

TEST

TEST 13 JSR,RIS,RTI
MD-11-DOM-A

EP-DOM-A-DL-A
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FICHE 1 OF 1

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This microfiche strip contains 15 frames of data. The frames are arranged in two columns. The left column contains 15 frames, and the right column contains 14 frames. The data is organized into several tables and charts. The tables are arranged in a grid-like structure, with columns and rows of data. Some frames contain text, while others contain numerical data or small diagrams. The data appears to be related to the test results mentioned in the header.

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5. OPERATION PROCEDURE

5.1 OPERATIONAL SWITCH SETTINGS

NO SWITCHES ARE USED

5.2 SUBROUTINE ABSTRACTS

5.2.1 BEGIN SA 200

5.2.2 SCOPE

IS A "NOP THAT IS PLACED BETWEEN EACH SUBTEST
IN THE INSTRUCTION SECTION. IF A SCOPE LOOP IS NEEDED.
INSERT A BRANCH TO THE PREVIOUS SCOPE LOCATION AT
THE CURRENT SCOPE LOCATION. (NOTE NOP=240)

5.2.3 HLT

INDICATES THE UNIQUE ADDRESS THAT TAGS THE FAILING
SUBTEST. THE INCORRECT DATA AT THE TIME OF THE FAIL-
URE MAY OR MAY NOT BE DISPLAYED IN REGISTER ZERO, WHICH
IS THE DATA REGISTER ON A HALT.

5.2.4 TRAPCATCHER

THIS IS A SERIES OF INSTRUCTIONS DESIGNED TO DETECT AND
ISOLATE UNEXPECTED TRAPS AND INTERRUPTS, THAT OCCUR IN THE
TRAP AND INTERRUPT VECTOR AREA OF MEMORY.

THE PRINCIPAL OF THIS ROUTINE IS: THE VECTOR ENTRANCE
ADDRESS POINTS TO THE NEXT SEQUENTIAL WORD WHICH WILL CON-
TAIN A HALT (00000) (THIS LOCATION IS ALSO THE STATUS
WORD FOR THAT VECTOR ENTRANCE. BUT THIS WILL HAVE NO EFFECT
ON IT ALSO BEING THE NEXT INSTRUCTION).

IF A HALT OCCURES IN THE TRAP OR INTERRUPT VECTOR AREA,
REGISTER SIX SHOULD BE EXAMINED TO DETERMINE ITS CONTENTS,
THEN USE REGISTER SIX CONTENTS AS AN ADDRESS TO DETERMINE
THE LOCATION THE PROGRAM WAS AT. WHEN THE INTERRUPT OR
TRAP OCCURRED. (MEMORY AS SPECIFIED BY R6 CONTAINS THE
PC OF THE INSTRUCTION FOLLOWING THE INSTRUCTION WHERE THE
TRAP OCCURED)

5.3 PROGRAM AND/OR OPERATOR ACTION

5.3.1 LOADING AND STARTING AT 200 STARTS THE TEST. IF
AN ERROR IS DETECTED. THERE WILL BE A HALT.
WHEN A HALT OCCURS AND IT IS NECESSARY TO SCOPE ON
IT, PLACE INSERT A BRANCH INSTRUCTION IN THE SCOPE
LOCATION FOLLOWING THE HALT. THE BRANCH INSTRUCTION
SHOULD BRANCH YOU TO THE PREVIOUS SCOPE LOCATION.

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6. ERRORS

6.1 ALL ERRORS WILL CAUSE A HALT.

6.2 ERROR RECOVERY

ON TRAP ERRORS - RESTART AT 200.
DEPRESS CONTINUE TO CONTINUE TEST

7. RESTRICTIONS

7.1 STARTING RESTRICTION

NONE

7.2 OPERATIONAL RESTRICTION

NONE

8. MISCELLANEOUS

8.1 EXECUTION TIME

FOR THE TEST ABOUT 2 MINUTES

9. PROGRAM DESCRIPTION

THIS IS THE FIRST PROGRAM THAT USES THE STACK. REGISTER SIX IS TESTED TO SEE THAT IT INCREMENTS AND DECREMENTS CORRECTLY. THAT THE CORRECT DATA IS TRANSFERED TO THE STACK FROM THE REGISTERS AND THAT THE STACK ALSO TRANSFERS CORRECTLY TO THE REGISTERS.

WHEN USING THE RTI INSTRUCTION THE STACK IS INCREMENTED TWO WORDS THE RESULTS ARE TESTED TO SEE IF THE STATUS IS SET UP CORRECTLY. THE JSR AND RTS ARE TESTED TO A LEVEL SEVEN DEEP.

10. LISTING

11. FLOW CHART(S)

GO1

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|-----|--------|--------|--------|-------|------------|---------------------------------------|
| 207 | | | | | | |
| 208 | | 000000 | | N=0 | | |
| 209 | 000200 | 000240 | | SCOPE | | ;TEST ABILITY OF JSR TO JUMP |
| 210 | 000202 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 211 | 000206 | 004067 | 000002 | JSR | %0,+.6 | ;JSR AROUND HALT |
| 212 | 000212 | 000000 | | HLT | | ;JSR FAILED TO JUMP |
| 213 | | | | | | |
| 214 | 000214 | 000240 | | SCOPE | | ;TEST PC+2 TO REG 0 |
| 215 | 000216 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 216 | 000222 | 004067 | 000000 | JSR | %0,+.4 | ;JSR TO NEXT INSTRUCTION |
| 217 | 000226 | 022700 | 000226 | CMP | #,%0 | ;TEST REG 0 FOR CORRECT MOVE |
| 218 | 000232 | 001401 | | BEQ | .+4 | ;BRANCH IF CORRECT |
| 219 | 000234 | 000000 | | HLT | | ;REG 0 VALUE NOT CORRECT |
| 220 | | | | | | |
| 221 | 000236 | 000240 | | SCOPE | | ;TEST DECREMENT OF LP |
| 222 | 000240 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 223 | 000244 | 004067 | 000000 | JSR | %0,+.4 | ;JSR TO NEXT INSTRUCTION |
| 224 | 000250 | 020627 | 003430 | CMP | LP,#BUFF-2 | ;TEST (LP) FOR INITIAL MINUS 2 |
| 225 | 000254 | 001401 | | BEQ | .+4 | ;BRANCH IF CORRECT |
| 226 | 000256 | 000000 | | HLT | | ;LINK POINTER NOT CORRECT |
| 227 | | | | | | |
| 228 | 000260 | 000240 | | SCOPE | | ;TEST TRANSFER OF (REG 0) TO (LP) |
| 229 | 000262 | 012700 | 177777 | MOV | #-1,%0 | ;INITIALIZE REG 0 TO ONES |
| 230 | 000266 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 231 | 000272 | 004067 | 000000 | JSR | %0,+.4 | ;JMP TO NEXT INSTRUCTION |
| 232 | 000276 | 026727 | 003126 | CMP | BUFF-2,#-1 | ;TEST BUFF-2 FOR ONES |
| 233 | 000304 | 001401 | | BEQ | .+4 | |
| 234 | 000306 | 000000 | | HLT | | ; (REG) WAS NOT TRANSFERED TO LP |
| 235 | | | | | | |
| 236 | 000310 | 000240 | | SCOPE | | ;TEST JMP INDIRECT THE LITERAL |
| 237 | 000312 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP POINTER |
| 238 | 000316 | 004037 | 000324 | JSR | %0,@#.6 | ;JMP OVER THE HLT |
| 239 | 000322 | 000000 | | HLT | | ;JSR FAILED |
| 240 | 000324 | 000240 | | OPR | | ;SHOULD JUMP TO HERE |
| 241 | | | | | | |
| 242 | 000326 | 000240 | | SCOPE | | ;TEST JSR INDIRECT A LOCATION |
| 243 | 000330 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 244 | 000334 | 004077 | 000000 | JSR | %0,@.4 | ;JSR DEFERED NEXT LOCATION |
| 245 | 000340 | 000344 | | .+4 | | ;POINTS TO OPERATE INSTRUCTION |
| 246 | 000342 | 000000 | | HLT | | ;FAILED TO JSR TO OPR |
| 247 | 000344 | 000240 | | OPR | | ;SHOULD JSR HERE |
| 248 | | | | | | |
| 249 | 000346 | 000240 | | SCOPE | | |
| 250 | 000350 | 012700 | 000364 | MOV | #+14,%0 | ;POINT TO BRANCH .+4 |
| 251 | 000354 | 012706 | 003432 | MOV | #BUFF,LP | |
| 252 | 000360 | 004010 | | JSR | %0,@%0 | |
| 253 | 000362 | 000000 | | HLT | | ;CURRENT REG USED INSTEAD OF PREVIOUS |
| 254 | 000364 | 000401 | | BR | .+4 | |
| 255 | 000366 | 000000 | | HLT | | |
| 256 | 000370 | 020027 | 000362 | CMP | %0,#.-6 | |
| 257 | 000374 | 001401 | | BEQ | .+4 | |
| 258 | 000376 | 000000 | | HLT | | ;REG 0 NOT SET CORRECTLY |
| 259 | | | | | | |
| 260 | 000400 | 000240 | | SCOPE | | ;TEST JSR AUTO DECREMENT |
| 261 | 000402 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP STACK |
| 262 | 000406 | 012700 | 000416 | MOV | #+10,%0 | ;REG 0 POINTS TO THE HLT |

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|-----|--------|--------|---------------|-------|------------|--|---------------------------------|
| 263 | 000412 | 004740 | | JSR | %7,-(0) | | ;TEST THE AUTO DECREMENT |
| 264 | 000414 | 000401 | | BR | +.4 | | |
| 265 | 000416 | 000000 | | HLT | | | ;DID NOT AUTO DECREMENT |
| 266 | 000420 | 020027 | 000414 | CMP | %0,#.-4 | | |
| 267 | 000424 | 001401 | | BEQ | +.4 | | |
| 268 | 000426 | 000000 | | HLT | | | ;FALSE AUTO DECREMENT |
| 269 | | | | | | | |
| 270 | | | | | | | ;TEST THE RTS INSTRUCTION |
| 271 | | | | | | | |
| 272 | 000430 | 000240 | | SCOPE | | | ;TEST (REG) TO (PC) |
| 273 | 000432 | 012706 | 003432 | MOV | #BUFF,LP | | ;SET UP LINK POINTER |
| 274 | 000436 | 012700 | 000446 | MOV | #+10,%0 | | ;RETURN TO REG 0 |
| 275 | 000442 | 000200 | | RTS | %0 | | ;RETURN AS SPECIFIED BY (REG 0) |
| 276 | 000444 | 000000 | | HLT | | | ;RTS FAILED |
| 277 | 000446 | 000240 | | OPR | | | ;SHOULD RETURN HERE |
| 278 | | | | | | | |
| 279 | 000450 | 000240 | | SCOPE | | | ;TEST (LP+2) TO (LP) |
| 280 | 000452 | 012706 | 003432 | MOV | #BUFF,LP | | ;SET UP LINK POINTER |
| 281 | 000456 | 012700 | 000464 | MOV | #+6,%0 | | ;SET UP (REG 0) |
| 282 | 000462 | 000200 | | RTS | %0 | | ;RETURN TO (REG 0) |
| 283 | 000464 | 020627 | 003434 | CMP | LP,#BUFF+2 | | ;LP SHOULD BE INCREMENTED |
| 284 | 000470 | 001401 | | BEQ | +.4 | | |
| 285 | 000472 | 000000 | | HLT | | | ;LINK POINTER NOT CORRECT |
| 286 | | | | | | | |
| 287 | 000474 | 000240 | | SCOPE | | | ;TEST ((LP)) TO (REG 0) |
| 288 | 000476 | 012767 | 041101 002726 | MOV | #*AB,BUFF | | ;ASCII (AB) TO BUFFER |
| 289 | 000504 | 012706 | 003432 | MOV | #BUFF,LP | | ;SET UP LINK POINTER |
| 290 | 000510 | 012700 | 000516 | MOV | #+6,%0 | | ;RETURN POINTER TO 0 |
| 291 | 000514 | 000200 | | RTS | %0 | | ;RETURN INSTRUCTION |
| 292 | 000516 | 020027 | 041101 | CMP | %0,#*AB | | ;TEST ((LP)) TO REG 0) |
| 293 | 000522 | 001401 | | BEQ | +.4 | | ;BRANCH IF EQUAL |
| 294 | 000524 | 000000 | | HLT | | | ;REG 0 NOT EQUAL ASCII "AB" |
| 295 | | | | | | | |
| 296 | | | | | | | |
| 297 | | | | | | | |
| 298 | | | | | | | |
| 299 | | 000001 | | N=N+1 | | | |
| 300 | 000526 | 000240 | | SCOPE | | | ;TEST ABILITY OF JSR TO JUMP |
| 301 | 000530 | 012706 | 003432 | MOV | #BUFF,LP | | ;SET UP LINK POINTER |
| 302 | 000534 | 004167 | 000002 | JSR | %1,+.6 | | ;JSR AROUND HALT |
| 303 | 000540 | 000000 | | HLT | | | ;JSR FAILED TO JUMP |
| 304 | | | | | | | |
| 305 | 000542 | 000240 | | SCOPE | | | ;TEST PC+2 TO REG 1 |
| 306 | 000544 | 012706 | 003432 | MOV | #BUFF,LP | | ;SET UP LINK POINTER |
| 307 | 000550 | 004167 | 000000 | JSR | %1,+.4 | | ;JSR TO NEXT INSTRUCTION |
| 308 | 000554 | 022701 | 000554 | CMP | %,%1 | | ;TEST REG 1 FOR CORRECT MOVE |
| 309 | 000560 | 001401 | | BEQ | +.4 | | ;BRANCH IF CORRECT |
| 310 | 000562 | 000000 | | HLT | | | ;REG 1 VALUE NOT CORRECT |
| 311 | | | | | | | |
| 312 | 000564 | 000240 | | SCOPE | | | ;TEST DECREMENT OF LP |
| 313 | 000566 | 012706 | 003432 | MOV | #BUFF,LP | | ;SET UP LINK POINTER |
| 314 | 000572 | 004167 | 000000 | JSR | %1,+.4 | | ;JSR TO NEXT INSTRUCTION |
| 315 | 000576 | 020627 | 003430 | CMP | LP,#BUFF-2 | | ;TEST (LP) FOR INITIAL MINUS 2 |
| 316 | 000602 | 001401 | | BEQ | +.4 | | ;BRANCH IF CORRECT |
| 317 | 000604 | 000000 | | HLT | | | ;LINK POINTER NOT CORRECT |
| 318 | | | | | | | |

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| 375 | 001016 | 001401 | | BEQ | .+4 | |
| 376 | 00102C | 000000 | | HLT | | ;LINK POINTER NOT CORRECT |
| 377 | | | | | | |
| 378 | 001022 | 000240 | | SCOPE | | ;TEST ((LP)) TO (REG 1) |
| 379 | 001024 | 012767 | 041101 002400 | MOV | #"AB,BUFF | ;ASCII (AB) TO BUFFER |
| 380 | 001032 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 381 | 001036 | 012701 | 001044 | MOV | #+6,%1 | ;RETURN POINTER TO 1 |
| 382 | 001042 | 000201 | | RTS | %1 | ;RETURN INSTRUCTION |
| 383 | 001044 | 020127 | 041101 | CMP | %1,#"AB | ;TEST ((LP)) TO REG 1) |
| 384 | 00105C | 001401 | | BEQ | +.4 | ;BRANCH IF EQUAL |
| 385 | 001052 | 000000 | | HLT | | ;REG 1 NOT EQUAL ASCII "AB" |
| 386 | | | | | | |
| 387 | | | | | | |
| 388 | | | | | | |
| 389 | | | | | | |
| 390 | | 000002 | | N=N+1 | | |
| 391 | 001054 | 000240 | | SCOPE | | ;TEST ABILITY OF JSR TO JUMP |
| 392 | 001056 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 393 | 001062 | 004267 | 000002 | JSR | %2,+.6 | ;JSR AROUND HALT |
| 394 | 001066 | 000000 | | HLT | | ;JSR FAILED TO JUMP |
| 395 | | | | | | |
| 396 | 001070 | 000240 | | SCOPE | | ;TEST PC+2 TO REG 2 |
| 397 | 001072 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 398 | 001076 | 004267 | 000000 | JSR | %2,+.4 | ;JSR TO NEXT INSTRUCTION |
| 399 | 001102 | 022702 | 001102 | CMP | #+,%2 | ;TEST REG 2 FOR CORRECT MOVE |
| 400 | 001106 | 001401 | | BEQ | +.4 | ;BRANCH IF CORRECT |
| 401 | 001110 | 000000 | | HLT | | ;REG 2 VALUE NOT CORRECT |
| 402 | | | | | | |
| 403 | 001112 | 000240 | | SCOPE | | ;TEST DECREMENT OF LP |
| 404 | 001114 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 405 | 001120 | 004267 | 000000 | JSR | %2,+.4 | ;JSR TO NEXT INSTRUCTION |
| 406 | 001124 | 020627 | 003430 | CMP | LP,#BUFF-2 | ;TEST (LP) FOR INITIAL MINUS 2 |
| 407 | 001130 | 001401 | | BEQ | +.4 | ;BRANCH IF CORRECT |
| 408 | 001132 | 000000 | | HLT | | ;LINK POINTER NOT CORRECT |
| 409 | | | | | | |
| 410 | 001134 | 000240 | | SCOPE | | ;TEST TRANSFER OF (REG 2) TO (LP) |
| 411 | 001136 | 012702 | 177777 | MOV | #+1,%2 | ;INITIALIZE REG 2 TO ONES |
| 412 | 001142 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 413 | 001146 | 004267 | 000000 | JSR | %2,+.4 | ;JMP TO NEXT INSTRUCTION |
| 414 | 001152 | 026727 | 002252 177777 | CMP | BUFF-2,#+1 | ;TEST BUFF-2 FOR ONES |
| 415 | 001160 | 001401 | | BEQ | +.4 | |
| 416 | 001162 | 000000 | | HLT | | ; (REG) WAS NOT TRANSFERED TO LP |
| 417 | | | | | | |
| 418 | 001164 | 000240 | | SCOPE | | ;TEST JMP INDIRECT THE LITERAL |
| 419 | 001166 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP POINTER |
| 420 | 001172 | 004237 | 001200 | JSR | %2,@#+.6 | ;JMP OVER THE HLT |
| 421 | 001176 | 000000 | | HLT | | ;JSR FAILED |
| 422 | 001200 | 000240 | | OPR | | ;SHOULD JUMP TO HERE |
| 423 | | | | | | |
| 424 | 001202 | 000240 | | SCOPE | | ;TEST JSR INDIRECT A LOCATION |
| 425 | 001204 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 426 | 001210 | 004277 | 000000 | JSR | %2,@+.4 | ;JSR DEFERED NEXT LOCATION |
| 427 | 001214 | 001220 | | +.4 | | ;POINTS TO OPERATE INSTRUCTION |
| 428 | 001216 | 000000 | | HLT | | ;FAILED TO JSR TO OPR |
| 429 | 001220 | 000240 | | OPR | | ;SHOULD JSR HERE |
| 430 | | | | | | |

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|-----|--------|--------|---------------|-------|------------|---------------------------------------|
| 431 | 001222 | 000240 | | SCOPE | | |
| 432 | 001224 | 012702 | 001240 | MOV | #.+14,%2 | ;POINT TO BRANCH .+4 |
| 433 | 001230 | 012706 | 003432 | MOV | #BUFF,LP | |
| 434 | 001234 | 004212 | | JSR | %2,%2 | |
| 435 | 001236 | 000000 | | HLT | | ;CURRENT REG USED INSTEAD OF PREVIOUS |
| 436 | 001240 | 000401 | | BR | .+4 | |
| 437 | 001242 | 000000 | | HLT | | |
| 438 | 001244 | 020227 | 001236 | CMP | %2,#.-6 | |
| 439 | 001250 | 001401 | | BEQ | .+4 | |
| 440 | 001252 | 000000 | | HLT | | ;REG 2 NOT SET CORRECTLY |
| 441 | | | | | | ;TEST JSR AUTO DECREMENT |
| 442 | 001254 | 000240 | | SCOPE | | |
| 443 | 001256 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP STACK |
| 444 | 001262 | 012702 | 001272 | MOV | #.+10,%2 | ;REG 2 POINTS TO THE HLT |
| 445 | 001266 | 004742 | | JSR | %7,-(2) | ;TEST THE AUTO DECREMENT |
| 446 | 001270 | 000401 | | BR | .+4 | |
| 447 | 001272 | 000000 | | HLT | | ;DID NOT AUTO DECREMENT |
| 448 | 001274 | 020227 | 001270 | CMP | %2,#.-4 | |
| 449 | 001300 | 001401 | | BEQ | .+4 | |
| 450 | 001302 | 000000 | | HLT | | ;FALSE AUTO DECREMENT |
| 451 | | | | | | |
| 452 | | | | | | ;TEST THE RTS INSTRUCTION |
| 453 | | | | | | |
| 454 | 001304 | 000240 | | SCOPE | | ;TEST (REG) TO (PC) |
| 455 | 001306 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 456 | 001312 | 012702 | 001322 | MOV | #.+10,%2 | ;RETURN TO REG 2 |
| 457 | 001316 | 000202 | | RTS | %2 | ;RETURN AS SPECIFIED BY (REG 2) |
| 458 | 001320 | 000000 | | HLT | | ;RTS FAILED |
| 459 | 001322 | 000240 | | OPR | | ;SHOULD RETURN HERE |
| 460 | | | | | | |
| 461 | 001324 | 000240 | | SCOPE | | ;TEST (LP+2) TO (LP) |
| 462 | 001326 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 463 | 001332 | 012702 | 001340 | MOV | #.+6,%2 | ;SET UP (REG 2) |
| 464 | 001336 | 000202 | | RTS | %2 | ;RETURN TO (REG 2) |
| 465 | 001340 | 020627 | 003434 | CMP | LP,#BUFF+2 | ;LP SHOULD BE INCREMENTED |
| 466 | 001344 | 001401 | | BEQ | .+4 | |
| 467 | 001346 | 000000 | | HLT | | ;LINK POINTER NOT CORRECT |
| 468 | | | | | | |
| 469 | 001350 | 000240 | | SCOPE | | ;TEST ((LP)) TO (REG 2) |
| 470 | 001352 | 012767 | 041101 002052 | MOV | #"AB,BUFF | ;ASCII (AB) TO BUFFER |
| 471 | 001360 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 472 | 001364 | 012702 | 001372 | MOV | #.+6,%2 | ;RETURN POINTER TO 2 |
| 473 | 001370 | 000202 | | RTS | %2 | ;RETURN INSTRUCTION |
| 474 | 001372 | 020227 | 041101 | CMP | %2,#"AB | ;TEST ((LP)) TO REG 2) |
| 475 | 001376 | 001401 | | BEQ | .+4 | ;BRANCH IF EQUAL |
| 476 | 001400 | 000000 | | HLT | | ;REG 2 NOT EQUAL ASCII "AB" |
| 477 | | | | | | |
| 478 | | | | | | |
| 479 | | | | | | |
| 480 | | | | | | |
| 481 | | 000003 | | N=N+1 | | |
| 482 | 001402 | 000240 | | SCOPE | | ;TEST ABILITY OF JSR TO JUMP |
| 483 | 001404 | 012706 | 003432 | MOV | #BUFF,LP | ;SET UP LINK POINTER |
| 484 | 001410 | 004367 | 000002 | JSR | %3,+.6 | ;JSR AROUND HALT |
| 485 | 001414 | 000000 | | HLT | | ;JSR FAILED TO JUMP |
| 486 | | | | | | |


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543                                     ;TEST THE RTS INSTRUCTION
544
545 001632 000240          SCOPE          ;TEST (REG) TO (PC)
546 001634 012706 003432  MOV          #BUFF,LP      ;SET UP LINK POINTER
547 001640 012703 001650  MOV          #.+10,%3    ;RETURN TO REG 3
548 001644 000203          RTS          %3        ;RETURN AS SPECIFIED BY (REG 3)
549 001646 000000          HLT
550 001650 000240          OPR          ;RTS FAILED
                                           ;SHOULD RETURN HERE
551
552 001652 000240          SCOPE          ;TEST (LP+2) TO (LP)
553 001654 012706 003432  MOV          #BUFF,LP      ;SET UP LINK POINTER
554 001660 012703 001666  MOV          #.+6,%3    ;SET UP (REG 3)
555 001664 000203          RTS          %3        ;RETURN TO (REG 3)
556 001666 020627 003434  CMP          LP,#BUFF+2  ;LP SHOULD BE INCREMENTED
557 001672 001401          BEQ          .+4
558 001674 000000          HLT          ;LINK POINTER NOT CORRECT
559
560 001676 000240          SCOPE          ;TEST ((LP)) TO (REG 3)
561 001700 012767 041101 001524  MOV          #"AB,BUFF  ;ASCII (AB) TO BUFFER
562 001706 012706 003432  MOV          #BUFF,LP    ;SET UP LINK POINTER
563 001712 012703 001720  MOV          #.+6,%3    ;RETURN POINTER TO 3
564 001716 000203          RTS          %3        ;RETURN INSTRUCTION
565 001720 020327 041101  CMP          %3,#"AB    ;TEST ((LP)) TO REG 3)
566 001724 001401          BEQ          .+4        ;BRANCH IF EQUAL
567 001726 000000          HLT          ;REG 3 NOT EQUAL ASCII "AB"
568
569
570
571
572                                     N=N+1
573 001730 000004          SCOPE
574 001732 012706 003432  MOV          #BUFF,LP    ;TEST ABILITY OF JSR TO JUMP
575 001736 004467 000002  JSR          %4,+.6     ;SET UP LINK POINTER
576 001742 000000          HLT          ;JSR AROUND HALT
                                           ;JSR FAILED TO JUMP
577
578 001744 000240          SCOPE          ;TEST PC+2 TO REG 4
579 001746 012706 003432  MOV          #BUFF,LP    ;SET UP LINK POINTER
580 001752 004467 000000  JSR          %4,+.4     ;JSR TO NEXT INSTRUCTION
581 001756 022704 001756  CMP          #,%4       ;TEST REG 4 FOR CORRECT MOVE
582 001762 001401          BEQ          .+4        ;BRANCH IF CORRECT
583 001764 000000          HLT          ;REG 4 VALUE NOT CORRECT
584
585 001766 000240          SCOPE          ;TEST DECREMENT OF LP
586 001770 012706 003432  MOV          #BUFF,LP    ;SET UP LINK POINTER
587 001774 004467 000000  JSR          %4,+.4     ;JSR TO NEXT INSTRUCTION
588 002000 020627 003430  CMP          LP,#BUFF-2  ;TEST (LP) FOR INITIAL MINUS 2
589 002004 001401          BEQ          .+4        ;BRANCH IF CORRECT
590 002006 000000          HLT          ;LINK POINTER NOT CORRECT
591
592 002010 000240          SCOPE          ;TEST TRANSFER OF (REG 4) TO (LP)
593 002012 012704 177777  MOV          #-1,%4     ;INITIALIZE REG 4 TO ONES
594 002016 012706 003432  MOV          #BUFF,LP    ;SET UP LINK POINTER
595 002022 004467 000000  JSR          %4,+.4     ;JMP TO NEXT INSTRUCTION
596 002026 026727 001376 177777  CMP          BUFF-2,#-1  ;TEST BUFF-2 FOR ONES
597 002034 001401          BEQ          .+4
598 002036 000000          HLT          ;(REG) WAS NOT TRANSFERED TO LP

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| | | | | | | | | | |
|-----|--------|--------|---------------|-------|-------------|--|--|--|---------------------------------------|
| 599 | | | | | | | | | |
| 600 | 002040 | 000240 | | SCOPE | | | | | ;TEST JMP INDIRECT THE LITERAL |
| 601 | 002042 | 012706 | 003432 | MOV | #BUFF,LP | | | | ;SET UP POINTER |
| 602 | 002046 | 004437 | 002054 | JSR | %4,2#. +6 | | | | ;JMP OVER THE HLT |
| 603 | 002052 | 000000 | | HLT | | | | | ;JSR FAILED |
| 604 | 002054 | 000240 | | OPR | | | | | ;SHOULD JUMP TO HERE |
| 605 | | | | | | | | | |
| 606 | 002056 | 000240 | | SCOPE | | | | | ;TEST JSR INDIRECT A LOCATION |
| 607 | 002060 | 012706 | 003432 | MOV | #BUFF,LP | | | | ;SET UP LINK POINTER |
| 608 | 002064 | 004477 | 000000 | JSR | %4,2. +4 | | | | ;JSR DEFERED NEXT LOCATION |
| 609 | 002070 | 002074 | | . +4 | | | | | ;POINTS TO OPERATE INSTRUCTION |
| 610 | 002072 | 000000 | | HLT | | | | | ;FAILED TO JSR TO OPR |
| 611 | 002074 | 000240 | | OPR | | | | | ;SHOULD JSR HERE |
| 612 | | | | | | | | | |
| 613 | 002076 | 000240 | | SCOPE | | | | | |
| 614 | 002100 | 012704 | 002114 | MOV | #. +14, %4 | | | | ;POINT TO BRANCH .+4 |
| 615 | 002104 | 012706 | 003432 | MOV | #BUFF,LP | | | | |
| 616 | 002110 | 004414 | | JSR | %4,2%4 | | | | |
| 617 | 002112 | 000000 | | HLT | | | | | ;CURRENT REG USED INSTEAD OF PREVIOUS |
| 618 | 002114 | 000401 | | BR | . +4 | | | | |
| 619 | 002116 | 000000 | | HLT | | | | | |
| 620 | 002120 | 020427 | 002112 | CMP | %4, #. -6 | | | | |
| 621 | 002124 | 001401 | | BEQ | . +4 | | | | |
| 622 | 002126 | 000000 | | HLT | | | | | ;REG 4 NOT SET CORRECTLY |
| 623 | | | | | | | | | |
| 624 | 002130 | 000240 | | | | | | | ;TEST JSR AUTO DECREMENT |
| 625 | 002132 | 012706 | 003432 | SCOPE | | | | | |
| 626 | 002136 | 012704 | 002146 | MOV | #BUFF,LP | | | | ;SET UP STACK |
| 627 | 002142 | 004744 | | MOV | #. +10, %4 | | | | ;REG 4 POINTS TO THE HLT |
| 628 | 002144 | 000401 | | JSR | %7, -(4) | | | | ;TEST THE AUTO DECREMENT |
| 629 | 002146 | 000000 | | BR | . +4 | | | | |
| 630 | 002150 | 020427 | 002144 | HLT | | | | | ;DID NOT AUTO DECREMENT |
| 631 | 002154 | 001401 | | CMP | %4, #. -4 | | | | |
| 632 | 002156 | 000000 | | BEQ | . +4 | | | | ;FALSE AUTO DECREMENT |
| 633 | | | | HLT | | | | | |
| 634 | | | | | | | | | |
| 635 | | | | | | | | | ;TEST THE RTS INSTRUCTION |
| 636 | 002160 | 000240 | | SCOPE | | | | | |
| 637 | 002162 | 012706 | 003432 | MOV | #BUFF,LP | | | | ;TEST (REG) TO (PC) |
| 638 | 002166 | 012704 | 002176 | MOV | #. +10, %4 | | | | ;SET UP LINK POINTER |
| 639 | 002172 | 000204 | | RTS | %4 | | | | ;RETURN TO REG 4 |
| 640 | 002174 | 000000 | | HLT | | | | | ;RETURN AS SPECIFIED BY (REG 4) |
| 641 | 002176 | 000240 | | OPR | | | | | ;RTS FAILED |
| 642 | | | | | | | | | ;SHOULD RETURN HERE |
| 643 | 002200 | 000240 | | SCOPE | | | | | |
| 644 | 002202 | 012706 | 003432 | MOV | #BUFF,LP | | | | ;TEST (LP+2) TO (LP) |
| 645 | 002206 | 012704 | 002214 | MOV | #. +6, %4 | | | | ;SET UP LINK POINTER |
| 646 | 002212 | 000204 | | RTS | %4 | | | | ;SET UP (REG 4) |
| 647 | 002214 | 020627 | 003434 | CMP | LP, #BUFF+2 | | | | ;RETURN TO (REG 4) |
| 648 | 002220 | 001401 | | BEQ | . +4 | | | | ;LP SHOULD BE INCREMENTED |
| 649 | 002222 | 000000 | | HLT | | | | | ;LINK POINTER NOT CORRECT |
| 650 | | | | | | | | | |
| 651 | 002224 | 000240 | | SCOPE | | | | | ;TEST ((LP)) TO (REG 4) |
| 652 | 002226 | 012767 | 041101 001176 | MOV | #*AB, BUFF | | | | ;ASCII (AB) TO BUFFER |
| 653 | 002234 | 012706 | 003432 | MOV | #BUFF, LP | | | | ;SET UP LINK POINTER |
| 654 | 002240 | 012704 | 002246 | MOV | #. +6, %4 | | | | ;RETURN POINTER TO 4 |

| | | | | | | | | |
|-----|--------|--------|--------|--------|-------|--------------|--|-----------------------------|
| 655 | 002244 | 000204 | | | RIS | %4 | | ;RETURN INSTRUCTION |
| 656 | 002246 | 020427 | 041101 | | CMP | %4, #AB | | ;TEST ((LP)) TO REG 4) |
| 657 | 002252 | 001401 | | | BEQ | .+4 | | ;BRANCH IF EQUAL |
| 658 | 002254 | 000000 | | | HLT | | | ;REG 4 NOT EQUAL ASCII "AB" |
| 659 | | | | | | | | |
| 660 | | | | | | | | |
| 661 | | | | | | | | |
| 662 | | | | | | | | |
| 663 | | 000005 | | | | N=N+1 | | |
| 664 | | | | | | | | |
| 665 | | | | | | | | |
| 666 | 002256 | 000240 | | | | | | ;TEST ((LP)) TO (PC) |
| 667 | 002260 | 005067 | 001150 | | SCOPE | | | ;CLR RTI STATUS |
| 668 | 002264 | 012767 | 002302 | 001140 | CLR | BUFF+2 | | ;RETURN POINTER TO BUFFER |
| 669 | 002272 | 012706 | 003432 | | MOV | #.+16,BUFF | | ;SET UP BUFFER POINTER |
| 670 | 002276 | 000002 | | | MOV | #BUFF,LP | | ;RETURN |
| 671 | 002300 | 000000 | | | RTI | | | ;RTI FAILED |
| 672 | 002302 | 000240 | | | HLT | | | ;SHOULD RETURN HERE |
| 673 | | | | | OPR | | | |
| 674 | 002304 | 000240 | | | | | | ;TEST THAT (LP) +4 TO LP |
| 675 | 002306 | 012706 | 003432 | | SCOPE | | | ;SET UP BUFFER POINTER |
| 676 | 002312 | 012767 | 002322 | 001112 | MOV | #BUFF,LP | | ;SET UP. RETURN |
| 677 | 002320 | 000002 | | | MOV | #.+10,BUFF | | ;RETURN NEXT INSTRUCTION |
| 678 | 002322 | 020627 | 003436 | | RTI | | | ;LP SHOULD BE PLUS 4 |
| 679 | 002326 | 001401 | | | CMP | LP, #BUFF+4 | | |
| 680 | 002330 | 000000 | | | BEQ | .+4 | | ;LP NOT INCREMENTED |
| 681 | | | | | HLT | | | |
| 682 | 002332 | 000240 | | | | | | ;TEST ((LP+2)) TO STATUS |
| 683 | 002334 | 012767 | 000357 | 001072 | SCOPE | | | ;RETURN STATUS ALL ONES |
| 684 | 002342 | 012706 | 003432 | | MOV | #357, BUFF+2 | | ;SET UP BUFFER POINTER |
| 685 | 002346 | 012767 | 002360 | 001056 | MOV | #BUFF,LP | | ;SET UP RETURN POINTER |
| 686 | 002354 | 000257 | | | MOV | #.+12,BUFF | | ;CLEAR CONDITION CODES |
| 687 | 002356 | 000002 | | | CCC | | | ;RETURN |
| | | | | | RTI | | | |

| | | | | | | | | |
|-----|--------|--------|--------|--------|--|--|--|--|
| 688 | | | | | | | | |
| 689 | 002360 | 001401 | | | | | | |
| 690 | 002362 | 000000 | | | | | | |
| 691 | 002364 | 102401 | | | | | | |
| 692 | 002366 | 000000 | | | | | | |
| 693 | 002370 | 100401 | | | | | | |
| 694 | 002372 | 000000 | | | | | | |
| 695 | 002374 | 103401 | | | | | | |
| 696 | 002376 | 000000 | | | | | | |
| 697 | | | | | | | | |
| 698 | 002400 | 000240 | | | | | | |
| 699 | 002402 | 005067 | 001026 | | | | | |
| 700 | 002406 | 012706 | 003432 | | | | | |
| 701 | 002412 | 012767 | 002424 | 001012 | | | | |
| 702 | 002420 | 000277 | | | | | | |
| 703 | 002422 | 000002 | | | | | | |
| 704 | 002424 | 001001 | | | | | | |
| 705 | 002426 | 000000 | | | | | | |
| 706 | 002430 | 102001 | | | | | | |
| 707 | 002432 | 000000 | | | | | | |
| 708 | 002434 | 100001 | | | | | | |
| 709 | 002436 | 000000 | | | | | | |
| 710 | 002440 | 103001 | | | | | | |
| 711 | 002442 | 000000 | | | | | | |
| 712 | | | | | | | | |
| 713 | | | | | | | | |
| 714 | 002444 | 000240 | | | | | | |
| 715 | 002446 | 012706 | 003432 | | | | | |
| 716 | 002452 | 004767 | 000002 | | | | | |
| 717 | 002456 | 000000 | | | | | | |
| 718 | | | | | | | | |
| 719 | 002460 | 000240 | | | | | | |
| 720 | 002462 | 012706 | 003432 | | | | | |
| 721 | 002466 | 004767 | 000000 | | | | | |
| 722 | 002472 | 020627 | 003430 | | | | | |
| 723 | 002476 | 001401 | | | | | | |
| 724 | 002500 | 000000 | | | | | | |
| 725 | | | | | | | | |
| 726 | 002502 | 000240 | | | | | | |
| 727 | 002504 | 012706 | 003432 | | | | | |
| 728 | 002510 | 004767 | 000000 | | | | | |
| 729 | 002514 | 022767 | 002514 | 000706 | | | | |
| 730 | 002522 | 001401 | | | | | | |
| 731 | 002524 | 000000 | | | | | | |

;TEST JSR %7, X

BEQ .+4
 HLT ;Z NOT SET
 BVS .+4
 HLT ;V NOT SET
 BMI .+4
 HLT ;N NOT SET
 BCS .+4
 HLT ;C NOT SET
 SCOPE
 CLR BUFF+2 ;ZERO TO STATUS
 MOV #BUFF,LP
 MOV #.+12,BUFF
 SCC ;SET CONDITION CODES
 RTI ;RETURN
 BNE .+4
 HLT ;Z NOT CLEARED
 BVC .+4
 HLT ;V NOT CLEARED
 BPL .+4
 HLT ;N NOT CLEARED
 BCC .+4
 HLT ;C NOT CLEARED

SCOPE
 MOV #BUFF,LP ;SETUP LINK POINTER
 JSR %7, .+6 ;JSR AROUND HALT
 HLT ;JSR %7, .+6 FAILED
 SCOPE
 MOV #BUFF,LP ;SET UP LINK POINTER
 JSR %7, .+4 ;TO NEXT LOCATION
 CMP LP, #BUFF-2 ;TEST(LP) FOR INITIAL MINUS 2
 BEQ .+4
 HLT ;LINK POINTER NOT CORRECT

SCOPE
 MOV #BUFF,LP ;SET UP LINK POINTER
 JSR %7, .+4
 CMP #, BUFF-2 ;TEST CONTENTS FOR STACK FOR RETURN PC
 BEQ .+4
 HLT ;CONTENTS NOT CORRECT

| | | | | | | | | |
|-----|--------|--------|--------|--------|--------------|---------------|--|----------------------------------|
| 732 | 002526 | 000240 | | | SCOPE | | | |
| 733 | 002530 | 012706 | 003432 | | MOV | #BUFF,LP | | ;SET UP LINK POINTER |
| 734 | 002534 | 012767 | 002564 | 000670 | MOV | #RTS7F,BUFF | | ;CONTENT OF STACK |
| 735 | 002542 | 012767 | 002562 | 000664 | MOV | #RTS7E,BUFF+2 | | |
| 736 | 002550 | 012767 | 002560 | 000652 | MOV | #RTS7D,BUFF-2 | | |
| 737 | 002556 | 004736 | | | JSR | %7,@(6)+ | | ;SHOULD SWAP (PC) AND (BUFF) |
| 738 | 002560 | 000000 | | | RTS7D: HLT | | | ;STACK NOT INCREMENT |
| 739 | 002562 | 000000 | | | RTS7E: HLT | | | ;STACK NOT DECREMENTED |
| 740 | 002564 | 022767 | 002560 | 000640 | RTS7F: CMP | #RTS7D,BUFF | | ;STACK SHOULD STAND STILL |
| 741 | 002572 | 001401 | | | BEQ | .+4 | | |
| 742 | 002574 | 000000 | | | HLT | | | ;PC DID NOT GO TO BUFF |
| 743 | | | | | | | | |
| 744 | | | | | | | | |
| 745 | 002576 | 000240 | | | ;TEST RTS %7 | | | |
| 746 | 002600 | 012767 | 002634 | 000624 | SCOPE | | | |
| 747 | 002606 | 012706 | 003432 | | MOV | #RTS7A,BUFF | | ;RETURN LOCATION TO STACK |
| 748 | 002612 | 012767 | 002630 | 000610 | MOV | #BUFF,LP | | ;SET UP STACK POINTER |
| 749 | 002620 | 012767 | 002632 | 000606 | MOV | #RTS7B,BUFF-2 | | ;SET UP FOR FALSE DECREMENT |
| 750 | 002626 | 000207 | | | MOV | #RTS7C,BUFF+2 | | ;SET UP FOR FALSE INCREMENT |
| 751 | 002630 | 000000 | | | RTS | %7 | | |
| 752 | 002632 | 000000 | | | RTS7B: HLT | | | |
| 753 | 002634 | 020627 | 003434 | | RTS7C: HLT | | | |
| 754 | 002640 | 001401 | | | RTS7A: CMP | LP,#BUFF+2 | | ;STACK POINTER DID NOT INCREMENT |
| 755 | 002642 | 000000 | | | BEQ | .+4 | | |
| 756 | 002644 | 000240 | | | HLT | | | |
| | | | | | SCOPE | | | |

| | | | | | | | |
|-----|--------|--------|--------|--------|--|--|--|
| 757 | | | | | | | |
| 758 | | | | | | | |
| 759 | 002646 | 000240 | | | | | |
| 760 | 002650 | 012706 | 003432 | | | | |
| 761 | 002654 | 004767 | 000002 | | | | |
| 762 | 002660 | 000000 | | | | | |
| 763 | 002662 | 004767 | 000002 | | | | |
| 764 | 002666 | 000000 | | | | | |
| 765 | 002670 | 022767 | 002666 | 000530 | | | |
| 766 | 002676 | 001401 | | | | | |
| 767 | 002700 | 000000 | | | | | |
| 768 | 002702 | 020627 | 003426 | | | | |
| 769 | 002706 | 001401 | | | | | |
| 770 | 002710 | 000000 | | | | | |
| 771 | | | | | | | |
| 772 | 002712 | 000240 | | | | | |
| 773 | 002714 | 012706 | 003432 | | | | |
| 774 | 002720 | 012746 | 002740 | | | | |
| 775 | 002724 | 012746 | 002734 | | | | |
| 776 | 002730 | 000207 | | | | | |
| 777 | 002732 | 000000 | | | | | |
| 778 | 002734 | 000207 | | | | | |
| 779 | 002736 | 000000 | | | | | |
| 780 | 002740 | 000240 | | | | | |
| 781 | 002742 | 000240 | | | | | |
| 782 | 002744 | 012706 | 003432 | | | | |
| 783 | 002750 | 005067 | 000352 | | | | |
| 784 | 002754 | 004767 | 000310 | | | | |
| 785 | 002760 | 005767 | 000342 | | | | |
| 786 | 002764 | 100401 | | | | | |
| 787 | 002766 | 000000 | | | | | |
| 788 | | | | | | | |
| 789 | 002770 | 000240 | | | | | |
| 790 | 002772 | 012706 | 003432 | | | | |
| 791 | 002776 | 004767 | 000264 | | | | |
| 792 | 003002 | 000401 | | | | | |
| 793 | 003004 | 000000 | | | | | |
| 794 | 003006 | 000240 | | | | | |
| 795 | | | | | | | |
| 796 | 003010 | 012706 | 003432 | | | | |
| 797 | 003014 | 005067 | 000306 | | | | |
| 798 | 003020 | 004767 | 000252 | | | | |
| 799 | 003024 | 005767 | 000276 | | | | |
| 800 | 003030 | 100401 | | | | | |
| 801 | 003032 | 000000 | | | | | |
| 802 | 003034 | 000240 | | | | | |
| 803 | 003036 | 012706 | 003432 | | | | |
| 804 | 003042 | 005067 | 000260 | | | | |
| 805 | 003046 | 004767 | 000232 | | | | |
| 806 | 003052 | 005767 | 000250 | | | | |
| 807 | 003056 | 100401 | | | | | |
| 808 | 003060 | 000000 | | | | | |
| 809 | 003062 | 000240 | | | | | |

;TEST A JSR TO A JSR

;TEST AM RTS TO A RTS

RTS2:

RTS1:

SCOPE
 MOV #BUFF,LP
 JSR %7, .+6
 HLT ;JSR FAILED
 JSR %7, .+6
 HLT ;JSR TO JSR FAILED
 CMP #.-2,BUFF-4
 BEQ .+4
 HLT ;STACK NOT PUSHED FOR TWO JSR
 CMP LP,#BUFF-4
 BEQ .+4
 HLT ;PC ON STACK WRONG

SCOPE
 MOV #BUFF,LP
 MOV #RTS1,-(6) ;SET STACK UP
 MOV #RTS2,-(6) ;SET STACK UP
 RTS %7
 HLT ;STACK DID NOT POP
 RTS %7 ;RTS TO RTS FAILED
 HLT
 SCOPE
 MOV #BUFF,LP
 CLR FLAG
 JSR %7, SUBR2 ;SHOULD COMPLIMENT FLAG
 TST FLAG
 BMI .+4 ;TEST FLAG
 HLT ;FLAG NOT COMPLIMENTED

SCOPE
 MOV #BUFF,LP
 JSR %7, SUBR1 ;IMMEDIATE RETURN
 BR .+4
 HLT ;RTS AT SUB1 FAILED
 SCOPE

MOV #BUFF,LP
 CLR FLAG
 JSR %7, SUBR3
 TST FLAG
 BMI .+4 ;JSR OR RTS TWO DEEP
 HLT ;FAILED
 SCOPE

MOV #BUFF,LP
 CLR FLAG
 JSR %7, SUBR4
 TST FLAG
 BMI .+4 ;JSR OR RTS THREE
 HLT ;DEEP FAILED
 SCOPE

| | | | | | | | |
|-----|--------|--------|--------|------------------------------|----------------|-----------|--------------------|
| 810 | | | | | | | |
| 811 | 003064 | 012706 | 003432 | MOV | #BUFF,LP | | |
| 812 | 003070 | 005067 | 000232 | CLR | FLAG | | |
| 813 | 003074 | 004767 | 000212 | JSR | %7, SUBRS | | |
| 814 | 003100 | 100401 | | BMI | .+4 | | |
| 815 | 003102 | 000000 | | HLT | | | ;JSR OR RTS FOUR |
| 816 | 003104 | 000240 | | SCOPE | | | ;DEEP FAILED |
| 817 | | | | | | | |
| 818 | 003106 | 012706 | 003432 | MOV | #BUFF,LP | | |
| 819 | 003112 | 005067 | 000210 | CLR | FLAG | | |
| 820 | 003116 | 004767 | 000176 | JSR | %7, SUBR6 | | |
| 821 | 003122 | 005767 | 000200 | TST | FLAG | | |
| 822 | 003126 | 100401 | | BMI | .+4 | | |
| 823 | 003130 | 000000 | | HLT | | | ;JSR OR RTS FIVE |
| 824 | 003132 | 000240 | | SCOPE | | | ;DEEP FAILED |
| 825 | 003134 | 000257 | | CCC | | | |
| 826 | 003136 | 012706 | 003432 | MOV | #BUFF,LP | | |
| 827 | 003142 | 005067 | 000160 | CLR | FLAG | | |
| 828 | 003146 | 004767 | 000146 | JSR | %7, SUBR6 | | |
| 829 | 003152 | 100401 | | BMI | .+4 | | |
| 830 | 003154 | 000000 | | HLT | | | ;JSR OR RTS FAILED |
| 831 | 003156 | 001001 | | BNE | .+4 | | |
| 832 | 003160 | 000000 | | HLT | | | ;JSR OR RTS FAILED |
| 833 | 003162 | 102001 | | BVC | .+4 | | |
| 834 | 003164 | 000000 | | HLT | | | ;JSR OR RTS FAILED |
| 835 | 003166 | 103401 | | BCS | .+4 | | |
| 836 | 003170 | 000000 | | HLT | | | ;JSR OR RTS FAILED |
| 837 | 003172 | 000240 | | SCOPE | | | |
| 838 | | | | | | | |
| 839 | 003174 | CJ0277 | | SCC | | | |
| 840 | 003176 | 012706 | 003432 | MOV | #BUFF,LP | | |
| 841 | 003202 | 005067 | 000120 | CLR | FLAG | | |
| 842 | 003206 | 004767 | 000106 | JSR | %7, SUBR6 | | |
| 843 | 003212 | 100401 | | BMI | .+4 | | |
| 844 | 003214 | 000000 | | HLT | | | ;JSR OR RTS FAILED |
| 845 | 003216 | 001001 | | BNE | .+4 | | |
| 846 | 003220 | 000000 | | HLT | | | ;JSR OR RTS FAILED |
| 847 | 003222 | 102001 | | BVC | .+4 | | |
| 848 | 003224 | 000000 | | HLT | | | ;JSR OR RTS FAILED |
| 849 | 003226 | 103401 | | BCS | .+4 | | |
| 850 | 003230 | 000000 | | HLT | | | ;JSR OR RTS FAILED |
| 851 | 003232 | 000240 | | SCOPE | | | |
| 852 | 003234 | 005267 | 000070 | INC | LOOP | | |
| 853 | 003240 | 100010 | | BPL | FIN | | |
| 854 | 003242 | 005067 | 000062 | CLR | LOOP | | |
| 855 | 003246 | 012737 | 000207 | MOV | #207, @#177566 | | |
| 856 | 003254 | 105737 | 177564 | TSTB | @#177564 | | |
| 857 | 003260 | 100375 | | BPL | .-4 | | |
| 858 | 003262 | 000167 | 174712 | JMP | 200 | | |
| 859 | | | | FIN: | | | |
| 860 | 003266 | 000207 | | ;GROUP OF NESTED SUBROUTINES | | | |
| 861 | 003270 | 005167 | 000032 | SUBR1: | RTS | %7 | ;ONE INSTRUCTION |
| 862 | 003274 | 000207 | | SUBR2: | COM | FLAG | ;ONE DEEP |
| 863 | 003276 | 004767 | 177766 | SUBR3: | RTS | %7 | |
| 864 | 003302 | 000207 | | SUBR3: | JSR | %7, SUBR2 | ;TWO DEEP |
| 865 | 003304 | 004767 | 177766 | SUBR4: | RTS | %7 | |
| | | | | SUBR4: | JSR | %7, SUBR3 | ;THREE DEEP |

| | | | | | | | |
|-----|--------|--------|--------|----------|------|-----------|-------------|
| 866 | 003310 | 000207 | | | RIS | %7 | |
| 867 | 003312 | 004767 | 177766 | SUBR5: | JSR | %7, SUBR4 | ;FOUR DEEP |
| 868 | 003316 | 000207 | | | RTS | %7 | |
| 869 | 003320 | 004767 | 177766 | SUBR6: | JSR | %7, SUBR5 | ;FIVE DEEP |
| 870 | 003324 | 000207 | | | RTS | %7 | |
| 871 | 003326 | 000000 | | FLAG: | 0 | | |
| 872 | 003330 | 000000 | | LOOP: | 0 | | ;LOOP COUNT |
| 873 | | 003432 | | . = +100 | | | |
| 874 | 003432 | 000000 | | BUFF: | 0 | | |
| 875 | | 000001 | | | .END | | |

| | | | | | | | | | | | | | | |
|-------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| BUFF | 003432 | 210 | 215 | 222 | 224 | 230 | 232 | 237 | 243 | 251 | 261 | 273 | 280 | 283 |
| | | 288* | 289 | 301 | 306 | 313 | 315 | 321 | 323 | 328 | 334 | 342 | 352 | 364 |
| | | 371 | 374 | 379* | 380 | 392 | 397 | 404 | 406 | 412 | 414 | 419 | 425 | 433 |
| | | 443 | 455 | 462 | 465 | 470* | 471 | 483 | 488 | 495 | 497 | 503 | 505 | 510 |
| | | 516 | 524 | 534 | 546 | 553 | 556 | 561* | 562 | 574 | 579 | 586 | 588 | 594 |
| | | 596 | 601 | 607 | 615 | 625 | 637 | 644 | 647 | 652* | 653 | 667* | 668* | 669 |
| | | 675 | 676* | 678 | 683* | 684 | 685* | 699* | 700 | 701* | 715 | 720 | 722 | 727 |
| | | 729 | 733 | 734* | 735* | 736* | 740 | 746* | 747 | 748* | 749* | 753 | 760 | 765 |
| | | 768 | 773 | 782 | 790 | 796 | 803 | 811 | 818 | 826 | 840 | 874* | | |
| FIN | 003262 | 853 | 858* | | | | | | | | | | | |
| FLAG | 003326 | 783* | 785 | 797* | 799 | 804* | 806 | 812* | 819* | 821 | 827* | 841* | 861* | 871* |
| HLT | = 000000 | 167* | 212 | 219 | 226 | 234 | 239 | 246 | 253 | 255 | 258 | 265 | 268 | 276 |
| | | 285 | 294 | 303 | 310 | 317 | 325 | 330 | 337 | 344 | 346 | 349 | 356 | 359 |
| | | 367 | 376 | 385 | 394 | 401 | 408 | 416 | 421 | 428 | 435 | 437 | 440 | 447 |
| | | 450 | 458 | 467 | 476 | 485 | 492 | 499 | 507 | 512 | 519 | 526 | 528 | 531 |
| | | 538 | 541 | 549 | 558 | 567 | 576 | 583 | 590 | 598 | 603 | 610 | 617 | 619 |
| | | 622 | 629 | 632 | 640 | 649 | 658 | 671 | 680 | 690 | 692 | 694 | 696 | 705 |
| | | 707 | 709 | 711 | 717 | 724 | 731 | 738 | 739 | 742 | 751 | 752 | 755 | 762 |
| | | 764 | 767 | 770 | 777 | 779 | 787 | 793 | 801 | 808 | 815 | 823 | 830 | 832 |
| | | 834 | 836 | 844 | 846 | 848 | 850 | | | | | | | |
| LOOP | 003330 | 852* | 854* | 872* | | | | | | | | | | |
| LP | =%000006 | 171* | 210* | 215* | 222* | 224 | 230* | 237* | 243* | 251* | 261* | 273* | 280* | 283 |
| | | 289* | 301* | 306* | 313* | 315 | 321* | 328* | 334* | 342* | 352* | 364* | 371* | 374 |
| | | 380* | 392* | 397* | 404* | 406 | 412* | 419* | 425* | 433* | 443* | 455* | 462* | 465 |
| | | 471* | 483* | 488* | 495* | 497 | 503* | 510* | 516* | 524* | 534* | 546* | 553* | 556 |
| | | 562* | 574* | 579* | 586* | 588 | 594* | 601* | 607* | 615* | 625* | 637* | 644* | 647 |
| | | 653* | 669* | 675* | 678 | 684* | 700* | 715* | 720* | 722 | 727* | 733* | 747* | 753 |
| | | 760* | 768 | 773* | 782* | 790* | 796* | 803* | 811* | 818* | 826* | 840* | | |
| N | = 000005 | 208* | 209 | 299* | 300 | 390* | 391 | 481* | 482 | 572* | 573 | 663* | | |
| NCP | = 000240 | 170* | | | | | | | | | | | | |
| OPR | = 000240 | 169* | 240 | 247 | 277 | 331 | 338 | 368 | 422 | 429 | 459 | 513 | 520 | 550 |
| | | 604 | 611 | 641 | 672 | | | | | | | | | |
| RTS1 | 002740 | 774 | 780* | | | | | | | | | | | |
| RTS2 | 002734 | 775 | 778* | | | | | | | | | | | |
| RTS7A | 002634 | 746 | 753* | | | | | | | | | | | |
| RTS7B | 002630 | 748 | 751* | | | | | | | | | | | |
| RTS7C | 002632 | 749 | 752* | | | | | | | | | | | |
| RTS7D | 002560 | 736 | 738* | 740 | | | | | | | | | | |
| RTS7E | 002562 | 735 | 739* | | | | | | | | | | | |
| RTS7F | 002564 | 734 | 740* | | | | | | | | | | | |
| SCOPE | = 000240 | 168* | 209 | 214 | 221 | 228 | 236 | 242 | 249 | 260 | 272 | 279 | 287 | 300 |
| | | 305 | 312 | 319 | 327 | 333 | 340 | 351 | 363 | 370 | 378 | 391 | 396 | 403 |
| | | 410 | 418 | 424 | 431 | 442 | 454 | 461 | 469 | 482 | 487 | 494 | 501 | 509 |
| | | 515 | 522 | 533 | 545 | 552 | 560 | 573 | 578 | 585 | 592 | 600 | 606 | 613 |
| | | 624 | 636 | 643 | 651 | 666 | 674 | 682 | 698 | 714 | 719 | 726 | 732 | 745 |
| | | 756 | 759 | 772 | 780 | 781 | 789 | 794 | 802 | 809 | 816 | 824 | 937 | 851 |
| SUBR1 | 003266 | 791 | 860* | | | | | | | | | | | |
| SUBR2 | 003270 | 784 | 861* | 863 | | | | | | | | | | |
| SUBR3 | 003276 | 798 | 863* | 865 | | | | | | | | | | |
| SUBR4 | 003304 | 805 | 865* | 867 | | | | | | | | | | |
| SUBR5 | 003312 | 813 | 867* | 869 | | | | | | | | | | |
| SUBR6 | 003320 | 820 | 828 | 842 | 869* | | | | | | | | | |
| . | = 003434 | 172* | 173 | 175 | 177 | 179 | 181 | 183 | 185 | 187 | 189 | 191 | 193 | 195 |
| | | 197 | 199 | 201 | 203 | 205* | 211 | 216 | 217 | 218 | 223 | 225 | 231 | 233 |
| | | 238 | 244 | 245 | 250 | 254 | 256 | 257 | 262 | 264 | 266 | 267 | 274 | 281 |
| | | 284 | 290 | 293 | 302 | 307 | 308 | 309 | 314 | 316 | 322 | 324 | 329 | 335 |

| | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|
| 336 | 341 | 345 | 347 | 348 | 353 | 355 | 357 | 358 | 365 | 372 | 375 | 381 |
| 384 | 393 | 398 | 399 | 400 | 405 | 407 | 413 | 415 | 420 | 426 | 427 | 432 |
| 436 | 438 | 439 | 444 | 446 | 448 | 449 | 456 | 463 | 466 | 472 | 475 | 484 |
| 489 | 490 | 491 | 496 | 498 | 504 | 506 | 511 | 517 | 518 | 523 | 527 | 529 |
| 530 | 535 | 537 | 539 | 540 | 547 | 554 | 557 | 563 | 566 | 575 | 580 | 581 |
| 582 | 587 | 589 | 595 | 597 | 602 | 608 | 609 | 614 | 618 | 620 | 621 | 626 |
| 628 | 630 | 631 | 638 | 645 | 648 | 654 | 657 | 668 | 676 | 679 | 685 | 689 |
| 691 | 693 | 695 | 701 | 704 | 706 | 708 | 710 | 716 | 721 | 723 | 728 | 729 |
| 730 | 741 | 754 | 761 | 763 | 765 | 766 | 769 | 786 | 792 | 800 | 807 | 814 |
| 822 | 829 | 831 | 833 | 835 | 843 | 845 | 847 | 849 | 857 | 873* | | |

| | | | | | | |
|----------|------|-----|-----|-----|-----|-----|
| COMMEN | 1* | | | | | |
| ENDCOM | 1* | | | | | |
| ESCAPE | 1* | | | | | |
| GETPRI | 1* | | | | | |
| GETSWR | 1* | | | | | |
| MULT | 1* | | | | | |
| NEWTST | 1* | | | | | |
| POP | 1* | | | | | |
| PUSH | 1* | | | | | |
| REPORT | 1* | | | | | |
| SETPRI | 1* | | | | | |
| SETUP | 1* | | | | | |
| SKIP | 1* | | | | | |
| SLASH | 1* | | | | | |
| STARS | 1* | | | | | |
| SWRSU | 1* | | | | | |
| TJSRA | 207* | 209 | 300 | 391 | 482 | 573 |
| TYPBIN | 1* | | | | | |
| TYPDEC | 1* | | | | | |
| TYPNAM | 1* | | | | | |
| TYPNUM | 1* | | | | | |
| TYPPCS | 1* | | | | | |
| TYP OCT | 1* | | | | | |
| TYPTXT | 1* | | | | | |
| \$\$ESCA | 1* | | | | | |
| \$\$NEWT | 1* | | | | | |
| \$\$SKIP | 1* | | | | | |
| .EQUAT | 1* | | | | | |
| .HEADE | 1* | | | | | |
| .KT11 | 1* | | | | | |
| .SETUP | 1* | | | | | |
| .SWRHI | 1* | | | | | |
| .SACT1 | 1* | | | | | |
| .SAPT8 | 1* | | | | | |
| .SAPTH | 1* | | | | | |
| .SAPTY | 1* | | | | | |
| .SASTA | 1* | | | | | |
| .SCATC | 1* | | | | | |
| .SCMTA | 1* | | | | | |
| .SDB20 | 1* | | | | | |
| .SDB20 | 1* | | | | | |
| .SDIV | 1* | | | | | |
| .SEOP | 1* | | | | | |
| .SERRO | 1* | | | | | |
| .SERRT | 1* | | | | | |
| .SMULT | 1* | | | | | |
| .SPOWE | 1* | | | | | |
| .SRAND | 1* | | | | | |
| .SRODE | 1* | | | | | |
| .SRDOC | 1* | | | | | |
| .SREAD | 1* | | | | | |
| .SF2AZ | 1* | | | | | |
| .\$SAVE | 1* | | | | | |
| .\$SB20 | 1* | | | | | |
| .\$SB20 | 1* | | | | | |
| .\$SCOP | 1* | | | | | |

.MAIN. MACY11 27(732) 01-OCT-76 11:05 PAGE 27
DOMA.P11 CROSS REFERENCE TABLE -- MACRO NAMES

| | |
|--------|----|
| .SSIZE | 1* |
| .SSUFR | 1* |
| .STRAP | 1* |
| .STYPB | 1* |
| .STYPD | 1* |
| .STYPE | 1* |
| .STYPO | 1* |
| .S40CA | 1* |
| .1170 | 1* |

| | | | | | | | | | | | | | | | |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| BCC | 710 | | | | | | | | | | | | | | |
| BCS | 695 | 835 | 849 | | | | | | | | | | | | |
| BEQ | 218 | 225 | 233 | 257 | 267 | 284 | 293 | 309 | 316 | 324 | 348 | 358 | 375 | 384 | 400 |
| | 407 | 415 | 439 | 449 | 466 | 475 | 491 | 498 | 506 | 520 | 540 | 557 | 566 | 582 | 589 |
| | 597 | 621 | 631 | 648 | 657 | 679 | 689 | 723 | 730 | 741 | 754 | 766 | 769 | | |
| BMI | 693 | 786 | 800 | 807 | 814 | 822 | 829 | 843 | | | | | | | |
| BNE | 704 | 831 | 845 | | | | | | | | | | | | |
| BPL | 708 | 853 | 857 | | | | | | | | | | | | |
| BR | 254 | 264 | 345 | 355 | 436 | 446 | 527 | 537 | 618 | 628 | 792 | | | | |
| BVC | 706 | 833 | 847 | | | | | | | | | | | | |
| BVS | 691 | | | | | | | | | | | | | | |
| CCC | 686 | 825 | | | | | | | | | | | | | |
| CLR | 667 | 699 | 783 | 797 | 804 | 812 | 819 | 827 | 841 | 854 | | | | | |
| CMP | 217 | 224 | 232 | 256 | 266 | 283 | 292 | 308 | 315 | 323 | 347 | 357 | 374 | 383 | 399 |
| | 406 | 414 | 438 | 448 | 465 | 474 | 490 | 497 | 505 | 529 | 539 | 556 | 565 | 581 | 588 |
| | 596 | 620 | 630 | 647 | 656 | 678 | 722 | 729 | 740 | 753 | 765 | 768 | | | |
| COM | 861 | | | | | | | | | | | | | | |
| HALT | 167 | 174 | 176 | 178 | 180 | 182 | 184 | 186 | 188 | 190 | 192 | 194 | 196 | 198 | 200 |
| | 202 | 204 | | | | | | | | | | | | | |
| INC | 852 | | | | | | | | | | | | | | |
| JMP | 858 | | | | | | | | | | | | | | |
| JSR | 211 | 216 | 223 | 231 | 238 | 244 | 252 | 263 | 302 | 307 | 314 | 322 | 329 | 335 | 343 |
| | 354 | 393 | 398 | 405 | 413 | 420 | 426 | 434 | 445 | 484 | 489 | 496 | 504 | 511 | 517 |
| | 525 | 536 | 575 | 580 | 587 | 595 | 602 | 608 | 616 | 627 | 716 | 721 | 728 | 737 | 761 |
| | 763 | 784 | 791 | 798 | 805 | 813 | 820 | 828 | 842 | 863 | 865 | 967 | 869 | | |
| MOV | 210 | 215 | 222 | 229 | 230 | 237 | 243 | 250 | 251 | 261 | 262 | 273 | 274 | 280 | 281 |
| | 288 | 289 | 290 | 301 | 306 | 313 | 320 | 321 | 328 | 334 | 341 | 342 | 352 | 353 | 364 |
| | 365 | 371 | 372 | 379 | 380 | 381 | 392 | 397 | 404 | 411 | 412 | 419 | 425 | 432 | 433 |
| | 443 | 444 | 455 | 456 | 462 | 463 | 470 | 471 | 472 | 483 | 488 | 495 | 502 | 503 | 510 |
| | 516 | 523 | 524 | 534 | 535 | 546 | 547 | 553 | 554 | 561 | 562 | 563 | 574 | 579 | 586 |
| | 593 | 594 | 601 | 607 | 614 | 615 | 625 | 626 | 637 | 638 | 644 | 645 | 652 | 653 | 654 |
| | 668 | 669 | 675 | 676 | 683 | 684 | 695 | 700 | 701 | 715 | 720 | 727 | 733 | 734 | 735 |
| | 736 | 746 | 747 | 748 | 749 | 760 | 773 | 774 | 775 | 782 | 790 | 796 | 803 | 811 | 818 |
| | 826 | 840 | 855 | | | | | | | | | | | | |
| RTI | 670 | 677 | 687 | 703 | | | | | | | | | | | |
| RTS | 275 | 282 | 291 | 366 | 373 | 382 | 457 | 464 | 473 | 548 | 555 | 564 | 639 | 646 | 655 |
| | 750 | 776 | 778 | 860 | 862 | 864 | 866 | 868 | 870 | | | | | | |
| SCC | 702 | 839 | | | | | | | | | | | | | |
| TST | 785 | 799 | 806 | 821 | | | | | | | | | | | |
| TSTB | 856 | | | | | | | | | | | | | | |
| .ENABL | 1 | | | | | | | | | | | | | | |
| .END | 875 | | | | | | | | | | | | | | |
| .LIST | 1 | | | | | | | | | | | | | | |
| .MACR | 207 | | | | | | | | | | | | | | |
| .MACRO | 1 | | | | | | | | | | | | | | |
| .NLIST | 1 | | | | | | | | | | | | | | |
| .REM | 1 | | | | | | | | | | | | | | |
| .REPT | 173 | 209 | | | | | | | | | | | | | |

ERRORS DETECTED: 0
 DEFAULT GLOBALS GENERATED: 0

*, DOMA. SEQ/SOL/CRF/PAGNUM/NL: TOC=SYSMAC.CO, DOMA.P11

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DOMA.P11 CROSS REFERENCE TABLE -- PERMANENT SYMBOLS

RUN-TIME: 21 23 1 SECONDS
RUN-TIME RATIO: 304/47=6.4
CORE USED: 33K (65 PAGES)

