSMT
15 01021 126020 MOV 1,1,SNR
16 01022 002277 JMP 0LS,11
17 01023 000002 INTDS
18 01024 000177 DDA 1,MAP
19 01025 002404 INTEN
20 /LRETP-RETURN FROM TEST
21 01026 000177 LRETP INTEN
22 01027 002401 JMP 0L,SS3
23 01030 000000 L,SS3 0
24 01031 000000 LS,11 0

```

18R42 NJSCT

```

01
02
03 01032 054406 /END OF TEST PASS, SEE IF ANY EXTRANEIOUS ERRORS
04 01033 030116 /NEED TO BE REPORTED
05 01034 011376 LSTAT: STA 3,LST,3
06 01035 101000 PRSTAT: LVA 2,PSTR
07 01036 020122 /PTH. TO XX,00
08 01037 103123 /-1 RUN CTR THIS TEST
09 01040 004714 /CHECK SWRGG2
10 01041 020375 LDA 0,SWRGG2
11 01042 120004 JMP PRS01
12 01043 000411 /DOZL P,0,SNR
13 01044 000074 /NOPE
14 01045 020116 /GET ERROR CTR FOR THIS TEST AND PASS
15 01046 101400 /SKIP 0 PRINT PASSED,NO ERRORS
16 01047 101400 /DON'T PRINT PASSED
17 01051 000075 /PRINT TEST TITLE
18 01052 000071 /ADDRESS OF PASS MSG
19 01053 001744 /BIT 15 IS TYPE ALL STATS
20 01054 020122 /PRINT 15 ON?
21 /SUBR 1,1
22 /SUBR 1,1
23 /AND 0,1,SNR
24 /JMP LS,IT
25 /MOVZ 0,0
26 /STA 0,SWRGG2
27 /SUB 0,0
28 /STA 0,PH,SV
29 /START WITH 0

```


10044 NJSCT

```

01 01065 00071  POINT PASSES AND ERROR COUNTS BY INDIVIDUAL TEST
02 01066 001721 JSR 0LMESS
03 01067 000074 STROR
04 01068 024427 PHSTLI
05 01069 024427 PHSTLI
06 01070 024427 PHSTLI
07 01071 030426 ISZ PR,SV
08 01072 030426 LDA 3,TTBL
09 01073 030426 ADD 1,3
10 01074 031427 LDA 2,0,3
11 01075 031427 MOV 2,0,SNR
12 01076 031427 JMP LSVIT
13 01077 021376 LDA 0,-2,2
14 01078 021376 MOV 0,0,SNR
15 01079 021376 JMP PRSTL
16 01080 026072 JSR 0PICT
17 01081 026072 LDA 1,-2,2
18 01082 026072 JSR 0PLCI
19 01083 026072 LDA 1,-1,2
20 01084 026072 JSR 0PECI
21 01085 026072 LDA 1,-3,2
22 01086 026072 JSR 0PLCI
23 01087 026072 MOV 1,1,SNR
24 01088 026072 JSR 0PCRLF
25 01089 026072 JMP PRSTL
26 01090 026072 ISZ CURPR
27 01091 026072 MOV 0,0
28 01092 026072 JMP 0LST,3
29 01093 026072 LSVIT
30 01094 026072 PR,SVI
31 01095 026072 LST,3I
32 01096 026072 LST,3I
33 01097 026072 LST,3I
34 01098 026072 LST,3I
35 01099 026072 LST,3I
36 01100 026072 LST,3I
37 01101 026072 LST,3I
38 01102 026072 LST,3I
39 01103 026072 LST,3I
40 01104 026072 LST,3I
41 01105 026072 LST,3I
42 01106 026072 LST,3I
43 01107 026072 LST,3I
44 01108 026072 LST,3I
45 01109 026072 LST,3I
46 01110 026072 LST,3I
47 01111 026072 LST,3I
48 01112 026072 LST,3I
49 01113 026072 LST,3I
50 01114 026072 LST,3I
51 01115 026072 LST,3I
52 01116 026072 LST,3I
53 01117 026072 LST,3I
54 01118 026072 LST,3I
55 01119 026072 LST,3I
56 01120 026072 LST,3I
57 01121 026072 LST,3I
58 01122 026072 LST,3I
59 01123 026072 LST,3I
60 01124 026072 LST,3I

```

10044 NJSCT

```

01 01125 026072 ICHECK FOR TTY INPUTTED CHARACTERS
02 01126 026072 STA 3,CK,53
03 01127 026072 LDA 0,LASTI
04 01128 026072 MOVZL 0,0,SNR
05 01129 026072 JMP 0CK,53
06 01130 026072 MOVZL 0,0,SNR
07 01131 026072 STA 3,LASTI
08 01132 026072 JSR 0KEYIN
09 01133 026072 MOV 3,0
10 01134 026072 LDA 2,SNRG2
11 01135 026072 LDA 1,CK,K1
12 01136 026072 SUBZ 1,0,SNR
13 01137 026072 JMP 0AS,0
14 01138 026072 INC 0,0,SNR
15 01139 026072 JMP 0AS,0
16 01140 026072 LDA 1,K4
17 01141 026072 SUBZ 1,0,SNR
18 01142 026072 JMP 0AS,0
19 01143 026072 LDA 1,CK,23
20 01144 026072 SUBZ 1,0,SNR
21 01145 026072 JMP 0CK,3A
22 01146 026072 SUBZL 1,1
23 01147 026072 JMP 0XOR,T
24 01148 026072 LDA 1,CK,K2
25 01149 026072 JMP 0XOR,T
26 01150 026072 SUBZL 1,1
27 01151 026072 JMP 0XOR,T
28 01152 026072 LDA 1,CK,K3
29 01153 026072 ANDM 2,1,STR
30 01154 026072 SUB 1,2,SKP
31 01155 026072 ADD 1,2
32 01156 026072 STA 2,SNRG2
33 01157 026072 JMP 0CK,53
34 01158 026072 CK,3AI
35 01159 026072 CK,53I
36 01160 026072 KEVINI
37 01161 026072 CK,K1I
38 01162 026072 CK,K2I
39 01163 026072 CK,K3I
40 01164 026072 CK,23I
41 01165 026072 TTY INTERRUPT HANDLER
42 01166 026072 TT,TII
43 01167 026072 LDA 1,TTI177
44 01168 026072 AND 1,0
45 01169 026072 LDA 1,LASTI
46 01170 026072 MOVZL 1,1,SNR
47 01171 026072 JMP TT,0I
48 01172 026072 LDA 1,TT,0A
49 01173 026072 SUBM 0,1,SNR
50 01174 026072 JMP TT,PT
51 01175 026072 LDA 1,TT,22
52 01176 026072 SUBM 0,1,SNR
53 01177 026072 JMP TT,PT
54 01178 026072 TTY,UII
55 01179 026072 STA 0,LASTI
56 01180 026072 JMP 0,3
57 01181 026072 TTY,UII
58 01182 026072 TTY,UII
59 01183 026072 TTY,UII
60 01184 026072 TTY,UII

```

10044 NJSCT

```

01 01185 026072 ICHECK FOR TTY INPUTTED CHARACTERS
02 01186 026072 STA 3,CK,53
03 01187 026072 LDA 0,LASTI
04 01188 026072 MOVZL 0,0,SNR
05 01189 026072 JMP 0CK,53
06 01190 026072 MOVZL 0,0,SNR
07 01191 026072 STA 3,LASTI
08 01192 026072 JSR 0KEYIN
09 01193 026072 MOV 3,0
10 01194 026072 LDA 2,SNRG2
11 01195 026072 LDA 1,CK,K1
12 01196 026072 SUBZ 1,0,SNR
13 01197 026072 JMP 0AS,0
14 01198 026072 INC 0,0,SNR
15 01199 026072 JMP 0AS,0
16 01200 026072 LDA 1,K4
17 01201 026072 SUBZ 1,0,SNR
18 01202 026072 JMP 0AS,0
19 01203 026072 LDA 1,CK,23
20 01204 026072 SUBZ 1,0,SNR
21 01205 026072 JMP 0CK,3A
22 01206 026072 SUBZL 1,1
23 01207 026072 JMP 0XOR,T
24 01208 026072 LDA 1,CK,K2
25 01209 026072 JMP 0XOR,T
26 01210 026072 SUBZL 1,1
27 01211 026072 JMP 0XOR,T
28 01212 026072 LDA 1,CK,K3
29 01213 026072 ANDM 2,1,STR
30 01214 026072 SUB 1,2,SKP
31 01215 026072 ADD 1,2
32 01216 026072 STA 2,SNRG2
33 01217 026072 JMP 0CK,53
34 01218 026072 CK,3AI
35 01219 026072 CK,53I
36 01220 026072 KEVINI
37 01221 026072 CK,K1I
38 01222 026072 CK,K2I
39 01223 026072 CK,K3I
40 01224 026072 CK,23I
41 01225 026072 TTY INTERRUPT HANDLER
42 01226 026072 TT,TII
43 01227 026072 LDA 1,TTI177
44 01228 026072 AND 1,0
45 01229 026072 LDA 1,LASTI
46 01230 026072 MOVZL 1,1,SNR
47 01231 026072 JMP TT,0I
48 01232 026072 LDA 1,TT,0A
49 01233 026072 SUBM 0,1,SNR
50 01234 026072 JMP TT,PT
51 01235 026072 LDA 1,TT,22
52 01236 026072 SUBM 0,1,SNR
53 01237 026072 JMP TT,PT
54 01238 026072 TTY,UII
55 01239 026072 STA 0,LASTI
56 01240 026072 JMP 0,3
57 01241 026072 TTY,UII
58 01242 026072 TTY,UII
59 01243 026072 TTY,UII
60 01244 026072 TTY,UII

```

0045 N38CT
 01 02035 04013R TT.P71 STA 9, LASTI
 02 02036 054403 STA 3, TT, 83
 03 02037 000747 JSR KEVIN
 04 02040 002481 JMP OTT, 83
 05 02041 00000R TT, 831 R

ISERVICE TTI REQUEST

0046 N38CT

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 30 02042 054524 MESTR STA 3, MESTR
 31 02043 044406 STA 1, PACT1
 32 02044 050466 STA 2, PACT2
 33 02045 010521 ISZ MESTR
 34 02046 03140R LDA 2, P, 3
 35 02047 024464 LDA 1, P, 3
 36 02050 02100R LDA R, 2
 37 02051 125112 MOVL# 1, 1, 8ZC
 38 02052 123761 ANDS 1, R, 8KP
 39 02053 123401 AND 1, R, 8KP
 40 02054 15140P INC 2, 2
 41 02055 12480P COM 1, 1
 42 02056 004456 JSR CMCT
 43 02057 000771 JMP MEST+6
 44 02058 000462 JMP +2
 45 02061 044453 PL3TT1 JSR CMCT
 46 02062 024447 PLA1TT1 LDA 1, PACT1
 47 02063 030447 PLA1TT1 LDA 2, PACT2
 48 02064 063311 SKPBZ TTD
 49 02065 000777 JMP +1
 50 02066 10100R MOV R, 0
 51 02067 000211 NIOP TTD
 52 02070 002476 JMP CMESTR
 53 02071 102401 ZOC71 JSR R, R, SKP
 54 02072 020563 POCT1 LDA R, P, C87R
 55 02073 050437 STA 2, PACT2
 56 02074 030505 LDA 2, OCT7A0
 57 02075 000444 JMP +4
 58 02076 050434 POCT1 STA 2, PACT2
 59 02077 030572 PLA1TT1 LDA 2, DECT10
 60 02100 10240P JSR R, R

IFILENAME=TTVIO

ITILETYPE NON INTERRUPT PACKAGE

IACI, AC2 SAVED

I*MESTR PRINTS ASCII MESSAGES AS SPECIFIED BY ASSEMBLER

I*CLF7 PRINTS A CARRIAGE RETURN

I*POCT PRINTS C(1) IN OCTAL

I*ZOC7 PRINTS C(1) IN OCTAL, LEADING ZEROS SUPPRESSED

I*ZDE7 PRINTS C(1) IN DECIMAL, LEADING ZEROS SUPPRESSED

I*THE ABOVE THREE ARE FOLLOWED BY A TAB UNLESS LOCATION PTBY IS

ALTERED IN WHICH CASE CONTENTS OF PTBY WILL BE PRINTED AFTER

I*THE NUMBER

I*TIOP ACCRPTS OCTAL, AND

I*TIOD ACCRPTS DECIMAL SINGLE PRECISION SIGNED INTEGERS

I*INTO ACI FROM THE TTI. LEADING NULLS, TABS,

I*AND SPACES ARE IGNORED. A 16 BIT UNSIGNED INTEGER IS

I*FORMED, THEN NEGATED IF A MINUS SIGN IS TYPED.

I*EXIT AT CALL+1 IF INPUT ERROR WITH ACRRBAD CHARACTER.

I*NOT A LEGAL DIGIT OR TERMINATING CHARACTER)

I*EXIT AT CALL+2 UPON TERMINATING CHARACTER

I* WITH ACRR0, 8, 4P, 1P, 9S

I* FOR NULL, TAB, SPACE, CARRIAGE RETURN, COMMA

I*THE ABOVE WAIT FOR TTD DONE, THEN CLEAR TTD.

I*CMCT PRINTS ASCII CHARACTER IN C(0)R/ C(0)L MUST BE 0.

I*EXIT CALL +2 IF C(0)R=0) SIMULATES TAB

I*TYPT PRINTS C(0)R, EXITS AT CALL+1. REPLACE *TYPT* WITH

I*INTERRUPT TYPT IF DESIRED.

I*TPSP PRINTS A SPACE AND EXITS AT CALL+1 WITH ACRR = 40

I*PRINT A TEXT MESSAGE

IC(2) POINTS TO MESSAGE

IA 8 BIT MASK

IC(2)=DATA WORD

IC(0)=DATA CHARACTER RIGHT

IINC TO NEXT WORD

IPLP MASK

I*PRINT

I*ANDOTHER

ILAST

I*PRINT C(1) IN OCTAL

I*PRINT C(1) IN DECIMAL

WR50 NJSCT
 01 02344 WR0PUP TYPR: 0

01 02282 10000P	10000P		
02 02283 1000P	1000P		
03 02284 1000P	1000		
04 02285 WR0100	100		
05 02286 WR010P	10		
06 02287 WR0001	1		
07 02270 WR0000	0		
08 02271 WR0005	DECT05		
09 02272 WR0012	.RDX 1R		
10 02273 WR0140	1000R		
11 02274 WR0170	1000		
12 02275 WR0144	100		
13 02276 WR0012	PC102: 10		
14 02277 WR0001	1		
15 02278 WR0000	0		
16 02279 WR0010	.RDX 0		
17 02300 WR0011	PT07: 11		
18 02301 WR0012	TP07: 11		
19 02302 WR0013	TP07: 11		
20 02303 WR0014	TP07: 11		
21 02304 WR0015	TP07: 11		
22 02305 WR0016	TP07: 11		
23 02306 WR0017	TP07: 11		
24 02307 WR0018	TP07: 11		
25 02308 WR0019	TP07: 11		
26 02309 WR0020	TP07: 11		
27 02310 WR0021	TP07: 11		
28 02311 WR0022	TP07: 11		
29 02312 WR0023	TP07: 11		
30 02313 WR0024	TP07: 11		
31 02314 WR0025	TP07: 11		
32 02315 WR0026	TP07: 11		
33 02316 WR0027	TP07: 11		
34 02317 WR0028	TP07: 11		
35 02318 WR0029	TP07: 11		
36 02319 WR0030	TP07: 11		
37 02320 WR0031	TP07: 11		
38 02321 WR0032	TP07: 11		
39 02322 WR0033	TP07: 11		
40 02323 WR0034	TP07: 11		
41 02324 WR0035	TP07: 11		
42 02325 WR0036	TP07: 11		
43 02326 WR0037	TP07: 11		
44 02327 WR0038	TP07: 11		
45 02328 WR0039	TP07: 11		
46 02329 WR0040	TP07: 11		
47 02330 WR0041	TP07: 11		
48 02331 WR0042	TP07: 11		
49 02332 WR0043	TP07: 11		
50 02333 WR0044	TP07: 11		
51 02334 WR0045	TP07: 11		
52 02335 WR0046	TP07: 11		
53 02336 WR0047	TP07: 11		
54 02337 WR0048	TP07: 11		
55 02338 WR0049	TP07: 11		
56 02339 WR0050	TP07: 11		
57 02340 WR0051	TP07: 11		
58 02341 WR0052	TP07: 11		
59 02342 WR0053	TP07: 11		
60 02343 WR0054	TP07: 11		

01 PC47R I PREPARE TO PRINT A SPACE
 02 TYPR I TYPE THE RIGHT BYTE OF ACR
 03 INT I IF IT IS HERE DUE TO SWITCH
 04 I SETTING ROUTINE THEN THE TYPE
 05 I ADUITS TO THE ITTY WILL BE ENABLED
 06 I
 07 I
 08 I
 09 I
 10 I
 11 I
 12 I
 13 I
 14 I
 15 I
 16 I
 17 I
 18 I
 19 I
 20 I
 21 I
 22 I
 23 I
 24 I
 25 I
 26 I
 27 I
 28 I
 29 I
 30 I
 31 I
 32 I
 33 I
 34 I
 35 I
 36 I
 37 I
 38 I
 39 I
 40 I
 41 I
 42 I
 43 I
 44 I
 45 I
 46 I
 47 I
 48 I
 49 I
 50 I
 51 I
 52 I
 53 I
 54 I
 55 I
 56 I
 57 I
 58 I
 59 I
 60 I

LDMSI NJSCT

FILENAME= SWRPACK

THIS PACKAGE IS USED TO CHANGE THE SETTINGS OF LOCATION
 1-4-REGH OF PAGE 9. THE PROGRAM CONTROL SHOULD ENTER "INPT"
 WITH AC3 HAVING THE RETURN ADDRESS. THE CHARACTER INPUTED
 BY THE OPERATOR IS COMFOU AFTER A "CR". IF THE COMMAND IS
 NOT A LEGAL ONE THEN THE CONTROL IS RETURNED WITHOUT DOING
 ANYTHING, OTHERWISE ONE OF THE FOLLOWING COMMANDS IS
 EXECUTED:

1-9 AND A-F ARE USED TO COMPLEMENT THE CURRENT VALUE
 OF BITS 1-15 OF "SWREG". IF ONE OF THESE KEYS IS HIT THE
 CORRESPONDING BIT OF "SWREG" IS COMPLEMENTED AND THE CONTROL
 IS RETURNED TO THE STATE PROGRAM BEFORE HITTING THE KEY
 HITTING OF A "0" WILL LOCK THE PROGRAM IN A SWITCH MODIFICATION
 MODE IN WHICH CASE MORE THAN ONE BITS CAN BE CHANGED BEFORE
 THE CONTROL IS ALLOWED TO RETURN TO THE MAIN PROGRAM. HITTING
 THE "CR" KEY WILL UNLOCK THE PROGRAM FROM THIS MODE.
 1-AD THIS COMMAND GIVEN AT ANY TIME WILL RESET THE "SWREG"
 TO ITS DEFAULT MODE (ALL ZEROS) AND RESTART THE PROGRAM AT ADD.
 STORED IN LOCATION "INST"
 1-AN THIS COMMAND GIVEN AT ANY TIME WILL RESTART THE PROG.
 AT ADDRESS STORED IN LOCATION "INST"
 1-AM THIS COMMAND GIVEN AT ANY TIME WILL PRINT THE CURRENT
 OPERATING MODES.
 1-AR THE CONTROL IS RETURNED TO THE MAIN PROGRAM HIT R WILL
 BE SET IF ANY OF THE OTHER BITS OF "SWREG" IS SET, OTHERWISE
 IT WILL BE CLEARED

THIS PACKAGE EXITS WITH C(AC3) = CHARACTER TYPED IN (RAPITY
 STRIPPED).

WSD2 NJSCT

21	02400	040756	STA	0,INST3	ISAVE CHARACTER
22	02401	024004	LDA	1,C107A	IAC1 = 100
23	02402	030673	LDA	3,PC172	IAC3 = 12
24	02403	110414	SUB#	0,3,52R	ISKIP IF IT IS A LINE FEED
25	02404	030744	LDA	3,INSTR3	IAC3 = 33
26	02405	102452	SUB0M	3,0,52C	ISKIP IF AC0 IS EQUAL OR MORE
27	02406	000502	JMP	INST	ITMAN AC3
28	02407	000473	JSP	TYP7	IECHO THE CHARACTER
29	02410	030645	LDA	3,PC67A	IAC3 = 06
30	02411	152629	SUBZ0	2,2	IAC2 = 10000
31	02412	110405	SUB	0,3,5NR	ISKIP IF THE DIGIT TYPED WAS
32	02413	000447	JMP	INST	INOT 0
33	02414	151221	MOVZ	2,2,SKP	ISHIFT AC2 TO RIGHT
34	02415	120520	SUBZL	1,1	IAC1 = 1
35	02416	170405	INC	3,3,5NR	
36	02417	000445	JMP	INST+2	10TAY IN LOOP UNTIL ALL BITS
37	02420	147415	ANDR	2,1,5NR	TOP SWREG ARE CHECKED
38	02421	000773	JMP	INST	WHEN THE CONTROL COMES HERE
39	02422	100400	SUB	0,1	FOR THE FIRST TIME AC1 = 100
40	02423	130900	MOV	1,3	
41	02424	151225	MOVZ	2,2,5NR	
42	02425	000444	JMP	INST	
43	02426	024715	LDA	1,PC175	IAC1 = 15
44	02427	107004	ADD	3,1,52P	ISKIP IF THE COMMAND WAS "M"
45	02430	000705	JMP	INST+1	
46	02431	034647	LDA	3,PT87	ISAVE PT87
47	02432	054727	STA	3,SVPT87	IPREPARE TO PRINT A SPACE
48	02433	034623	LDA	3,PC47A	IAPTR EACH NUMBER
49	02434	054644	STA	3,PT87	
50	02435	000674	JSR	0,ICLF7	ITYPE A "CR" AND "LF"
51	02436	000670	JSR	0,POE7	IPRINT THE CONTENTS OF AC1
52	02437	034636	LDA	3,PC172	IAC3 = 12
53	02440	125400	INC	1,1	
54	02441	100452	SUB0M	3,1,52C	ISKIP IF AC1 IS GREATER OR EQUAL
55	02442	004637	JSR	TP57	ITO AC3
56	02443	101220	MOVZ	0,0	IACB = 00
57	02444	122414	SUB#	1,0,52M	ISKIP AFTER TYPING # 15
58	02445	000771	JMP	INST+5	
59	02446	000674	JSR	0,ICLF7	
60	02447	030665	LDA	2,5WREG	IACR HAD SWITCH SETTINGS
61	02450	151142	MOVOL	2,2	IBRING THE CARRY BIT IN AC1
62	02451	120550	SUBCL	1,1	ITYPE THE CONTENTS OF AC1
63	02452	000672	JSR	0,PIOC7	ITYPE A SPACE
64	02453	004626	JSR	TP37	ISKIP AFTER TYPING ALL THE 10
65	02454	151124	MOVZL	2,2,52P	10170
66	02455	000774	JMP	0,4	
67	02456	000674	JSR	0,ICLF7	
68	02457	034702	LDA	3,SVPT87	
69	02460	054620	STA	3,PT87	
70	02461	000410	JMP	IN47	

LDMSI NJSCT

46	02362	054770	INPT1	STA	3,INSTR	ISAVE THE RETURN ADDRESS
47	02363	040770	STA	0,INST0	ISAVE AC0	
48	02364	040770	STA	1,INST1	IAC1	
49	02365	050770	STA	2,INST2	IAC2	
50	02366	175200	MOVH	3,3		
51	02367	054770	STA	3,INSTR	ISAVE CARRY	
52	02370	170400	SUB	3,3		
53	02371	054751	STA	3,INST		
54	02372	000674	JSR	0,ICLF7		
55	02373	040756	JSR	0,INLTK	IFINLTK IS NOT -1	
56	02374	020130	INPT1	LDA	0,PLAST	IFREAD THE INPUT
57	02375	024740	LDA	1,PC175	IAC1 = 15	
58	02376	100415	SUB#	0,1,5NR	ISKIP IF THE CHARACTER TYPED	
59	02377	000527	JMP	INST	IFAS NOT "CR"	

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0853 N3SCT
01 02462 17600P IM37: ADC
02 02463 05466 STA
03 02464 02405 LDA
04
05 02465 133414 ANON
06 02466 146401 808
07 02467 14760R ADD
08 02470 044965 STA
09 02471 01066R IN47: ISZ
10
11 02472 000434 JMP
12 02473 014656 032
13 02474 024130 LDA
14 02475 101122 MOVZL
15 02476 000460 JMP
16 02477 06361R SKPDN
17 02500 006774 JMP
18 02501 10100R MOV
19 02502 060610 DIAC
20 02503 000462 JMP
21 02504 101020 MOVZR
22 02505 04013R STA
23 02506 000667 JMP
24
25 02507 002322 IYPT: TYP
26 02510 10700R INST: ADD
27
28 02511 020634 LDA
29 02512 006775 JSR
30 02513 12100R MOV
31 02514 000773 JSR
32 02515 034632 LDA
33 02516 110405 SUB
34 02517 000405 JMP
35 02520 034620 LDA
36 02521 110404 SUB
37 02522 000747 JMP
38 02523 054865 STA
39
40 02524 034634 IN67: LDA
41
42 02525 054625 STA
43 02526 006674 JSR
44 02527 010613 ISZ
45 02530 030665 LDA
46 02531 170220 ACCIR
47 02532 170484 AND
48
49 02533 17200R ADC
50 02534 050865 STA
51 02535 020622 LDA
52 02536 101100 MOVL
53 02537 020614 LDA
54 02540 024614 LDA
55 02541 030614 LDA
56 02542 034614 LDA
57 02543 002687 JMP

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10054 N3SCT
01
02
03
04 02544 044427 RAN64: STA 1,RN,31
05 02545 050427 STA 2,RN,32
06 02546 030430P LDA 2,RN,K1
07 02547 020430P LDA R,RN,C2
08 02550 024425 LDA 1,RN,C1
09 02551 133404 AND 1,2,SZR
10 02552 000464 JMP RAN,1
11 02553 101122 MOVZL 0,0,SZC
12 02554 101400 INC R,0
13 02555 044422 STA R,RN,C2
14 02556 024423 RAN,1: LDA 1,RTABL
15 02557 13300R ADD 1,2
16 02560 02500P LDA 1,0,2
17 02561 12300R ADD 1,0
18 02562 04100R STA 0,0,2
19 02563 024419 LDA 1,RANM
20 02564 12330P ADD08 1,0
21 02565 040413 STA 0,RANM
22 02566 030406 RAN,2: LDA 2,RN,32
23 02567 024404 LDA 1,RN,31
24 02570 010405 ISZ RN,C1
25 02571 00140P JMP 0,3
26 02572 00140P JMP 0,3
27 02573 02000R RN,31:0
28 02574 00000R RN,32:0
29 02575 00000P RN,C1:0
30 02576 00000P RN,K1:7
31 02577 123450 RN,C2:103450
32 02580 00000P RANM:0
33 02581 00000P RTABL: RTABL+1
34 02582 027247 027247
35 02583 145651 145651
36 02584 102724 102724
37 02585 071352 071352
38 02586 034565 034565
39 02587 110272 110272
40 02512 047135 047135
41 02511 113523 113523

```

```

IAC3 = -1
FLOCK IN SWITCH INPUT MODE
I$READ THE CURRENT VALUE OF
I$SWREG
ITAKE TOP OF AC1 AND AC2
I$AVE THE NEW VALUE OF $SWREG
I$SKIP IF THE PROGRAM IS LOCKED
I$M SWITCH INPUT MODE
I$NEVER SKIP
I$WAIT FOR OPERATOR INPUT
I$GET CHARACTER
I$LAST INPUT IN LASTI
IAC1 = I$R + ASCII VALUE OF
I$CONTROL CHARACTER
I$TYPE A
I$SKIP IF IT IS NOT A R
IAC3 = I22
IAC3 = I04
I$SKIP IF IT WAS A 0
I$SET SWITCHES TO DEFAULT
I$MODE
IAC3 = ADDRESS OF THE LOCATION
I$WHERE THE PROGRAM WILL START
IAC3 = 77777
I$SKIP IF THE SWITCHES ARE SET
ITO ALL ZERO'S
I$RESTORE CARRY
I$RESTORE THE ACCUMULATORS
I$RETURN WITH C(AC3)=CHAR INPUT
I$RETURN

```

```

TRANSM-RANDOM # GENERATOR
I$PIN 01'S OUT IN A HURRY FORGET THE MATH
RAN64: STA 1,RN,31
LDA 2,RN,K1
LUA R,RN,C2
LDA 1,RN,C1
AND 1,2,SZR
JMP RAN,1
MOVZL 0,0,SZC
INC R,0
STA R,RN,C2
LDA 1,RTABL
ADD 1,2
LDA 1,0,2
ADD 1,0
STA 0,0,2
LDA 1,RANM
ADD08 1,0
STA 0,RANM
LDA 2,RN,32
LDA 1,RN,31
ISZ RN,C1
JMP 0,3
JMP 0,3
RN,31:0
RN,32:0
RN,C1:0
RN,K1:7
RN,C2:103450
RANM:0
RTABL: RTABL+1
027247
145651
102724
071352
034565
110272
047135
113523

```

```

18055 NJSCT
01
02
03 02012 00131P
04 02013 040403 ER,SSI
05 02014 040403 ER,SSI
06 02015 050403 ER,SSI
07 02016 050403 ER,SSI
08 02017 020403 ER,SSI
09 02020 10112R ER,SSI
10 02021 10112R ER,SSI
11 02022 000404 ER,SSI
12 02023 030767 ER,SSI
13 02024 021401 ER,SSI
14 02025 040402 ER,SSI
15 02026 000401 ER,SSI
16 02027 000401 ER,SSI
17 02030 024406 ER,SSI
18 02031 000073 ER,SSI
19 02032 024405 ER,SSI
20 02033 000073 ER,SSI
21 02034 024404 ER,SSI
22 02035 000073 ER,SSI
23 02036 024117 ER,SSI
24 02037 125005 ER,SSI
25 02040 000403 ER,SSI
26 02041 024120 ER,SSI
27 02042 000073 ER,SSI

ERROR - ERROR HANDLER - PRINT ALL ERR INFO
IFIRST PRINT PRG# AND (ACIS)
CD,LA
STA 0,ER,S0
STA 1,ER,S1
STA 2,ER,S2
STA 3,ER,S3
LDA 0,S,REG
MOVZL 0,0
JMP EREXIT
LDA 3,ER,S5
LDA 0,1,0
STA 0,0,0
JSR 0,M,ESS
R
LDA 1,ER,S0
JSR 0,P,ECT
LDA 1,ER,S1
JSR 0,P,ECT
LDA 1,ER,S2
JSR 0,P,ECT
LDA 1,PR,FLG
MOV 1,1,SNR
JMP 0,0
LDA 1,PH,S3
JSR 0,P,ECT

18056 NJSCT
01
02
03
04
05 02043 000071 ER,SSI
06 02044 020406 ER,SSI
07 02045 024142 ER,SSI
08 02046 000073 ER,SSI
09 02047 024143 ER,SSI
10 02050 000073 ER,SSI
11 02051 000071 ER,SSI
12 02052 003160 ER,SSI
13 02053 024140 ER,SSI
14 02054 000070 ER,SSI
15 02055 024141 ER,SSI
16 02056 000070 ER,SSI
17 02057 000071 ER,SSI
18 02060 003152 ER,SSI
19 02061 024136 ER,SSI
20 02062 000070 ER,SSI
21 02063 024137 ER,SSI
22 02064 000070 ER,SSI
23 02065 000040 ER,SSI
24

IPRINT -EM ALLOCATION ASSIGNMENTS
EMHPP:
JSR 0,M,ESS
TXT,2
LDA 1,SCRLO
JSR 0,P,ECT
LDA 1,SCRMI
JSR 0,P,ECT
JSR 0,M,ESS
TXT,8
LDA 1,TSTLO
JSR 0,P,ECT
LDA 1,TSTMI
JSR 0,P,ECT
JSR 0,M,ESS
TXT,7
LDA 1,PHSLO
JSR 0,P,ECT
LDA 1,PHSMT
JSR 0,P,ECT
JMP EREXIT
IDONE NOW EXIT

IPRINT TSTLO
IPRINT TSTMI
IPRINT PH8LO
IPRINT PH8MI
IDONE NOW EXIT

```

10057 N38CT

01 02066 030413 ERX11
 02 02067 151400
 03 02070 050411
 04 02071 004510
 05 02072 020404 ERXT1
 06 02073 024404
 07 02074 030404
 08 02075 002404
 09
 10 02076 000000 ER,001 0
 11 02077 000000 ER,011 0
 12 02700 000000 ER,021 0
 13 02701 000000 ER,031 0
 14

RESET RETURN ADDRESS
 TINC TO RETURN ADDRESS

10058 N38CT

01 02702 054456 ERR03: STA 3,ERR.3
 02 02703 170400 AOC 3,3
 03 02704 004403 JMP 0,3
 04 02705 054453 ERR01: STA 3,ERR.3
 05 02706 170400 SUB 3,3
 06 02707 054117 STA 3,PRPLG
 07 02708 050447 STA 2,ERR.2
 08 02709 044445 STA 1,ERR.1
 09 02710 044445 STA 0,ERR.0
 10 02711 054402 LDA 3,ERR.3
 11 02712 054445 JSR 0ERR01
 12 02713 054445 ER,PR1
 13 02714 054402 ER,PR1
 14 02715 000100 ER,PR1
 15 02716 000100 ER,PR1
 16 02717 030116 ER,PR1
 17 02718 011377 ER,PR1
 18 02719 000481
 19 02720 011379
 20 02721 000481
 21 02722 011379
 22 02723 000481
 23 02724 010133
 24 02725 000401
 25 02726 020133
 26 02727 024432
 27 02728 105404
 28 02729 000410
 29 02730 000410
 30 02731 000410
 31 02732 000410
 32 02733 000410
 33 02734 000277
 34 02735 000277
 35 02736 000277
 36 02737 000210
 37 02738 000177
 38 02739 000177
 39 02740 000177
 40 02741 030406
 41 02742 177122
 42 02743 000404
 43 02744 120000
 44 02745 130000
 45 02746 050406
 46 02747 020406
 47 02748 020406
 48 02749 020406
 49 02750 020406
 50 02751 030406
 51 02752 030406
 52 02753 021401
 53 02754 001310
 54 02755 000000
 55 02756 000000
 56 02757 000000
 57 02758 000000
 58 02759 000000
 59 02760 000000
 60 02761 000000

RETURN ADDRESS

01 04514 011000	MUV R,R	01 04537 003353	PREVERSE ISZ TEST	01 04537 003353	PREVERSE ISZ TEST	01 04537 003353	PREVERSE ISZ TEST
02 04515 021000	LDA R,R,2	02 04538 045000	LDA 2,SCRM1	02 04538 045000	LDA 2,SCRM1	02 04538 045000	LDA 2,SCRM1
03 04516 021000	COMB R,R,SNR	03 04539 011000	LDA 3,SCRL0	03 04539 011000	LDA 3,SCRL0	03 04539 011000	LDA 3,SCRL0
04 04517 000405	JMP M1,3P	04 04540 000405	ADC 1,1	04 04540 000405	ADC 1,1	04 04540 000405	ADC 1,1
05 04520 120000	ADC 1,1	05 04541 000405	LDA R,R,2	05 04541 000405	LDA R,R,2	05 04541 000405	LDA R,R,2
06 04521 003507	LCALL ERROR	06 04542 000405	COMB R,R,SNR	06 04542 000405	COMB R,R,SNR	06 04542 000405	COMB R,R,SNR
07 04522 045000	M1,7F	07 04543 000405	JMP M1,4C	07 04543 000405	JMP M1,4C	07 04543 000405	JMP M1,4C
08 04523 045000	STA 1,R,2	08 04544 021000	LCALL ERROR	08 04544 021000	LCALL ERROR	08 04544 021000	LCALL ERROR
09 04524 151400	INC 2,2	09 04545 100400	M1,7F	09 04545 100400	M1,7F	09 04545 100400	M1,7F
10 04525 150432	SUBZM 2,3,8ZC	10 04546 000405	STA 1,R,2	10 04546 000405	STA 1,R,2	10 04546 000405	STA 1,R,2
11 04526 000740	JMP M1,04	11 04547 000405	ISZ R,2	11 04547 000405	ISZ R,2	11 04547 000405	ISZ R,2
12 04527 000401	JMP M1,04	12 04548 000405	JMP M1,4C	12 04548 000405	JMP M1,4C	12 04548 000405	JMP M1,4C
13		13 04549 000405	SUB 1,1	13 04549 000405	SUB 1,1	13 04549 000405	SUB 1,1
		14 04550 000405	LCALL ERROR	14 04550 000405	LCALL ERROR	14 04550 000405	LCALL ERROR
		15 04551 021000	M1,7F	15 04551 021000	M1,7F	15 04551 021000	M1,7F
		16 04552 101000	STA 1,R,2	16 04552 101000	STA 1,R,2	16 04552 101000	STA 1,R,2
		17 04553 000405	LDA R,R,2	17 04553 000405	LDA R,R,2	17 04553 000405	LDA R,R,2
		18 04554 120400	MOV R,R,SNR	18 04554 120400	MOV R,R,SNR	18 04554 120400	MOV R,R,SNR
		19 04555 000405	JMP M1,4E	19 04555 000405	JMP M1,4E	19 04555 000405	JMP M1,4E
		20 04556 120400	SUB 1,1	20 04556 120400	SUB 1,1	20 04556 120400	SUB 1,1
		21 04557 000405	LCALL ERROR	21 04557 000405	LCALL ERROR	21 04557 000405	LCALL ERROR
		22 04558 000405	M1,7F	22 04558 000405	M1,7F	22 04558 000405	M1,7F
		23 04559 120000	ADC 1,1	23 04559 120000	ADC 1,1	23 04559 120000	ADC 1,1
		24 04560 150000	ADD 1,2	24 04560 150000	ADD 1,2	24 04560 150000	ADD 1,2
		25 04561 172432	SUBZM 3,2,8ZC	25 04561 172432	SUBZM 3,2,8ZC	25 04561 172432	SUBZM 3,2,8ZC
		26 04562 000751	JMP M1,04+3	26 04562 000751	JMP M1,04+3	26 04562 000751	JMP M1,04+3
		27	LCALL RETRN	27	LCALL RETRN	27	LCALL RETRN
		28		28		28	
		29		29		29	
		30		30		30	
		31		31		31	
		32		32		32	
		33		33		33	
		34		34		34	
		35		35		35	
		36		36		36	
		37		37		37	
		38		38		38	
		39		39		39	
		40		40		40	
		41		41		41	
		42		42		42	
		43		43		43	
		44		44		44	
		45		45		45	
		46		46		46	
		47		47		47	
		48		48		48	
		49		49		49	
		50		50		50	
		51		51		51	
		52		52		52	
		53		53		53	
		54		54		54	
		55		55		55	
		56		56		56	
		57		57		57	
		58		58		58	
		59		59		59	
		60		60		60	
		61		61		61	
		62		62		62	
		63		63		63	
		64		64		64	
		65		65		65	
		66		66		66	
		67		67		67	
		68		68		68	
		69		69		69	
		70		70		70	
		71		71		71	
		72		72		72	
		73		73		73	
		74		74		74	
		75		75		75	
		76		76		76	
		77		77		77	
		78		78		78	
		79		79		79	
		80		80		80	
		81		81		81	
		82		82		82	
		83		83		83	
		84		84		84	
		85		85		85	
		86		86		86	
		87		87		87	
		88		88		88	
		89		89		89	
		90		90		90	
		91		91		91	
		92		92		92	
		93		93		93	
		94		94		94	
		95		95		95	
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		97		97		97	
		98		98		98	
		99		99		99	
		100		100		100	


```

10075 N3SCT
01 05025 1P246A IREAD AND VERIFY ARRAY CONTENTS
02 05026 740467 SUB 0,0
03 05027 740467 STA 0,ROW
04 05028 740467 STA 0,CLMN
05 05029 730142 L0A 2,SCRLO
06 05030 724464 L0A 1,ROW
07 05031 724464 L0A 1,ROW
08 05032 734107 L0A 3,437
09 05033 167524 ANOZL 3,1,5ZP
10 05034 127120 ANOZL 1,1
11 05035 127124 ANOZL 1,1,5ZR
12 05036 130000 A00 1,2
13 05037 724457 L0A 1,CLMN
14 05038 167404 ANO 3,1,5ZR
15 05039 130000 A00 1,2
16 05040 721960 L0A 0,0,2
17 05041 730446 STA 2,SO,AD
18 05042 730455 L0A 2,014G
19 05043 730455 SUB 2,1
20 05044 167400 L0A 2,ROW
21 05045 167400 ANO 3,1
22 05046 730446 SUB 1,2,5ZR
23 05047 730446 L0A 3,8CKGN
24 05048 730446 JMP RCKCR
25 05049 160415 CUM 3,1
26 05050 160415 SUBM 0,1,5NR
27 05051 704411 JMP SO,CR
28 05052 704411 STA 3,PR,53
29 05053 704412 L0A 2,SO,AD
30 05054 704412 LCALL ENROY
31 05055 704412 M4,11
32 05056 704404 JMP SO,CR
33 05057 704404 IWORD WAS BACKGRND CHECK IT
34 05058 160400 RCKCR: L0A 3,8CKGN
35 05059 704400 MUV 3,1
36 05060 724427 JMP SO,AX
37 05061 724427 L0A 1,ROW
38 05062 734107 L0A 3,437
39 05063 160415 SUBM 3,1,5NR
40 05064 160415 JMP SO,CL
41 05065 724422 INC 1,1
42 05066 744422 STA 1,ROW
43 05067 704404 JMP SO,05+3
44 05068 162400 INC TO NEXT COLUMN
45 05069 740417 SO,CL: SUB 0,0
46 05070 740417 STA 0,ROW
47 05071 162415 L0A 0,CLMN
48 05072 162415 SUBM 3,0,5NR
49 05073 704404 JMP SO,06
50 05074 161400 INC 0,0
51 05075 704424 JMP SO,05+2
52 05076 177400 SO,32:

```

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10076 N3SCT
01 05100 726013 ILSIDE DIAGONAL BY ONE POSITION
02 05101 116015 SUBM 0,3,5NR
03 05102 704412 JMP SO,07
04 05103 101400 INC 0,0
05 05104 740407 STA 0,DIAG
06 05105 162400 SUB 0,0
07 05106 704404 JMP 0,0+3
08 05107 704404 STA 0,0
09 05108 704404 CLMN: 0
10 05109 704404 STA 0,0
11 05110 704404 SUB,ADI 0
12 05111 704404 RCKGN: 0
13 05112 704404 DIAG: 0
14 05113 704404 ICOMPLEMENT THE BACKGROUND PATTERN
15 05114 704404 L0A 0,8CKGN
16 05115 704404 CUM 0,0
17 05116 704404 STA 0,8CKGN
18 05117 704404 MOV 0,0,5NR
19 05118 704404 JMP M4,EX
20 05119 182400 SUB 0,0
21 05120 704404 JMP 0,0+1
22 05121 704404 M4,02+2
23 05122 704404 LCALL RETRN
24 05123 704404 M4,EX:
25 05124 704404

```

```

01 05125 704404 ISTART OVER WITH BACKGROUND COMPL.
02 05126 704404
03 05127 704404
04 05128 704404
05 05129 704404
06 05130 704404
07 05131 704404
08 05132 704404
09 05133 704404
10 05134 704404
11 05135 704404
12 05136 704404
13 05137 704404
14 05138 704404
15 05139 704404
16 05140 704404
17 05141 704404
18 05142 704404
19 05143 704404
20 05144 704404
21 05145 704404
22 05146 704404
23 05147 704404
24 05148 704404
25 05149 704404
26 05150 704404
27 05151 704404
28 05152 704404
29 05153 704404
30 05154 704404
31 05155 704404
32 05156 704404
33 05157 704404
34 05158 704404
35 05159 704404
36 05160 704404
37 05161 704404
38 05162 704404
39 05163 704404
40 05164 704404
41 05165 704404
42 05166 704404
43 05167 704404
44 05168 704404
45 05169 704404
46 05170 704404
47 05171 704404
48 05172 704404
49 05173 704404
50 05174 704404
51 05175 704404
52 05176 704404

```


0605 N3SCT

LUSJ 001446 35/04 37/01 37/02 38/15 38/17
 LIDIS 001232 18/28 18/32 18/34
 LMKM 002113 18/17 18/18 18/39
 LMKP 002215 18/17 18/18 18/39
 LMKR 002212 18/17 18/18 18/39
 LMKR 002722 24/22 24/26 24/27
 LMKR 002857 22/17 24/22 24/26
 LMKL 002215 65/05 65/08 66/06
 LMKR 002857 71/09 74/08 77/08
 LMS5 000071 15/26 25/31 23/03 23/18 25/28 29/31 31/02
 LMS5 000071 48/27 42/19 43/02 55/15 56/17 56/18
 LPDIX 004366 63/15 63/36 61/18 61/21 61/23 65/01
 LPS6 001153 18/18 65/06 65/08 66/07 66/09 69/07 69/09
 LPS6 001153 71/06 71/08 74/08 77/08 77/08 79/07
 LPS6 001153 79/09 81/03 39/07
 LPMK 001805 15/41 39/07
 LPMK 002255 61/12 63/23
 LPLUX 002266 62/13 62/15 63/12 63/26
 LPMK 001173 61/17 61/21 23/21 23/25 31/05 55/18 55/20 55/22
 LPOCT 000073 19/27 56/08 62/12 62/22 63/11 63/18
 LPR1E 004250 63/09 63/25 63/24 63/16 63/22
 LPR4P 004257 63/09 63/25 63/24 63/16 63/22
 LPR77 004256 63/09 63/25 63/24 63/16 63/22
 LPRGN 004254 63/09 63/25 63/24 63/16 63/22
 LPRGO 001516 29/43 48/02 29/19 29/19
 LPR11 001066 29/12 29/28 29/28
 LPR12 001672 29/26 29/30 29/35
 LPR13 001111 62/03 63/28 61/23 62/28
 LPR14 004280 28/06 61/07 61/28
 LPR15 004155 61/08 63/27
 LPR16 004261 61/24 63/30
 LPR17 004313 61/24 63/32
 LPR18 004326 61/24 63/32
 LPR19 004351 61/28 63/34
 LPR20 004367 61/28 63/34
 LPR21 004367 29/15 29/17 63/21
 LPR22 004367 61/07 62/08 63/21
 LPR23 004367 29/14 29/06 29/42
 LPR24 004367 15/34 41/21 28/18
 LPR25 004367 18/21 28/08 28/18
 LPR26 004367 29/28 29/44 48/15
 LPR27 004367 29/06 62/08 48/14
 LPR28 004367 29/45 48/14 26/22
 LPR29 004367 26/04 26/04 26/18 26/22
 LPR30 004367 26/15 26/18 42/03
 LPR31 004367 28/17 42/03 43/29
 LPR32 004367 34/58 43/27 43/29
 LPR33 004367 42/24 42/24 43/25
 LPR34 004367 21/14 23/18 48/16
 LPR35 004367 23/14 81/05
 LPR36 004367 28/03 21/04
 LPR37 004367 23/09 41/14
 LPR38 004367 41/08 41/19
 LPR39 004367 26/04 26/25
 LPR40 004367 18/28 26/03
 LPR41 004367 18/22 28/14

0606 N3SCT

LTTI 000073 23/08 24/29
 LMRK 001103 15/39 33/22 69/34 77/31 79/33
 LMAX 001534 48/09 48/16
 LMAX 001144 15/48 16/15 81/03
 LSS3 001636 41/03 41/22 41/23
 M000 004405 65/07 65/13
 M002 004415 65/13 65/22
 M003 004417 65/24 65/27
 M004 004423 65/28 65/37
 M004 004432 65/32 65/35
 M001 003166 65/34 65/34
 M004 004441 66/08 66/14
 M002 004451 66/14 66/24 66/35
 M003 004465 66/38 67/11
 M004 004530 67/12 66/02 66/08
 M002 004462 66/34 66/33
 M003 004474 66/41 66/45
 M004 004504 66/47 66/53
 M003 004513 66/55 66/58
 M004 004524 67/04 67/09
 M004 004541 68/07 68/11
 M004 004551 68/13 68/19
 M004 004557 68/21 68/25
 M003 004521 68/12 68/32
 M004 004555 68/14 66/44
 M003 004537 68/16 66/59
 M004 004541 68/18 68/09
 M004 004541 68/20 68/24
 M004 004541 68/22 68/51
 M004 004541 68/24 87/07
 M004 004551 69/08 69/14
 M004 004576 69/14 69/23
 M004 004576 69/36 69/56
 M004 004576 69/57 78/03 78/25
 M004 004576 78/28 69/32
 M004 004576 69/38 69/46
 M004 004576 78/06 78/18
 M004 004576 78/06 78/13
 M004 004576 69/25 69/56 78/23
 M004 004576 78/24 78/26
 M004 004576 69/32 69/37 69/53 69/56 78/05 78/28
 M004 004576 78/22 78/27
 M004 004576 68/25 68/44
 M004 004576 78/11 78/11
 M004 004576 27/14 27/21
 M004 004576 27/15 27/17
 M004 004576 71/07 71/13
 M004 004576 71/13 71/24
 M004 004576 72/02 73/02
 M004 004576 71/34 73/02
 M004 004576 71/27 71/32
 M004 004576 72/06 72/19
 M004 004576 73/05 73/14
 M004 004576 73/07 73/18
 M004 004576 73/12 73/15
 M004 004576 72/13 73/17

0000 N38CT

RAN_2 002566

REYN 000070

RM_C1 002575

RM_C2 002577

RM_K1 002576

RM_S1 002573

RM_S2 002574

ROM 005115

RTABL 002601

RTCB 000124

RTTTH 000125

SCANI 000143

SCALO 000142

SOCAI 005104

SO_B3 004771

SO_B4 005008

SO_B5 005025

SO_B6 005106

SO_B7 005182

SO_B8 005105

SO_AD 005117

SO_CL 005075

SO_CR 005066

SO_KX 005054

SO_LP 004774

SECTL 000121

SETAL 001335

SETAX 001565

SEY83 001570

STATS 000126

STHUR 001721

STRIM 000565

STRIT 000576

STRIT 000200

STRT2 000210

SVPTT 000301

SWREG 000065

SWR52 000122

TICT 002167

TIDT 002200

TIMP 002235

TINIP 001507

TINIT 001463

TINTL 001515

TINT 002237

TINTI 002257

00/30

60/30

70/27

73/10

76/00

65/39

61/01

54/00

54/31

54/38

54/27

54/22

54/08

74/04

74/33

21/41

23/37

16/15

66/25

71/25

72/11

30/06

08/24

71/36

73/03

78/02

74/39

74/55

74/56

75/42

76/02

76/04

75/52

74/38

75/18

75/39

75/44

75/31

75/25

74/38

34/06

48/18

48/42

48/44

31/16

43/30

23/02

23/04

03/11

18/03

25/20

51/43

52/33

23/14

53/08

53/45

21/00

44/10

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