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|------|--|----------|
| 0149 | * STORAGE | DAPM0380 |
| 0150 | * | DAPM0390 |
| 0151 | * 5611 (OCTAL) | DAPM0400 |
| 0152 | * 2953 (DECIMAL) | DAPM0410 |
| 0153 | * | DAPM0420 |
| 0154 | * | DAPM0430 |
| 0155 | * USE | DAPM0440 |
| 0156 | * | DAPM0450 |
| 0157 | * 1) SOURCE LANGUAGE | DAPM0460 |
| 0158 | * | DAPM0470 |
| 0159 | * | DAPM0480 |
| 0160 | * REFER TO THE H316/DDP-516 PROGRAMMERS REFERENCE | DAPM0490 |
| 0161 | * MANUAL FOR SOURCE LANGUAGE SPECIFICATIONS, SOURCE | DAPM0500 |
| 0162 | * PROGRAM FORMAT, AND EKRR FLAG EXPLANATION. | DAPM0510 |
| 0163 | * | DAPM0520 |
| 0164 | * 2) SYSTEM CONFIGURATION | DAPM0530 |
| 0165 | * | DAPM0540 |
| 0166 | * | DAPM0550 |
| 0167 | * IN ADDITION TO THE ASSEMBLER ITSELF, A CONVERSION | DAPM0560 |
| 0168 | * ROUTINE, AN I/O SUPERVISOR, THE I/O LIBRARY ROUTINES | DAPM0570 |
| 0169 | * FOR AVAILABLE DEVICES, AND THE SYMBOL TABLE | DAPM0580 |
| 0170 | * SET UP ROUTINE, TABLESIZ, ARE REQUIRED. THE SYMBOL TABLE | DAPM0590 |
| 0171 | * MAP PRINTER, SYMLIST, IS OPTIONAL. | DAPM0600 |
| 0172 | * FOR A 4K SYSTEM, A DEDICATED IOS MUST BE USED. | DAPM0610 |
| 0173 | * IF GREATER THAN 4K OF MEMORY IS AVAILABLE, A SELECTABLE | DAPM0620 |
| 0174 | * DEVICE IOS MAY BE USED. | DAPM0630 |
| 0175 | * TWO CONVERSION ROUTINES ARE AVAILABLE. 016-DECS | DAPM0640 |
| 0176 | * PROVIDES FOR SINGLE WORD, NONSCALED FIXED POINT | DAPM0650 |
| 0177 | * HEXIDECIMAL, OCTAL, AND DECIMAL CONVERSIONS. THIS ROUTINE MUST | DAPM0660 |
| 0178 | * BE USED IN A 4K SYSTEM. THE CONVERSION ROUTINE 016-DECL MAY | DAPM0670 |
| 0179 | * BE USED IN SYSTEMS WITH GREATER THAN 4K OF MEMORY. IT | DAPM0680 |
| 0180 | * PROVIDES SCALED AND MULTI WORD FIXED AND FLOATING POINT | DAPM0690 |
| 0181 | * CONVERSIONS IN ADDITION TO THE CAPABILITIES OF 016-DECS. | DAPM0700 |
| 0182 | * THE ROUTINE TABLESIZ IS USED TO DETERMINE | DAPM0710 |
| 0183 | * THE STORAGE AREA AVAILABLE FOR THE ASSEMBLER AND THE | DAPM0720 |
| 0184 | * DEFAULT COMMON BASE. THIS MUST BE THE LAST ROUTINE | DAPM0730 |
| 0185 | * LOADED WHEN CONFIGURING THE ASSEMBLER. | DAPM0740 |

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| 0186 | * THE FOLLOWING LIST GIVES THE NAME OF EACH | DAPM0750 |
| 0187 | * STANDARD IOS AND THE DEVICES THAT IT CAN USE: | DAPM0760 |
| 0188 | * | DAPM0770 |
| 0189 | * | DAPM0780 |
| 0190 | * TITLE | DAPM0790 |
| 0191 | * INPJ1 DEVICE | DAPM0800 |
| 0192 | * OBJECT DEVICE | DAPM0810 |
| 0193 | * LISTING DEVICE | DAPM0820 |
| 0194 | * IOS-OAAA ASR ASR ASR | DAPM0830 |
| 0195 | * IOS-ORAA PTR ASR ASR | DAPM0840 |
| 0196 | * IOS-OCAA CARD ASR ASR | DAPM0850 |
| 0197 | * IOS-ORPA PTR PTP ASR | DAPM0860 |
| 0198 | * IOS-OCPA CARD PTP ASR | DAPM0870 |
| 0199 | * IOS-016D ASR,PTR,CARD, ASR,PTP,CARD, ASR,PTP,LP, | DAPM0880 |
| 0200 | * MAG,DISC MAG,DISC | DAPM0890 |
| 0201 | * | DAPM0900 |
| 0202 | * | DAPM0910 |
| 0203 | * 3) OPERATION | DAPM0920 |
| 0204 | * | DAPM0930 |
| 0205 | * THERE ARE FIVE STARTING POINTS IN THE | DAPM0940 |
| 0206 | * ASSEMBLER. | DAPM0950 |
| 0207 | * | DAPM0960 |
| 0208 | * 1) '400 - START NORMAL ASSEMBLY | DAPM0970 |
| 0209 | * 2) '401 - CONTINUE ASSEMBLY (RESTART AFTER | DAPM0980 |
| 0210 | * FEED CHECK, ETC.) | DAPM0990 |
| 0211 | * 3) '402 - START SUBROUTINE ASSEMBLY (NO EOF | DAPM1000 |
| 0212 | * IS PLACED ON OBJECT) | DAPM1010 |
| 0213 | * 4) '403 - TERMINATE ASSEMBLY - DUMP BUFFERS, | DAPM1020 |
| 0214 | * OUTPUT EOF ON OBJECT | DAPM1030 |
| 0215 | * 5) '404 - RESTART PASS TWO (FOR ADDITIONAL TAPES | DAPM1040 |
| 0216 | * AND/OR LISTINGS) | DAPM1050 |
| 0217 | * | DAPM1060 |
| 0218 | * STARTING POINTS 1,3, AND 5 REQUIRE AN A REGISTER | DAPM1070 |
| 0219 | * PARAMETER SETTING. THE FOLLOWING PAGE GIVES THE EXPLANATION | DAPM1080 |
| 0220 | * OF THIS PARAMETER SETTING. IF MAG. TAPES ARE USED, | DAPM1090 |
| 0221 | * A B REGISTER SETTING MAY BE REQUIRED. REFER TO THE LISTING OF | DAPM1100 |
| 0222 | * THE IOS THAT IS USED FOR B REGISTER SETTING EXPLANATION. | DAPM1110 |

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|------|------|-------|---------------|----------|
| 0333 | ENT | T237 | | DAPM2220 |
| 0334 | ENT | LGCT | ERROR COUNTER | DAPM2230 |
| 0335 | EJCT | ***** | | DAPM2240 |

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|------|-------|------------------------|---------------------------------|----------|
| 0336 | * | | | DAPM2250 |
| 0337 | | CF3 | FOR USE ON H316 AND DDP-516 | DAPM2260 |
| 0338 | | ABS | THIS PROGRAM IS NOT RELOCATABLE | DAPM2270 |
| 0339 | | ORG | *400 | DAPM2280 |
| 0340 | * | | | DAPM2290 |
| 0341 | * | ASSEMBLER ENTRY POINTS | | DAPM2300 |
| 0342 | * | | | DAPM2310 |
| 0343 | 00400 | -0 01 00535 | JMP* GO | DAPM2320 |
| 0344 | 00401 | -0 01 00553 | JMP* LIN | DAPM2330 |
| 0345 | 00402 | -0 01 00536 | JMP* SBA | DAPM2340 |
| 0346 | 00403 | -0 01 00537 | JMP* PND | DAPM2350 |
| 0347 | 00404 | -0 01 00571 | JMP* R2 | DAPM2360 |
| 0348 | * | | | DAPM2370 |
| 0349 | * | | | DAPM2380 |
| 0350 | EJCT | ***** | | DAPM2390 |

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|------|--------|--------|-----------------------------------|-------|---|--|--|--|----------|
| 0351 | | * | | | | | | | |
| 0352 | | * | FLAGS, COUNTERS, AND ACCUMULATORS | | | | | | DAPM2400 |
| 0353 | | * | | | | | | | DAPM2410 |
| 0354 | 00405 | | CLOC BSS | 1 | LOCATION COUNTER | | | | DAPM2420 |
| 0355 | 00406 | | ABSW BSS | 1 | ASSEMBLY RELOCATION MODE | | | | DAPM2430 |
| 0356 | 00407 | | LODF BSS | 1 | LOAD MODE FLAG | | | | DAPM2440 |
| 0357 | 00410 | | LSTW BSS | 1 | LISTING SWITCH | | | | DAPM2450 |
| 0358 | 00411 | | TTLF BSS | 1 | HEADING SWITCH | | | | DAPM2460 |
| 0359 | 00412 | | CNTR BSS | 1 | LINE COUNTER | | | | DAPM2470 |
| 0360 | 00413 | | ERCT BSS | 1 | ERROR COUNTER | | | | DAPM2480 |
| 0361 | 00414 | | CRP BSS | 1 | INHIBITED ASSEMBLY COUNTER | | | | DAPM2490 |
| 0362 | 00415 | | TCNT BSS | 1 | CURRENT UNMATCHED CONDITIONAL COUNT | | | | DAPM2500 |
| 0363 | 00416 | | LSIZ BSS | 1 | LIST BUFFER SIZE FLAG | | | | DAPM2510 |
| 0364 | 00417 | | RBIT BSS | 1 | ACCUMULATED RELOCATION COUNTER | | | | DAPM2520 |
| 0365 | 00420 | | E BSS | 1 | FORWARD REFERENCE FLAG | | | | DAPM2530 |
| 0366 | 00421 | | E1 BSS | 1 | MULTIPLE UNDEFINED FLAG | | | | DAPM2540 |
| 0367 | 00422 | | DBFL BSS | 1 | DOUBLE PRECISION MODE FLAG | | | | DAPM2550 |
| 0368 | 00423 | | SUM BSS | 1 | EXPRESSION RESULT ACCUMULATOR | | | | DAPM2560 |
| 0369 | 00424 | | ADRF BSS | 1 | ADDRESS REQUIRED FLAG | | | | DAPM2570 |
| 0370 | 00425 | | INDA BSS | 1 | INDIRECT/INDEX ALLOWED FLAG | | | | DAPM2580 |
| 0371 | 00426 | | INDF BSS | 1 | INDIRECT REFERENCE FLAG | | | | DAPM2590 |
| 0372 | 00427 | | TAG BSS | 1 | INDEX FLAG | | | | DAPM2600 |
| 0373 | 00430 | | DECF BSS | 1 | DECIMAL CONVERSION MODE FLAG | | | | DAPM2610 |
| 0374 | 00431 | | SETF BSS | 1 | SET PSEUDO-OP FLAG | | | | DAPM2620 |
| 0375 | 00432 | | DACF BSS | 1 | ADDRESS CONSTANT FLAG | | | | DAPM2630 |
| 0376 | 00433 | | D\$TP BSS | 1 | HIGHEST AVAILABLE SYMBOL TABLE LOCATION | | | | DAPM2640 |
| 0377 | 00434 | | D\$SZ BSS | 1 | NUMBER OF WORDS AVAILABLE IN SYMBOL TABLE | | | | DAPM2650 |
| 0378 | 00435 | | D\$CB BSS | 1 | DEFAULT COMMON BASE | | | | DAPM2660 |
| 0379 | 00436 | | ZP BSS | 1 | PASS INDICATOR | | | | DAPM2670 |
| 0380 | 00437 | | WORD BSS | 1 | OPCODE STORAGE | | | | DAPM2680 |
| 0381 | 00440 | | WZ BSS | 1 | OBJECT TEXT OUTPUT INFORMATION | | | | DAPM2690 |
| 0382 | 00441 | | ERD BSS | 1 | CONVERSION ERROR INDICATOR | | | | DAPM2700 |
| 0383 | 00442 | | WCNT BSS | 1 | | | | | DAPM2710 |
| 0384 | 00443 | | DOCT BSS | 1 | CURRENT CONVERSION MODE | | | | DAPM2720 |
| 0385 | 00444 | | TERM BSS | 1 | LAST CHARACTER EXAMINED | | | | DAPM2730 |
| 0386 | 00445 | 000000 | NUM BSZ | 3 | NUMERIC ACCUMULATOR | | | | DAPM2740 |
| 0387 | 000446 | | NUM1 EQU | NUM+1 | | | | | DAPM2750 |
| | | | | | | | | | DAPM2760 |

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|------|--------|----------|----------|-------|---|--|--|--|----------|
| 0388 | 000447 | | NUM2 EQU | NUM+2 | | | | | DAPM2770 |
| 0389 | 000450 | | NUM3 EQU | NUM+3 | | | | | DAPM2780 |
| 0390 | 00450 | 000000 | SYL BSZ | 3 | ALPHANUMERIC ACCUMULATOR | | | | DAPM2790 |
| 0391 | 00453 | | SIGN BSS | 1 | SIGN OF SYL | | | | DAPM2800 |
| 0392 | 00454 | 000000 | SYL1 BSZ | 3 | | | | | DAPM2810 |
| 0393 | 00457 | | SIGT BSS | 1 | SIGN OF SYL1 | | | | DAPM2820 |
| 0394 | 00460 | | ALFA BSS | 1 | ALPHABETIC MODE SWITCH | | | | DAPM2830 |
| 0395 | 00461 | | TST BSS | 1 | ASSEMBLY PARAMETER WORD | | | | DAPM2840 |
| 0396 | 00462 | | FREE BSS | 1 | NUMBER OF NULL ENTRIES IN SYMBOL TABLE | | | | DAPM2850 |
| 0397 | 00463 | | RELV BSS | 1 | RELOCATION MODE OF ADDRESS TERM | | | | DAPM2860 |
| 0398 | 00464 | | SYL2 BSS | 1 | CHARACTER/WORD COUNTER FOR PACKING | | | | DAPM2870 |
| 0399 | 00465 | | SYL3 BSS | 1 | WORD COUNTER FOR CHARACTER PACKING | | | | DAPM2880 |
| 0400 | 00466 | | DEOT BSS | 1 | DEFAULT CONVERSION MODE | | | | DAPM2890 |
| 0401 | 00467 | | SYMC BSS | 1 | SYMBOL TABLE SEARCH COUNTER | | | | DAPM2900 |
| 0402 | 00470 | | CSYM BSS | 1 | CURRENT COUNT OF SYMBOL TABLE ENTRIES | | | | DAPM2910 |
| 0403 | 00471 | | BSYM BSS | 1 | CURRENT BASE OF SYMBOL TABLE | | | | DAPM2920 |
| 0404 | 00472 | | CBT1 BSS | 1 | OPCODE CLASSIFICATION FLAGS | | | | DAPM2930 |
| 0405 | 00473 | | DSYM BSS | 1 | END PSEUDO-OP SCAN COUNTER | | | | DAPM2940 |
| 0406 | 00474 | | CBT2 BSS | 1 | OPCODE CLASSIFICATION FLAGS | | | | DAPM2950 |
| 0407 | 00475 | | T BSS | 1 | TEMPORARY STORAGE | | | | DAPM2960 |
| 0408 | 00476 | | TCMP BSS | 1 | TEMPORARY STORAGE | | | | DAPM2970 |
| 0409 | 00477 | | DBCT BSS | 1 | LIST COUNTER FOR BCI PSEUDO-OP | | | | DAPM2980 |
| 0410 | 00500 | | DBNM BSS | 1 | LIST COUNTER FOR BCI PSEUDO-OP | | | | DAPM2990 |
| 0411 | 00501 | | DBPT BSS | 1 | | | | | DAPM3000 |
| 0412 | 00502 | | COML BSS | 1 | CURRENT COMMON BASE | | | | DAPM3010 |
| 0413 | 00503 | | BOPS BSS | 1 | END OF LEGAL OPCODES | | | | DAPM3020 |
| 0414 | 00504 | 0 000450 | SYLC DAC | SYL | POINTER TO SYLLABLE REGISTERS | | | | DAPM3030 |
| 0415 | 00505 | | SYLP BSS | 1 | TEMP. STORAGE FOR CHARACTER PACKING | | | | DAPM3040 |
| 0416 | 00506 | | LITF BSS | 1 | LITERAL FLAG | | | | DAPM3050 |
| 0417 | 00507 | | SUBF BSS | 1 | | | | | DAPM3060 |
| 0418 | 00510 | | ICON BSS | 1 | TEMP STORAGE FOR COUNTER UPDATE | | | | DAPM3070 |
| 0419 | 00511 | | ZPT BSS | 1 | ASSEMBLY CONTROL FLAG | | | | DAPM3080 |
| 0420 | 00512 | | BLKS BSS | 1 | OBJECT TEXT BUFFER WORD COUNT | | | | DAPM3090 |
| 0421 | 00513 | | ROOM BSS | 1 | SIZE CONSTANT FOR OBJECT TEXT BUFFER | | | | DAPM3100 |
| 0422 | 00514 | | OBT BSS | 1 | CURRENT OBJECT TEXT BLOCK TYPE | | | | DAPM3110 |
| 0423 | 00515 | | CKSM BSS | 1 | CURRENT CHECKSUM OF OBJECT TEXT BUFFER | | | | DAPM3120 |
| 0424 | 00516 | | LHW BSS | 1 | STORAGE FOR 3RD BYTE OF OBJECT TEXT ENTRY | | | | DAPM3130 |

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|------|-------|----------|------|-----|------|--|----------|
| 0425 | 00517 | | MOD | BSS | 1 | STORAGE FOR ASCII COUNTER MODIFIER | DAPM3140 |
| 0426 | 00520 | | MSK | BSS | 1 | POSITION MASK FOR ASCII COUNTER UPDATE | DAPM3150 |
| 0427 | 00521 | | CHRC | BSS | 1 | SOURCE LINE SCAN POINTER | DAPM3160 |
| 0428 | 00522 | | ADVP | BSS | 1 | SOURCE LINE FIELD POINTER | DAPM3170 |
| 0429 | 00523 | | POUT | BSS | 1 | OBJECT TEXT BUFFER POINTER | DAPM3180 |
| 0430 | 00524 | | WORT | BSS | 1 | TEMP. STORAGE FOR WORD | DAPM3190 |
| 0431 | 00525 | | FINF | BSS | 1 | FIN COUNTER | DAPM3200 |
| 0432 | 00526 | | SYMF | BSS | 1 | SYNONYM FLAG | DAPM3210 |
| 0433 | | 000477 | VFD2 | EQU | DBCT | VFD PSEUDO-OP BIT COUNTER | DAPM3220 |
| 0434 | | 000500 | VFD3 | EQU | DBNM | VFD PSEUDO-OP VALUE ACCUMULATOR | DAPM3230 |
| 0435 | | 000501 | VFDX | EQU | DBPT | VFD PSEUDO-OP ERROR INDICATOR | DAPM3240 |
| 0436 | 00527 | | ZPTX | BSS | 1 | | DAPM3250 |
| 0437 | 00530 | 0 004640 | DBIP | DAC | DBLK | | DAPM3260 |
| 0438 | | | EJCT | | | *****DAPM3270 | |

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|------|-------|----------|------|-------------------|------|---------------------------------|----------|
| 0439 | | | * | | | | DAPM3280 |
| 0440 | | | * | | | | DAPM3290 |
| 0441 | | | * | LINKAGE DIRECTORY | | | DAPM3300 |
| 0442 | 00531 | 0 002244 | VF | DAC | VFS | ITEM EVALUATOR | DAPM3310 |
| 0443 | 00532 | 0 001261 | CLE | DAC | CLER | SYLLABLE REGISTER CLEAR ROUTINE | DAPM3320 |
| 0444 | 00533 | 0 001300 | SYLR | DAC | SYLL | SYLLABLE ANALYZER | DAPM3330 |
| 0445 | 00534 | 0 002404 | SGN | DAC | SGNA | UPDATE ADDRESS AND RELOCATION | DAPM3340 |
| 0446 | 00535 | 0 001000 | GO | DAC | STRT | START NORMAL ASSEMBLY | DAPM3350 |
| 0447 | 00536 | 0 001003 | SBA | DAC | SSBT | START SUBROUTINE ASSEMBLY | DAPM3360 |
| 0448 | 00537 | 0 003125 | PND | DAC | PEND | OUTPUT EOF ON OBJECT | DAPM3370 |
| 0449 | 00540 | 0 001006 | RES | DAC | REST | START ASSEMBLY | DAPM3380 |
| 0450 | 00541 | 0 001020 | RSG | DAC | RESG | PASS ONE/IWO INITIALIZATION | DAPM3390 |
| 0451 | 00542 | 0 001157 | COM | DAC | COMM | STATEMENT TERMINATION | DAPM3400 |
| 0452 | 00543 | 0 002517 | DUST | DAC | DUS | PROCESS UNDEFINED SYMBOL | DAPM3410 |
| 0453 | 00544 | 0 001765 | DUMP | DAC | DWRD | OUTPUT DATA WORD | DAPM3420 |
| 0454 | 00545 | 0 002204 | CPC | DAC | CVPC | PRINT PROGRAM COUNTER | DAPM3430 |
| 0455 | 00546 | 0 002212 | CDTA | DAC | CDAT | PRINT PURE DATA | DAPM3440 |
| 0456 | 00547 | 0 001550 | DLC | DAC | DLUC | DEFINE SYMBOL IN LOCATION FIELD | DAPM3450 |
| 0457 | 00550 | 0 001270 | RESS | DAC | SWAP | SWAP SYLLABLE REGISTER | DAPM3460 |
| 0458 | 00551 | 0 004501 | LSTD | DAC | SLST | LIST LINE | DAPM3470 |
| 0459 | 00552 | 0 004264 | UACD | DAC | UAC | UPDATE ASCII COUNTER | DAPM3480 |
| 0460 | 00553 | 0 001042 | LIN | DAC | LINE | PROCESS NEXT STATEMENT | DAPM3490 |
| 0461 | 00554 | 0 003175 | FINP | DAC | FINX | LITERAL POOL DEFINITION ROUTINE | DAPM3500 |
| 0462 | 00555 | 0 002444 | XCHK | DAC | XCK | SET UP SYMBOL TABLE ENTRY | DAPM3510 |
| 0463 | 00556 | 0 003736 | AER | DAC | AEER | FLAG 'A' ERROR | DAPM3520 |
| 0464 | 00557 | 0 003741 | CER | DAC | CEER | FLAG 'C' ERROR | DAPM3530 |
| 0465 | 00560 | 0 003745 | EER | DAC | EEER | FLAG 'E' ERROR | DAPM3540 |
| 0466 | 00561 | 0 003751 | FER | DAC | FEER | FLAG 'F' ERROR | DAPM3550 |
| 0467 | 00562 | 0 003755 | IER | DAC | IEER | FLAG 'I' ERROR | DAPM3560 |
| 0468 | 00563 | 0 003773 | OER | DAC | OEER | FLAG 'O' ERROR | DAPM3570 |
| 0469 | 00564 | 0 004012 | SER | DAC | SEER | FLAG 'S' ERROR | DAPM3580 |
| 0470 | 00565 | 0 004016 | TER | DAC | TEER | FLAG 'T' ERROR | DAPM3590 |
| 0471 | 00566 | 0 004026 | VER | DAC | VEER | FLAG 'V' ERROR | DAPM3600 |
| 0472 | 00567 | 0 004032 | XER | DAC | XEER | FLAG 'X' ERROR | DAPM3610 |
| 0473 | 00570 | 0 003765 | MDFP | DAC | MDFP | FLAG 'M' ERROR | DAPM3620 |
| 0474 | 00571 | 0 003146 | R2 | DAC | RP2 | RESTART PASS TWO | DAPM3630 |
| 0475 | 00572 | 0 002471 | ZSC | DAC | ZSCN | RECOVER NULL TABLE ENTRY | DAPM3640 |

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|------|-------|----|--------|-----------|--------|---|----------|
| 0476 | 00573 | 0 | 004366 | ADVD DAC | ADV | ADVANCE TO NEXT STATEMENT FIELD | DAPM3650 |
| 0477 | 00574 | 0 | 004430 | CSRD DAC | CSRT | INSERT CHARACTER IN LIST BUFFER | DAPM3660 |
| 0478 | 00575 | 0 | 004413 | CHRD DAC | CHR | FETCH NEXT CHARACTER FROM SOURCE BUFFER | DAPM3670 |
| 0479 | 00576 | 0 | 003725 | ITST DAC | INHT | TEST FOR INHIBITED ASSEMBLY | DAPM3680 |
| 0480 | 00577 | 0 | 004061 | OBTD DAC | OBIX | PLACE ENTRY IN OBJECT TEXT BUFFER | DAPM3690 |
| 0481 | 00600 | 0 | 004343 | OPTD DAC | OPT | OCTAL-ASCII CONVERSION | DAPM3700 |
| 0482 | 00601 | 0 | 001125 | VSC9 DAC | VSLN | START ADDRESS SCAN | DAPM3710 |
| 0483 | 00602 | 0 | 001140 | REG9 DAC | REGP+2 | | DAPM3720 |
| 0484 | 00603 | -0 | 001950 | DLO9 DAC* | DLUC | RETURN FROM 'M' ERROR | DAPM3730 |
| 0485 | 00604 | 0 | 003473 | BCE9 DAC | BCER | FATAL PSEUDO-OP ERROR | DAPM3740 |
| 0486 | 00605 | 0 | 003002 | UPAK DAC | UNPK | UNPACK CHARACTER PAIR | DAPM3750 |
| 0487 | 00606 | 0 | 001224 | TRT DAC | TRIG | INDEX TERM PROCESSOR | DAPM3760 |
| 0488 | 00607 | 0 | 002440 | PMS DAC | PMSC | CLASSIFY TERMINATING CHARACTER | DAPM3770 |
| 0489 | 00610 | 0 | 004022 | UER DAC | UEKR | FLAG 'U' ERROR | DAPM3780 |
| 0490 | 00611 | 0 | 003732 | COMX DAC | COMY | COMMENT LINE PROCESSOR | DAPM3790 |
| 0491 | 00612 | 0 | 002224 | VARD DAC | VARH | EVALUATE FIRST PSEUDO-OP ADDRESS SUBFIELD | DAPM3800 |
| 0492 | 00613 | 0 | 002230 | VARF DAC | VARX | EVALUATE PSEUDO-OP ADDRESS SUBFIELD | DAPM3810 |
| 0493 | 00614 | 0 | 004036 | ZERX DAC | ZEHR | FLAG 'Z' ERROR | DAPM3820 |
| 0494 | | | | EJCT | ***** | *****DAPM3830 | |

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|------|-------|--------|------|-----|---------------|---|----------|
| 0495 | | | | * | | | DAPM3840 |
| 0496 | | | | * | CONSTANT POOL | | DAPM3850 |
| 0497 | | | | * | | | DAPM3860 |
| 0498 | 00615 | 130260 | ZX3 | BCI | 1,00 | INITIALIZATION CONSTANT FOR ERROR COUNTER | DAPM3870 |
| 0499 | 00616 | 100000 | B1 | OCT | 100000 | BIT ONE SET | DAPM3880 |
| 0500 | 00617 | 040000 | B2 | OCT | 40000 | BIT TWO SET | DAPM3890 |
| 0501 | 00620 | 020000 | B3 | OCT | 20000 | BIT THREE SET | DAPM3900 |
| 0502 | 00621 | 010000 | B4 | OCT | 10000 | BIT FOUR SET | DAPM3910 |
| 0503 | 00622 | 140000 | B12 | OCT | 140000 | MASK FOR SYNONYM RECOGNITION | DAPM3920 |
| 0504 | 00623 | 174000 | B174 | OCT | 174000 | MASK FOR CODE BITS | DAPM3930 |
| 0505 | 00624 | 000002 | C2 | OCT | 2 | | DAPM3940 |
| 0506 | 00625 | 037000 | C7X | OCT | 37000 | MASK FOR SECTOR NUMBER | DAPM3950 |
| 0507 | 00626 | 000012 | C12 | OCT | 12 | | DAPM3960 |
| 0508 | 00627 | 000015 | C15 | OCT | 15 | | DAPM3970 |
| 0509 | 00630 | 000017 | C17 | OCT | 17 | | DAPM3980 |
| 0510 | 00631 | 000020 | C20 | OCT | 20 | | DAPM3990 |
| 0511 | 00632 | 000023 | C23 | OCT | 23 | | DAPM4000 |
| 0512 | 00633 | 000035 | C29 | DEC | 29 | | DAPM4010 |
| 0513 | 00634 | 000077 | C77 | OCT | 77 | | DAPM4020 |
| 0514 | 00635 | 000240 | C240 | OCT | 240 | ASCII ' ' | DAPM4030 |
| 0515 | 00636 | 000244 | C244 | OCT | 244 | ASCII '\$' | DAPM4040 |
| 0516 | 00637 | 000252 | C252 | OCT | 252 | ASCII '*' | DAPM4050 |
| 0517 | 00640 | 000253 | C253 | OCT | 253 | ASCII '+' | DAPM4060 |
| 0518 | 00641 | 000254 | C254 | OCT | 254 | ASCII ',' | DAPM4070 |
| 0519 | 00642 | 000255 | C255 | OCT | 255 | ASCII '-' | DAPM4080 |
| 0520 | 00643 | 000260 | C260 | OCT | 260 | ASCII '0' | DAPM4090 |
| 0521 | 00644 | 000301 | C301 | OCT | 301 | ASCII 'A' | DAPM4100 |
| 0522 | 00645 | 000303 | C303 | OCT | 303 | ASCII 'C' | DAPM4110 |
| 0523 | 00646 | 000305 | C305 | OCT | 305 | ASCII 'E' | DAPM4120 |
| 0524 | 00647 | 000306 | C306 | OCT | 306 | ASCII 'F' | DAPM4130 |
| 0525 | 00650 | 000311 | C311 | OCT | 311 | ASCII 'I' | DAPM4140 |
| 0526 | 00651 | 000314 | C314 | OCT | 314 | ASCII 'L' | DAPM4150 |
| 0527 | 00652 | 000315 | C315 | OCT | 315 | ASCII 'M' | DAPM4160 |
| 0528 | 00653 | 000317 | C317 | OCT | 317 | ASCII 'O' | DAPM4170 |
| 0529 | 00654 | 000320 | C320 | OCT | 320 | ASCII 'P' | DAPM4180 |
| 0530 | 00655 | 000322 | C322 | OCT | 322 | ASCII 'R' | DAPM4190 |
| 0531 | 00656 | 000323 | C323 | OCT | 323 | ASCII 'S' | DAPM4200 |

| | | | | | | | |
|------|-------|-----------|------|------|---------|---|----------|
| 0532 | 00657 | 000324 | C324 | OCT | 324 | ASCII 'T' | |
| 0533 | 00660 | 000325 | C325 | OCT | 325 | ASCII 'U' | DAPM4210 |
| 0534 | 00661 | 000326 | C326 | OCT | 326 | ASCII 'V' | DAPM4220 |
| 0535 | 00662 | 000330 | C330 | OCT | 330 | ASCII 'X' | DAPM4230 |
| 0536 | 00663 | 000332 | C332 | OCT | 332 | ASCII 'Z' | DAPM4240 |
| 0537 | 00664 | 001200 | C520 | OCT | 1200 | MASK FOR DOUBLE ASTERISK IDENTIFICATION | DAPM4250 |
| 0538 | 00665 | 007777 | CHR2 | OCT | 7777 | MASK FOR TWO INTERNAL CHARACTER | DAPM4260 |
| 0539 | 00666 | 110000 | CM12 | OCT | 110000 | EXTERNAL ENTRY MASK | DAPM4270 |
| 0540 | 00667 | 017777 | CSC1 | OCT | 17777 | MASK FOR TWO CHARACTERS AND LITERAL FLAG | DAPM4280 |
| 0541 | 00670 | 007760 | CSC2 | OCT | 7760 | FIN LEVEL MASK | DAPM4290 |
| 0542 | 00671 | 177777 | M1 | OCT | -1 | | DAPM4300 |
| 0543 | 00672 | 177776 | M2 | OCT | -2 | | DAPM4310 |
| 0544 | 00673 | 177775 | M3 | OCT | -3 | | DAPM4320 |
| 0545 | 00674 | 177774 | M4 | DEC | -4 | | DAPM4330 |
| 0546 | 00675 | 177772 | M6 | OCT | -6 | | DAPM4340 |
| 0547 | 00676 | 177764 | M12 | DEC | -12 | | DAPM4350 |
| 0548 | 00677 | 177700 | M77 | OCT | 17700 | INTERNAL CHARACTER MASK | DAPM4360 |
| 0549 | 00700 | 000001 | ONE | OCT | 1 | | DAPM4370 |
| 0550 | 00701 | 0404 00 | VFD5 | LGR | 0 | | DAPM4380 |
| 0551 | 00702 | 0414 00 | VFD6 | LGL | 0 | | DAPM4390 |
| 0552 | 00703 | 001000 | C10X | OCT | 1000 | DATA POSITIONING INSTRUCTION CONSTANT | DAPM4400 |
| 0553 | 00704 | 0 000704 | FLDP | DAC | * | | DAPM4410 |
| 0554 | 00705 | 000000 | DEC | | 0 | POINTER TO LOCATION FIELD | DAPM4420 |
| 0555 | 00706 | 000005 | DEC | | 5 | POINTER TO OP-CODE FIELD | DAPM4430 |
| 0556 | 00707 | 000013 | C13 | DEC | 11 | POINTER TO ADDRESS FIELD | DAPM4440 |
| 0557 | 00710 | 177710 | M56 | DEC | -56 | OBJECT TEXT BLOCK SIZE CONSTANT | DAPM4450 |
| 0558 | 00711 | -0 004144 | KDS | DAC* | DSPT | ADDRESS OF OBJECT TEXT BLOCK PROCESSOR LIST | DAPM4460 |
| 0559 | 00712 | 177704 | M60 | DEC | -60 | | DAPM4470 |
| 0560 | 00713 | 0 004700 | OUTP | DAC | OUTB+3 | START OF DATA IN OBJECT TEXT BUFFER | DAPM4480 |
| 0561 | 00714 | 0 004562 | INPD | DAC | INPB | INPUT BUFFER ADDRESS | DAPM4490 |
| 0562 | 00715 | 0 004544 | DCON | DAC | OTPB | | DAPM4500 |
| 0563 | 00716 | 0 004545 | DCN1 | DAC | OTPB+1 | | DAPM4510 |
| 0564 | 00717 | 0 004546 | DCN2 | DAC | OTPB+2 | | DAPM4520 |
| 0565 | 00720 | 0 004547 | DCN3 | DAC | OTPB+3 | | DAPM4530 |
| 0566 | 00721 | 125252 | ASTR | BCI | 1,** | FORWARD REFERENCE INDICATOR | DAPM4540 |
| 0567 | 00722 | 0 004557 | FREF | DAC | OTPB+11 | | DAPM4550 |
| 0568 | | | EJCT | | ***** | | DAPM4560 |
| | | | | | | | DAPM4570 |

| | | | | | | | |
|------|-------|--------|------|----------|-----|------------------------------|----------|
| 0569 | | | * | | | | DAPM4580 |
| 0570 | | | * | MESSAGES | | | DAPM4590 |
| 0571 | | | * | | | | DAPM4600 |
| 0572 | 00723 | 120240 | EMES | BCI | 16, | 0000 WARNING OR ERROR FLAGS | DAPM4610 |
| | 00724 | 120240 | | | | | |
| | 00725 | 130260 | | | | | |
| | 00726 | 130260 | | | | | |
| | 00727 | 120327 | | | | | |
| | 00730 | 140722 | | | | | |
| | 00731 | 147311 | | | | | |
| | 00732 | 147307 | | | | | |
| | 00733 | 120317 | | | | | |
| | 00734 | 151240 | | | | | |
| | 00735 | 142722 | | | | | |
| | 00736 | 151317 | | | | | |
| | 00737 | 151240 | | | | | |
| | 00740 | 143314 | | | | | |
| | 00741 | 140707 | | | | | |
| | 00742 | 151640 | | | | | |
| 0573 | 00743 | 000003 | C3 | OCT | 3 | | |
| 0574 | 00744 | 120240 | IDMS | BCI | 19, | DAP-16 MUD 2 REV. C 01-26-71 | DAPM4620 |
| | 00745 | 120240 | | | | | DAPM4630 |
| | 00746 | 142301 | | | | | |
| | 00747 | 150255 | | | | | |
| | 00750 | 130666 | | | | | |
| | 00751 | 120315 | | | | | |
| | 00752 | 147704 | | | | | |
| | 00753 | 120262 | | | | | |
| | 00754 | 120240 | | | | | |
| | 00755 | 120240 | | | | | |
| | 00756 | 151305 | | | | | |
| | 00757 | 153256 | | | | | |
| | 00760 | 120303 | | | | | |
| | 00761 | 120240 | | | | | |
| | 00762 | 120240 | | | | | |
| | 00763 | 130261 | | | | | |
| | 00764 | 126662 | | | | | |

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00765 133255
00766 133661
0575 00767 000004 C4 OCT 4
0576 *
0577 * DISC INTERCEPT ROUTINE
0578 *
0579 * WHEN IUS-016D IS USED, IT IS POSSIBLE FOR DISC
0580 * I/O TO BE SELECIED BEFORE THE DOP ADDRESS
0581 * LINKAGES HAVE BEEN INITIALIZED. IF THIS OCCURS, THE
0582 * FOLLOWING ROUTINE WILL INTERCEPT THE CALL TO THE
0583 * DISC INIIIALIZATION ROUTINE AND HALT. AT THIS POINT,
0584 * EITHER SIART DOP TO SET THE LINKAGE ADDRESS AND RESTART
0585 * THE ASSEMBLER, OR SET NEW DEVICE SELECTION CODES AND
0586 * PRESS START.
0587 *
0588 *
0589 00770 0 000771 ORG *770
0590 00771 0 000000 DAC **1 LINKAGE TO INTERCEPT ROUTINE
0591 00772 000000 DAC ** INTERCEPT THE INITIALIZATION ROUTINE
0592 00773 0 01 00400 HLT DOP HAS NOT BEEN INITIALIZED
0593 * JMP *400 ON RESTART, TRY NEW PARAMETER SELECTION
0594 00774 0 004773 TOPS DAC OPS
0595 00775 0 005540 XF1 DAC OP1 BASE OF OPCODE TABLE
0596 00776 0 005350 XF4 DAC OP4 END OF DDP-116 OPCODES
0597 00777 0 005620 XF5D DAC OPE END OF DDP-416 OPCODES
0598 * EJECT *****
*****DAPM4870
DAPM4640
DAPM4650
DAPM4660
DAPM4670
DAPM4680
DAPM4690
DAPM4700
DAPM4710
DAPM4720
DAPM4730
DAPM4740
DAPM4750
DAPM4760
DAPM4770
DAPM4780
DAPM4790
DAPM4800
DAPM4810
DAPM4820
DAPM4830
DAPM4840
DAPM4850
DAPM4860
DAPM4870
```

```
0599 * ORG *1000
0600 *
0601 * PASS ONE INIIIALIZATIUN
0602 *
0603 *
0604 * INITIALIZE NORMAL ASSEMBLY
0605 *
0606 01000 0 04 00461 STRT STA TST SAVE PARAMETER WORD
0607 01001 140040 CRA CLEAR A TO INDICATE NORMAL ASSEMBLY
0608 01002 0 01 01005 JMP REST-1 JOIN COMMON PROCESSING
0609 *
0610 *
0611 * INITIALIZE SUBROUTINE ASSEMBLY
0612 *
0613 01003 0 04 00461 SSET STA TST SAVE PARAMETER WORD
0614 01004 0 02 00671 LDA M1 A & -1 TO INDICATE SUBROUTINE ASSEMBLY
0615 01005 0 04 00507 STA SUBF SET ASSEMBLY MODE SWITCH
0616 01006 0 02 00461 REST LDA TSI FETCH PARAMETER WORD
0617 01007 0 04 00436 STA ZP SET PASS SWITCH
0618 01010 140100 SSP
0619 01011 0 10 00000 CALL D$IN INITIALIZE IOS
0620 01012 0 02 00433 LDA D$IP BSYM & BASE OF SYMBOL TABLE
0621 01013 0 04 00471 STA BSYM
0622 01014 140040 CRA
0623 01015 0 04 00470 STA CSYM SET SYMBOL COUNT TO ZERO
0624 01016 0 04 00462 STA FREE CLEAR NULL TABLE ENTRY COUNT
0625 01017 0 04 00527 STA ZPIX CLEAR PASS FLAG
0626 *
0627 *
0628 * EJECT *****
*****DAPM5170
DAPM4880
DAPM4890
DAPM4900
DAPM4910
DAPM4920
DAPM4930
DAPM4940
DAPM4950
DAPM4960
DAPM4970
DAPM4980
DAPM4990
DAPM5000
DAPM5010
DAPM5020
DAPM5030
DAPM5040
DAPM5050
DAPM5060
DAPM5070
DAPM5080
DAPM5090
DAPM5100
DAPM5110
DAPM5120
DAPM5130
DAPM5140
DAPM5150
DAPM5160
DAPM5170
```

```
0629 *
0630 * COMMON PASS ONE/TWO INITIALIZATION
0631 *
0632 *
0633 01020 0 35 00676 RESG LDX M12 PREPARE TO CLEAR 12 FLAGS
0634 01021 1 04 00421 STA CLUC+12,1 CLEAR A WORD
0635 01022 0 12 00000 IRS 0 INCREMENT COUNTER
0636 01023 0 01 01021 JMP *-2 GO BACK TO CLEAR NEXT WORD
0637 01024 0 02 00671 LDA M1 SET FIRST OBJECT TEXT
0638 01025 0 04 00514 STA OBI BLOCK INDICATOR
0639 01026 0 10 04373 JST BLIN INITIALIZE OBJECT TEXT ENTRY ROUTINE
0640 01027 0 02 00435 LDA D$CB SET UP DEFAULT COMMON BASE
0641 01030 0 04 00502 STA COML
0642 01031 0 02 00777 LDA XFD ALLOW ALL OPCODES AT START
0643 01032 0 04 00503 STA BOFS
0644 01033 0 02 00670 LDA CSC2 SETUP INITIAL FIN LEVEL
0645 01034 0 04 00525 STA FINF
0646 01035 0 02 00436 LDA ZP
0647 01036 0 04 00511 STA ZPI
0648 01037 0 02 00615 LDA ZX3 CLEAR ASCII ERROR COUNTER
0649 01040 0 04 00725 STA EMES+2
0650 01041 0 04 00726 STA EMES+3
0651 *
0652 *
0653 * END OF INITIALIZATION
0654 *
0655 *
0656 * EJECT *****DAPM5450
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0657 *
0658 * PROCESS NEXT STATEMENT
0659 *
0660 01042 0 10 04253 LINE JST CLEO CLEAR OUTPUT BUFFER
0661 01043 0 10 00000 CALL D$RD READ NEXT SOURCE LINE
0662 01044 -0 10 00552 JST* UACD UPDATE LINE COUNTER
0663 01045 0 000412 DAC CNIR ADDRESS OF LINE COUNTER
0664 01046 0 004546 DAC OTPB+2 ADDRESS OF ASCII EXPANSION FIELD
0665 01047 0 02 00704 LDA FLDP INITIALIZE SOURCE FIELD POINTER
0666 01050 0 04 00522 STA ADVP
0667 01051 -0 10 00573 JST* ADVD SET SOURCE CHARACTER POINTER
0668 01052 0 10 01261 JST CLER CLEAR REGISTERS
0669 01053 0 35 00676 LDX M12 PREPARE TO INITIALIZE FLAGS
0670 01054 1 04 00433 STA RBIT+12,1 CLEAR A WORD
0671 01055 0 12 00000 IRS 0 STEP THE POINT
0672 01056 0 01 01054 JMP *-2 GO CLEAR NEXT WORD
0673 01057 0 04 04052 STA LGCT CLEAR ERROR/LINE COUNTER
0674 01060 0 04 00457 STA SIGT CLEAR SIGN OF SYLLABLE REGISTERS
0675 01061 0 02 00671 LDA M1 GET INITIALIZATION CONSTANT
0676 01062 0 04 00466 STA DEUT SET DECIMAL CONVERSION MODE
0677 01063 0 10 01300 JST SYLL PACK LOCATION FIELD
0678 01064 0 02 00450 LDA SYL FETCH FIRST TWO CHARS. OF FIELD
0679 01065 -0 10 00605 JST* UPAK CONVERT THEM TO ASCII
0680 01066 141140 ICL ISOLATE FIRST CHARACTER
0681 01067 0 05 00637 ERA C2>2 CHECK FOR COMMENT LINE
0682 01070 101040 SNZ SKIP IF NOT
0683 01071 -0 01 00611 JMP* COMX GO PROCESS COMMENT CARD
0684 01072 0 02 00450 LDA SYL SEE IF ANYTHING IS IN LOCATION FIELD
0685 01073 101040 SNZ
0686 01074 0 01 01100 JMP *+4 NO
0687 01075 0 02 00460 LDA ALFA SEE IF IT'S SOMETHING FUNNY - LIKE A NUMBER
0688 01076 100040 SZE SKIP IF VALID SYMBOL
0689 01077 0 10 03760 JST LEKR FLAG 'L' ERROR
0690 01100 0 02 00444 LDA TERM FETCH TERMINATING CHARACTER
0691 01101 0 05 00635 ERA C240 CHECK FOR BLANK
0692 01102 100040 SZE SKIP IF SU
0693 01103 -0 10 00561 JST* FER FORMAT ERROR
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| | | | | | | | |
|------|-------|-------------|------|------|-----------------------------------|-----------------------------|----------|
| 0694 | 01104 | 0 10 01270 | JST | SWAP | SYL1 & LOCATION FIELD | DAPM5830 | |
| 0695 | 01105 | -0 10 00573 | JST* | ADVD | ADVANCE TO OP-CODE FIELD | DAPM5840 | |
| 0696 | 01106 | 0 10 01300 | JST | SYLL | INPUT OP-CODE-TERMINATING | DAPM5850 | |
| 0697 | | | * | | CHARACTER IN A REGISTER | DAPM5860 | |
| 0698 | 01107 | 0 05 00637 | ERA | C2>2 | TEST FOR ASTERISK | DAPM5870 | |
| 0699 | 01110 | 101040 | SNZ | | SKIP IF NOT | DAPM5880 | |
| 0700 | 01111 | 0 12 00426 | IRS | INDF | SET INDIRECT FLAG | DAPM5890 | |
| 0701 | 01112 | 0 10 01470 | JST | OPSR | SEARCH OP-CODE TABLE - RETURN | DAPM5900 | |
| 0702 | | | * | | IF MACHINE OP. | DAPM5910 | |
| 0703 | | | * | | | DAPM5920 | |
| 0704 | | | * | | MACHINE OP-CODE PROCESSOR | DAPM5930 | |
| 0705 | | | * | | | DAPM5940 | |
| 0706 | | | * | | | DAPM5950 | |
| 0707 | 01113 | -0 10 00547 | JST* | DLC | DEFINE SYMBOL IN LOCATION FIELD | DAPM5960 | |
| 0708 | 01114 | 0 02 00426 | LDA | INDF | FETCH INDIRECT FLAG | DAPM5970 | |
| 0709 | 01115 | 101040 | SNZ | | SKIP IF INDIRECT | DAPM5980 | |
| 0710 | 01116 | 0 01 01125 | JMP | VSCN | NOT INDIRECT | DAPM5990 | |
| 0711 | 01117 | 0 02 00425 | LDA | INDA | FETCH INDIRECT LEGAL FLAG | DAPM6000 | |
| 0712 | 01120 | 101040 | SNZ | | SKIP IF LEGAL | DAPM6010 | |
| 0713 | 01121 | -0 01 00562 | JMP* | IEK | ILLEGAL INDIRECT - FLAG 'I' ERROR | DAPM6020 | |
| 0714 | 01122 | 0 02 00437 | LDA | WORD | FETCH OP-CODE | DAPM6030 | |
| 0715 | 01123 | 140500 | SSM | | SET INDIRECT BIT | DAPM6040 | |
| 0716 | 01124 | 0 04 00437 | STA | WORD | REPLACE OP-CODE | DAPM6050 | |
| 0717 | 01125 | -0 10 00573 | VSCN | JST* | ADVANCE TO ADDRESS FIELD | DAPM6060 | |
| 0718 | 01126 | 0 10 01300 | VSC2 | JST | INPUT A TERM | DAPM6070 | |
| 0719 | 01127 | 0 02 00424 | LDA | ADRF | CHECK ADDRESS REQUIRED FLAG | DAPM6080 | |
| 0720 | 01130 | 100040 | SZE | | SKIP IF NOT REQUIRED | DAPM6090 | |
| 0721 | 01131 | 0 01 01161 | JMP | L1 | GO PROCESS ADDRESS | DAPM6100 | |
| 0722 | 01132 | 0 02 00474 | REGO | LDA | CB12 | FETCH OPCODE TYPE CODE BITS | |
| 0723 | 01133 | 0414 75 | LGL | 3 | A(1)&GENERIC FLAG | DAPM6110 | |
| 0724 | 01134 | 100400 | SPL | | SKIP IF NOT GENERIC | DAPM6120 | |
| 0725 | 01135 | 0 01 01173 | JMP | GENR | GO PROCESS GENERIC INSTRUCTION | DAPM6130 | |
| 0726 | 01136 | -0 10 00531 | REGP | JST* | VF | PROCESS ADDRESS TERM | DAPM6140 |
| 0727 | 01137 | 0 01 01177 | JMP | UNDE | PROCESS UNDEFINED SYMBOL | DAPM6150 | |
| 0728 | 01140 | -0 10 00534 | REGL | JST* | SGN | SUM AND SET SIGN | DAPM6160 |
| 0729 | 01141 | 100000 | SKP | | TERMINAL DELIMITER RETURN | DAPM6170 | |
| 0730 | 01142 | 0 01 01126 | JMP | VSC2 | PROCESS NEXT ITEM | DAPM6180 | |
| | | | | | | DAPM6190 | |

| | | | | | | |
|------|-------|-------------|------|------|--------------------------------------|--------------------------------|
| 0731 | | | * | | | DAPM6200 |
| 0732 | | | * | | END OF ADDRESS | DAPM6210 |
| 0733 | | | * | | | DAPM6220 |
| 0734 | 01143 | 0 02 00420 | LDA | E | CHECK FOR UNENTERED UNDEFINED SYMBOL | DAPM6230 |
| 0735 | 01144 | 101040 | SNZ | | SKIP IF THERE IS | DAPM6240 |
| 0736 | 01145 | 0 01 01151 | JMP | TRM1 | GO PROCESS INDEX TAG | DAPM6250 |
| 0737 | 01146 | 0 10 01270 | JST | SWAP | SYL&SYL1 | DAPM6260 |
| 0738 | 01147 | -0 10 00543 | JST* | DUST | ENTER UNDEFINED SYMBOL | DAPM6270 |
| 0739 | 01150 | 0 04 00423 | STA | SUM | SAVE SYMBOL NUMBER | DAPM6280 |
| 0740 | 01151 | 0 10 01224 | TRM1 | JST | TRIG | PROCESS INDEX TAG |
| 0741 | | | * | | | DAPM6290 |
| 0742 | | | * | | FINISH PROCESSING MACHINE-OP | DAPM6300 |
| 0743 | | | * | | | DAPM6310 |
| 0744 | 01152 | 0 02 00444 | ASMB | LDA | TERM | FETCH TERMINATING CHARACTER |
| 0745 | 01153 | 0 05 00635 | ERA | C240 | TEST FOR A SPACE | DAPM6330 |
| 0746 | 01154 | 100040 | SZE | | SKIP IF A SPACE | DAPM6340 |
| 0747 | 01155 | -0 10 00561 | JST* | FEX | IF NOT, FURMAT ERROR | DAPM6350 |
| 0748 | 01156 | 0 10 01765 | JST | DWRD | PLACE INSTRUCTION IN OBJECT TEXT | DAPM6360 |
| 0749 | 01157 | -0 10 00551 | COMM | JST* | LSID | LIST THIS STATEMENT |
| 0750 | 01160 | 0 01 01042 | JMP | LINE | GO PROCESS NEXT STATEMENT | DAPM6370 |
| 0751 | | | * | | | DAPM6380 |
| 0752 | | | * | | | DAPM6390 |
| 0753 | | | * | | HERE IF ADDRESS REQUIRED | DAPM6400 |
| 0754 | | | * | | | DAPM6410 |
| 0755 | 01161 | 0 02 00450 | L1 | LDA | SYL | FETCH FIRST 2 CHARS. OF SYMBOL |
| 0756 | 01162 | 100040 | SZE | | SKIP IF BLANKS | DAPM6430 |
| 0757 | 01163 | 0 01 01132 | JMP | REGO | ADDRESS EXISTS - OK | DAPM6440 |
| 0758 | 01164 | 0 02 00444 | LDA | TERM | FETCH TERMINATING CHARACTER | DAPM6450 |
| 0759 | 01165 | 0 07 00640 | SUB | C2>3 | TEST FOR '-' | DAPM6460 |
| 0760 | 01166 | 100040 | SZE | | SKIP IF 11 IS | DAPM6470 |
| 0761 | 01167 | 0 07 00624 | SUB | C2 | TEST FOR '+' | DAPM6480 |
| 0762 | 01170 | 101040 | SNZ | | SKIP IF NOT | DAPM6490 |
| 0763 | 01171 | 0 01 01132 | JMP | REGO | IT'S EITHER '+' OR '-' - OK | DAPM6500 |
| 0764 | 01172 | -0 01 00556 | JMP* | AER | ADDRESS ERROR | DAPM6510 |
| 0765 | | | * | | | DAPM6520 |
| 0766 | | | * | | GENERIC PROCESSOR | DAPM6530 |
| 0767 | | | * | | | DAPM6540 |
| | | | | | | DAPM6550 |
| | | | | | | DAPM6560 |

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0768 01173 0 02 00450 GENR LDA SYL          FETCH FIRST TWO CHARACTERS OF NAME      DAPM6570
0769 01174 101040          SNZ          SKIP IF THEY ARE NOT BLANK          DAPM6580
0770 01175 0 01 01152      JMP  ASMB          BLANK - OK                          DAPM6590
0771 01176 -0 01 00556     JMP* AEK          ADDRESS ERROR                          DAPM6600
0772          *                                           DAPM6610
0773          *      UNDEFINED PROCESSOR          DAPM6620
0774          *                                           DAPM6630
0775 01177 0 02 00420 UNDE LDA E            FETCH PREVIOUS UNDEFINED FLAG        DAPM6640
0776 01200 101040          SNZ          SKIP IF PREVIOUS UNDEFINED SYMBOL      DAPM6650
0777 01201 0 01 01220      JMP  UNDI          FIRST UNDEFINED                          DAPM6660
0778 01202 0 12 00421      IRS  E1          SET EXTENDED FLAG                      DAPM6670
0779 01203 -0 10 00543     JST* DUST        ENTER UNDEFINED SYMBOL                DAPM6680
0780 01204 0 05 00620      ERA  B3          SET EXTENDED BIT                      DAPM6690
0781 01205 0 04 00423      STA  SUM          SET VALUE                            DAPM6700
0782 01206 0 10 01765      JST  DWKD        OUTPUT WORD                          DAPM6710
0783 01207 0 02 00405      LDA  CLUC        RESTORE THE PROGRAM COUNTER      DAPM6720
0784 01210 0 07 00700      SUB  ONE         DAPM6730
0785 01211 0 04 00405      STA  CLUC        DAPM6740
0786 01212 140040          CRA          DAPM6750
0787 01213 0 04 00423      STA  SUM          CLEAR ACCUMULATED ADDRESS        DAPM6760
0788 01214 0 04 00437      STA  WORD        CLEAR OP CODE                          DAPM6770
0789 01215 0 04 00440      STA  W2          CLEAR LOW ORDER CODE BITS      DAPM6780
0790 01216 0 04 00463      STA  RELV        CLEAR RELOCATION                          DAPM6790
0791 01217 0 01 01140      JMP  REGL        GO PROCESS NEXT TERM    DAPM6800
0792          *                                           DAPM6810
0793 01220 0 12 00420 UNDI IRS E            SET EXTENSION FLAG                    DAPM6820
0794 01221 0 10 01270      JST  SWAP        SYL1&SYL                          DAPM6830
0795 01222 0 10 01261      JST  CLER        CLEAR SYL                          DAPM6840
0796 01223 0 01 01140      JMP  REGL        GO PROCESS NEXT TERM    DAPM6850
0797          *                                           DAPM6860
0798          *                                           DAPM6870
0799          *      EJCT *****DAPM6880
```

```
0800          *                                           DAPM6890
0801          *      TRTG: INDEX IAG PROCESSOR          DAPM6900
0802          *                                           DAPM6910
0803          *                                           DAPM6920
0804 01224 0 000000      TRTG DAC **          DAPM6930
0805 01225 0 02 00444      LDA  TERK        CHECK FOR COMMA THAT DELIMITS        DAPM6940
0806 01226 0 07 00641      SUB  C2D4        THE INDEX TERM                          DAPM6950
0807 01227 100040          SZE          SKIP IF INDEX TAG PRESENT          DAPM6960
0808 01230 -0 01 01224     JMP* TRIG        EXIT - NO TAG                          DAPM6970
0809 01231 0 04 00453      STA  SIGN        CLEAR SIGN OF INDEX TERM          DAPM6980
0810 01232 0 02 00425      LDA  INDA        CHECK INDEX/INDIRECT LEGAL FLAG      DAPM6990
0811 01233 101040          SNZ          SKIP IF SET                          DAPM7000
0812 01234 -0 10 00565     JST* TER         FLAG 'T' ERROR                          DAPM7010
0813 01235 0 02 00503      LDA  BOPS        CHECK FOR DDP-416 ASSEMBLY          DAPM7020
0814 01236 0 05 00776      ERA  XF4         INDEX NOT LEGAL ON DDP-416          DAPM7030
0815 01237 101040          SNZ          SKIP IF NOT DDP-416          DAPM7040
0816 01240 -0 10 00565     JST* TER         FLAG 'T' ERROR - NO X REG. ON DDP-416  DAPM7050
0817 01241 0 02 00437      LDA  WORD        FETCH OP-CODE                          DAPM7060
0818 01242 0405 66        ARS  10          A(13-16)&OPCODE                          DAPM7070
0819 01243 0 03 00630      ANA  C17         WIPE OUT OTHER BITS                          DAPM7080
0820 01244 0 07 00627      SUB  C1D         CHECK FOR LDX, STX                          DAPM7090
0821 01245 101040          SNZ          SKIP IF NOT                          DAPM7100
0822 01246 -0 10 00565     JST* TER         INDEX NOT ALLOWED ON LDX, STX          DAPM7110
0823 01247 0 10 01300      JST  SYLL        INPUT INDEX TERM                          DAPM7120
0824 01250 -0 10 00531     JST* VF         EVALUATE IT                          DAPM7130
0825 01251 -0 10 00565     JST* TER         UNDEFINED SYMBOL RETURN          DAPM7140
0826 01252 0404 77        LGR  1           PLACE INDEX BIT IN C                          DAPM7150
0827 01253 100040          SZE          SKIP IF INDEX WAS 0 OR 1          DAPM7160
0828 01254 -0 10 00565     JST* TER         FLAG 'T' ERROR                          DAPM7170
0829 01255 141216          ACA          PLACE INDEX IN A                          DAPM7180
0830 01256 0406 76        ARR  2           A(2) & INDEX TAG                          DAPM7190
0831 01257 0 04 00427      STA  TAG        SAVE THE IAG                          DAPM7200
0832 01260 -0 01 01224     JMP* TRIG        EXIT                          DAPM7210
0833          *                                           DAPM7220
0834          *                                           DAPM7230
0835          *      EJCT *****DAPM7240
```

```
0836 *
0837 * CLER: CLEAR SYLLABLE REGISTERS DAPM7250
0838 * DAPM7260
0839 * DAPM7270
0840 * CALLING SEQUENCE: DAPM7280
0841 * JSI CLER DAPM7290
0842 * .....RETURN DAPM7300
0843 * DAPM7310
0844 * DAPM7320
0845 * RESULTS: DAPM7330
0846 * SYL&0 DAPM7340
0847 * NUM&0 DAPM7350
0848 * DAPM7360
0849 * DAPM7370
0850 01261 0 000000 CLER DAC ** ENTRY DAPM7380
0851 01262 0 10 00000 CALL DECI INITIALIZE CONVERSION ROUTINE - A REGISTER DAPM7390
0852 * ZERO ON RETURN DAPM7400
0853 01263 0 35 00675 LDX M6 PREPARE TO CLEAR SYL-SYL+2, NUM-NUM+2 DAPM7410
0854 01264 1 04 00453 STA SYL+3,1 CLEAR A WORD DAPM7420
0855 01265 0 12 00000 IRS 0 INCREMENT INDEX DAPM7430
0856 01266 0 01 01264 JMP *-2 GO BACK TO CLEAR NEXT WORD DAPM7440
0857 01267 -0 01 01261 JMP* CLER EXIT DAPM7450
0858 * DAPM7460
0859 * DAPM7470
0860 * EJCT *****DAPM7480
*****DAPM7490
```

```
0861 *
0862 * SWAP: SWAP ACTIVE SYLLABLE REGISTERS DAPM7500
0863 * DAPM7510
0864 * DAPM7520
0865 * CALLING SEQUENCE: DAPM7530
0866 * JSI SWAP DAPM7540
0867 * .....RETURN DAPM7550
0868 * DAPM7560
0869 * DAPM7570
0870 * RESULTS: DAPM7580
0871 * SYL1&SYL, SYL&SYL1 DAPM7590
0872 * SIGT&SIGN, SIGN&SIGT DAPM7600
0873 * DAPM7610
0874 * DAPM7620
0875 01270 0 000000 SWAP DAC ** ENTRY DAPM7630
0876 01271 0 35 00674 LDX M4 FOUR WORDS TO BE INTERCHANGED DAPM7640
0877 01272 1 02 00454 LDA SYL+4,1 FETCH WORD FROM REGISTER ONE DAPM7650
0878 01273 1 13 00460 IMA SYL1+4,1 SWAP IT WITH WORD IN REGISTER TWO DAPM7660
0879 01274 1 04 00454 STA SYL+4,1 REPLACE WORD IN REGISTER ONE DAPM7670
0880 01275 0 12 00000 IRS 0 INCREMENT INDEX REGISTER DAPM7680
0881 01276 0 01 01272 JMP *-4 GO BACK FOR NEXT WORD DAPM7690
0882 01277 -0 01 01270 JMP* SWAP EXIT DAPM7700
0883 * DAPM7710
0884 * DAPM7720
0885 * EJCT *****DAPM7730
*****DAPM7740
```

```

0886 *
0887 * SYLL: SYLLABLE ANALYZER
0888 *
0889 *
0890 * CALLING SEQUENCE:
0891 * JSI SYLL
0892 * .....RETURN TERMINATING CHAR. IN A
0893 *
0894 *
0895 01300 0 000000 SYLL DAC ** SYLLABLE ANALYZER
0896 01301 0 02 00466 LDA DEUT DOCT&DEFAULT CONVERSION MODE
0897 01302 0 04 00443 STA DOCT -1 FOR DEC, 0 FOR OCT, +1 FOR HEX
0898 01303 0 02 00504 LDA SYLC SYLP&ADDRESS OF SYL
0899 01304 0 04 00505 STA SYLP
0900 01305 0 04 00460 STA ALFA TURN OFF ALFA FLAG
0901 01306 0 04 00506 STA LIIF TURN OFF LITERAL FLAG
0902 01307 0 10 01261 JST CLER CLEAR NUM=NUM+2, SYL=SYL+2
0903 01310 0 02 00672 LDA M2 SET UP CHARACTER/WORD COUNTER
0904 01311 0 04 00464 STA SYL2
0905 01312 0 07 00700 SUB ONE SET UP FOR MAXIMUM OF
0906 01313 0 04 00465 STA SYL3 6 CHARACTERS/IDENTIFIER
0907 01314 -0 10 00575 SYLO JST* CHRD FETCH NEXT CHARACTER FROM INPUT BUFFER
0908 01315 0 07 00636 SUB C244 TEST FOR '$'
0909 01316 101040 SNZ SKIP IF NOT
0910 01317 0 01 01375 JMP HEXM '$' - SEE IF HEX MODE CONVERSION
0911 01320 0 07 00743 SUB C3 TEST FOR SINGLE QUOTE
0912 01321 101040 SNZ SKIP IF NOT
0913 01322 0 01 01376 JMP OCIK IT IS - CHECK FOR OCTAL MODE CONVERSION
0914 01323 0 07 00743 SUB C3 TEST FOR '*'
0915 01324 101040 SNZ SKIP IF NOT
0916 01325 0 01 01365 JMP STAR GO TO THE ASTERISK PROCESSOR
0917 01326 0 07 00632 SUB C23 TEST FOR '='
0918 01327 101040 SNZ SKIP IF NOT
0919 01330 0 01 01443 JMP LIIS GO TO LITERAL PROCESSOR
0920 01331 0 10 00000 CALL DECC HAVE THE CONVERSION ROUTINE WORK ON IT
0921 01332 0 01 01425 JMP LEI1 NUMBER RETURN
0922 01333 0 01 01415 JMP LEI LETTER RETURN
    
```

```

0923 *
0924 * HERE IF NOT NUMBER OR LETTER
0925 *
0926 01334 0 02 00441 LDA ERD CHECK FOR ERROR IN CONVERSION
0927 01335 100040 SZE SKIP IF NO ERROR DETECTED
0928 01336 -0 10 00557 JST* CER FLAG CONVERSION ERROR
0929 01337 0 02 00506 SYLA LDA LIIF CHECK FOR LITERAL IN PROCESS
0930 01340 100040 SZE SKIP IF LITERAL
0931 01341 0 01 01363 JMP DELO ELSE, GO EXIT
0932 *
0933 *
0934 * FORM LITERAL SYMBOL
0935 *
0936 * THE LITERAL SYMBOL IS STORED IN THE FIRST
0937 * TWO WORDS OF THE SYMBOL TABLE ENTRY AS FOLLOWS:
0938 *
0939 * WORD ONE -- BITS 1-4 CONTROL FLAGS
0940 * BITS 5-12 FIN LEVEL
0941 * BITS 13-16 4 HIGH ORDER BITS OF VALUE
0942 *
0943 * WORD TWO -- BITS 1-3 CONTROL FLAGS
0944 * BIT 4 LITERAL FLAG
0945 * BIT 5-16 12 LOW ORDER BITS OF VALUE
0946 *
0947 * THE FIN LEVEL, FINF, CORRESPONDS TO THE NUMBER
0948 * OF 'FIN' PSEUDO-UPS THAT HAVE BEEN ENCOUNTERED.
0949 * EACH TIME A 'FIN' IS ENCOUNTERED, FINF IS
0950 * DECREMENTED BY 1812.
0951 *
0952 *
0953 01342 0 04 00460 STA ALFA LITERALS ARE CONSIDERED ALFA
0954 01343 0 02 00450 LDA SYL IF THE CURRENT CHARACTER IS
0955 01344 100040 SZE A PLUS OR MINUS, AND NO
0956 01345 0 01 01351 JMP **4 PART OF THE NUMERIC VALUE HAS
0957 01346 -0 10 00607 JST* PMS BEEN ENCOUNTERED, THE LITERAL IS, AS
0958 01347 100000 SKP OF YET, UNFORMED THEREFORE
0959 01350 0 01 01314 JMP SYLO WE SHOULD CONTINUE LOOKING FOR DIGITS, ETC.
    
```


| | | | | | | |
|------|-------|-------------|----------|--------|--------------------------------------|----------|
| 0960 | 01351 | 0 02 00445 | LDA | NUM | FETCH VALUE OF LITERAL | DAPM8490 |
| 0961 | 01352 | 0404 64 | LGR | 12 | A(13-16) & HIGH 4 BITS OF VALUE | DAPM8500 |
| 0962 | 01353 | 0 05 00525 | ERA | FINF | INSERT FIN LEVEL | DAPM8510 |
| 0963 | 01354 | 0 04 00450 | STA | SYL | SYL & FIRST WORD OF LITERAL ENTRY | DAPM8520 |
| 0964 | 01355 | 0 02 00445 | LDA | NUM | FETCH THE VALUE OF LITERAL | DAPM8530 |
| 0965 | 01356 | 0 03 00665 | ANA | CHK2 | A(1-4) & 0 | DAPM8540 |
| 0966 | 01357 | 0 05 00621 | ERA | B4 | SET LITERAL FLAG | DAPM8550 |
| 0967 | 01360 | 0 04 00451 | STA | SYL+1 | SYL+1 & SECOND WORD OF LITERAL ENTRY | DAPM8560 |
| 0968 | 01361 | 140040 | CRA | | | DAPM8570 |
| 0969 | 01362 | 0 04 00453 | STA | SIGN | CLEAR SIGN | DAPM8580 |
| 0970 | 01363 | 0 02 00444 | DELO LDA | TERM | TERMINATING CHARACTER | DAPM8590 |
| 0971 | 01364 | -0 01 01300 | JMP* | SYLL | EXIT | DAPM8600 |
| 0972 | | | | | | DAPM8610 |
| 0973 | 01365 | 0 02 00450 | STAR LDA | SYL | IS *** FIRST CHARACTER | DAPM8620 |
| 0974 | 01366 | 100040 | SZE | | SKIP IF FIRST CHARACTER | DAPM8630 |
| 0975 | 01367 | 0 01 01363 | JMP | DELO | OTHERWISE TREAT AS DELIMITING CHAR. | DAPM8640 |
| 0976 | 01370 | 0 04 00460 | STA | ALFA | SET ALFA MODE | DAPM8650 |
| 0977 | 01371 | 0 10 01445 | JST | STF | PACK THE CHARACTER | DAPM8660 |
| 0978 | 01372 | -0 10 00575 | JST* | CHRD | FETCH NEXT CHAR. FROM INPUT BUFFER | DAPM8670 |
| 0979 | 01373 | 0 07 00637 | SUB | C252 | REDUCE THE CHAR FOR *** TEST | DAPM8680 |
| 0980 | 01374 | 0 01 01366 | JMP | STAR+1 | GO TEST FOR ANOTHER *** | DAPM8690 |
| 0981 | | | | | | DAPM8700 |
| 0982 | 01375 | 141206 | HEXM AOA | | A & 1 FOR HEX MODE | DAPM8710 |
| 0983 | | | | | | DAPM8720 |
| 0984 | 01376 | 0 04 00475 | OCTK STA | T | SAVE DESIRED CONVERSION MODE | DAPM8730 |
| 0985 | 01377 | 0 05 00443 | ERA | DOCT | COMPARE WITH CURRENT MODE | DAPM8740 |
| 0986 | 01400 | 101040 | SNZ | | SKIP IF DIFFERENT | DAPM8750 |
| 0987 | 01401 | 0 01 01314 | JMP | SYLO | SAME - NO EFFECT | DAPM8760 |
| 0988 | 01402 | 0 02 00450 | LDA | SYL | TEST FOR FIRST CHARACTER | DAPM8770 |
| 0989 | 01403 | 100040 | SZE | | SKIP IF FIRST CHARACTER | DAPM8780 |
| 0990 | 01404 | 0 01 01415 | JMP | LEI | OTHERWISE TREAT AS A LETTER | DAPM8790 |
| 0991 | 01405 | 0 02 00443 | LDA | DOCT | | DAPM8800 |
| 0992 | 01406 | 0 06 00430 | ADD | DECF | TEST FOR ILLEGAL MODE SWITCHING | DAPM8810 |
| 0993 | 01407 | 141206 | AOA | | DECF+DOCT = -1 IF LEGAL | DAPM8820 |
| 0994 | 01410 | 100040 | SZE | | SKIP IF LEGAL | DAPM8830 |
| 0995 | 01411 | 0 01 01415 | JMP | LEI | OTHERWISE TREAT AS A LETTER | DAPM8840 |
| 0996 | 01412 | 0 02 00475 | LDA | T | OK TO SWITCH, FETCH MODE INDICATOR | DAPM8850 |

| | | | | | | |
|------|-------|-------------|----------|------|------------------------------------|----------|
| 0997 | 01413 | 0 04 00443 | STA | DOCT | SET NEW CONVERSION MODE | DAPM8860 |
| 0998 | 01414 | 0 01 01314 | JMP | SYLO | GO PROCESS NEXT CHARACTER | DAPM8870 |
| 0999 | | | | | | DAPM8880 |
| 1000 | | | | | | DAPM8890 |
| 1001 | 01415 | 0 02 00506 | LET LDA | LIIF | FETCH LITERAL FLAG | DAPM8900 |
| 1002 | 01416 | 101040 | SNZ | | SKIP IF NOT PROCESSING A LITERAL | DAPM8910 |
| 1003 | 01417 | 0 01 01427 | JMP | LIIF | GO PROCESS ASCII LITERAL | DAPM8920 |
| 1004 | 01420 | 140040 | CRA | | | DAPM8930 |
| 1005 | 01421 | 0 04 00460 | STA | ALFA | SET ALFA FLAG | DAPM8940 |
| 1006 | 01422 | 0 02 00443 | LDA | DOCT | FETCH CONVERSION MODE INDICATOR | DAPM8950 |
| 1007 | 01423 | 101400 | SMI | | SKIP IF DECIMAL MODE | DAPM8960 |
| 1008 | 01424 | -0 10 00557 | JST* | CER | NOT IN DEC MODE - VERY STRANGE | DAPM8970 |
| 1009 | 01425 | 0 10 01445 | LET1 JST | STF | PACK THE CHARACTER | DAPM8980 |
| 1010 | 01426 | 0 01 01314 | JMP | SYLO | CONTINUE SCAN | DAPM8990 |
| 1011 | | | | | | DAPM9000 |
| 1012 | | | | | | DAPM9010 |
| 1013 | | | | | | DAPM9020 |
| 1014 | 01427 | 0 02 00444 | LITP LDA | TERM | FETCH TERMINATING CHARACTER | DAPM9030 |
| 1015 | 01430 | 0 05 00644 | ERA | C301 | TEST FOR ASCII 'A' | DAPM9040 |
| 1016 | 01431 | 100040 | SZE | | SKIP IF 'A' | DAPM9050 |
| 1017 | 01432 | -0 10 00557 | JST* | CER | ERROR - CONSIDER IT AN 'A' ANYWAY | DAPM9060 |
| 1018 | 01433 | -0 10 00575 | JST* | CHRD | FETCH NEXT CHARACTER | DAPM9070 |
| 1019 | 01434 | 141240 | ICR | | A(1-8) & CHARACTER, A(9-16) & 0 | DAPM9080 |
| 1020 | 01435 | 0 04 00445 | STA | NUM | SAVE FIRST CHARACTER | DAPM9090 |
| 1021 | 01436 | -0 10 00575 | JST* | CHRD | FETCH NEXT CHARACTER | DAPM9100 |
| 1022 | 01437 | 0 05 00445 | ERA | NUM | INSERT FIRST CHARACTER | DAPM9110 |
| 1023 | 01440 | 0 04 00445 | STA | NUM | SAVE THEM BOTH IN NUM | DAPM9120 |
| 1024 | 01441 | -0 10 00575 | JST* | CHRD | FETCH NEXT CHAR. FOR COMPATIBILITY | DAPM9130 |
| 1025 | 01442 | 0 01 01337 | JMP | SYLA | PROCESS THE LITERAL | DAPM9140 |
| 1026 | | | | | | DAPM9150 |
| 1027 | 01443 | 0 04 00506 | LITS STA | LIIF | SET LITERAL FLAG | DAPM9160 |
| 1028 | 01444 | 0 01 01314 | JMP | SYLO | | DAPM9170 |
| 1029 | | | | | | DAPM9180 |
| 1030 | | | | | | DAPM9190 |
| 1031 | | | | | | DAPM9200 |
| 1032 | | | | | | DAPM9210 |
| 1033 | | | | | | DAPM9220 |

EJCT *****

```
1034 *
1035 *   STF : CHARACTER PACKING ROUTINE
1036 *
1037 *
1038 *   CALLING SEQUENCE:
1039 *       JSI   STF
1040 *       .....RETURN
1041 *
1042 *   THIS ROUTINE WILL PACK 1-6 CHARACTERS INTO
1043 *   SYL-SYL+2 AND IGNORE ADDITIONAL CHARACTERS.
1044 *   ONE CHARACTER IS INSERTED EACH TIME THIS
1045 *   ROUTINE IS CALLED.
1046 *
1047 *
1048 01445 0 000000 STF DAC **   ENTRY
1049 01446 0 02 00465 LDA SYL3   FETCH THE WORD COUNTER
1050 01447 101040 SNZ           IF NON-ZERO, NO OVERFLOW YET
1051 01450 -0 01 01445 JMP* STF   OVERFLOW CONDITION EXISTS-EXIT
1052 01451 0 02 00444 LDA TERM   FETCH CHARACTER TO BE PACKED
1053 01452 0 07 00635 SUB C240   CONVERT IT TO INTERNAL CODE
1054 01453 0 03 00634 ANA C71    RETAIN SIX BITS OF SIGNIFICANCE
1055 01454 0400 72 LRL 6      PLACE NEW CHARACTER IN B REGISTER
1056 01455 -0 02 00505 LDA* SYLP   FETCH CURRENT PACKING WORD
1057 01456 0410 72 LLL 6      SHIFT NEW CHARACTER INTO IT
1058 01457 -0 04 00505 STA* SYLP   REPLACE THE WORD
1059 01460 0 12 00464 IRS SYL2    INCREMENT CHARACTER COUNT
1060 01461 -0 01 01445 JMP* STF   UPDATE NOT REQUIRED, EXIT
1061 01462 0 12 00465 IRS SYL3    INCREMENT WORD COUNT
1062 01463 101000 NOP         OVERFLOW IS POSSIBLE
1063 01464 0 12 00505 IRS SYLP   INCREMENT WORD POINTER
1064 01465 0 02 00672 LDA M2     RESET CHARACTER COUNTER
1065 01466 0 04 00464 STA SYL2   FOR TWO CHARACTERS/WORD
1066 01467 -0 01 01445 JMP* STF   EXIT
1067 *
1068 *
1069 *   EJCT *****DAPM9580
```

```
1070 *
1071 *   OPSR: OP CODE TABLE SEARCH ROUTINE
1072 *
1073 *
1074 *   CALLING SEQUENCE:
1075 *       JSI   OPSR
1076 *       .....RETURN   IF MACHINE OP
1077 *
1078 *   IF THE OP-CODE IS A PSEUDO-OP, CONTROL
1079 *   WILL BE PASSED TO THE PROPER PROCESSING
1080 *   ROUTINE. THIS ROUTINE CHECKS FOR INHIBITED
1081 *   ASSEMBLY AND UNDEFINED AND ILLEGAL OPCODES.
1082 *
1083 *
1084 01470 0 000000 OPSR DAC **
1085 01471 0 35 00777 LDX XFD    POINTER TO FREE ENTRY IN TABLE
1086 01472 0 02 00450 LDA SYL     FIRST 2 CHARACTERS OF TARGET NAME
1087 01473 0 05 00620 ERA B3      INDIRECT ALLOWED BIT
1088 01474 1 04 00000 STA 0,1    PLACE WORD IN TABLE
1089 01475 0 02 00451 LDA SYL+1   LAST 2 CHARACTERS IN TARGET NAME
1090 01476 0 05 00620 ERA B3      MEMORY REFERENCE BIT
1091 01477 1 04 00001 STA 1,1    PLACE WORD IN TABLE
1092 01500 0 35 00774 LDX TOPS   ADDRESS OF FIRST WORD IN TABLE
1093 01501 1 02 00000 OPS1 LDA 0,1  FETCH FIRST WORD OF ENTRY FROM TABLE
1094 01502 0 04 00472 STA CB11   SAVE IT FOR LATER USE
1095 01503 0 05 00450 ERA SYL     MERGE WITH FIRST TWO CHARACTERS
1096 *   OF TARGET NAME
1097 01504 0 03 00665 ANA CHR2   ELIMINATE CODE BITS
1098 01505 100040 SZE       SKIP IF CHARACTERS MATCH
1099 01506 0 01 01536 JMP OPS2   OTHERWISE ADVANCE TO NEXT ENTRY
1100 01507 1 02 00001 LDA 1,1    FETCH SECOND WORD OF ENTRY FROM TABLE
1101 01510 0 04 00474 STA CB12   SAVE IT FOR LATER USE
1102 01511 0 05 00451 ERA SYL+1   MERGE WITH SECOND TWO CHARACTERS OF
1103 *   TARGET NAME
1104 01512 0 03 00665 ANA CHR2   ELIMINATE CODE BITS
1105 01513 100040 SZE       SKIP IF CHARACTERS MATCH
1106 01514 0 01 01536 JMP OPS2   OTHERWISE ADVANCE TO NEXT ENTRY
```

| | | | | | | | |
|------|-------|-------------|------|------|-------|--|----------|
| 1107 | 01515 | 1 02 00002 | | LDA | 2,1 | FETCH THIRD WORD OF ENTRY - CONTAINS | DAPM9960 |
| 1108 | | | * | | | OPCODE IF A MACHINE-OP, OR ADDRESS OF | DAPM9970 |
| 1109 | | | * | | | PROCESSOR IF PSEUDO-OP. | DAPM9980 |
| 1110 | 01516 | 0 04 00437 | | STA | WORD | SAVE IT | DAPM9990 |
| 1111 | 01517 | 0 02 00472 | | LDA | CB11 | RETRIEVE FIRST WORD OF ENTRY | DAP10000 |
| 1112 | 01520 | 100400 | | SPL | | IF POSITIVE, ITS A MACHINE OP | DAP10010 |
| 1113 | 01521 | 0 01 01540 | | JMP | OPS3 | OTHERWISE IT'S A PSEUDO-OP | DAP10020 |
| 1114 | 01522 | 0414 77 | DACX | LGL | 1 | A(1)& ADDRESS REQUIRED FLAG | DAP10030 |
| 1115 | 01523 | 100400 | | SPL | | SKIP IF ADDRESS NOT REQUIRED | DAP10040 |
| 1116 | 01524 | 0 12 00424 | | IRS | ADRF | SET ADDRESS REQUIRED FLAG | DAP10050 |
| 1117 | 01525 | 0414 77 | | LGL | 1 | A(1)& INDIRECT ALLOWED FLAG | DAP10060 |
| 1118 | 01526 | 100400 | | SPL | | SKIP IF INDIRECT NOT ALLOWED | DAP10070 |
| 1119 | 01527 | 0 12 00425 | | IRS | INDA | SET INDIRECT ALLOWED FLAG | DAP10080 |
| 1120 | 01530 | -0 10 00576 | | JST* | ITST | TEST FOR INHIBITED ASSEMBLY | DAP10090 |
| 1121 | 01531 | 0 02 00000 | | LDA | 0 | FETCH ADDRESS OF ENTRY | DAP10100 |
| 1122 | 01532 | 0 11 00503 | | CAS | BOPS | COMPARE WITH END OF LEGAL OP-CODES | DAP10110 |
| 1123 | 01533 | 101000 | | NOP | | ERROR-ILLEGAL OP-CODE | DAP10120 |
| 1124 | 01534 | -0 10 00563 | | JST* | OER | ERROR-ILLEGAL OP-CODE | DAP10130 |
| 1125 | 01535 | -0 01 01470 | | JMP* | OPSR | RETURN TO PROCESS MACHINE-OP | DAP10140 |
| 1126 | 01536 | 0 10 02512 | OPS2 | JST | ISCP | INCREMENT OPCODE TABLE POINTER | DAP10150 |
| 1127 | 01537 | 0 01 01501 | | JMP | OPS1 | GO CHECK NEXT ENTRY | DAP10160 |
| 1128 | 01540 | 0 02 00474 | OPS3 | LDA | CB12 | HERE IF PSEUDO-OP | DAP10170 |
| 1129 | 01541 | 101400 | | SMI | | CHECK FORCED ASSEMBLY FLAG | DAP10180 |
| 1130 | 01542 | -0 10 00576 | | JST* | ITST | NOT SET - CHECK FOR INHIBITED ASSEMBLY | DAP10190 |
| 1131 | 01543 | -0 01 00437 | | JMP* | WORD | EXIT TO PSEUDO-OP PROCESSOR | DAP10200 |
| 1132 | | | * | | | | DAP10210 |
| 1133 | | | * | | | | DAP10220 |
| 1134 | | | | EJCT | ***** | | DAP10230 |

| | | | | | | | |
|------|-------|------------|-----|------|-------|------------------------------|----------|
| 1135 | | | * | | | | DAP10240 |
| 1136 | | | * | | | | DAP10250 |
| 1137 | | | * | | | | DAP10260 |
| 1138 | | | * | | | | DAP10270 |
| 1139 | 01544 | 0 12 00432 | DAC | IRS | DACF | SET 14/15 BIT REFERENCE FLAG | DAP10280 |
| 1140 | 01545 | 0 04 00437 | | STA | WORD | SET OPCODE TO ZERO | DAP10290 |
| 1141 | 01546 | 0 02 00472 | | LDA | CB11 | RETRIEVE CODE BITS | DAP10300 |
| 1142 | 01547 | 0 01 01522 | | JMP | DACX | NOW PROCESS AS MACHINE-OP | DAP10310 |
| 1143 | | | * | | | | DAP10320 |
| 1144 | | | * | | | | DAP10330 |
| 1145 | | | | EJCT | ***** | | DAP10340 |

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|------|-------|-------------|------|------|------|--|--|---|----------|
| 1220 | | | * | | | | | | |
| 1221 | 01654 | 1 02 00000 | MDE | LDA | 0,1 | | | FETCH FIRST WORD OF THIS ENTRY | DAP11090 |
| 1222 | 01655 | 0 03 00621 | | ANA | B4 | | | ISOLATE EXTERNAL FLAG | DAP11100 |
| 1223 | 01656 | 101040 | | SNZ | | | | SKIP IF EXTERNAL SYMBOL ENTRY | DAP11110 |
| 1224 | 01657 | 0 01 01664 | | JMP | **5 | | | NOT EXTERNAL, CHECK INTERNAL MULT. DEF. | DAP11120 |
| 1225 | 01660 | 1 02 00002 | | LDA | 2,1 | | | FETCH THIRD WORD OF EXTERNAL ENTRY | DAP11130 |
| 1226 | 01661 | 101040 | | SNZ | | | | SKIP IF 5TH AND 6TH CHARS. ARE NOT SPACES | DAP11140 |
| 1227 | 01662 | -0 01 00570 | | JMP* | MD+P | | | *M' ERROR - NAME IS DECLARED EXTERNAL | DAP11150 |
| 1228 | 01663 | 0 01 01627 | | JMP | DEND | | | NAMES ARE DIFFERENT - CONTINUE SCAN | DAP11160 |
| 1229 | 01664 | 1 02 00001 | | LDA | 1,1 | | | FETCH SECOND WORD OF ENTRY | DAP11170 |
| 1230 | 01665 | 100400 | | SPL | | | | SKIP IF SUBR FLAG IS NOT SET | DAP11180 |
| 1231 | 01666 | 0 01 01716 | | JMP | SUBP | | | GO PROCESS SUBR ENTRY | DAP11190 |
| 1232 | 01667 | 0 02 00431 | | LDA | SEIF | | | IF SETF > 0, MULT. DEF. IS OK | DAP11200 |
| 1233 | 01670 | 100040 | | SZE | | | | SKIP IF NOT SET | DAP11210 |
| 1234 | 01671 | 0 01 01643 | | JMP | SEIJ | | | GO GIVE SYMBOL NEW VALUE | DAP11220 |
| 1235 | 01672 | 1 02 00000 | | LDA | 0,1 | | | GET FIRST WORD OF TABLE ENTRY | DAP11230 |
| 1236 | 01673 | 0 03 00620 | | ANA | B3 | | | ISOLATE BIT 3 | DAP11240 |
| 1237 | 01674 | 100040 | | SZE | | | | NOT SET | DAP11250 |
| 1238 | 01675 | -0 01 00570 | | JMP* | MD+P | | | BIT NOW SET - *M' ERROR REQUIRED | DAP11260 |
| 1239 | 01676 | 1 02 00002 | | LDA | 2,1 | | | GET ORIGINAL DEFINITION | DAP11270 |
| 1240 | 01677 | 0 07 00405 | | SUB | CLUC | | | COMPARE TO CURRENT DEFINITION | DAP11280 |
| 1241 | 01700 | 101040 | | SNZ | | | | UNEQUAL | DAP11290 |
| 1242 | 01701 | 0 01 01651 | | JMP | DXIT | | | EQUAL, SO OK | DAP11300 |
| 1243 | 01702 | 0 02 00436 | | LDA | ZP | | | SKIP IF NOT OUTPUT PASS | DAP11310 |
| 1244 | 01703 | 101400 | | SMI | | | | NOT OUTPUT PASS | DAP11320 |
| 1245 | 01704 | 0 01 03777 | | JMP | PEKR | | | OUTPUT PASS - REPORT PHASE ERROR | DAP11330 |
| 1246 | 01705 | 0 02 00461 | | LDA | TSI | | | 1ST PASS, BUT OF 1 OR 2. Q. | DAP11340 |
| 1247 | 01706 | 101400 | | SMI | | | | 1ST OF 2 PASS ASSEMBLY | DAP11350 |
| 1248 | 01707 | -0 01 00570 | | JMP* | MD+P | | | ONE PASS - REPORT *M' ERROR NOW | DAP11360 |
| 1249 | 01710 | 0 02 00620 | | LDA | B3 | | | CLEAR BIT 3 OF TABLE ENTRY | DAP11370 |
| 1250 | 01711 | 140401 | | CMA | | | | * | DAP11380 |
| 1251 | 01712 | 1 03 00000 | | ANA | 0,1 | | | * | DAP11390 |
| 1252 | 01713 | 0 06 00620 | | ADD | B3 | | | AND THEN SET IT | DAP11400 |
| 1253 | 01714 | 1 04 00000 | | STA | 0,1 | | | AND PUT BACK IN TABLE FOR PASS TWO | DAP11410 |
| 1254 | 01715 | 0 01 01651 | | JMP | DXIT | | | | DAP11420 |
| 1255 | | | * | | | | | | DAP11430 |
| 1256 | 01716 | 0416 77 | SUBP | ALR | 1 | | | TEST FOR SYNONYM | DAP11440 |
| | | | | | | | | | DAP11450 |

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|------|-------|-------------|------|------|--------|--|--|---|----------|
| 1257 | 01717 | 100400 | | SPL | | | | SKIP IF NO SYNONYM | DAP11460 |
| 1258 | 01720 | 0 01 01752 | | JMP | SSYN | | | GO PROCESS SYNONYM | DAP11470 |
| 1259 | 01721 | 0 02 00000 | SUBC | LDA | 0 | | | FETCH ADDRESS OF CURRENT ENTRY | DAP11480 |
| 1260 | 01722 | 0 11 00471 | | CAS | BSYM | | | COMPARE WITH TABLE BASE | DAP11490 |
| 1261 | 01723 | 100000 | | SKP | | | | NOT LOWEST IN TABLE | DAP11500 |
| 1262 | 01724 | 0 01 01734 | | JMP | SUBX | | | LOWEST ENTRY - SKIP SYNONYM CHECK | DAP11510 |
| 1263 | 01725 | 0 07 00624 | | SUB | C2 | | | CALCULATE ADDRESS OF 2ND WORD OF LAST ENTRY | DAP11520 |
| 1264 | 01726 | 0 04 00475 | | STA | T | | | IF THE PREVIOUS ENTRY HAS THE | DAP11530 |
| 1265 | 01727 | -0 02 00475 | | LDA* | T | | | SUBR AND SYNONYM FLAGS SET, | DAP11540 |
| 1266 | 01730 | 0 03 00622 | | ANA | B12 | | | THEN THE CURRENT ENTRY DOES NOT | DAP11550 |
| 1267 | 01731 | 0 05 00622 | | ERA | B12 | | | DEFINE AN ENTRY POINT | DAP11560 |
| 1268 | 01732 | 101040 | | SNZ | | | | SKIP IF PREVIOUS ENTRY IS NOT A SYNONYM | DAP11570 |
| 1269 | 01733 | 0 01 01627 | | JMP | DEND | | | FALSE ALARM - CONTINUE SCAN | DAP11580 |
| 1270 | 01734 | -0 10 00577 | SUBX | JST* | OBID | | | FORCE ORG BLOCK | DAP11590 |
| 1271 | 01735 | 000007 | | OCT | 7 | | | | DAP11600 |
| 1272 | 01736 | 0 02 00624 | | LDA | C2 | | | | DAP11610 |
| 1273 | 01737 | 0 04 00513 | | STA | ROOM | | | | DAP11620 |
| 1274 | 01740 | 0 02 00673 | | LDA | M3 | | | SET COUNTER FOR 3 WORD NAME | DAP11630 |
| 1275 | 01741 | 0 04 00475 | | STA | T | | | | DAP11640 |
| 1276 | 01742 | 140040 | | CRA | | | | | DAP11650 |
| 1277 | 01743 | 1 13 00000 | | IMA | 0,1 | | | FETCH WORD AND CLEAR ITS POSITION | DAP11660 |
| 1278 | 01744 | 0 10 01760 | | JST | WSUB | | | WRITE NAME WORD | DAP11670 |
| 1279 | 01745 | 0 12 00000 | | IRS | 0 | | | INCREMENT INDEX | DAP11680 |
| 1280 | 01746 | 0 12 00475 | | IRS | T | | | INCREMENT COUNTER | DAP11690 |
| 1281 | 01747 | 0 01 01742 | | JMP | *-> | | | GO BACK FOR NEXT WORD | DAP11700 |
| 1282 | 01750 | 0 12 00462 | | IRS | FREE | | | INCREMENT TABLE AVAILABILITY COUNT | DAP11710 |
| 1283 | 01751 | 0 01 01630 | | JMP | DEND+1 | | | CONTINUE SCAN | DAP11720 |
| 1284 | 01752 | 140040 | SSYN | CRA | | | | DELETE SYNONYM FROM TABLE | DAP11730 |
| 1285 | 01753 | 1 04 00000 | | STA | 0,1 | | | | DAP11740 |
| 1286 | 01754 | 0 12 00467 | | IRS | SYMC | | | INCREMENT SCAN COUNTER TO COVER SYNONYM | DAP11750 |
| 1287 | 01755 | 0 10 02512 | | JST | ISCP | | | INCREMENT SYMBOL TABLE POINTER | DAP11760 |
| 1288 | 01756 | 0 12 00462 | | IRS | FREE | | | INCREMENT TABLE AVAILABILITY COUNT | DAP11770 |
| 1289 | 01757 | 0 01 01734 | | JMP | SUBX | | | GO OUTPUT ENTRY NAME | DAP11780 |
| 1290 | | | * | | | | | | DAP11790 |
| 1291 | | | * | | | | | HERE TO OUTPUT TWO CHARACTERS OF ENTRY NAME | DAP11800 |
| 1292 | | | * | | | | | | DAP11810 |
| 1293 | 01760 | 0 000000 | WSUB | DAC | ** | | | PACKED CHAR. IN A ON ENTRY | DAP11820 |

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|------------------------|------------|-----------------------|----------|
| 1294 01761 -0 10 00605 | JST* UPAK | UNPACK THE CHARACTERS | DAP11830 |
| 1295 01762 -0 10 00577 | JST* OBID | WRITE TWO CHARACTERS | DAP11840 |
| 1296 01763 000012 | OCT 12 | | DAP11850 |
| 1297 01764 -0 01 01760 | JMP* WSUB | EXIT | DAP11860 |
| 1298 | * | | DAP11870 |
| 1299 | * | | DAP11880 |
| 1300 | EJCT ***** | | DAP11890 |

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|------------------------|---------------|---|--|----------|
| 1301 | * | | | DAP11900 |
| 1302 | * | DWRD: OUIPUT WORD | | DAP11910 |
| 1303 | * | | | DAP11920 |
| 1304 | * | | | DAP11930 |
| 1305 | * | CALLING SEQUENCE | | DAP11940 |
| 1306 | * | JSI DWRD | | DAP11950 |
| 1307 | * |RETURN | | DAP11960 |
| 1308 | * | | | DAP11970 |
| 1309 | * | THE CONTENTS OF THE FOLLOWING LOCATIONS CONTROL | | DAP11980 |
| 1310 | * | THE OUTPUT SEQUENCE: | | DAP11990 |
| 1311 | * | | | DAP12000 |
| 1312 | * | CBT1 - PSEUDU-OP AND PURE DATA INDICATORS | | DAP12010 |
| 1313 | * | CBT2 - MACHINE UPCODE CLASSIFICATION FLAGS | | DAP12020 |
| 1314 | * | WORD - MACHINE UPCODE | | DAP12030 |
| 1315 | * | SUM - PURE DATA OR ADDRESS | | DAP12040 |
| 1316 | * | RBIT - RELOCATION MODE UF ADDRESS | | DAP12050 |
| 1317 | * | | | DAP12060 |
| 1318 | * | | | DAP12070 |
| 1319 01765 0 000000 | DWRD DAC ** | | | DAP12080 |
| 1320 01766 -0 10 00545 | JST* CPC | INSERT PROGRAM COUNTER IN LIST BUFFER | | DAP12090 |
| 1321 01767 0 02 00417 | LDA RBIT | TEST FOR RELOCATION ERROR | | DAP12100 |
| 1322 01770 0 11 00672 | CAS M2 | X | | DAP12110 |
| 1323 01771 0 11 00624 | CAS C2 | X | | DAP12120 |
| 1324 01772 101000 | NOP | YES% | | DAP12130 |
| 1325 01773 0 10 04006 | JST REKR | FLAG 'R' | | DAP12140 |
| 1326 01774 140040 | CRA | | | DAP12150 |
| 1327 01775 0 11 00472 | CAS CB11 | CHECK DATA WURD TYPE | | DAP12160 |
| 1328 01776 0 01 02003 | JMP POPB | PSEUDU-OP | | DAP12170 |
| 1329 01777 0 01 02016 | JMP POPY | PURE DATA | | DAP12180 |
| 1330 02000 0 02 00423 | LDA SUM | FETCH ADDRESS | | DAP12190 |
| 1331 02001 140100 | SSP | MASK TO 15 BITS | | DAP12200 |
| 1332 02002 0 04 00423 | STA SUM | REPLACE ADDRESS WORD | | DAP12210 |
| 1333 02003 0 02 00474 | POPB LDA CB12 | FETCH OPCUDE TYPE FLAGS | | DAP12220 |
| 1334 02004 100400 | SPL | SKIP IF NOT SHIFT | | DAP12230 |
| 1335 02005 0 01 02027 | JMP SHUP | SHIFT - GU FURMAT SHIFT INSTRUCTION | | DAP12240 |
| 1336 02006 0414 77 | LGL 1 | A(1)& I/O INSTRUCTION FLAG | | DAP12250 |
| 1337 02007 100400 | SPL | SKIP IF NOT I/O INSTRUCTION | | DAP12260 |

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|------|-------|-------------|------|----------|-------------------------------------|----------|
| 1338 | 02010 | 0 01 02044 | JMP | IOUP | GO FORMAT I/O INSTRUCTION | DAPI2270 |
| 1339 | 02011 | 0414 77 | LGL | 1 | A(1)& MEMORY REFERENCE FLAG | DAPI2280 |
| 1340 | 02012 | 100400 | SPL | | SKIP IF NOI MEMORY REFERENCE | DAPI2290 |
| 1341 | 02013 | 0 01 02056 | JMP | MRUP | GO FORMAT MEMORY REFERENCE INST. | DAPI2300 |
| 1342 | | | | | | DAPI2310 |
| 1343 | | | * | | | DAPI2320 |
| 1344 | | | * | | FORMAT GENERIC CLASS INSTRUCTION | DAPI2330 |
| 1345 | 02014 | 0 02 00437 | LDA | WORD | FETCH GENERIC OPCODE | DAPI2340 |
| 1346 | 02015 | 0 04 00423 | STA | SUM | PLACE IT IN SUM FOR LISTING | DAPI2350 |
| 1347 | 02016 | -0 10 00546 | POPY | JST* | PRINT PURE DATA | DAPI2360 |
| 1348 | 02017 | 0 02 00423 | LDA | SUM | FETCH DATA VALUE | DAPI2370 |
| 1349 | 02020 | 0 04 00437 | STA | WORD | IT LOOKS LIKE A GENERIC INSTRUCTION | DAPI2380 |
| 1350 | 02021 | 140040 | GOP | CRA | | DAPI2390 |
| 1351 | 02022 | 0 04 00440 | CNV9 | STA | W2 | DAPI2400 |
| 1352 | 02023 | -0 10 00577 | CNV8 | JST* | OBID | DAPI2410 |
| 1353 | 02024 | 000001 | OCT | 1 | CLEAR LOW ORDER CODE BITS | DAPI2420 |
| 1354 | 02025 | 0 12 00405 | IRS | CLUC | PLACE WORD IN OBJECT TEXT | DAPI2430 |
| 1355 | 02026 | -0 01 01765 | JMP* | DWRD | INCREMENT THE LOCATION COUNTER | DAPI2440 |
| 1356 | | | * | | RETURN TO CALLER | DAPI2450 |
| 1357 | | | * | | | DAPI2460 |
| 1358 | | | * | | FORMAT SHIFT CLASS INSTRUCTION | DAPI2470 |
| 1359 | 02027 | 0 02 00423 | SHOP | LDA | SUM | DAPI2480 |
| 1360 | 02030 | 140407 | TCA | | FETCH SHIFT COUNT | DAPI2490 |
| 1361 | 02031 | 0 03 00634 | ANA | C77 | COMPLEMENT SHIFT COUNT | DAPI2500 |
| 1362 | 02032 | 0 06 00437 | ADD | WORD | MASK 10 SIX BITS | DAPI2510 |
| 1363 | 02033 | 0 04 00437 | STA | WORD | ADD TO SHIFT OPCODE | DAPI2520 |
| 1364 | 02034 | 0404 76 | LGR | 2 | SAVE COMPLETE SHIFT INSTRUCTION | DAPI2530 |
| 1365 | 02035 | -0 10 00600 | JST* | OPID | FORMAT FOR PRINTING OP-CODE PART | DAPI2540 |
| 1366 | 02036 | 002021 | VFD | 8,4,8,17 | PLACE OPCODE IN LISTING | DAPI2550 |
| 1367 | 02037 | 0 02 00437 | LDA | WORD | FOUR DIGITS STARTING IN COLUMN 18 | DAPI2560 |
| 1368 | 02040 | 0415 66 | ALS | 10 | FETCH THE INSTRUCTION | DAPI2570 |
| 1369 | 02041 | -0 10 00600 | JST* | OPID | SET UP TO PRINT SHIFT COUNT | DAPI2580 |
| 1370 | 02042 | 001026 | VFD | 8,2,8,22 | PLACE SHIFT COUNT IN LISTING | DAPI2590 |
| 1371 | 02043 | 0 01 02021 | JMP | GOP | TWO DIGITS STARTING IN COLUMN 23 | DAPI2600 |
| 1372 | | | * | | PLACE INSTRUCTION IN OBJECT TEXT | DAPI2610 |
| 1373 | | | * | | | DAPI2620 |
| 1374 | | | * | | FORMAT I/O CLASS INSTRUCTION | DAPI2630 |

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|------|-------|-------------|------|----------|---|-------------------------|----------|
| 1375 | 02044 | 0 02 00423 | IOOP | LDA | SUM | FETCH I/O FUNCTION CODE | DAPI2640 |
| 1376 | 02045 | 0 06 00437 | ADD | WORD | MERGE WITH OPCODE | DAPI2650 | |
| 1377 | 02046 | 0 04 00437 | STA | WORD | SAVE COMPLETE INSTRUCTION | DAPI2660 | |
| 1378 | 02047 | -0 10 00600 | JST* | OPID | PRINT OPCODE | DAPI2670 | |
| 1379 | 02050 | 001021 | VFD | 8,2,8,17 | TWO DIGITS STARTING IN COLUMN 18 | DAPI2680 | |
| 1380 | 02051 | 0 02 00437 | LDA | WORD | RETRIEVE THE INSTRUCTION | DAPI2690 | |
| 1381 | 02052 | 0415 74 | ALS | 4 | POSITION FUNCTION CODE FOR PRINTING | DAPI2700 | |
| 1382 | 02053 | -0 10 00600 | JST* | OPID | PRINT THE FUNCTION CODE | DAPI2710 | |
| 1383 | 02054 | 002024 | VFD | 8,4,8,20 | FOUR DIGITS STARTING IN COLUMN 21 | DAPI2720 | |
| 1384 | 02055 | 0 01 02021 | JMP | GOP | PLACE INSTRUCTION IN OBJECT TEXT | DAPI2730 | |
| 1385 | | | * | | | DAPI2740 | |
| 1386 | | | * | | FORMAT MEMORY REFERENCE CLASS INSTRUCTION | DAPI2750 | |
| 1387 | | | * | | | DAPI2760 | |
| 1388 | 02056 | 0 02 00437 | MRUP | LDA | WORD | DAPI2770 | |
| 1389 | 02057 | 101400 | SMI | | FETCH OPCODE WITH INDIRECT FLAG | DAPI2780 | |
| 1390 | 02060 | 0 01 02064 | JMP | **4 | SKIP IF INDIRECT REFERENCE | DAPI2790 | |
| 1391 | 02061 | 0 02 00642 | LDA | C255 | NOT INDIRECT | DAPI2800 | |
| 1392 | 02062 | -0 10 00574 | JST* | CSND | LOAD ASCII MINUS SIGN | DAPI2810 | |
| 1393 | 02063 | 000020 | DEC | 16 | INSERT IT IN LISTING | DAPI2820 | |
| 1394 | 02064 | 140040 | CRA | | COLUMN 17 | DAPI2830 | |
| 1395 | 02065 | 0 04 00440 | STA | W2 | CLEAR LOW ORDER BITS | DAPI2840 | |
| 1396 | 02066 | 0 02 00432 | LDA | DACF | OF OUTPUT WORD | DAPI2850 | |
| 1397 | 02067 | 101040 | SNZ | | FETCH THE DAC FLAG | DAPI2860 | |
| 1398 | 02070 | 0 01 02112 | JMP | MR1 | SKIP IF SET | DAPI2870 | |
| 1399 | 02071 | 0 02 00420 | LDA | E | NO - NOT A DAC | DAPI2880 | |
| 1400 | 02072 | 100040 | SZE | | FETCH FORWARD REFERENCE FLAG | DAPI2890 | |
| 1401 | 02073 | 0 01 02175 | JMP | MRU | SKIP IF KNOWN REFERENCE | DAPI2900 | |
| 1402 | 02074 | 0 02 00423 | LDA | SUM | PROCESS FORWARD REFERENCE DAC | DAPI2910 | |
| 1403 | 02075 | 0404 76 | LGR | 2 | FETCH ADDRESS | DAPI2920 | |
| 1404 | 02076 | -0 10 00600 | JST* | OPID | POSITION TO PRINT FIRST DIGIT | DAPI2930 | |
| 1405 | 02077 | 000423 | VFD | 8,1,8,19 | PRINT FIRST DIGIT | DAPI2940 | |
| 1406 | 02100 | 0 02 00423 | LDA | SUM | ONE DIGIT IN COLUMN 20 | DAPI2950 | |
| 1407 | 02101 | 0414 77 | LGL | 1 | FETCH THE ADDRESS | DAPI2960 | |
| 1408 | 02102 | -0 10 00600 | JST* | OPID | POSITION TO PRINT LAST FIVE DIGITS | DAPI2970 | |
| 1409 | 02103 | 002424 | VFD | 8,5,8,20 | PRINT LAST FIVE DIGITS | DAPI2980 | |
| 1410 | 02104 | 0 02 00417 | LDA | RBIT | FIVE DIGITS STARTING IN COLUMN 21 | DAPI2990 | |
| 1411 | 02105 | 0 03 00743 | ANA | C3 | FETCH RELOCATION OF ADDRESS | DAPI3000 | |
| | | | | | MASK 10 TWO BITS | | |

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|------|-------|-------------|---------|----------|--|----------|
| 1412 | 02106 | 0416 65 | ALR | 11 | SHIFT TO OPCODE FIELD | DAP13010 |
| 1413 | 02107 | 0 06 00437 | ADD | WORD | PUT IN REST OF WORD | DAP13020 |
| 1414 | 02110 | 0 04 00437 | STA | WORD | SAVE THE RESULT | DAP13030 |
| 1415 | 02111 | 0 01 02142 | JMP | MR5 | CONTINUE PROCESSING | DAP13040 |
| 1416 | 02112 | 0 02 00437 | MRI LDA | WORD | FETCH INSTRUCTION WORD | DAP13050 |
| 1417 | 02113 | 140100 | SSP | | REMOVE INDIRECT BIT | DAP13060 |
| 1418 | 02114 | -0 10 00600 | JST* | OP10 | PRINT THE OPCODE | DAP13070 |
| 1419 | 02115 | 001023 | VFD | 8,2,8,19 | TWO DIGITS STARTING IN COLUMN 20 | DAP13080 |
| 1420 | 02116 | 0 02 00420 | LDA | E | FETCH FORWARD REFERENCE FLAG | DAP13090 |
| 1421 | 02117 | 100040 | SZE | | SKIP IF NOT SET | DAP13100 |
| 1422 | 02120 | 0 01 02175 | JMP | MRU | GO PROCESS FORWARD REFERENCE | DAP13110 |
| 1423 | 02121 | 0 02 00423 | LDA | SUM | FETCH ADDRESS | DAP13120 |
| 1424 | 02122 | 140100 | SSP | | TRUNCATE TO 15 BITS | DAP13130 |
| 1425 | 02123 | 0 04 00423 | STA | SUM | REPLACE THE ADDRESS | DAP13140 |
| 1426 | 02124 | 0415 77 | ALS | 1 | POSITION ADDRESS FOR PRINTING | DAP13150 |
| 1427 | 02125 | -0 10 00600 | JST* | OP10 | PRINT THE ADDRESS | DAP13160 |
| 1428 | 02126 | 002426 | VFD | 8,5,8,22 | FIVE DIGITS STARTING IN COLUMN 23 | DAP13170 |
| 1429 | 02127 | 0 02 00407 | LDA | LODF | FETCH LOAD FLAG | DAP13180 |
| 1430 | 02130 | 101040 | SNZ | | SKIP IF SET | DAP13190 |
| 1431 | 02131 | 0 01 02142 | JMP | MR5 | NOT SET - DO NOT CHECK CROSS SECTOR REF. | DAP13200 |
| 1432 | 02132 | 0 02 00423 | LDA | SUM | FETCH ADDRESS OF INSTRUCTION | DAP13210 |
| 1433 | 02133 | 0 03 00625 | ANA | C7X | ISOLATE SECTOR NUMBER | DAP13220 |
| 1434 | 02134 | 101040 | SNZ | | SKIP IF NOT SECTOR REFERENCE | DAP13230 |
| 1435 | 02135 | 0 01 02142 | JMP | MR5 | SECTOR ZERO REFERENCE IS ALWAYS OK | DAP13240 |
| 1436 | 02136 | 0 05 00405 | ERA | CLUC | MERGE WITH CURRENT ADDRESS | DAP13250 |
| 1437 | 02137 | 0 03 00625 | ANA | C7X | ISOLATE SECTOR BITS | DAP13260 |
| 1438 | 02140 | 100040 | SZE | | SKIP IF CURRENT SECTOR REFERENCE | DAP13270 |
| 1439 | 02141 | -0 10 00564 | JST* | SEK | CROSS SECTOR REFERENCE - FLAG 'S' ERROR | DAP13280 |
| 1440 | 02142 | 0 02 00423 | MRS LDA | SUM | FETCH ADDRESS | DAP13290 |
| 1441 | 02143 | 0400 73 | LRL | 5 | PUT LOW ORDER 5 BITS IN B REGISTER | DAP13300 |
| 1442 | 02144 | 0 06 00437 | ADD | WORD | ADD IN OP-CODE | DAP13310 |
| 1443 | 02145 | 0 06 00427 | ADD | TAG | ADD IN TAG | DAP13320 |
| 1444 | 02146 | 0 04 00437 | STA | WORD | SAVE RESULT IN WORD | DAP13330 |
| 1445 | 02147 | 000201 | IAB | | PUT LOW ORDER ADDRESS BITS IN A(1)-A(5) | DAP13340 |
| 1446 | 02150 | 0 03 00623 | ANA | B174 | ELIMINATE ANY OTHER BITS | DAP13350 |
| 1447 | 02151 | 0 06 00440 | ADD | W2 | INSERT LOW HALF | DAP13360 |
| 1448 | 02152 | 0 04 00440 | STA | W2 | SAVE THE RESULT | DAP13370 |

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|------|-------|-------------|----------|----------|---------------------------------------|----------|
| 1449 | 02153 | 0 02 00427 | LDA | TAG | FETCH TAG | DAP13380 |
| 1450 | 02154 | 0406 77 | ARR | 1 | POSITION IT FOR PRINTING | DAP13390 |
| 1451 | 02155 | -0 10 00600 | JST* | OP10 | PRINT THE TAG | DAP13400 |
| 1452 | 02156 | 000421 | VFD | 8,1,8,17 | ONE DIGIT IN COLUMN 18 | DAP13410 |
| 1453 | 02157 | 0 02 00420 | LDA | E | FETCH FORWARD REFERENCE FLAG | DAP13420 |
| 1454 | 02160 | 100040 | SZE | | SKIP IF NOT SET | DAP13430 |
| 1455 | 02161 | 0 01 02023 | JMP | CNV8 | FORWARD REFERENCE - GO OUTPUT WORD | DAP13440 |
| 1456 | 02162 | 0 02 00432 | LDA | DACF | FETCH THE DAC FLAG | DAP13450 |
| 1457 | 02163 | 100040 | SZE | | SKIP IF NOT SET | DAP13460 |
| 1458 | 02164 | 0 01 02173 | JMP | DACC | GO WORK ON DAC | DAP13470 |
| 1459 | 02165 | 0 02 00417 | LDA | RB1T | FETCH RELOCATION OF ADDRESS | DAP13480 |
| 1460 | 02166 | 0 03 00743 | ANA | C3 | MASK TO TWO BITS | DAP13490 |
| 1461 | 02167 | 140500 | SSM | | SET MEMORY REFERENCE FLAG | DAP13500 |
| 1462 | 02170 | 0416 67 | ALR | 9 | POSITION FLAGS | DAP13510 |
| 1463 | 02171 | 0 06 00440 | MRR ADD | W2 | INSERT REST OF LOW ORDER WORD | DAP13520 |
| 1464 | 02172 | 0 01 02022 | JMP | CNV9 | GO OUTPUT THE WORD | DAP13530 |
| 1465 | 02173 | 0415 66 | DACC ALS | 10 | POSITION DAC FLAG | DAP13540 |
| 1466 | 02174 | 0 01 02171 | JMP | MRK | GO FINISH PROCESSING | DAP13550 |
| 1467 | 02175 | 0 02 00721 | MRO LDA | AS1R | FETCH ASCII '***' | DAP13560 |
| 1468 | 02176 | -0 04 00722 | STA* | FREF | INDICATE FORWARD REFERENCE ON LISTING | DAP13570 |
| 1469 | 02177 | 0 02 00432 | LDA | DACF | FETCH THE DAC FLAG | DAP13580 |
| 1470 | 02200 | 140500 | SSM | | SET FORWARD REFERENCE FLAG | DAP13590 |
| 1471 | 02201 | 0406 72 | ARR | 6 | CODE IS 110 FOR FORWARD DAC, | DAP13600 |
| 1472 | 02202 | 0 04 00440 | STA | W2 | OR 010 FOR FORWARD 9-BIT. | DAP13610 |
| 1473 | 02203 | 0 01 02142 | JMP | MR5 | GO INSERT SYMBOL NUMBER | DAP13620 |
| 1474 | | | * | | | DAP13630 |
| 1475 | | | * | | | DAP13640 |
| 1476 | | | EJCT | ***** | ***** | DAP13650 |


```
1477 *
1478 * CVPC: CONVERT PROGRAM COUNTER FOR PRINTING DAP13660
1479 * DAP13670
1480 * THE PROGRAM COUNTER IS CONVERTED TO ASCII AND INSERTED IN DAP13680
1481 * THE LISTING BUFFER. DAP13690
1482 * DAP13700
1483 * DAP13710
1484 02204 0 000000 CVPC DAC ** ENTRY DAP13720
1485 02205 0 02 00405 LDA CLUC FETCH THE LOCATION COUNTER DAP13730
1486 02206 0415 77 ALS 1 ADJUST IT FOR THE CONVERSION DAP13740
1487 02207 -0 10 00600 JST* OPID CONVERT IT TO ASCII AND INSERT IN BUFFER DAP13750
1488 02210 002411 VFD 8,5,8,9 5 DIGITS STARTING AT COLUMN 10 DAP13760
1489 02211 -0 01 02204 JMP* CVPC EXIT DAP13770
1490 * DAP13780
1491 * DAP13790
1492 * CDAT: CONVERT DATA FOR PRINTING DAP13800
1493 * DAP13810
1494 * THE SIX DIGIT OCTAL VALUE IN SUM IS CONVERTED DAP13820
1495 * TO ASCII AND INSERTED IN THE LISTING BUFFER. DAP13830
1496 * DAP13840
1497 * DAP13850
1498 02212 0 000000 CDAT DAC ** ENTRY DAP13860
1499 02213 0 02 00423 LDA SUM FETCH THE VALUE DAP13870
1500 02214 0404 76 LGR 2 ADJUST IT TO PRINT SIGN BIT DAP13880
1501 02215 -0 10 00600 JST* OPID PLACE IT IN LISTING DAP13890
1502 02216 000421 VFD 8,1,8,17 1 DIGIT IN COLUMN 18 DAP13900
1503 02217 0 02 00423 LDA SUM FETCH THE SUM AGAIN DAP13910
1504 02220 0415 77 ALS 1 ADJUST IT TO CONVERT LOW ORDER 15 BITS DAP13920
1505 02221 -0 10 00600 JST* OPID PLACE IT IN LISTING DAP13930
1506 02222 002422 VFD 8,5,8,18 5 DIGITS STARTING IN COLUMN 19 DAP13940
1507 02223 -0 01 02212 JMP* CDAT EXIT DAP13950
1508 * DAP13960
1509 * DAP13970
1510 * DAP13980
1511 * DAP13990
EJCT *****
```

```
1511 * VAR : ANALYZE FIRST PSEUDO-OP ADDRESS SUBFIELD DAP14000
1512 * DAP14010
1513 * DAP14020
1514 * CALLING SEQUENCE: DAP14030
1515 * JSI VAR DAP14040
1516 * .....RETURN RESULT IN A REGISTER DAP14050
1517 * DAP14060
1518 02224 0 000000 VAR DAC ** ENTRY DAP14070
1519 02225 -0 10 00573 JST* ADVD ADVANCE TO ADDRESS FIELD DAP14080
1520 02226 0 10 02230 JST VARX EVALUATE FIRST SUBFIELD DAP14090
1521 02227 -0 01 02224 JMP* VARX RETURN TO CALLER - RESULT IN A DAP14100
1522 * DAP14110
1523 * DAP14120
1524 * DAP14130
1525 * VARX: ANALYZE PSEUDO-OP ADDRESS SUBFIELD DAP14140
1526 * DAP14150
1527 * DAP14160
1528 * CALLING SEQUENCE: DAP14170
1529 * JSI VARX DAP14180
1530 * .....RETURN RESULT IN A REGISTER DAP14190
1531 * DAP14200
1532 02230 0 000000 VARX DAC ** ENTRY DAP14210
1533 02231 -0 10 00532 JST* CLR CLEAR ACCUMULATORS DAP14220
1534 02232 0 04 00423 STA SUM CLEAR EXPRESSION VALUE AND DAP14230
1535 02233 0 04 00453 STA SIGN SIGN ACCUMULATORS DAP14240
1536 02234 -0 10 00533 VR1 JST* SYLR ISOLATE NEXT TERM DAP14250
1537 02235 0 02 00506 LDA LIIF CHECK FOR A LITERAL DAP14260
1538 02236 100040 SZE DO NOT ALLOW LITERALS IN PSEUDO-OP ADDRESS DAP14270
1539 02237 0 10 02244 JST VFS EVALUATE TERM DAP14280
1540 02240 -0 10 00566 JST* VER UDEFINED SYMBOL OR LITERAL DAP14290
1541 02241 0 10 02404 JST SGNA UPDATE RESULT DAP14300
1542 02242 -0 01 02230 JMP* VARX TERMINAL DELIMITER - EXIT DAP14310
1543 02243 0 01 02234 JMP VR1 NON TERMINAL - EVALUATE NEXT ELEMENT DAP14320
1544 * DAP14330
1545 * DAP14340
1546 * DAP14350
EJCT *****
```


| | | | | | | | |
|------|-------|-------------|------|--------|---|--|----------|
| 1621 | 02344 | 140040 | VNUM | CRA | | NUMBER - RELOCATION IS ZERO | DAPI5100 |
| 1622 | 02345 | 0 04 00463 | STA | RELV | | | DAPI5110 |
| 1623 | 02346 | 0 02 00445 | LDA | NUM | | FETCH THE NUMBER | DAPI5120 |
| 1624 | 02347 | 0 12 02244 | VVAL | IRS | VFS | INCREMENT RETURN ADDRESS | DAPI5130 |
| 1625 | 02350 | -0 01 02244 | JMP* | VFS | | TAKE DEFINED EXIT | DAPI5140 |
| 1626 | 02351 | 0 04 00445 | VNUM | STA | NUM | RESULT IS ZERO FOR '***' | DAPI5150 |
| 1627 | 02352 | 0 01 02345 | JMP | VNUM+1 | | CLEAR RELOCATION AND TAKE DEFINED EXIT | DAPI5160 |
| 1628 | 02353 | 0 02 00406 | TLOC | LDA | ABSW | ASSEMBLY RELOCATION FACTOR | DAPI5170 |
| 1629 | 02354 | 0 04 00463 | STA | RELV | | IT IS RELOCATION OF '**' | DAPI5180 |
| 1630 | 02355 | 0 02 00405 | LDA | CLUC | | CURRENT LOCATION IS VALUE OF '**' | DAPI5190 |
| 1631 | 02356 | 0 01 02347 | JMP | VVAL | | TAKE DEFINED EXIT | DAPI5200 |
| 1632 | | | * | | | | DAPI5210 |
| 1633 | | | * | | EXTR: PROCESS DIRECT EXTERNAL REFERENCE | | DAPI5220 |
| 1634 | | | * | | | | DAPI5230 |
| 1635 | 02357 | 0 02 00472 | EXTR | LDA | CB11 | CHECK FOR MEMORY REFERENCE INSTRUCTION | DAPI5240 |
| 1636 | 02360 | 0414 76 | LGL | Z | | A(1)MEMORY REFERENCE FLAG | DAPI5250 |
| 1637 | 02361 | 101400 | SMI | | | SKIP IF MEMORY REFERENCE INSTRUCTION | DAPI5260 |
| 1638 | 02362 | 0 01 02375 | JMP | EXIE | | ERROR-ILLEGAL REFERENCE TO EXTERNAL SYMBOL | DAPI5270 |
| 1639 | 02363 | 0 02 00423 | LDA | SUM | | CHECK FOR PREVIOUS ADDRESS MODIFICATION | DAPI5280 |
| 1640 | 02364 | 100040 | SZE | | | SKIP IF UNMODIFIED ADDRESS | DAPI5290 |
| 1641 | 02365 | -0 10 00560 | JST* | EER | | ERROR-MODIFIED EXTERNAL REFERENCE | DAPI5300 |
| 1642 | 02366 | 0 10 02440 | JST | PMSC | | CLASSIFY DELIMITING CHARACTER | DAPI5310 |
| 1643 | 02367 | 0 01 02652 | JMP | XAC1 | | TERMINAL DELIMITER-OUTPUT THE INSTRUCTION | DAPI5320 |
| 1644 | 02370 | -0 10 00560 | JST* | EER | | NONTERMINAL DELIMITER-EXT. REFERENCE ERROR | DAPI5330 |
| 1645 | 02371 | -0 10 00533 | JST* | SYLR | | INPUT NEXT TERM | DAPI5340 |
| 1646 | 02372 | 0 10 02440 | JST | PMSC | | CLASSIFY TERMINATING CHARACTER | DAPI5350 |
| 1647 | 02373 | 0 01 02652 | JMP | XAC1 | | TERMINAL DELIMITER-OUTPUT THE INSTRUCTION | DAPI5360 |
| 1648 | 02374 | 0 01 02371 | JMP | *-3 | | NONTERMINAL DELIMITER-CONTINUE SCAN | DAPI5370 |
| 1649 | | | * | | | | DAPI5380 |
| 1650 | | | * | | HERE IF ILLEGAL EXTERNAL REFERENCE | | DAPI5390 |
| 1651 | | | * | | | | DAPI5400 |
| 1652 | 02375 | -0 10 00560 | EXTE | JST* | EER | FLAG AN *E* ERROR | DAPI5410 |
| 1653 | 02376 | 0 04 00423 | STA | SUM | | CLEAR ADDRESS | DAPI5420 |
| 1654 | 02377 | 0 02 00472 | LDA | CB11 | | TEST FOR PSEUDO-OP | DAPI5430 |
| 1655 | 02400 | 100400 | SPL | | | SKIP IF NOT | DAPI5440 |
| 1656 | 02401 | -0 01 02244 | JMP* | VFS | | TAKE UNDEF. EXIT FROM TABLE SCANNER | DAPI5450 |
| 1657 | 02402 | -0 10 00544 | JST* | DUMP | | OUTPUT THE INSTRUCTION | DAPI5460 |

| | | | | | | | |
|------|-------|-------------|------|-----|-------|------------------------------|----------|
| 1658 | 02403 | -0 01 00542 | JMP* | COM | | LIST THIS STATEMENT AND EXIT | DAPI5470 |
| 1659 | | | * | | | | DAPI5480 |
| 1660 | | | EJCT | | ***** | | DAPI5490 |

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1661 *
1662 * SGNA: PUI SIGN ON RESULT DAP15500
1663 * DAP15510
1664 * DAP15520
1665 * DAP15530
1666 * CALLING SEQUENCE: DAP15540
1667 * LDA VALU VALUE OF TERM IN A REGISTER ON ENTRY DAP15550
1668 * JSI SGNA DAP15560
1669 * .....RETURN TERMINAL DELIMITER (SPACE, COMMA) DAP15570
1670 * .....RETURN NON-TERMINAL DELIMITER (PLUS, MINUS) DAP15580
1671 * DAP15590
1672 * THE FOLLOWING LOCATIONS CONTAIN INFORMATION DAP15600
1673 * USED IN THIS ROUTINE: DAP15610
1674 * DAP15620
1675 * TERM - TERMINATING CHARACTER IN ASCII CODE DAP15630
1676 * SIGN - 0 IF CURRENT TERM IS POSITIVE, -1 IF MINUS DAP15640
1677 * RELV - RELOCATION FACTOR OF CURRENT TERM DAP15650
1678 * SUM - PREVIOUS ACCUMULATED EXPRESSION VALUE DAP15660
1679 * RBIT - PREVIOUS RELOCATION OF EXPRESSION DAP15670
1680 * DAP15680
1681 * DAP15690
1682 * RESULTS: DAP15700
1683 * DAP15710
1684 * SUM - NEW ACCUMULATED VALUE DAP15720
1685 * RBIT - NEW ACCUMULATED RELOCATION FACTOR DAP15730
1686 * SIGN - 0 IF NEXT TERM IS POSITIVE, -1 IF MINUS DAP15740
1687 * (ONLY SET IF NON-TERMINAL DELIMITER IS DETECTED) DAP15750
1688 * DAP15760
1688 02404 0 000000 SGNA DAC ** VALUE IN A ON ENTRY DAP15770
1689 02405 0 05 00453 ERA SIGN TWO COMPLEMENT RESULT DAP15780
1690 02406 0 07 00453 SUB SIGN IF SIGN IS MINUS DAP15790
1691 02407 0 06 00423 ADD SUM ADD TO PREVIOUS VALUE DAP15800
1692 02410 0 04 00423 STA SUM SAVE NEW VALUE DAP15810
1693 02411 0 02 00463 LDA RELV FETCH RELOCATION OF NEW TERM DAP15820
1694 02412 0 05 00453 ERA SIGN TWO COMPLEMENT RELOCATION DAP15830
1695 02413 0 07 00453 SUB SIGN IF SIGN WAS MINUS DAP15840
1696 02414 0 06 00417 ADD RBIT ADD TO PREVIOUS RELOCATION DAP15850
1697 02415 0 04 00417 STA RBIT SAVE NEW RELOCATION FACTOR DAP15860
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1698 02416 0 02 00444 CKSG LDA TERM FETCH TERMINATING CHARACTER DAP15870
1699 02417 0 07 00635 SUB C240 CHECK FOR SPACE DAP15880
1700 02420 101040 SNZ SKIP IF NOT DAP15890
1701 02421 0 01 02436 JMP SGNX TAKE TERMINAL DELIMITER EXIT DAP15900
1702 02422 0 07 00707 SUB C13 CHECK FOR '+' DAP15910
1703 02423 101040 SNZ SKIP IF NOT DAP15920
1704 02424 0 01 02434 JMP PLUS GO SET NEW SIGN DAP15930
1705 02425 0 07 00700 SUB ONE CHECK FOR COMMA DAP15940
1706 02426 101040 SNZ SKIP IF NOT DAP15950
1707 02427 0 01 02436 JMP SGNX TAKE TERMINAL DELIMITER EXIT DAP15960
1708 02430 0 07 00700 SUB ONE CHECK FOR '-' DAP15970
1709 02431 100040 SZE SKIP IF MINUS SIGN DAP15980
1710 02432 -0 10 00561 JST* FER ILLEGAL TERMINATING CHAR. - FORMAT ERROR DAP15990
1711 02433 0 07 00700 SUB ONE SET A REGISTER TO -1 FOR MINUS DAP16000
1712 02434 0 04 00453 PLUS STA SIGN SET SIGN OF NEXT TERM DAP16010
1713 02435 0 12 02404 IRS SGNA TAKE NON-TERMINAL EXIT DAP16020
1714 02436 0 02 00423 SGNX LDA SUM FETCH ACCUMULATED RESULT DAP16030
1715 02437 -0 01 02404 JMP* SGNA EXIT DAP16040
1716 * DAP16050
1717 * DAP16060
1718 * PMSC: CLASSIFY TERMINATING CHARACTER DAP16070
1719 * DAP16080
1720 * DAP16090
1721 * DAP16100
1722 * CALLING SEQUENCE: DAP16110
1723 * JSI PMSC DAP16120
1724 * .....RETURN TERMINAL DELIMITER (SPACE, COMMA) DAP16130
1725 * .....RETURN NON-TERMINAL DELIMITER (PLUS, MINUS) DAP16140
1726 02440 0 000000 PMSC DAC ** CLASSIFY TERMINATING CHARACTER DAP16150
1727 02441 0 02 02440 LDA *-1 FETCH RETURN ADDRESS DAP16160
1728 02442 0 04 02404 STA SGNA RETURN IS THROUGH SGNA DAP16170
1729 02443 0 01 02416 JMP CKSG CHECKING IS DONE IN THE SGNA ROUTINE DAP16180
1730 * DAP16190
1731 * DAP16200
1732 * EJCT *****DAP16210
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1733 *
1734 * XCK : SYMBOL TABLE CHECK ROUTINE
1735 *
1736 *
1737 * CALLING SEQUENCE:
1738 * JSI XCK
1739 * .....RETURN IF SYMBOL TABLE OVERFLOW
1740 * .....RETURN IF NO OVERFLOW - INDEX
1741 * POINTS TO FIRST WORD OF NEW ENTRY
1742 *
1743 *
1744 02444 0 000000 XCK DAC ** SYMBOL TABLE CHECK
1745 02445 0 02 00471 LDA BSYM CURRENT BASE OF TABLE
1746 02446 0 07 00743 SUB C3 ADD AN NEW ENTRY
1747 02447 0 04 00471 STA BSYM STORE NEW BASE ADDRESS
1748 02450 0 04 00000 STA 0 MAKE INDEX POINT TO NEW ENTRY
1749 02451 0 02 00470 LDA CSYM FETCH NEGATED SYMBOL COUNT
1750 02452 0 07 00700 SUB ONE UPDATE THE COUNT
1751 02453 0 04 00470 STA CSYM REPLACE THE COUNT
1752 02454 0 04 00467 STA SYMC SET ENTRY COUNTER
1753 02455 0415 77 ALS 1 MULTIPLY BY TWO
1754 02456 0 06 00470 ADD CSYM *3
1755 02457 0 06 00434 ADD D$S2 ADD IN MAX TABLE SIZE
1756 02460 100400 SPL SKIP IF NO OVERFLOW
1757 02461 0 01 02464 JMP XLV SYMBOL TABLE OVERFLOW***
1758 02462 0 12 02444 IRS XCK INCREMENT RETURN ADDRESS
1759 02463 -0 01 02444 JMP* XCK TAKE NO OVERFLOW EXIT
1760 02464 -0 10 00567 XLV JST* XER FLAG AN 'X' ERROR
1761 02465 0 10 02512 JST ISCP RESTORE TABLE BASE TO ITS
1762 02466 0 04 00471 STA BSYM LAST NONOVERFLOW VALUE
1763 02467 0 12 00470 IRS CSYM DECREMENT SYMBOL TABLE ENTRY COUNT
1764 02470 -0 01 02444 JMP* XCK TAKE OVERFLOW EXIT
1765 *
1766 *
1767 EJCT *****DAP16560
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```
1768 *
1769 * ZSCN: RECOVER NULL SYMBOL TABLE ENTRY
1770 *
1771 *
1772 * CALLING SEQUENCE
1773 * LDA FREE FREE COUNT IN A ON ENTRY
1774 * JSI ZSCN
1775 * .....
1776 * .....
1777 * .....RETURN INDEX POINTS TO FREE ENTRY ON RETURN
1778 *
1779 *
1780 02471 0 000000 ZSCN DAC ** RECOVER NULL SYMBOL TABLE ENTRY
1781 02472 0 07 00700 SUB ONE DECREMENT FREE COUNT
1782 02473 0 04 00462 STA FREE SAVE UPDATED FREE COUNT
1783 02474 0 10 02505 JST ISCN SET UP FOR TABLE SCAN
1784 02475 0 12 02471 IRS ZSCN INCREMENT RETURN ADDRESS
1785 02476 0 12 02471 IRS ZSCN INCREMENT RETURN ADDRESS
1786 02477 1 02 00000 ZLOP LDA 0,1 FETCH FIRST WORD OF CURRENT ENTRY
1787 02500 101040 SNZ SKIP IF NOT NULL
1788 02501 -0 01 02471 JMP* ZSCN NULL - EXIT
1789 02502 0 10 02512 JST ISCP INCREMENT SYMBOL TABLE POINTER
1790 02503 0 12 00467 IRS SYMC INCREMENT ENTRY COUNTER
1791 02504 0 01 02477 JMP ZLUP GO CHECK NEXT NEXT ENTRY
1792 *
1793 *
1794 EJCT *****DAP16830
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1795 *
1796 * ISCN: INITIALIZE SYMBOL TABLE SCAN DAP16840
1797 * DAP16850
1798 * DAP16860
1799 * CALLING SEQUENCE: DAP16870
1800 * JSI ISCN DAP16880
1801 * .....RETURN DAP16890
1802 * DAP16900
1803 * RESULTS: DAP16910
1804 * INDEX&ADDRESS OF FIRST ENTRY IN SYMBOL TABLE DAP16920
1805 * SYMC&NEGATED COUNT OF ENTRIES IN TABLE DAP16930
1806 * DAP16940
1807 02505 0 000000 ISCN DAC ** INITIALIZE SYMBOL TABLE SCAN DAP16950
1808 02506 0 35 00471 LDX BSYM SET INDEX TO POINT TO BASE OF TABLE DAP16960
1809 02507 0 02 00470 LDA CSYM FETCH SYMBOL TABLE COUNT DAP16970
1810 02510 0 04 00467 STA SYMC ESTABLISH SCAN COUNTER DAP16980
1811 02511 -0 01 02505 JMP* ISCN EXIT DAP16990
1812 * DAP17000
1813 * DAP17010
1814 * ISCP: INCREMENT SYMBOL TABLE SCAN POINTER DAP17020
1815 * DAP17030
1816 * DAP17040
1817 * CALLING SEQUENCE: DAP17050
1818 * JSI ISCP DAP17060
1819 * .....RETURN DAP17070
1820 * RESULTS: DAP17080
1821 * INDEX&INDEX+3 DAP17090
1822 * DAP17100
1823 * DAP17110
1824 02512 0 000000 ISCP DAC ** INCREMENT SYMBOL TABLE SCAN POINTER DAP17120
1825 02513 0 02 00000 LDA 0 FETCH TABLE POINTER DAP17130
1826 02514 0 06 00743 ADD C3 ADVANCE IT TO POINT TO NEXT ENTRY DAP17140
1827 02515 0 04 00000 STA 0 REPLACE THE POINTER DAP17150
1828 02516 -0 01 02512 JMP* ISCP RETURN TO CALLER DAP17160
1829 * DAP17170
1830 * DAP17180
1831 * DAP17190
EJCT *****DAP17200
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1832 *
1833 * DUS : ENTER UNDEFINED SYMBOL IN TABLE DAP17210
1834 * DAP17220
1835 * DAP17230
1836 * CALLING SEQUENCE: DAP17240
1837 * JSI DUS DAP17250
1838 * .....RETURN DAP17260
1839 * DAP17270
1840 02517 0 000000 DUS DAC ** ENTER UNDEFINED SYMBOL IN TABLE DAP17280
1841 02520 0 02 00421 LDA E1 IF EXTENSION FLAG OR DAC FLAG DAP17290
1842 02521 0 06 00432 ADD DACF IS SET, ENTER SYMBOL AT BOTTOM OF TABLE DAP17300
1843 02522 100040 SZE SKIP IF NEITHER IS SET DAP17310
1844 02523 0 01 02552 JMP DBUT ENTER AT BASE OF TABLE DAP17320
1845 02524 0 10 02505 JST ISCN SETUP FOR SYMBOL TABLE SEARCH DAP17330
1846 02525 101040 SNZ SKIP IF TABLE NOT EMPTY DAP17340
1847 02526 0 01 02552 JMP DBUT DAP17350
1848 02527 1 02 00000 DL1 LDA 0,1 FETCH FIRST WORD OF CURRENT ENTRY DAP17360
1849 02530 100400 SPL SKIP IF DEFINED FLAG IS NOT SET DAP17370
1850 02531 0 01 02547 JMP DL4 DEFINED SYMBOL - ADVANCE TO NEXT ENTRY DAP17380
1851 02532 0 03 00665 ANA CHK2 ELIMINATE CODE BITS DAP17390
1852 02533 0 05 00450 ERA SYL MERGE WITH FIRST WORD OF TARGET NAME DAP17400
1853 02534 100040 SZE SKIP IF THEY MATCH DAP17410
1854 02535 0 01 02547 JMP DL4 ADVANCE TO NEXT ENTRY DAP17420
1855 02536 1 02 00001 LDA 1,1 FETCH SECOND WORD OF ENTRY DAP17430
1856 02537 0 03 00667 ANA CSC1 ELIMINATE CONTROL BITS DAP17440
1857 02540 0 05 00451 ERA SYL+1 MERGE WITH SECOND WORD OF TARGET NAME DAP17450
1858 02541 100040 SZE SKIP IF THEY MATCH DAP17460
1859 02542 0 01 02547 JMP DL4 ADVANCE TO NEXT ENTRY DAP17470
1860 02543 1 02 00002 LDA 2,1 FETCH THIRD WORD OF CURRENT ENTRY DAP17480
1861 02544 0 05 00423 ERA SUM MERGE OFFSET DAP17490
1862 02545 101040 SNZ SKIP IF OFFSETS DO NOT AGREE DAP17500
1863 02546 0 01 02604 JMP FNDD MATCHING ENTRY FOUND DAP17510
1864 02547 0 10 02512 DL4 JST ISCP INCREMENT SYMBOL TABLE POINTER DAP17520
1865 02550 0 12 00467 IRS SYMC INCREMENT THE SCAN COUNT DAP17530
1866 02551 0 01 02527 JMP DL1 GO CHECK NEXT ENTRY DAP17540
1867 02552 0 02 00462 DBOT LDA FREE FETCH NULL TABLE ENTRY COUNTER DAP17550
1868 02553 100040 SZE SKIP IF NO RECOVERABLE ENTRIES DAP17560
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|------|-------|-------------|----------|-------|-------------------------------------|----------|
| 1869 | 02554 | -0 10 00572 | JST* | ZSC | USE A FREE ENTRY | DAPI7580 |
| 1870 | 02555 | -0 10 00555 | JST* | XCHK | ADD NEW ENTRY | DAPI7590 |
| 1871 | 02556 | 0 01 02602 | JMP | DBZR | SYMBOL TABLE OVERFLOW | DAPI7600 |
| 1872 | 02557 | 0 02 00421 | LDA | E1 | CHECK FOR EXTENDED OR DAC FLAGS SET | DAPI7610 |
| 1873 | 02560 | 0 06 00432 | ADD | DACF | | DAPI7620 |
| 1874 | 02561 | 100040 | SZE | | SKIP IF NEITHER IS SET | DAPI7630 |
| 1875 | 02562 | 140600 | SCB | | SET C BIT | DAPI7640 |
| 1876 | 02563 | 0 02 00453 | LDA | SIGN | GET SIGN OF SYL | DAPI7650 |
| 1877 | 02564 | 0 03 00621 | ANA | B4 | A(1-3)&0,A(5-16)&0 | DAPI7660 |
| 1878 | 02565 | 101040 | SNZ | | SKIP IF A(4) SET | DAPI7670 |
| 1879 | 02566 | 0 02 00620 | LDA | B3 | SET PLUS | DAPI7680 |
| 1880 | 02567 | 100001 | SRC | | | DAPI7690 |
| 1881 | 02570 | 0 06 00617 | ADD | B2 | INSERT CHAIN FLAG | DAPI7700 |
| 1882 | 02571 | 0 06 00450 | ADD | SYL | ADD IN FIRST WORD OF NAME | DAPI7710 |
| 1883 | 02572 | 1 04 00000 | STA | 0,1 | PLACE IT IN FIRST WORD OF ENTRY | DAPI7720 |
| 1884 | 02573 | 0 02 00451 | LDA | SYL+1 | FETCH SECOND WORD OF NAME | DAPI7730 |
| 1885 | 02574 | 1 04 00001 | STA | 1,1 | STORE IT IN SECOND WORD OF ENTRY | DAPI7740 |
| 1886 | 02575 | 0 02 00423 | LDA | SUM | FETCH OFFSET | DAPI7750 |
| 1887 | 02576 | 1 04 00002 | STA | 2,1 | STORE IT IN THIRD WORD OF ENTRY | DAPI7760 |
| 1888 | 02577 | 0 02 00467 | DDD LDA | SYMC | FETCH SYMBOL NUMBER | DAPI7770 |
| 1889 | 02600 | 140407 | TCA | | COMPLEMENT IT | DAPI7780 |
| 1890 | 02601 | -0 01 02517 | JMP* | DUS | EXIT | DAPI7790 |
| 1891 | 02602 | 140040 | DBZR CRA | | OVERFLOW- EXIT WITH A ZERO | DAPI7800 |
| 1892 | 02603 | -0 01 02517 | JMP* | DUS | EXIT | DAPI7810 |
| 1893 | 02604 | 1 02 00000 | FNDD LDA | 0,1 | FETCH FIRST WORD OF ENTRY | DAPI7820 |
| 1894 | 02605 | 0416 77 | ALR | 1 | A(1)& CHAINED FLAG | DAPI7830 |
| 1895 | 02606 | 100400 | SPL | | SKIP IF NOT SET | DAPI7840 |
| 1896 | 02607 | 0 01 02547 | JMP | DL4 | NOT THE SAME | DAPI7850 |
| 1897 | 02610 | 0416 77 | ALR | 1 | | DAPI7860 |
| 1898 | 02611 | 0 05 00453 | ERA | SIGN | | DAPI7870 |
| 1899 | 02612 | 101400 | SMI | | | DAPI7880 |
| 1900 | 02613 | 0 01 02547 | JMP | DL4 | | DAPI7890 |
| 1901 | 02614 | 0 01 02577 | JMP | DDD | DUNE, EXII | DAPI7900 |
| 1902 | | | * | | | DAPI7910 |
| 1903 | | | * | | | DAPI7920 |
| 1904 | | | EJCT | ***** | | DAPI7930 |

| | | | | | | |
|------|-------|-------------|-----------|--------------------------------|----------------------------------|----------|
| 1905 | | | * | | | DAPI7940 |
| 1906 | | | * | CALL: CALL PSEUDO-OP PROCESSOR | | DAPI7950 |
| 1907 | | | * | | | DAPI7960 |
| 1908 | | | * | | | DAPI7970 |
| 1909 | 02615 | -0 10 00547 | CALL JST* | DL4 | DEFINE SYMBOL IN LOCATION FIELD | DAPI7980 |
| 1910 | 02616 | 0 02 00620 | LDA | B3 | A(3)&1 | DAPI7990 |
| 1911 | 02617 | 0 04 00437 | STA | WORD | PLACE A JST INSTRUCTION IN WORD | DAPI8000 |
| 1912 | 02620 | 0 04 00472 | STA | CB11 | | DAPI8010 |
| 1913 | 02621 | 140040 | CRA | | SET ADDRESS TO | DAPI8020 |
| 1914 | 02622 | 0 04 00423 | STA | SUM | ABSOLUTE ZERO | DAPI8030 |
| 1915 | 02623 | -0 10 00544 | JST* | DUMP | OUTPUT A 'JST 0' INSTRUCTION | DAPI8040 |
| 1916 | 02624 | -0 10 00573 | JST* | ADV4 | ADVANCE TO ADDRESS FIELD | DAPI8050 |
| 1917 | 02625 | 0 10 03016 | JST | R6C | READ SIX CHAR. EXTERNAL NAME | DAPI8060 |
| 1918 | 02626 | 0 35 00673 | CALL LDX | M3 | PREPARE TO OUTPUT SIX CHAR. NAME | DAPI8070 |
| 1919 | 02627 | 1 02 00453 | LDA | SYL+3,1 | FETCH NAME WORD | DAPI8080 |
| 1920 | 02630 | -0 10 00605 | JST* | UPAK | UNPACK THE CHARACTERS | DAPI8090 |
| 1921 | 02631 | -0 10 00577 | JST* | OBID | OUTPUT 2 CHARS. OF NAME | DAPI8100 |
| 1922 | 02632 | 000011 | OCT | 11 | CODE FOR EXTERNAL LINKAGE BLOCK | DAPI8110 |
| 1923 | 02633 | 0 12 00000 | IRS | 0 | INCREMENT COUNTER | DAPI8120 |
| 1924 | 02634 | 0 01 02627 | JMP | *-> | GO BACK FOR NEXT WORD | DAPI8130 |
| 1925 | 02635 | 0 02 00432 | LDA | DACF | DACF INDICATED 9 OF 14/15 | DAPI8140 |
| 1926 | 02636 | 0 04 00437 | STA | WORD | BIT REFERENCE | DAPI8150 |
| 1927 | 02637 | -0 10 00577 | JST* | OBID | OUTPUT REFERENCE TYPE INDICATOR | DAPI8160 |
| 1928 | 02640 | 000011 | OCT | 11 | | DAPI8170 |
| 1929 | 02641 | -0 01 00542 | JMP* | COM | LIST THIS LINE AND EXIT | DAPI8180 |
| 1930 | | | * | | | DAPI8190 |
| 1931 | | | * | | | DAPI8200 |
| 1932 | | | EJCT | ***** | | DAPI8210 |

| | | | | | | |
|------|-------|-------------|------|---------|-----------------------------------|----------|
| 1993 | 02717 | 0 02 00624 | LDA | CZ | INSURE ROOM FOR THIS ENTRY | DAP18820 |
| 1994 | 02720 | 0 04 00513 | STA | ROOM | | DAP18830 |
| 1995 | 02721 | 1 02 00453 | LDA | SYL+3+1 | FETCH TWO CHARACTERS OF NAME | DAP18840 |
| 1996 | 02722 | -0 10 00605 | JST* | UPAK | | DAP18850 |
| 1997 | 02723 | -0 10 00577 | JST* | UBID | OUTPUT SUBR HEADER WORD | DAP18860 |
| 1998 | 02724 | 000000 | OCT | 0 | | DAP18870 |
| 1999 | 02725 | 0 12 00000 | IRS | 0 | INCREMENT WORD COUNT | DAP18880 |
| 2000 | 02726 | 0 01 02721 | JMP | *-> | GO BACK TO OUTPUT NEXT WORD | DAP18890 |
| 2001 | 02727 | 0 10 02766 | JST | SCHW | PUT ENTRY NAME IN SYMBOL TABLE | DAP18900 |
| 2002 | 02730 | 0 02 00526 | LDA | SYMF | FETCH SYNONYM FLAG | DAP18910 |
| 2003 | 02731 | 101040 | SNZ | | SKIP IF A SYNONYM IS IN SYL1 | DAP18920 |
| 2004 | 02732 | -0 01 00542 | JMP* | COM | OTHERWISE, PROCESSING IS COMPLETE | DAP18930 |
| 2005 | 02733 | 0 10 01270 | JST | SWAP | PLACE SYNONYM IN SYL | DAP18940 |
| 2006 | 02734 | 0 02 00451 | LDA | SYL+1 | FETCH SECOND WORD OF NAME | DAP18950 |
| 2007 | 02735 | 0 05 00617 | ERA | B2 | SET SYNONYM BIT | DAP18960 |
| 2008 | 02736 | 0 04 00451 | STA | SYL+1 | REPLACE THE WORD | DAP18970 |
| 2009 | 02737 | 0 10 02766 | JST | SCHW | PUT SYNONYM NAME IN SYMBOL TABLE | DAP18980 |
| 2010 | 02740 | -0 01 00542 | JMP* | COM | LIST THE STATEMENT AND EXIT | DAP18990 |
| 2011 | | | | | | DAP19000 |
| 2012 | | | | | | DAP19010 |
| 2013 | | | EJCT | ***** | ***** | DAP19020 |

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|------|-------|-------------|----------|-------|--|----------|
| 2014 | | | * | | | DAP19030 |
| 2015 | | | * | EXT : | EXT PSEUDO-OP PROCESSOR | DAP19040 |
| 2016 | | | * | | | DAP19050 |
| 2017 | | | * | | | DAP19060 |
| 2018 | 02741 | -0 10 00573 | EXT JST* | ADVD | ADVANCE TO ADDRESS FIELD | DAP19070 |
| 2019 | 02742 | 0 10 03016 | JST | R6C | READ 1-6 CHARACTER NAME | DAP19080 |
| 2020 | 02743 | 0 02 00444 | LDA | TERM | FETCH TERMINATING CHARACTER | DAP19090 |
| 2021 | 02744 | 0 05 00635 | ERA | C240 | CHECK FOR SPACE CHARACTER | DAP19100 |
| 2022 | 02745 | 100040 | SZE | | SKIP IF IT IS | DAP19110 |
| 2023 | 02746 | -0 01 00604 | JMP* | BCE9 | ELSE FLAG 'V' ERROR AND EXIT | DAP19120 |
| 2024 | 02747 | 0 02 00405 | LDA | CLUC | CHECK FOR PREVIOUS CODE GENERATION | DAP19130 |
| 2025 | 02750 | 100040 | SZE | | SKIP IF NO CODE HAS BEEN GENERATED | DAP19140 |
| 2026 | 02751 | -0 10 00560 | JST* | EER | THIS POTENTIALLY COULD CAUSE PROBLEMS | DAP19150 |
| 2027 | 02752 | 0 02 00436 | LDA | ZP | CHECK FOR PASS ONE | DAP19160 |
| 2028 | 02753 | 0 05 00461 | ERA | TSI | BIT ONE RESET IF PASS ONE | DAP19170 |
| 2029 | 02754 | 100400 | SPL | | SKIP IF PASS ONE | DAP19180 |
| 2030 | 02755 | -0 01 00542 | JMP* | COM | PASS TWO - NO MORE PROCESSING REQUIRED | DAP19190 |
| 2031 | 02756 | 0 02 00450 | LDA | SYL | FETCH FIRST WORD OF NAME | DAP19200 |
| 2032 | 02757 | 0 05 00621 | ERA | B4 | SET EXTERNAL FLAG | DAP19210 |
| 2033 | 02760 | 0 04 00450 | STA | SYL | REPLACE FIRST WORD OF NAME | DAP19220 |
| 2034 | 02761 | 0 02 00451 | LDA | SYL+1 | FETCH SECOND WORD OF NAME | DAP19230 |
| 2035 | 02762 | 0 05 00616 | ERA | B1 | COMPLEMENT 'SUBR' FLAG | DAP19240 |
| 2036 | 02763 | 0 04 00451 | STA | SYL+1 | REPLACE WORD | DAP19250 |
| 2037 | 02764 | 0 10 02766 | JST | SCHW | WRITE EXTERNAL NAME IN TABLE | DAP19260 |
| 2038 | 02765 | -0 01 00542 | JMP* | COM | EXIT | DAP19270 |
| 2039 | | | * | | | DAP19280 |
| 2040 | | | * | | | DAP19290 |
| 2041 | | | EJCT | ***** | ***** | DAP19300 |

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2042 *
2043 * SCHW: WRITE EXTERNAL NAME IN SYMBOL TABLE DAP19310
2044 * DAP19320
2045 * DAP19330
2046 * CALLING SEQUENCE: DAP19340
2047 * JSI SCHW DAP19350
2048 * .....RETJRN DAP19360
2049 * DAP19370
2050 * DAP19380
2051 * THIS ROUTINE WILL PLACE THE SIX CHARACTER NAME DAP19390
2052 * FOUND IN SYL-SYL+2 IN THE SYMBOL TABLE, WITH DAP19400
2053 * THE DEFINED FLAG SEI, AND THE SUBR FLAG COMPLEMENTED. DAP19410
2054 * DAP19420
2055 * DAP19430
2055 02766 0 000000 SCHW DAC ** WRITE EXTERNAL NAME IN TABLE DAP19440
2056 02767 -0 10 00555 JST* XCHK SETUP SYMBOL TABLE ENTRY DAP19450
2057 02770 -0 01 02766 JMP* SCHW TABLE OVERFLOW - RETURN DAP19460
2058 02771 0 02 00450 LDA SYL FETCH FIRST WORD OF NAME DAP19470
2059 02772 140500 SSM SET DEFINED FLAG DAP19480
2060 02773 1 04 00000 STA 0,1 PLACE RESULT IN FIRST WORD OF ENTRY DAP19490
2061 02774 0 02 00451 LDA SYL+1 FETCH SECOND WORD OF NAME DAP19500
2062 02775 140024 CHS COMPLEMENT SUBR FLAG DAP19510
2063 02776 1 04 00001 STA 1,1 PLACE RESULT IN SECOND WORD OF ENTRY DAP19520
2064 02777 0 02 00452 LDA SYL+2 FETCH THIRD WORD OF NAME DAP19530
2065 03000 1 04 00002 STA 2,1 PLACE IT IN THIRD WORD OF ENTRY DAP19540
2066 03001 -0 01 02766 JMP* SCHW RETURN TO CALLER DAP19550
2067 * DAP19560
2068 * DAP19570
2069 * EJECT *****DAP19580
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2070 *
2071 * UNPK: UNPACK CHARACTER PAIR DAP19590
2072 * DAP19600
2073 * DAP19610
2074 * CALLING SEQUENCE: DAP19620
2075 * LDA CHAR A CONTAINS 2 CHARS. IN INTERNAL FORMAT DAP19630
2076 * JSI UNPK DAP19640
2077 * .....RETURN RESULT IN A REGISTER AND WORD DAP19650
2078 * DAP19660
2079 * DAP19670
2080 03002 0 000000 UNPK DAC ** DAP19680
2081 03003 0 03 00665 ANA CHR2 ELIMINATE CODE BITS DAP19690
2082 03004 000201 IAB B(5-16)&PACKED CHARACTER PAIR DAP19700
2083 03005 140040 CRA DAP19710
2084 03006 0410 66 LLL 10 A(11-16)&FIRST CHAR. DAP19720
2085 03007 0414 76 LGL 2 POSITION FIRST CHAR. DAP19730
2086 03010 101040 SNZ SKIP IF I1 WAS NOT A BLANK DAP19740
2087 03011 0410 70 LLL 8 PLACE SECOND CHAR. IN POSITION OF FIRST DAP19750
2088 03012 0410 72 LLL 6 MOVE IN SECOND CHAR. (A BLANK IF DAP19760
2089 * CHAR. ONE WAS A BLANK) DAP19770
2090 03013 0 06 00723 ADD EMES CONVERT I1 TO ASCII DAP19780
2091 03014 0 04 00437 STA WORD PLACE RESULT IN WORD DAP19790
2092 03015 -0 01 03002 JMP* UNPK EXIT DAP19800
2093 * DAP19810
2094 * DAP19820
2095 * EJECT *****DAP19830
2095 * DAP19840
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2096 *
2097 * R6C : READ AND CHECK EXTERNAL NAME DAP19850
2098 * DAP19860
2099 * DAP19870
2100 * CALLING SEQUENCE: DAP19880
2101 * JSI R6C DAP19890
2102 * .....RETURN DAP19900
2103 * DAP19910
2104 * THE SIX CHARACTER NAME IS PLACED IN SYL-SYL+2. IF DAP19920
2105 * A NAME IS NOT FOUND, A 'V' ERROR IS FLAGGED AND DAP19930
2106 * RETURN IS MADE TO THE STATEMENT PROCESSOR. DAP19940
2107 * DAP19950
2108 * DAP19960
2109 03016 0 000000 R6C DAC ** DAP19970
2110 03017 -0 10 00533 JST* SYLR DAP19980
2111 03020 0 02 00450 LDA SYL INPUT UP TO SIX CHARACTERS DAP19990
2112 03021 100040 SZE FETCH WORD CONTAINING FIRST TWO CHARS. DAP20000
2113 03022 -0 01 03016 JMP* R6C SKIP IF BOTH ARE BLANKS DAP20010
2114 03023 -0 01 00604 JMP* BCE9 NAME EXISIS - RETURN TO CALLER DAP20020
2115 * FLAG 'V' ERROR AND EXIT - NO NAME DAP20030
2116 * DAP20040
2117 * EJECT ***** DAP20050
***** DAP20060
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2118 *
2119 * END : END PSEUDO-OP PROCESSOR DAP20070
2120 * DAP20080
2121 * DAP20090
2122 * END EQU * END PSEUDO-OP PROCESSOR DAP20100
2123 03024 0 02 00415 LDA TCNT DAP20110
2124 03025 100040 SZE FETCH CONDITIONAL NESTING COUNT DAP20120
2125 03026 -0 10 00614 JST* ZERX SKIP IF NO UNMATCHED CONDITIONALS DAP20130
2126 03027 -0 10 00554 JST* VARD UNMATCHED CONDITIONAL - 'Z' ERROR DAP20140
2127 03030 0 02 00417 LDA RB1T EVALUATE EXPRESSION IN ADDRESS FIELD DAP20150
2128 03031 100040 SZE FETCH RELOCATION OF EXPRESSION DAP20160
2129 03032 0 02 00616 LDA B1 SKIP IF ABSOLUTE DAP20170
2130 03033 0 06 00423 ADD SUM SET RELOCATABLE FLAG DAP20180
2131 03034 0 04 04640 STA DBLK INSERT ADDRESS DAP20190
2132 03035 -0 10 00554 JST* FINP SAVE 'END JUMP' ADDRESS DAP20200
2133 03036 -0 10 00551 JST* LSID DEFINE ANY OUTSTANDING LITERALS DAP20210
2134 03037 0 10 02505 JST ISCN ENSURE THAT 'END' LINE IS PRINTED DAP20220
2135 03040 0 04 00473 STA DSYM SETUP FOR SYMBOL TABLE SEARCH DAP20230
2136 03041 101040 SNZ SCAN COUNT DAP20240
2137 03042 0 01 03077 JMP ECUN SKIP IF TABLE NOT EMPTY DAP20250
2138 03043 -0 10 00616 LDA B1 NO SYMBOLS NO UNDEFINED CHECK DAP20260
2139 03044 0 04 00527 STA ZPIX 32768 IN ZPIX DAP20270
2140 03045 1 02 00000 EDOL LDA 0,1 TO INHIBIT SYMBOL DEFINITION DAP20280
2141 03046 100040 SZE FETCH FIRST WORD OF CURRENT ENTRY DAP20290
2142 03047 100400 SPL SKIP IF NULL ENTRY DAP20300
2143 03050 0 01 03070 JMP EDUP SKIP IF UNDEFINED DAP20310
2144 03051 0 03 00665 ANA CHK2 NULL OR DEFINED - ADVANCE TO NEXT ENTRY DAP20320
2145 03052 0 04 00454 STA SYL1 A(1-4)60 DAP20330
2146 03053 -0 10 00605 JST* UPAK SAVE FIRST WORD OF NAME FOR DEFINITION DAP20340
2147 03054 -0 04 00715 STA* DCUN UNPACK THE CHARACTER PAIR DAP20350
2148 03055 1 02 00001 LDA 1,1 PLACE CHARACTER PAIR IN LIST BUFFER DAP20360
2149 03056 0 03 00665 ANA CHK2 FETCH SECOND WORD OF NAME DAP20370
2150 03057 0 04 00455 STA SYL1+1 A(1-4)60 DAP20380
2151 03060 -0 10 00605 JST* UPAK SAVE SECOND WORD OF NAME FOR DEFINITION DAP20390
2152 03061 -0 04 00716 STA* DCN1 UNPACK THE CHARACTER PAIR DAP20400
2153 03062 0 15 03156 STX MESG PLACE LAST TWO CHARACTERS IN LIST BUFFER DAP20410
2154 03063 -0 10 00547 JST* DLC SAVE INDEX DURING DEFINITION DAP20420
***** DAP20430
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|------|-------|-------------|-----------|--------|---|----------|
| 2155 | 03064 | -0 10 00545 | JST* | CPC | PRINT PROGRAM COUNTER | DAP20440 |
| 2156 | 03065 | -0 10 00551 | JST* | LSID | LIST SYMBOL DEFINITION | DAP20450 |
| 2157 | 03066 | 0 12 00405 | IRS | CLUC | INCREMENT PROGRAM COUNTER | DAP20460 |
| 2158 | 03067 | 0 35 03156 | LDX | MSG | RESTORE INDEX REGISTER | DAP20470 |
| 2159 | 03070 | 0 10 02512 | EDUP JST | ISCP | INCREMENT SYMBOL TABLE POINTER | DAP20480 |
| 2160 | 03071 | 0 12 00473 | IRS | DSYM | INCREMENT SCAN COUNT | DAP20490 |
| 2161 | 03072 | 0 01 03045 | JMP | EDUL | GO EXAMINE NEXT ENTRY | DAP20500 |
| 2162 | 03073 | -0 10 00577 | JST* | OBID | FORCE ORG BLOCK | DAP20510 |
| 2163 | 03074 | 000007 | OCT | 7 | HIGH SHOULD BE ABOVE UNDEFINED SYMBOLS | DAP20520 |
| 2164 | 03075 | 0 02 00511 | LDA | ZPI | RESTORE CONTROL STATE | DAP20530 |
| 2165 | 03076 | 0 04 00436 | STA | ZP | | DAP20540 |
| 2166 | 03077 | 0 02 04640 | ECON LDA | DBLK | FETCH *END JUMP* ADDRESS | DAP20550 |
| 2167 | 03100 | 101400 | SMI | | SKIP IF RELOCATABLE | DAP20560 |
| 2168 | 03101 | 0 01 03110 | JMP | EABS | ELSE ABSOLUTE | DAP20570 |
| 2169 | 03102 | 0 02 00406 | LDA | ABSW | FETCH ASSEMBLY MODE SWITCH | DAP20580 |
| 2170 | 03103 | 100040 | SZE | | SKIP IF ABSOLUTE | DAP20590 |
| 2171 | 03104 | 0 01 03115 | JMP | EFIN | RELOCATABLE - AGREES WITH END JUMP MODE | DAP20600 |
| 2172 | 03105 | -0 10 00577 | JST* | OBID | OUTPUT REL MODE BLOCK | DAP20610 |
| 2173 | 03106 | 000005 | OCT | 5 | CODE FOR NEW STYLE BLOCK 0-24 | DAP20620 |
| 2174 | 03107 | 0 01 03115 | JMP | EFIN | IN CORRECT MODE NOW - OUTPUT END BLOCK | DAP20630 |
| 2175 | 03110 | 0 02 00406 | EABS LDA | ABSW | FETCH ASSEMBLY MODE SWITCH | DAP20640 |
| 2176 | 03111 | 101040 | SNZ | | SKIP IF RELOCATABLE | DAP20650 |
| 2177 | 03112 | 0 01 03115 | JMP | EFIN | ABSOLUTE - AGREES WITH END JUMP MODE | DAP20660 |
| 2178 | 03113 | -0 10 00577 | JST* | OBID | OUTPUT ABS MODE BLOCK | DAP20670 |
| 2179 | 03114 | 000006 | OCT | 6 | CODE FOR NEW STYLE BLOCK 0-30 | DAP20680 |
| 2180 | 03115 | 0 02 04640 | EFIN LDA | DBLK | FETCH *END JUMP* ADDRESS | DAP20690 |
| 2181 | 03116 | 140100 | SSP | | WIPE OUT RELOCATION FLAG | DAP20700 |
| 2182 | 03117 | 0 04 00437 | STA | WORD | STORE RESULT IN WORD | DAP20710 |
| 2183 | 03120 | -0 10 00577 | JST* | OBID | OUTPUT END BLOCK | DAP20720 |
| 2184 | 03121 | 000003 | OCT | 3 | CODE FOR NEW STYLE BLOCK 0-14 | DAP20730 |
| 2185 | 03122 | 0 02 00507 | LDA | SUBF | CHECK FOR SUBROUTINE ASSEMBLY | DAP20740 |
| 2186 | 03123 | 100040 | SZE | | SKIP IF NOT | DAP20750 |
| 2187 | 03124 | 0 01 03153 | JMP | LEND | DO NOT OUTPUT EOF | DAP20760 |
| 2188 | 03125 | -0 10 00577 | PEND JST* | OBID | OUTPUT EOF IN OBJECT TEXT | DAP20770 |
| 2189 | 03126 | 000010 | OCT | 10 | | DAP20780 |
| 2190 | 03127 | 0 12 00416 | HLT IRS | LSIZ | SET FULL LINE OUTPUT INDICATOR | DAP20790 |
| 2191 | 03130 | 0 10 00000 | CALL | D\$MAP | PRINT SYMBOL TABLE MAP | DAP20800 |

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|------|-------|-------------|-----------|-------|--|----------|
| 2192 | 03131 | -0 10 00551 | JST* | LSID | SPACE A LINE BEFORE END MESSAGES | DAP20810 |
| 2193 | 03132 | 0 10 03156 | JST | MSG | PRINT COUNT OF WARNING AND ERROR FLAGS | DAP20820 |
| 2194 | 03133 | 0 000723 | DAC | EMES | ADDRESS OF MESSAGE | DAP20830 |
| 2195 | 03134 | 0 10 03156 | JST | MSG | PRINT VERSION IDENTIFICATION | DAP20840 |
| 2196 | 03135 | 0 000744 | DAC | IDMS | ADDRESS OF MESSAGE | DAP20850 |
| 2197 | 03136 | 0 10 00000 | CALL | D\$HT | STOP - END OF PASS*** | DAP20860 |
| 2198 | 03137 | 0 02 00436 | LDA | ZP | FETCH PASS INDICATOR | DAP20870 |
| 2199 | 03140 | 140100 | SSP | | SET-UP FOR PASS TWO | DAP20880 |
| 2200 | 03141 | 0 04 00436 | STA | ZP | REPLACE PASS INDICATOR | DAP20890 |
| 2201 | 03142 | 0 02 00511 | LDA | ZPI | FETCH PREVIOUS STATE | DAP20900 |
| 2202 | 03143 | 101400 | SMI | | SKIP IF END OF PASS ONE | DAP20910 |
| 2203 | 03144 | -0 01 00540 | JMP* | RES | OTHERWISE START A NEW ASSEMBLY | DAP20920 |
| 2204 | 03145 | 0 01 03150 | JMP | **3 | SKIP OVER RESTART PASS 2 KLUDGE | DAP20930 |
| 2205 | 03146 | 140500 | RP2 SSM | | CORRECT FORGETFUL USERS | DAP20940 |
| 2206 | 03147 | 0 04 00461 | STA | TSI | SAVE NEW PARAMETER SETTING | DAP20950 |
| 2207 | 03150 | 0 10 00000 | CALL | D\$IN | REINSTATE FOR PASS 2 | DAP20960 |
| 2208 | 03151 | 140040 | CRA | | | DAP20970 |
| 2209 | 03152 | -0 01 00541 | JMP* | RSG | START PASS TWO | DAP20980 |
| 2210 | 03153 | -0 10 00577 | LEND JST* | OBID | LOGICAL END OF ASSEMBLY (NO EOF) | DAP20990 |
| 2211 | 03154 | 000004 | OCT | 4 | | DAP21000 |
| 2212 | 03155 | 0 01 03127 | JMP | HLI | GO FINISH *END* PROCESSING | DAP21010 |
| 2213 | | | * | | | DAP21020 |
| 2214 | | | * | | | DAP21030 |
| 2215 | | | EJCT | ***** | ***** | DAP21040 |

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2216 *
2217 * MESH: MESSAGE WRITER
2218 *
2219 *
2220 * CALLING SEQUENCE:
2221 * JSI MESH
2222 * DAC MES
2223 * .....RETURN
2224 *
2225 * WHERE:
2226 *
2227 * MES - MESSAGE THAT IS PACKED TWO CHARACTERS
2228 * PER WORD, WITH THE MESSAGE TERMINATED BY A WORD
2229 * WITH BIT ONE RESET.
2230 *
2231 *
2232 03156 0 000000 MESH DAC ** MESSAGE WRITER
2233 03157 0 12 04052 IRS LGCT MAKE MESSAGE LOOK LIKE AN ERROR LINE
2234 03160 0 02 00715 LDA DCUN FETCH LISTING BUFFER ADDRESS
2235 03161 0 04 00526 STA SYMF USE IT AS A POINTER TO THE LISTING BUFFER
2236 03162 -0 35 03156 LDX* MESH INDEX&ADDRESS OF MESSAGE
2237 03163 0 12 03156 IRS MESH INCREMENT RETURN ADDRESS
2238 03164 1 02 00000 MESH LDA 0+1 FETCH MESSAGE CHARACTER PAIR
2239 03165 101400 SMI SKIP IF NOT AT END OF MESSAGE
2240 03166 0 01 03173 JMP MSL1 ALL OF MESSAGE IS IN BUFFER
2241 03167 -0 04 00526 STA* SYMF PLACE CHARACTER PAIR IN LIST BUFFER
2242 03170 0 12 00526 IRS SYMF INCREMENT LIST BUFFER POINTER
2243 03171 0 12 00000 IRS 0 INCREMENT MESSAGE POINTER
2244 03172 0 01 03164 JMP MESH GO BACK FOR NEXT WORD
2245 03173 -0 10 00551 MSL1 JST* LSI0 OUTPUT THE MESSAGE
2246 03174 -0 01 03156 JMP* MESH EXIT
2247 *
2248 *
2249 * EJCT *****DAP21380

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2250 *
2251 * FINX: LITERAL POOL DEFINITION ROUTINE
2252 *
2253 *
2254 * CALLING SEQUENCE:
2255 * JSI FINX
2256 * .....RETURN
2257 *
2258 * THIS ROUTINE DEFINES ALL LITERALS AT THE LEVEL GIVEN BY THE
2259 * COUNTER 'FINX', THEN UPDATES THE COUNTER.
2260 *
2261 *
2262 03175 0 000000 FINX DAC ** ENTRY
2263 03176 140040 CRA
2264 03177 0 04 00472 STA CB11 CLEAR CODE BITS - LITERALS ARE PURE DATA
2265 03200 0 10 02505 JST ISCN SETUP FOR SYMBOL TABLE SEARCH
2266 03201 0 04 00473 STA DSYM SET SCAN COUNTER
2267 03202 101040 SNZ SKIP IF SYMBOL TABLE IS NOT EMPTY
2268 03203 -0 01 03175 JMP* FINX EXIT - NO SYMBOLS IN TABLE
2269 03204 1 02 00001 FIRM LDA 1+1 FETCH SECOND WORD OF CURRENT ENTRY
2270 03205 0 03 00667 ANA CSC1 ELIMINATE CODE BITS BUT NOT LITERAL FLAG
2271 03206 0 04 00455 STA SYL1+1 SAVE RESULT FOR DEFINITION
2272 03207 0400 64 LRL 12 PLACE LOW ORDER 12 BITS OF VALUE IN B
2273 03210 101100 SLN SKIP IF LITERAL ENTRY (BIT 4 SET)
2274 03211 0 01 03231 JMP FSIP NO - ADVANCE TO NEXT ENTRY
2275 03212 1 02 00000 LDA 0+1 FETCH FIRST WORD OF THIS ENTRY
2276 03213 0 03 00670 ANA CSC2 ISOLATE FIN LEVEL CODE
2277 03214 0 05 00525 ERA FINF MERGE WITH CURRENT LEVEL
2278 03215 100040 SZE SKIP IF AT PROPER LEVEL
2279 03216 0 01 03231 JMP FSIP NO - ADVANCE TO NEXT ENTRY
2280 03217 1 02 00000 LDA 0+1 FETCH FIRST WORD OF ENTRY AGAIN
2281 03220 0 03 00665 ANA CHM2 ELIMINATE CODE BITS
2282 03221 0 04 00454 STA SYL1 SAVE RESULT FOR DEFINITION
2283 03222 0410 64 LLL 12 PUT THE VALUE TOGETHER
2284 03223 0 04 00423 STA SUM SAVE IT IN 'SUM'
2285 03224 0 15 03156 STX MESH SAVE TABLE POINTER DURING DEFINITION
2286 03225 -0 10 00547 JST* DLG DEFINE THE LITERAL

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2287 03226 0 35 03156 LDX MSG RESTORE THE TABLE POINTER DAP21760
2288 03227 -0 10 00544 FDMP JST* DUMP OUTPUT THE LITERAL DAP21770
2289 03230 -0 10 00551 JST* L5ID LIST THIS LINE DAP21780
2290 03231 0 10 02512 FSTP JST ISCP INCREMENT SYMBOL TABLE POINTER DAP21790
2291 03232 0 12 00473 IRS DSYM INCREMENT SCAN COUNTER DAP21800
2292 03233 0 01 03204 JMP FIRN GO EXAMINE THE NEXT ENTRY DAP21810
2293 03234 0 02 00525 LDA FINF FETCH THE FIN LEVEL CODE DAP21820
2294 03235 0 07 00631 SUB C2U DECREMENT THE COUNT DAP21830
2295 03236 0 04 00525 STA FINF REPLACE THE CODE DAP21840
2296 03237 -0 01 03175 JMP* FINX EXIT DAP21850
2297 * DAP21860
2298 * DAP21870
2299 EJCT *****DAP21880
```

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2300 * DAP21890
2301 * ORG : ORG PSEUDO-OP PROCESSOR DAP21900
2302 * DAP21910
2303 * DAP21920
2304 03240 -0 10 00547 ORG JST* DLC DEFINE SYMBOL IN LOCATION FIELD DAP21930
2305 03241 0 10 02224 JST VAR EVALUATE EXPRESSION IN ADDRESS FIELD DAP21940
2306 03242 0 04 00405 STA CLUC SET NEW VALUE IN PROGRAM COUNTER DAP21950
2307 03243 -0 10 00577 OR2 JST* OBID SET NEW ORIGIN IN OBJECT TEXT DAP21960
2308 03244 000007 OCT 7 DAP21970
2309 03245 -0 01 00542 JMP* COM LIST THIS STATEMENT AND EXIT DAP21980
2310 * DAP21990
2311 * DAP22000
2312 * LOAD: LOAD PSEUDO-OP PROCESSOR DAP22010
2313 * DAP22020
2314 03246 0 02 00671 LOAD LDA M1 SET LOAD FLAG TO DAP22030
2315 03247 0 04 00407 STA LODF MINUS ONE DAP22040
2316 * FALL THROUGH TO ABS PROCESSOR DAP22050
2317 * DAP22060
2318 * ABS : ABS PSEUDO-OP PROCESSOR DAP22070
2319 * DAP22080
2320 03250 -0 10 00577 ABS JST* OBID OUTPUT ABS MODE BLOCK DAP22090
2321 03251 000006 OCT 6 CODE FOR NEW STYLE BLOCK 0-30 DAP22100
2322 03252 140040 CRA CLEAR A REGISTER FOR ASSEMBLY MODE SWITCH DAP22110
2323 03253 0 01 03257 JMP REL1 GO TO REL PROCESSOR TO SET THE SWITCH DAP22120
2324 * DAP22130
2325 * DAP22140
2326 * REL : REL PSEUDO-OP PROCESSOR DAP22150
2327 * DAP22160
2328 03254 -0 10 00577 REL JST* OBID OUTPUT REL MODE BLOCK DAP22170
2329 03255 000005 OCT 5 CODE FOR NEW STYLE BLOCK 0-24 DAP22180
2330 03256 0 02 00700 LDA ONE A&1 FOR ASSEMBLY MODE SWITCH DAP22190
2331 03257 0 04 00406 REL1 STA ABSW SET ASSEMBLY MODE SWITCH DAP22200
2332 03260 -0 01 00542 JMP* COM GO LIST THIS STATEMENT AND EXIT DAP22210
2333 * DAP22220
2334 * DAP22230
2335 EJCT *****DAP22240
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2336 *
2337 * DESECTOR CONTROL PSEUDO-OP PROCESSORS DAP22250
2338 * DAP22260
2339 * DAP22270
2340 * EXD : EXD PSEUDO-OP PROCESSOR DAP22280
2341 * DAP22290
2342 * DAP22300
2343 03261 -0 10 00577 EXD JST* OBID OUTPUT OBJECT BLOCK DAP22310
2344 03262 000013 OCT 13 CODE FOR 'ENTER EXTENDED DESECTORIZATION' DAP22320
2345 03263 -0 01 00542 JMP* COM EXIT DAP22330
2346 * DAP22340
2347 * DAP22350
2348 * LXD : LXD PSEUDO-OP PROCESSOR DAP22360
2349 * DAP22370
2350 * DAP22380
2351 03264 -0 10 00577 LXD JST* OBID OUTPUT OBJECT BLOCK DAP22390
2352 03265 000014 OCT 14 CODE FOR 'LEAVE EXTENDED DESECTORIZATION' DAP22400
2353 03266 -0 01 00542 JMP* COM EXIT DAP22410
2354 * DAP22420
2355 * DAP22430
2356 * DAP22440
EJCT *****DAP22450
```

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2357 *
2358 * CONFIGURATION PSEUDO-UP PROCESSORS DAP22460
2359 * DAP22470
2360 * DAP22480
2361 * CF3 : CF3 PSEUDO-OP PROCESSOR DAP22490
2362 * CF5 : CF5 PSEUDO-OP PROCESSOR DAP22500
2363 * DAP22510
2364 * DAP22520
2365 003267 CF3 EQU * DAP22530
2366 003267 CF5 EQU * DAP22540
2367 03267 0 02 00777 LDA XF5D END OF LEGAL OP-CODES FOR 316/516 DAP22550
2368 03270 0 01 03274 JMP **4 GO STORE NEW LIMIT DAP22560
2369 * DAP22570
2370 * DAP22580
2371 * CF4 : CF4 PSEUDO-OP PROCESSOR DAP22590
2372 * DAP22600
2373 * DAP22610
2374 03271 0 02 00776 CF4 LDA XF4 END OF LEGAL OPCODES FOR 416 DAP22620
2375 03272 100000 SKP GO STORE NEW LIMIT DAP22630
2376 * DAP22640
2377 * DAP22650
2378 * CF1 : CF1 PSEUDO-OP PROCESSOR DAP22660
2379 * DAP22670
2380 * DAP22680
2381 03273 0 02 00775 CF1 LDA XF1 END OF LEGAL OPCODES FOR 116 DAP22690
2382 03274 0 04 00503 STA BOPS STORE ADDRESS OF END OF LEGAL OPCODES DAP22700
2383 03275 -0 01 00542 JMP* COM EXIT DAP22710
2384 * DAP22720
2385 * DAP22730
2386 * DAP22740
EJCT *****DAP22750
```

```
2387 *
2388 * LISTING CONTROL PSEUDO-OP PROCESSORS
2389 *
2390 *
2391 * LIST: LIST PSEUDO-OP PROCESSOR
2392 *
2393 *
2394 03276 0 04 00410 LIST STA LSIW TURN ON LISTING SWITCH (A ZERO ON ENTRY)
2395 03277 -0 01 00542 JMP* COM EXIT
2396 *
2397 *
2398 * NLST: NLST PSEUDO-OP PROCESSOR
2399 *
2400 *
2401 03300 0 12 00410 NLST IRS LSIW INSURE THAT LISTING SWITCH IS OFF
2402 03301 -0 01 00542 JMP* COM EXIT
2403 *
2404 *
2405 * EJCT: EJCT PSEUDO-OP PROCESSOR
2406 *
2407 *
2408 03302 -0 10 00551 EJCT JST* LSID
2409 03303 0 02 00461 LDA TSI FETCH ASSEMBLY PARAMETER WORD
2410 03304 0414 76 LGL Z A(1)ERROR ONLY LIST FLAG
2411 03305 100400 SPL SKIP IF NOT ERROR ONLY LISTING
2412 03306 -0 01 00553 JMP* LIN NO USE EJECTING IF NOT FULL LISTING
2413 03307 0 02 00436 EJCT LDA ZP FETCH PASS INDICATOR
2414 03310 101400 SMI SKIP IF NOT OUTPUT PASS
2415 03311 0 10 00000 CALL D$EJ EJECT THE PAGE
2416 03312 -0 01 00553 JMP* LIN EXIT
2417 *
2418 *
2419 * EJCT *****DAP23080
```

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2420 *
2421 * SYMBOL DEFINITION PSEUDO-OP PROCESSORS
2422 *
2423 *
2424 * SET : SET PSEUDO-OP PROCESSOR
2425 *
2426 *
2427 03313 0 12 00431 SET IRS SEIF TURN ON SET FLAG
2428 * FALL THROUGH TO EQU PROCESSOR
2429 *
2430 * EQU : EQU PSEUDO-OP PROCESSOR
2431 *
2432 03314 0 10 02224 EQU JST VAR EVALUATE ADDRESS FIELD-RESULT IN A
2433 03315 0 13 00405 EQU1 IMA CLUC SWAP RESULT WITH PROGRAM COUNTER
2434 03316 0 04 00526 STA SYMF SAVE PROGRAM COUNTER IN SYMF
2435 03317 0 02 00417 LDA RBIT RELOCATION VALUE OF THE EXPRESSION
2436 03320 0 13 00406 IMA ABSW SWAP IT WILL ASSEMBLY RELOCATION MODE
2437 03321 0 04 00417 STA RBIT SAVE ASSEMBLY RELOCATION MODE IN RBIT
2438 03322 0 02 00454 LDA SYL1 CHECK FOR SYMBOL IN LOCATION FIELD
2439 03323 101040 SNZ SKIP IF THERE IS
2440 03324 0 10 03760 JST LEKR NO SYMBOL ... FLAG 'L' ERROR
2441 03325 -0 10 00547 JST* DLC DEFINE THE SYMBOL IN THE LOCATION FIELD
2442 03326 -0 10 00546 JST* CDIA PRINT THE VALUE OF THE EXPRESSION
2443 03327 0 02 00526 LDA SYMF SYMF CONTAINS CORRECT PROGRAM COUNTER
2444 03330 0 04 00405 STA CLUC RESTORE THE PROGRAM COUNTER
2445 03331 0 02 00417 LDA RBIT RBIT CONTAINS ASSEMBLY MODE
2446 03332 0 04 00406 STA ABSW RESTORE ASSEMBLY MODE FLAG
2447 03333 -0 01 00542 JMP* COM EXIT
2448 *
2449 * COMN: COMN PSEUDO-OP PROCESSOR
2450 *
2451 *
2452 03334 0 10 02224 COMN JST VAR EVALUATE THE ADDRESS FIELD
2453 03335 140407 TCA COMPLEMENT THE RESULT
2454 03336 0 06 00502 ADD COML ADD TO THE COMMON BASE
2455 03337 0 04 00502 STA COML REPLACE THE COMMON BASE WITH NEW VALUE
2456 03340 0 04 00423 STA SUM SAVE RESULT IN SUM FOR PRINTING
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2457 03341 0 01 03315 JMP EQU1 JOIN THE EQU PROCESSOR DAP23460
2458 * DAP23470
2459 EJCT *****DAP23480
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2460 * DAP23490
2461 * SETB: SET BASE PSEUDO-OP PROCESSOR DAP23500
2462 * DAP23510
2463 * DAP23520
2464 03342 -0 10 00547 SETB JST* DLC DEFINE LOCATION FIELD DAP23530
2465 03343 -0 10 00612 JST* VARD EVALUATE ADDRESS FIELD DAP23540
2466 03344 140100 SSP TRUNCATE IF NECESSARY TO 15 BITS DAP23550
2467 03345 0 04 00437 STA WORD SAVE THE VALUE FOR OUTPUT ROUTINE DAP23560
2468 03346 0 02 00417 LDA RBIT FETCH THE RELOCATION FLAG DAP23570
2469 03347 101040 SNZ SKIP IF NOT ABSOLUTE DAP23580
2470 03350 0 01 03357 JMP STBX ALSO OUTPUT ABSOLUTE BASE ADDRESS DAP23590
2471 03351 0 07 00700 SUB ONE SUBTRACT ONE TO TEST FOR RELOCATABLE DAP23600
2472 03352 100040 SZE RESULT IS ZERO IF RELOCATABLE DAP23610
2473 03353 -0 10 00566 JST* VEX NOT RELOCATABLE - FLAG 'V' ERROR DAP23620
2474 03354 140500 SSM SET BIT ONE - RELOCATABLE DAP23630
2475 03355 0 06 00437 ADD WORD ADD IN THE ADDRESS DAP23640
2476 03356 0 04 00437 STA WORD SAVE RESULT FOR OUTPUT ROUTINE DAP23650
2477 03357 -0 10 00577 STBX JST* OBID OUTPUT OBJECT TEXT BLOCK DAP23660
2478 03360 000015 OCT 15 CODE FOR NEW STYLE BLOCK 64 DAP23670
2479 03361 -0 01 00542 JMP* COM GO LIST THE STATEMENT AND EXIT DAP23680
2480 * DAP23690
2481 * DAP23700
2482 EJCT *****DAP23710
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2483 *
2484 * MOR : MOR PSEUDO-OP PROCESSOR
2485 *
2486 *
2487 03362 0 04 00412 MOR STA CNIR CLEAR LINE COUNTER
2488 03363 -0 10 00551 JST* LSI0 LIST THIS STATEMENT
2489 03364 0 10 00000 CALL D$PA WAIT FOR NEW SOURCE TO BE LOADED
2490 03365 0 01 03307 JMP EJCI EJECT THE PAGE
2491 *
2492 *
2493 * FIN : FIN PSEUDO-OP PROCESSOR
2494 *
2495 *
2496 03366 -0 10 00554 FIN JST* FINP DEFINE CURRENT LITERAL POOL ENTRIES
2497 03367 -0 01 00542 JMP* COM GO LIST THIS STATEMENT AND EXIT
2498 *
2499 *
2500 * CSET: SEIC PSEUDO-OP PROCESSOR
2501 *
2502 *
2503 03370 -0 10 00612 CSET JST* VARD EVALUATE EXPRESSION IN ADDRESS FIELD
2504 03371 0 04 00502 STA COML PUT THE RESULT IN THE COMMON BASE
2505 03372 -0 01 00542 JMP* COM LIST THIS STATEMENT AND EXIT
2506 *
2507 *
2508 * EJCT *****DAP23970
```

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2509 *
2510 * BSZ : BSZ PSEUDO-OP PROCESSOR
2511 *
2512 * ENTRY IS FROM OP-CODE TABLE SEARCH ROUTINE
2513 *
2514 *
2515 03373 0 04 00472 BSZ STA CB11 SET PURE DATA INDICATOR
2516 03374 -0 10 00547 JST* DLC DEFINE SYMBOL IN LOCATION FIELD
2517 03375 0 10 02224 JST VAR EVALUATE EXPRESSION IN VARIABLE FIELD
2518 03376 140407 TCA OBTAIN TWOS COMPLEMENT OF BLOCK COUNT
2519 03377 101400 SMI SKIP IF A CREDIBLE SIZE BLOCK
2520 03400 -0 01 00604 JMP* BCE9 OTHERWISE FLAG A 'V' ERROR AND EXIT
2521 03401 0 04 00453 STA SIGN SAVE BLOCK COUNT
2522 03402 0 04 00500 STA DBNM SAVE BLOCK COUNT
2523 03403 140040 CRA CLEAR A REGISTER
2524 03404 0 04 00423 STA SUM SET SUM TO ZERO
2525 03405 -0 10 00544 BSZ1 JST* DUMP OUTPUT OBJECT TEXT
2526 03406 -0 10 00551 JST* LSI0 LIST THE LINE
2527 03407 0 12 00410 IRS LSIW INHIBIT LISTING AFTER FIRST WORD
2528 03410 0 12 00453 IRS SIGN INCREMENT COUNT
2529 03411 0 01 03405 JMP BSZ1 GO BACK TO OUTPUT NEXT WORD
2530 03412 0 02 00410 LDA LSIW FETCH LISTING SWITCH
2531 03413 0 06 00500 ADD DBNM RESTORE II
2532 03414 0 04 00410 STA LSIW REPLACE LISTING SWITCH
2533 03415 -0 01 00553 JMP* LIN END OF STATEMENT
2534 *
2535 *
2536 * EJCT *****DAP24250
```

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2537 *
2538 * BSS : BSS PSEUDO-OP PROCESSOR
2539 *
2540 *
2541 03416 -0 10 00547 BSS JST* DLC DEFINE SYMBOL IN LOCATION FIELD
2542 03417 -0 10 00545 JST* CPC PRINT LOCATION OF FIRST WORD OF BLOCK
2543 03420 0 10 02224 JST VAR EVALUATE EXPRESSION IN ADDRESS FIELD
2544 03421 0 06 00405 ADD CLUC ADD CURRENT LOCATION TO BLOCK SIZE
2545 03422 0 04 00405 STA CLUC REPLACE LOCATION COUNTER
2546 03423 0 01 03243 JMP ORZ GO SET NEW ORIGIN IN OBJECT TEXT
2547 *
2548 *
2549 * BES : BES PSEUDO-OP PROCESSOR
2550 *
2551 *
2552 03424 0 10 02224 BES JST VAR EVALUATE EXPRESSION IN ADDRESS FIELD
2553 03425 0 06 00405 ADD CLUC ADD LOCATION COUNTER TO BLOCK SIZE
2554 03426 0 04 00405 STA CLUC REPLACE LOCATION COUNTER
2555 03427 -0 10 00547 JST* DLC DEFINE SYMBOL IN LOCATION FIELD
2556 03430 -0 10 00545 JST* CPC PRINT END OF BLOCK ADDRESS
2557 03431 0 01 03243 JMP ORZ GO SET NEW ORIGIN IN OBJECT TEXT
2558 *
2559 *
2560 EJCT *****DAP24490
    
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2561 *
2562 * BCI : BCI PSEUDO-OP PROCESSOR
2563 *
2564 *
2565 03432 -0 10 00547 BCI JST* DLC DEFINE SYMBOL IN LOCATION FIELD
2566 03433 0 10 02224 JST VAR EVALUATE WORD COUNT
2567 03434 140407 TCA TWOS COMPLEMENT WORD COUNT
2568 03435 101400 SMI SMI SKIP IF COUNT > 0
2569 03436 0 01 03473 JMP BCeR OTHERWISE FLAG 'V' ERROR AND EXIT
2570 03437 0 04 00477 STA DBCT ESTABLISH COUNT ONE
2571 03440 0 04 00500 STA DBNM ESTABLISH COUNT TWO
2572 03441 0 06 00633 ADD C29 CHECK FOR OVERSIZE COUNT
2573 03442 100400 SPL SKIP IF 0 < COUNT < 30
2574 03443 0 01 03473 JMP BCeR OTHERWISE FLAG 'V' ERROR AND EXIT
2575 03444 0 02 00530 LDA DBIP ADDRESS OF STORAGE AREA
2576 03445 0 04 00501 STA DBPT ESTABLISH POINTER TO STORAGE AREA
2577 03446 -0 10 00575 BCL JST* CHRD FETCH NEXT
2578 03447 141240 ICR A(1-8)& CHARACTER, A(9-16)& 0
2579 03450 0 04 00475 STA T SAVE FIRST CHARACTER OF WORD
2580 03451 -0 10 00575 JST* CHRD FETCH NEXT CHARACTER
2581 03452 0 06 00475 ADD T INSERT PREVIOUS CHARACTER
2582 03453 -0 04 00501 STA* DBPT PLACE WORD IN STORAGE AREA
2583 03454 0 12 00501 IRS DBPT INCREMENT STORAGE POINTER
2584 03455 0 12 00477 IRS DBCT INCREMENT WORD COUNT
2585 03456 0 01 03446 JMP BCL GO BACK TO PACK NEXT WORD
2586 03457 140040 LDMP CRA
2587 03460 0 04 00472 STA CB1I SET CB1I TO INDICATE PURE DATA
2588 03461 0 02 00530 LDA DBIP ESTABLISH LIST POINTER
2589 03462 0 04 00501 STA DBPT
2590 03463 -0 02 00501 BCL1 LDA* DBPT
2591 03464 0 04 00423 STA SUM
2592 03465 -0 10 00544 JST* DUMP
2593 03466 -0 10 00551 JST* LSID
2594 03467 0 12 00501 IRS DBPT
2595 03470 0 12 00500 IRS DBNM
2596 03471 0 01 03463 JMP BCL1
2597 03472 -0 01 00553 JMP* LIN
    
```


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|------|-------|-------------|------|-------|-------------------------|---------------------------------|--|--|----------|
| 2625 | | | * | | | | | | DAP25140 |
| 2626 | | | * | HEX : | HEX PSEUDO-OP PROCESSOR | | | | DAP25150 |
| 2627 | | | * | | | | | | DAP25160 |
| 2628 | | | * | | | | | | DAP25170 |
| 2629 | 03507 | 141206 | HEX | AOA | | A & 1 FOR HEX CONVERSION | | | DAP25180 |
| 2630 | | | * | | | FALL THROUGH TO OCT PROCESSOR | | | DAP25190 |
| 2631 | | | * | | | | | | DAP25200 |
| 2632 | | | * | | | | | | DAP25210 |
| 2633 | | | * | OCT : | OCT PSEUDO-OP PROCESSOR | | | | DAP25220 |
| 2634 | | | * | | | | | | DAP25230 |
| 2635 | | | * | | | | | | DAP25240 |
| 2636 | 03510 | 0 04 00466 | OCT | STA | DEUT | SET CONVERSION SWITCH | | | DAP25250 |
| 2637 | 03511 | 140040 | | CRA | | | | | DAP25260 |
| 2638 | 03512 | 0 04 00500 | | STA | DBNM | SET WORD COUNT TO ZERO | | | DAP25270 |
| 2639 | 03513 | -0 10 00547 | JST* | DLC | | DEFINE SYMBOL IN LOCATION FIELD | | | DAP25280 |
| 2640 | 03514 | 0 02 00530 | LDA | DBIP | | ESTABLISH LIST POINTER | | | DAP25290 |
| 2641 | 03515 | 0 04 00501 | STA | DBPT | | | | | DAP25300 |
| 2642 | 03516 | 0 10 02224 | JST | VAR | | EVALUATE FIRST FIELD | | | DAP25310 |
| 2643 | 03517 | 0 02 00460 | OCTT | LDA | ALFA | TEST FOR NUMERIC | | | DAP25320 |
| 2644 | 03520 | 101040 | | SNZ | | SKIP IF 11 IS | | | DAP25330 |
| 2645 | 03521 | -0 10 00557 | JST* | CER | | FLAG CONVERSION ERROR | | | DAP25340 |
| 2646 | 03522 | 0 02 00423 | LDA | SUM | | GET HIGH ORDER PART OF VALUE | | | DAP25350 |
| 2647 | 03523 | -0 04 00501 | STA* | DBPT | | PLACE IT IN LIST | | | DAP25360 |
| 2648 | 03524 | 0 02 00422 | LDA | DBFL | | FETCH DOUBLE PRECISION FLAG | | | DAP25370 |
| 2649 | 03525 | 100040 | | SZE | | SKIP IF NOT SET | | | DAP25380 |
| 2650 | 03526 | 0 01 03546 | JMP | OC2P | | GO OUTPUT SECOND WORD | | | DAP25390 |
| 2651 | 03527 | 0 02 00442 | LDA | WCNT | | FETCH WORD COUNT OF VALUE | | | DAP25400 |
| 2652 | 03530 | 0 07 00700 | SUB | ONE | | TEST FOR MULTIPLE PRECISION | | | DAP25410 |
| 2653 | 03531 | 100040 | | SZE | | SKIP IF NOT | | | DAP25420 |
| 2654 | 03532 | 0 01 03543 | JMP | OC2W | | GO OUTPUT SECOND WORD | | | DAP25430 |
| 2655 | 03533 | 0 02 00444 | OCTR | LDA | TERM | FETCH TERMINATING CHARACTER | | | DAP25440 |
| 2656 | 03534 | 0 05 00635 | ERA | C240 | | TEST FOR BLANK | | | DAP25450 |
| 2657 | 03535 | 101040 | | SNZ | | SKIP IF NOT | | | DAP25460 |
| 2658 | 03536 | 0 01 03561 | JMP | OCID | | BLANK - SCAN COMPLETED | | | DAP25470 |
| 2659 | 03537 | 0 12 00501 | IRS | DBPT | | INCREMENT LIST POINTER | | | DAP25480 |
| 2660 | 03540 | 0 12 00500 | IRS | DBNM | | INCREMENT WORD COUNT | | | DAP25490 |
| 2661 | 03541 | -0 10 00613 | JST* | VARF | | EVALUATE NEXT FIELD | | | DAP25500 |

| | | | | | | | | | |
|------|-------|-------------|------|--------|--------------------|-----------------------------|--|--|----------|
| 2662 | 03542 | 0 01 03517 | JMP | OCIT | | GO MOVE VALUE TO LIST | | | DAP25510 |
| 2663 | 03543 | 0 07 00700 | OC2W | SUB | ONE | TEST FOR 3 WORD VALUE | | | DAP25520 |
| 2664 | 03544 | 100040 | | SZE | | SKIP IF NOT | | | DAP25530 |
| 2665 | 03545 | 0 01 03553 | JMP | OC3W | | GO PROCESS THREE WORD VALUE | | | DAP25540 |
| 2666 | 03546 | 0 02 00446 | OC2P | LDA | NUM+1 | FETCH SECOND WORD OF VALUE | | | DAP25550 |
| 2667 | 03547 | 0 12 00501 | IRS | DBPT | | INCREMENT LIST POINTER | | | DAP25560 |
| 2668 | 03550 | 0 12 00500 | IRS | DBNM | | INCREMENT WORD COUNT | | | DAP25570 |
| 2669 | 03551 | -0 04 00501 | STA* | DBPT | | INSERT VALUE IN LIST | | | DAP25580 |
| 2670 | 03552 | 0 01 03533 | JMP | OCIR | | GO PROCESS NEXT FIELD | | | DAP25590 |
| 2671 | 03553 | 0 02 00446 | OC3W | LDA | NUM+1 | FETCH SECOND WORD OF VALUE | | | DAP25600 |
| 2672 | 03554 | 0 12 00501 | IRS | DBPT | | INCREMENT LIST POINTER | | | DAP25610 |
| 2673 | 03555 | 0 12 00500 | IRS | DBNM | | INCREMENT WORD COUNT | | | DAP25620 |
| 2674 | 03556 | -0 04 00501 | STA* | DBPT | | INSERT VALUE IN LIST | | | DAP25630 |
| 2675 | 03557 | 0 02 00447 | LDA | NUM+2 | | FETCH THIRD WORD OF VALUE | | | DAP25640 |
| 2676 | 03560 | 0 01 03547 | JMP | OC2P+1 | | GO PLACE THIRD WORD IN LIST | | | DAP25650 |
| 2677 | | | * | | | | | | DAP25660 |
| 2678 | | | * | HERE | WHEN SCAN COMPLETE | | | | DAP25670 |
| 2679 | | | * | | | | | | DAP25680 |
| 2680 | 03561 | 0 02 00500 | OCTD | LDA | DBNM | FETCH WORD COUNT -1 | | | DAP25690 |
| 2681 | 03562 | 140401 | | CMA | | ONES COMPLEMENT COUNT | | | DAP25700 |
| 2682 | 03563 | 0 04 00500 | STA | DBNM | | REPLACE THE COUNT | | | DAP25710 |
| 2683 | 03564 | 0 01 03457 | JMP | LDMP | | GO DUMP THE BLOCK | | | DAP25720 |
| 2684 | | | * | | | | | | DAP25730 |
| 2685 | | | * | | | | | | DAP25740 |
| 2686 | | | EJCT | | | ***** | | | DAP25750 |


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2799 *
2800 * ELSE: ELSE PSEUDO-OP PROCESSOR DAP26880
2801 * DAP26890
2802 * DAP26900
2803 03676 0 02 00415 ELSE LDA TCNT FETCH CONDITIONAL COUNT DAP26910
2804 03677 100040 SZE IF ZERO - ERROR DAP26920
2805 03700 0 01 03703 JMP **3 NON-ZERO, OK DAP26930
2806 03701 -0 10 00614 JST* ZERX FLAG A 'Z' ERROR DAP26940
2807 03702 0 01 03666 JMP COUT+2 TERMINATE PROCESSING DAP26950
2808 03703 0 02 00414 LDA CRP FETCH ASSEMBLY INHIBITED COUNTER DAP26960
2809 03704 101040 SNZ SNZ SKIP IF ASSEMBLY IS INHIBITED DAP26970
2810 03705 0 01 03662 JMP COND+1 GO INHIBIT ASSEMBLY DAP26980
2811 03706 0 07 00700 SUB ONE DECREMENT INHIBITION COUNTER DAP26990
2812 03707 100040 SZE SKIP IF ASSEMBLY IS NOW RESTORED DAP27010
2813 03710 0 01 03666 JMP COUT+2 OTHERWISE THIS STATEMENT HAS NO EFFECT DAP27020
2814 03711 0 04 00414 STA CRP CLEAR ASSEMBLY INHIBITION COUNTER DAP27030
2815 03712 0 01 03666 JMP COUT+2 GO CHECK FOR LISTING AND EXIT DAP27040
2816 * DAP27050
2817 * DAP27060
2818 * ENDC: ENDC PSEUDO-OP PROCESSOR DAP27070
2819 * DAP27080
2820 * DAP27090
2821 03713 0 02 00414 ENDC LDA CRP FETCH ASSEMBLY INHIBITION COUNTER DAP27100
2822 03714 100040 SZE SKIP IF ASSEMBLY NOT INHIBITED DAP27110
2823 03715 0 07 00700 SUB ONE OTHERWISE DECREMENT THE COUNTER DAP27120
2824 03716 0 04 00414 STA CRP REPLACE THE COUNTER DAP27130
2825 03717 0 02 00415 LDA TCNT FETCH CONDITIONAL COUNTER DAP27140
2826 03720 0 07 00700 SUB ONE DECREMENT THE COUNTER DAP27150
2827 03721 100400 SPL SKIP IF VALID RESULT DAP27160
2828 03722 -0 10 00614 JST* ZERX EXTRA 'ENDC' - FLAG 'Z' ERROR DAP27170
2829 03723 0 04 00415 STA TCNT REPLACE THE COUNTER DAP27180
2830 03724 0 01 03666 JMP COUT+2 GO TEST FOR LISTING AND EXIT DAP27190
2831 * DAP27200
2832 * DAP27210
2833 * EJCT *****DAP27220
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2834 * DAP27230
2835 * INHT: TEST FOR INHIBITED ASSEMBLY DAP27240
2836 * DAP27250
2837 * DAP27260
2838 03725 0 000000 INHT DAC ** DAP27270
2839 03726 0 02 00414 LDA CRP FETCH INHIBITED ASSEMBLY COUNTER DAP27280
2840 03727 100040 SZE SKIP IF ASSEMBLY NOT INHIBITED DAP27290
2841 03730 0 01 03666 JMP COUT+2 ASSEMBLY INHIBITED - TERMINATE PROCESSING DAP27300
2842 03731 -0 01 03725 JMP* INHT NOT INHIBITED - RETURN DAP27310
2843 * DAP27320
2844 * DAP27330
2845 * COMY: COMMENT LINE PROCESSOR DAP27340
2846 * DAP27350
2847 * DAP27360
2848 03732 0 10 03725 COMY JST INHT TEST FOR INHIBITED ASSEMBLY DAP27370
2849 03733 -0 01 00542 JMP* COM NOT INHIBITED - LIST THIS LINE DAP27380
2850 * DAP27390
2851 * DAP27400
2852 * FAIL: FAIL PSEUDO-OP PROCESSOR DAP27410
2853 * DAP27420
2854 * DAP27430
2855 03734 -0 10 00563 FAIL JST* OER FLAG AN 'O' ERROR DAP27440
2856 03735 -0 01 00542 JMP* COM LIST THIS LINE AND EXIT DAP27450
2857 * DAP27460
2858 * DAP27470
2859 * EJCT *****DAP27480
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|------|-------------------|------|------|-------------------------|--|--|--|--|----------|
| 2860 | | * | | | | | | | DAP27490 |
| 2861 | | * | | ERROR FLAGGING ROUTINES | | | | | DAP27500 |
| 2862 | | * | | | | | | | DAP27510 |
| 2863 | | * | | | | | | | DAP27520 |
| 2864 | 003736 | AERR | EQU | * | | 'A' ERROR/ADDRESS ERROR | | | DAP27530 |
| 2865 | 03736 0 02 00644 | LDA | C301 | | | ASCII CODE FOR 'A' | | | DAP27540 |
| 2866 | 03737 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP27550 |
| 2867 | 03740 -0 01 00602 | JMP* | REG9 | | | EXIT | | | DAP27560 |
| 2868 | | * | | | | | | | DAP27570 |
| 2869 | 03741 0 000000 | CERR | DAC | ** | | 'C' ERROR/CONVERSION ERROR | | | DAP27580 |
| 2870 | 03742 0 02 00645 | LDA | C303 | | | ASCII CODE FOR 'C' | | | DAP27590 |
| 2871 | 03743 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP27600 |
| 2872 | 03744 -0 01 03741 | JMP* | CEMR | | | EXIT | | | DAP27610 |
| 2873 | | * | | | | | | | DAP27620 |
| 2874 | 03745 0 000000 | EERR | DAC | ** | | 'E' ERROR/EXTERNAL REFERENCE ERROR | | | DAP27630 |
| 2875 | 03746 0 02 00646 | LDA | C305 | | | ASCII CODE FOR 'E' | | | DAP27640 |
| 2876 | 03747 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP27650 |
| 2877 | 03750 -0 01 03745 | JMP* | EEER | | | EXIT | | | DAP27660 |
| 2878 | | * | | | | | | | DAP27670 |
| 2879 | 03751 0 000000 | FERR | DAC | ** | | 'F' ERROR/FORMAT ERROR | | | DAP27680 |
| 2880 | 03752 0 02 00647 | LDA | C306 | | | ASCII CODE FOR 'F' | | | DAP27690 |
| 2881 | 03753 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP27700 |
| 2882 | 03754 -0 01 03751 | JMP* | FEER | | | EXIT | | | DAP27710 |
| 2883 | | * | | | | | | | DAP27720 |
| 2884 | 003755 | IERR | EQU | * | | 'I' ERROR/INDIRECT ERROR | | | DAP27730 |
| 2885 | 03755 0 02 00650 | LDA | C311 | | | ASCII CODE FOR 'I' | | | DAP27740 |
| 2886 | 03756 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP27750 |
| 2887 | 03757 -0 01 00601 | JMP* | VSC9 | | | EXIT | | | DAP27760 |
| 2888 | | * | | | | | | | DAP27770 |
| 2889 | 03760 0 000000 | LERR | DAC | ** | | 'L' ERROR/LOCATION FIELD ERROR | | | DAP27780 |
| 2890 | 03761 0 02 00651 | LDA | C314 | | | ASCII CODE FOR 'L' | | | DAP27790 |
| 2891 | 03762 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP27800 |
| 2892 | 03763 0 04 00450 | STA | SYL | | | PREVENT ERRONEOUS LOCATION FROM BEING DEF. | | | DAP27810 |
| 2893 | 03764 -0 01 03760 | JMP* | LEER | | | EXIT | | | DAP27820 |
| 2894 | | * | | | | | | | DAP27830 |
| 2895 | 003765 | MDEF | EQU | * | | | | | DAP27840 |
| 2896 | 03765 0 10 037 7 | JST | MEER | | | | | | DAP27850 |

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|------|-------------------|------|------|----|--|-------------------------------------|--|--|----------|
| 2897 | 03766 -0 01 00603 | JMP* | DLU9 | | | | | | DAP27860 |
| 2898 | | * | | | | | | | DAP27870 |
| 2899 | 03767 0 000000 | MERR | DAC | ** | | 'M' ERROR/MULTIPLY DEFINED SYMBOL | | | DAP27880 |
| 2900 | 03770 0 02 00652 | LDA | C315 | | | ASCII CODE FOR 'M' | | | DAP27890 |
| 2901 | 03771 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP27900 |
| 2902 | 03772 -0 01 03767 | JMP* | MEER | | | EXIT | | | DAP27910 |
| 2903 | | * | | | | | | | DAP27920 |
| 2904 | 03773 0 000000 | OERR | DAC | ** | | 'O' ERROR/ILLEGAL OPCODE | | | DAP27930 |
| 2905 | 03774 0 02 00653 | LDA | C317 | | | ASCII CODE FOR 'O' | | | DAP27940 |
| 2906 | 03775 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP27950 |
| 2907 | 03776 -0 01 03773 | JMP* | OEER | | | EXIT | | | DAP27960 |
| 2908 | | * | | | | | | | DAP27970 |
| 2909 | 003777 | PERR | EQU | * | | 'P' ERROR/PHASE ERROR | | | DAP27980 |
| 2910 | 03777 0 02 00461 | LDA | TS1 | | | CHECK IF ONE PASS ASSEMBLY | | | DAP27990 |
| 2911 | 04000 140320 | CSA | | | | | | | DAP28000 |
| 2912 | 04001 0 02 00654 | LDA | C320 | | | ASCII CODE FOR 'P' | | | DAP28010 |
| 2913 | 04002 101001 | SSC | | | | IF ONE PASS, CAN'T HAVE PHASE ERROR | | | DAP28020 |
| 2914 | 04003 0 02 00652 | LDA | C315 | | | MUST MEAN 'M' | | | DAP28030 |
| 2915 | 04004 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP28040 |
| 2916 | 04005 -0 01 00603 | JMP* | DLU9 | | | EXIT | | | DAP28050 |
| 2917 | | * | | | | | | | DAP28060 |
| 2918 | 04006 0 000000 | RERR | DAC | ** | | 'R' ERROR/RELOCATION ERROR | | | DAP28070 |
| 2919 | 04007 0 02 00655 | LDA | C322 | | | ASCII CODE FOR 'R' | | | DAP28080 |
| 2920 | 04010 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP28090 |
| 2921 | 04011 -0 01 04006 | JMP* | REER | | | EXIT | | | DAP28100 |
| 2922 | | * | | | | | | | DAP28110 |
| 2923 | 04012 0 000000 | SERR | DAC | ** | | 'S' ERROR/CROSS SECTOR REFERENCE | | | DAP28120 |
| 2924 | 04013 0 02 00656 | LDA | C323 | | | ASCII CODE FOR 'S' | | | DAP28130 |
| 2925 | 04014 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP28140 |
| 2926 | 04015 -0 01 04012 | JMP* | SEER | | | EXIT | | | DAP28150 |
| 2927 | | * | | | | | | | DAP28160 |
| 2928 | 04016 0 000000 | TERR | DAC | ** | | 'T' ERROR/FLAG ERROR | | | DAP28170 |
| 2929 | 04017 0 02 00657 | LDA | C324 | | | ASCII CODE FOR 'T' | | | DAP28180 |
| 2930 | 04020 0 10 04042 | JST | LOGR | | | LOG THE ERROR | | | DAP28190 |
| 2931 | 04021 -0 01 04016 | JMP* | TEER | | | EXIT | | | DAP28200 |
| 2932 | | * | | | | | | | DAP28210 |
| 2933 | 04022 0 000000 | UERR | DAC | ** | | 'U' ERROR/UNDEFINED SYMBOL | | | DAP28220 |

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2934 04023 0 02 00660 LDA C325 ASCII CODE FOR 'U' DAP28230
2935 04024 0 10 04042 JST LOGR LOG THE ERROR DAP28240
2936 04025 -0 01 04022 JMP* UERR EXIT DAP28250
2937 * DAP28260
2938 04026 0 000000 VERR DAC ** 'V' ERROR/PSEUDO-OP ADDRESS FIELD ERROR DAP28270
2939 04027 0 02 00661 LDA C326 ASCII CODE FOR 'V' DAP28280
2940 04030 0 10 04042 JST LOGR LOG THE ERROR DAP28290
2941 04031 -0 01 04026 JMP* VERR EXIT DAP28300
2942 * DAP28310
2943 04032 0 000000 XERR DAC ** 'X' ERROR/SYMBOL TABLE OVERFLOW DAP28320
2944 04033 0 02 00662 LDA C330 ASCII CODE FOR 'X' DAP28330
2945 04034 0 10 04042 JST LOGR LOG THE ERROR DAP28340
2946 04035 -0 01 04032 JMP* XERR EXIT DAP28350
2947 * DAP28360
2948 04036 0 000000 ZERR DAC ** 'Z' ERROR/CONDITIONAL ASSEMBLY ERROR DAP28370
2949 04037 0 02 00663 LDA C332 ASCII CODE FOR 'Z' DAP28380
2950 04040 0 10 04042 JST LOGR LOG THE ERROR DAP28390
2951 04041 -0 01 04036 JMP* ZERR EXIT DAP28400
2952 * DAP28410
2953 * DAP28420
2954 EJCT *****DAP28430
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2955 * DAP28440
2956 * LOGR: ERROR LOGGING ROUTINE DAP28450
2957 * DAP28460
2958 * DAP28470
2959 * CALLING SEQUENCE: DAP28480
2960 * LDA CHAR CHAR IS ASCII REPRESENTATION OF ERROR FLAG DAP28490
2961 * JST LOGR DAP28500
2962 * .....RETURN DAP28510
2963 * DAP28520
2964 * DAP28530
2965 04042 0 000000 LOGR DAC ** LOG ERROR DAP28540
2966 04043 0 04 03725 STA INHT SAVE ERROR FLAG DAP28550
2967 04044 0 02 04052 LDA LGCT FETCH ERROR/LINE COUNTER DAP28560
2968 04045 0 11 00767 CAS C4 CHECK FOR FIELD OVERFLOW DAP28570
2969 04046 101000 NOP NO ROOM FOR FLAG DAP28580
2970 04047 -0 01 04042 JMP* LOGR EXIT - NO ROOM FOR FLAG DAP28590
2971 04050 0 02 03725 LDA INHT RETRIEVE ERROR FLAG DAP28600
2972 04051 -0 10 00574 JST* CSRD INSERT CHARACTER IN LIST BUFFER DAP28610
2973 04052 000000 LGCT OCT 0 COLUMN POINTER DAP28620
2974 04053 0 12 04052 IRS *-1 INCREMENT COLUMN POINTER DAP28630
2975 04054 -0 10 00552 JST* UACD UPDATE ERROR COUNTER DAP28640
2976 04055 0 000413 DAC ERCT ADDRESS OF ERROR COUNTER DAP28650
2977 04056 0 000725 DAC EMES+2 ADDRESS OF ASCII EXPANSION FIELD DAP28660
2978 04057 0414 57 LGL 17 CLEAR A REGISTER AND C BIT DAP28670
2979 04060 -0 01 04042 JMP* LOGR RETURN TO CALLER DAP28680
2980 * DAP28690
2981 * DAP28700
2982 EJCT *****DAP28710
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|------|-------|-------------|----|---|------|--|------------------------------------|--|----------|
| 2983 | | | * | | | | | | |
| 2984 | | | ** | OBTX: PLACE ENTRY IN OBJECT TEXT BUFFER | | | | | DAP28720 |
| 2985 | | | * | | | | | | DAP28730 |
| 2986 | | | * | | | | | | DAP28740 |
| 2987 | | | * | CALLING SEQUENCE: | | | | | DAP28750 |
| 2988 | | | * | JSI | UBTX | | | | DAP28760 |
| 2989 | | | * | UCI | BLCK | | | | DAP28770 |
| 2990 | | | * |RETRN | | | | | DAP28780 |
| 2991 | | | * | | | | | | DAP28790 |
| 2992 | | | * | WHERE: | | | | | DAP28800 |
| 2993 | | | * | | | | | | DAP28810 |
| 2994 | | | * | BLCK - INTERNAL BLOCK CODE (REFER TO ADDRESS LIST | | | | | DAP28820 |
| 2995 | | | * | IN THIS ROUTINE FOR CODES) | | | | | DAP28830 |
| 2996 | | | * | | | | | | DAP28840 |
| 2997 | | | * | | | | | | DAP28850 |
| 2998 | 04061 | 0 000000 | | OBTX DAC ** | | | ENTRY | | DAP28860 |
| 2999 | 04062 | 0 02 00436 | | LDA ZP | | | FETCH PASS INDICATOR | | DAP28870 |
| 3000 | 04063 | 100400 | | SPL | | | SKIP IF OUTPUT PASS | | DAP28880 |
| 3001 | 04064 | 0 01 04245 | | JMP DX1 | | | PASS 1 OF 2, INHIBIT BINARY | | DAP28890 |
| 3002 | 04065 | -0 02 04061 | | LDA* OBIX | | | FETCH BLOCK TYPE | | DAP28900 |
| 3003 | 04066 | 0 07 00514 | | SUB OBI | | | COMPAKE WITH CURRENT TYPE | | DAP28910 |
| 3004 | 04067 | 100040 | | SZE | | | SKIP IF SAME TYPE | | DAP28920 |
| 3005 | 04070 | 0 01 04104 | | JMP PNCH | | | DIFFERENT - DUMP CURRENT BLOCK | | DAP28930 |
| 3006 | 04071 | 0 02 00514 | | LDA OBI | | | LOAD BLOCK CODE | | DAP28940 |
| 3007 | 04072 | 100040 | | SZE | | | IF ZERO, ONE WORD/ENTRY | | DAP28950 |
| 3008 | 04073 | 0 07 00743 | | SUB C3 | | | IF 1-3, TWO WORD/ENTRY | | DAP28960 |
| 3009 | 04074 | 100400 | | SPL | | | SKIP IF ONE WORD FORMAT | | DAP28970 |
| 3010 | 04075 | 0 01 04227 | | JMP TWOR | | | PROCESS TWO WORD TYPE | | DAP28980 |
| 3011 | 04076 | 0 02 00512 | | LDA BLKS | | | FETCH WORD COUNT | | DAP28990 |
| 3012 | 04077 | 0 06 00513 | | ADD ROOM | | | ADD SIZE CONSTANT (0 OR 2) | | DAP29000 |
| 3013 | 04100 | 101400 | | SMI | | | SKIP IF ROOM FOR ENTRY | | DAP29010 |
| 3014 | 04101 | 0 01 04104 | | JMP PNCH | | | NOT ENOUGH, PUNCH THE BUFFER | | DAP29020 |
| 3015 | 04102 | 0 12 00512 | | IRS BLKS | | | INCREMENT WORD COUNT | | DAP29030 |
| 3016 | 04103 | 0 01 04243 | | JMP FILL+1 | | | IF NO OVERFLOW, PUT WORD IN BUFFER | | DAP29040 |
| 3017 | 04104 | 0 02 00514 | | PNCH LDA OBI | | | FETCH BLOCK CODE | | DAP29050 |
| 3018 | 04105 | 100400 | | SPL | | | SKIP IF NOT FIRST CALL | | DAP29060 |
| 3019 | 04106 | 0 01 04236 | | JMP BEGF | | | FIRST CALL - OUTPUT FEED | | DAP29070 |

| | | | | | | | | | |
|------|-------|-------------|---|---------------|--|---|--|--|----------|
| 3020 | 04107 | 0 11 00767 | | CAS C4 | | CHECK FOR INTERNAL TYPE 4 | | | DAP29090 |
| 3021 | 04110 | 100000 | | SKP | | NO | | | DAP29100 |
| 3022 | 04111 | 0 01 04135 | | JMP RRI | | BLOCK TYPE 0-20 SHOULD NEVER BE OUTPUT | | | DAP29110 |
| 3023 | 04112 | 141240 | | ICR | | A(1-8) & BLOCK CODE | | | DAP29120 |
| 3024 | 04113 | 0 04 04676 | | STA OUIB+1 | | PLACE IT IN OUTPUT BUFFER | | | DAP29130 |
| 3025 | 04114 | 0 05 00515 | | ERA CKSM | | UPDATE THE CHECKSUM | | | DAP29140 |
| 3026 | 04115 | 0 04 00515 | | STA CKSM | | SAVE NEW CHECKSUM VALUE | | | DAP29150 |
| 3027 | 04116 | 0 02 00514 | | LDA OBI | | TEST FOR DATA BLOCK | | | DAP29160 |
| 3028 | 04117 | 0 07 00700 | | SUB ONE | | | | | DAP29170 |
| 3029 | 04120 | 101040 | | SNZ | | SKIP IF NOT | | | DAP29180 |
| 3030 | 04121 | 0 10 04452 | | JST TRUN | | INSURE THAT LAST ENTRY IS IN THE BUFFER | | | DAP29190 |
| 3031 | 04122 | 0 02 00512 | | LDA BLKS | | DETERMINE DATA WORD COUNT | | | DAP29200 |
| 3032 | 04123 | 0 07 00710 | | SUB M56 | | | | | DAP29210 |
| 3033 | 04124 | 0 06 00743 | | ADD C3 | | ADD IN 3 WORD OVERHEAD | | | DAP29220 |
| 3034 | 04125 | 0 04 04675 | | STA OUIB | | PLACE IT IN FIRST WORD OF BUFFER | | | DAP29230 |
| 3035 | 04126 | 141240 | | ICR | | A(1-8) & WORD COUNT | | | DAP29240 |
| 3036 | 04127 | 0 04 04677 | | STA OUIB+2 | | PLACE IT IN SECOND WORD OF OBJECT BLOCK | | | DAP29250 |
| 3037 | 04130 | 0 05 00515 | | ERA CKSM | | UPDATE THE CHECKSUM | | | DAP29260 |
| 3038 | 04131 | 0 10 04473 | | JST FILL | | PLACE CHECKSUM IN BUFFER | | | DAP29270 |
| 3039 | 04132 | 0 15 00517 | | STX MOD | | | | | DAP29280 |
| 3040 | 04133 | 0 10 00000 | | CALL DSUB | | OUTPUT OBJECT TEXT BLOCK | | | DAP29280 |
| 3041 | 04134 | 0 35 00517 | | LDX MOD | | | | | DAP29290 |
| 3042 | 04135 | 0 10 04373 | | JST BLIN | | SET UP FOR NEXT BLOCK | | | DAP29300 |
| 3043 | 04136 | -0 02 04061 | | LDA* OBIX | | FETCH BLOCK TYPE | | | DAP29310 |
| 3044 | 04137 | 0 04 00514 | | STA OBI | | SAVE NEW BLOCK CODE | | | DAP29320 |
| 3045 | 04140 | 0 06 00711 | | ADD KDS | | ADD ADDRESS OF LINKAGE TABLE | | | DAP29330 |
| 3046 | 04141 | 0 04 04143 | | STA **2 | | SAVE BLOCK TYPE PROCESSOR ADDRESS | | | DAP29340 |
| 3047 | 04142 | -0 01 04143 | | JMP* **1 | | JUMP TO BLOCK PROCESSOR | | | DAP29350 |
| 3048 | 04143 | 0 000000 | | DAC ** | | | | | DAP29360 |
| 3049 | | | * | | | | | | DAP29370 |
| 3050 | 04144 | 0 004242 | | DSPT DAC FILL | | (00) @0-00% SUBR NAME | | | DAP29380 |
| 3051 | 04145 | 0 004163 | | DAC DATA | | (01) @0-04% DATA BLOCK | | | DAP29390 |
| 3052 | 04146 | 0 004207 | | DAC SYMS | | (02) @0-10% SYMBOL DEFINITION | | | DAP29400 |
| 3053 | 04147 | 0 004242 | | DAC FILL | | (03) @0-14% END BLOCK | | | DAP29410 |
| 3054 | 04150 | 0 004245 | | DAC DX1 | | (04) @0-20% LOGICAL END | | | DAP29420 |
| 3055 | 04151 | 0 004245 | | DAC DX1 | | (05) @0-24% REL MODE | | | DAP29430 |
| 3056 | 04152 | 0 004245 | | DAC DX1 | | (06) @0-30% ABS MODE | | | DAP29430 |

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|------|-------|---|----------|------|------|--|--------------------------|----------|
| 3057 | 04153 | 0 | 004247 | DAC | ORG1 | (07) @0-34% ORG SET | DAP29440 | |
| 3058 | 04154 | 0 | 004234 | DAC | ENDL | (10) @0-40% END ASSEMBLY | DAP29450 | |
| 3059 | 04155 | 0 | 004242 | DAC | FILL | (11) @0-44% EXTERNAL LINKAGE | DAP29460 | |
| 3060 | 04156 | 0 | 004242 | DAC | FILL | (12) @0-50% ENTRY POINT DEFINITION | DAP29470 | |
| 3061 | 04157 | 0 | 004245 | DAC | DXI | (13) @0-54% EXTENDED DESECTORING | DAP29480 | |
| 3062 | 04160 | 0 | 004245 | DAC | DXI | (14) @0-60% LEAVE EXTENDED DESECTORING | DAP29490 | |
| 3063 | 04161 | 0 | 004242 | DAC | FILL | (15) @0-64% SET BASE SECTOR | DAP29500 | |
| 3064 | | | * | | | | DAP29510 | |
| 3065 | 04162 | 0 | 01 04211 | JSM | JMP | JSMH | DAP29520 | |
| 3066 | | | * | | | | DAP29530 | |
| 3067 | 04163 | 0 | 10 04464 | DATA | JST | SEIC | DAP29540 | |
| 3068 | 04164 | 0 | 00 00000 | SKP | *** | ** | DAP29550 | |
| 3069 | 04165 | 0 | 01 04221 | JMP | FIKS | JMP JSM,NOP, OR SKP | DAP29560 | |
| 3070 | 04166 | 0 | 02 00437 | LDA | WORD | NEXT ENTRY STARTS ON A WORD BOUNDARY | DAP29570 | |
| 3071 | 04167 | | 141140 | ICL | | FETCH FIRST WORD OF NEW ENTRY | DAP29580 | |
| 3072 | 04170 | 0 | 06 00516 | ADD | LHW | ISOLATE FIRST BYTE IN A(9-16) | DAP29590 | |
| 3073 | 04171 | 0 | 10 04473 | JST | FIL | INSERT LAST BYTE OF PREVIOUS ENTRY | DAP29600 | |
| 3074 | 04172 | 0 | 12 00512 | IRS | BLKS | PLACE WORD IN BUFFER | DAP29610 | |
| 3075 | 04173 | 0 | 02 00437 | LDA | WORD | INCREMENT WORD COUNT | DAP29620 | |
| 3076 | 04174 | | 141050 | CAL | | FETCH FIRST WORD OF NEW ENTRY | DAP29630 | |
| 3077 | 04175 | 0 | 06 00440 | ADD | W2 | ISOLATE BYTE TWO | DAP29640 | |
| 3078 | 04176 | | 141340 | ICA | | INSERT THIRD BYTE OF THIS ENTRY | DAP29650 | |
| 3079 | 04177 | 0 | 10 04473 | JST | FIL | SWAP THE BYTES | DAP29660 | |
| 3080 | 04200 | 0 | 12 00512 | IRS | BLKS | PLACE THE WORD IN THE BUFFER | DAP29670 | |
| 3081 | 04201 | | 101000 | NOP | | INCREMENT THE WORD COUNT | DAP29680 | |
| 3082 | 04202 | 0 | 02 04164 | SKPI | LDA | OVERFLOW IS POSSIBLE | DAP29690 | |
| 3083 | 04203 | | 100400 | SPL | | FETCH BRANCH INSTRUCTION | DAP29700 | |
| 3084 | 04204 | 0 | 05 00703 | ERA | C1UX | SKIP IF IT WAS A JMP | DAP29710 | |
| 3085 | 04205 | 0 | 04 04164 | STA | SKP | COMPLEMENT SKP INVERSION BIT | DAP29720 | |
| 3086 | 04206 | 0 | 01 04245 | JMP | DXI | REPLACE BRANCH INSTRUCTION | DAP29730 | |
| 3087 | | | * | | | EXIT | DAP29740 | |
| 3088 | 04207 | 0 | 02 04162 | SYMS | LDA | JSM | SET 'JMP JSMH' IN | DAP29750 |
| 3089 | 04210 | 0 | 04 04164 | STA | SKP | BRANCH INSTRUCTION | DAP29760 | |
| 3090 | 04211 | 0 | 02 00437 | JSMH | LDA | WORD | SYMBOL DEFINITION: PLACE | DAP29770 |
| 3091 | 04212 | 0 | 10 04473 | JST | FIL | WORD IN BUFFER | DAP29780 | |
| 3092 | 04213 | 0 | 12 00512 | IRS | BLKS | INCREMENT WORD COUNT | DAP29790 | |
| 3093 | 04214 | 0 | 02 00440 | LDA | W2 | PLACE SECOND WORD | DAP29800 | |

| | | | | | | | | |
|------|-------|----|----------|------|--------|-------------------------------------|---|----------|
| 3094 | 04215 | 0 | 10 04473 | JST | FIL | IN BUFFER | DAP29810 | |
| 3095 | 04216 | 0 | 12 00512 | IRS | BLKS | INCREMENT WORD COUNT | DAP29820 | |
| 3096 | 04217 | 0 | 01 04245 | JMP | DXI | EXIT | DAP29830 | |
| 3097 | 04220 | 0 | 01 04104 | JMP | PNCH | OUTPUT FULL BUFFER | DAP29840 | |
| 3098 | | | * | | | | DAP29850 | |
| 3099 | 04221 | 0 | 02 00437 | FIRS | LDA | WORD | FETCH FIRST 2 BYTES OF ENTRY | DAP29860 |
| 3100 | 04222 | 0 | 10 04473 | JST | FIL | PLACE IT IN THE BUFFER | DAP29870 | |
| 3101 | 04223 | 0 | 12 00512 | IRS | BLKS | INCREMENT WORD COUNT | DAP29880 | |
| 3102 | 04224 | 0 | 02 00440 | LDA | W2 | SAVE THIRD BYTE IN | DAP29890 | |
| 3103 | 04225 | 0 | 04 00516 | STA | LHW | LHW FOR NEXT INSERTION | DAP29900 | |
| 3104 | 04226 | 0 | 01 04202 | JMP | SKPI | GO INVERT SKIP INSTRUCTION AND EXIT | DAP29910 | |
| 3105 | | | * | | | | DAP29920 | |
| 3106 | 04227 | 0 | 02 00512 | TWOR | LDA | BLKS | CHECK FOR ROOM FOR 2 WORD ENTRY | DAP29930 |
| 3107 | 04230 | | 141206 | AOA | | | DAP29940 | |
| 3108 | 04231 | | 101400 | SMI | | | DAP29950 | |
| 3109 | 04232 | 0 | 01 04104 | JMP | PNCH | NO ROOM - OUTPUT THE BUFFER | DAP29960 | |
| 3110 | 04233 | 0 | 01 04164 | JMP | SKP | ROOM - ADD THE ENTRY | DAP29970 | |
| 3111 | | | * | | | | DAP29980 | |
| 3112 | 04234 | 0 | 10 00000 | ENDL | CALL | D\$EOM | OUTPUT END OF JOB CODE TO OBJECT DEVICE | DAP29990 |
| 3113 | 04235 | 0 | 01 04245 | JMP | DXI | EXIT | DAP30000 | |
| 3114 | | | * | | | | DAP30010 | |
| 3115 | 04236 | 0 | 15 00517 | BEGF | STX | MOD | | |
| 3116 | 04237 | 0 | 10 00000 | CALL | D\$SOM | | START OBJECT DEVICE | |
| 3117 | 04240 | 0 | 35 00517 | LDX | MOD | | | |
| 3118 | 04241 | 0 | 01 04135 | JMP | RR1 | | CONTINUE PROCESSING | DAP30030 |
| 3119 | | | * | | | | | DAP30040 |
| 3120 | 04242 | 0 | 12 00512 | FILL | IRS | BLKS | INCREMENT WORD COUNT | DAP30050 |
| 3121 | 04243 | 0 | 02 00437 | LDA | WORD | | FETCH OBJECT TEXT WORD | DAP30060 |
| 3122 | 04244 | 0 | 10 04473 | JST | FIL | | PLACE IT IN BUFFER | DAP30070 |
| 3123 | 04245 | 0 | 12 04061 | DXT | IRS | OBIX | INCREMENT RETURN ADDRESS | DAP30080 |
| 3124 | 04246 | -0 | 01 04061 | JMP* | OBIX | | EXIT | DAP30090 |
| 3125 | | | * | | | | | DAP30100 |
| 3126 | 04247 | 0 | 02 00700 | ORG1 | LDA | ONE | SET BLOCK TYPE TO ONE | DAP30110 |
| 3127 | 04250 | 0 | 04 00514 | STA | OB1 | | | DAP30120 |
| 3128 | 04251 | 0 | 10 04464 | JST | SEIC | | SET ORIGIN | DAP30130 |
| 3129 | 04252 | 0 | 01 04245 | JMP | DXI | | EXIT | DAP30140 |
| 3130 | | | * | | | | | DAP30150 |

3131
3132

* EJCT ***** DAP30160
***** DAP30170

3133 *
3134 * CLEO: CLEAR LISTING BUFFER DAP30180
3135 * DAP30190
3136 * DAP30200
3137 * CALLING SEQUENCE: DAP30210
3138 * JSI CLEO DAP30220
3139 *RETURN DAP30230
3140 * DAP30240
3141 * DAP30250
3142 * RESULTS: DAP30260
3143 * DAP30270
3144 * THE LISTING BUFFER (OTPB) IS FILLED WITH DAP30280
3145 * SPACE CHARACTERS ('120240'). DAP30290
3146 * DAP30300
3147 * DAP30310
3148 04253 0 000000 CLEO DAC ** CLEAR LISTING BUFFER DAP30320
3149 04254 0 15 00517 STX MOD SAVE THE INDEX REGISTER DAP30330
3150 04255 0 35 00712 LDX M6U SET UP TO CLEAR 60 WORDS DAP30340
3151 04256 0 02 00723 LDA EMES FETCH SPACE CODE ('120240) DAP30350
3152 04257 1 04 04640 STA OTPB+60,1 CLEAR ONE WORD DAP30360
3153 04260 0 12 00000 IRS 0 INCREMENT BUFFER POINTER DAP30370
3154 04261 0 01 04257 JMP *-2 GO BACK TO CLEAR NEXT WORD DAP30380
3155 04262 0 35 00517 LDX MOD RESTORE THE INDEX REGISTER DAP30390
3156 04263 -0 01 04253 JMP* CLEO EXIT DAP30400
3157 * DAP30410
3158 * DAP30420
3159 * DAP30430
EJCT ***** DAP30440

```
3160 *
3161 * UAC : UPDATE ASCII COUNTER DAP30450
3162 * DAP30460
3163 * DAP30470
3164 * CALLING SEQUENCE: DAP30480
3165 * JSI UAC DAP30490
3166 * DAC CNTR DAP30500
3167 * DAC EXP DAP30510
3168 * .....RETURN DAP30520
3169 * DAP30530
3170 * WHERE: DAP30540
3171 * DAP30550
3172 * CNTR - COUNTER TO BE UPDATED. IT IS FORMATTED DAP30560
3173 * INTO FOUR FIELDS OF FOUR BITS EACH. DAP30570
3174 * EACH FIELD MAY HAVE A VALUE FROM 0 TO DAP30580
3175 * 9, AND CARRY FROM ONE FIELD IS DAP30590
3176 * ADDED TO THE NEXT, OVERFLOW BEING IGNORED DAP30600
3177 * IF THE VALUE EXCEEDS 9999. DAP30610
3178 * EXP - TWO WORD BUFFER INTO WHICH THE ASCII DAP30620
3179 * EXPANSION OF THE COUNTER IS PLACED. DAP30630
3180 * DAP30640
3181 * DAP30650
3182 04264 0 000000 UAC DAC ** UPDATE ASCII COUNTER DAP30660
3183 04265 -0 02 04264 LDA* UAC DAP30670
3184 04266 0 04 04430 STA CSRT DAP30680
3185 04267 0 12 04264 IRS UAC DAP30690
3186 04270 -0 02 04264 LDA* UAC INCREMENT ARGUMENT POINTER DAP30700
3187 04271 0 04 04413 STA CHR DAP30710
3188 04272 0 02 00700 LDA ONE DAP30720
3189 04273 0 04 00517 STA MOD DAP30730
3190 04274 0 02 00626 LDA C12 SET CONSTANT FOR CARRY TEST DAP30740
3191 04275 0 04 00510 STA ICUN DAP30750
3192 04276 0 02 00630 LDA C17 DAP30760
3193 04277 0 04 00520 LUDT STA MSK UNITS POSITION MASK DAP30770
3194 04300 -0 02 04430 LDA* CSRT SET POSITION MASK DAP30780
3195 04301 0 06 00517 ADD MOD DAP30790
3196 04302 -0 04 04430 STA* CSRT DAP30800
REPLACE THE COUNTER DAP30810
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3197 04303 0 03 00520 ANA MSK ISOLATE CURRENT POSITION DAP30820
3198 04304 0 07 00510 SUB ICUN TEST FOR POSITION OVERFLOW DAP30830
3199 04305 100040 SZE SKIP IF OVERFLOW DAP30840
3200 04306 0 01 04324 JMP LU1 NO OVERFLOW - GO EXPAND THE COUNTER DAP30850
3201 04307 -0 02 04430 LDA* CSRT RETRIEVE THE COUNTER DAP30860
3202 04310 0 07 00510 SUB ICUN CLEAR CURRENT POSITION DAP30870
3203 04311 -0 04 04430 STA* CSRT REPLACE THE COUNTER DAP30880
3204 04312 0 02 00517 LDA MOD DAP30890
3205 04313 0416 74 ALR 4 MOVE CARRY BIT TO NEXT POSITION DAP30900
3206 04314 0 04 00517 STA MOD REPLACE THE MODIFIER DAP30910
3207 04315 0 02 00510 LDA ICUN DAP30920
3208 04316 0414 74 LGL 4 DAP30930
3209 04317 0 04 00510 STA ICUN MOVE IT TO NEXT POSITION DAP30940
3210 04320 0 02 00520 LDA MSK REPLACE THE CONSTANT DAP30950
3211 04321 0414 74 LGL 4 DAP30960
3212 04322 100040 SZE MOVE IT TO NEXT POSITION DAP30970
3213 04323 0 01 04277 JMP LUDT SKIP IF FOUR DIGITS HAVE BEEN UPDATED DAP30980
3214 04324 -0 02 04430 LU1 LDA* CSRT OTHERWISE, UPDATE NEXT POSITION DAP30990
3215 04325 000201 IAB DAP30990
3216 04326 0 02 00672 LDA M2 PLACE IT IN B REGISTER DAP31000
3217 04327 0 04 00517 STA MOD DAP31010
3218 04330 140040 LU2 CRA DAP31020
3219 04331 0410 74 LLL 4 DAP31030
3220 04332 0414 74 LGL 4 MOVE DIGIT INTO A DAP31040
3221 04333 0410 74 LLL 4 POSITION IT DAP31050
3222 04334 0 06 00615 ADD ZX3 MOVE IN NEXT DIGIT DAP31060
3223 04335 -0 04 04413 STA* CHR CONVERT DIGIT PAIR TO ASCII DAP31070
3224 04336 0 12 04413 IRS CHR PLACE CHAR. PAIR IN EXPANSION FIELD DAP31080
3225 04337 0 12 00517 IRS MOD INCREMENT FIELD POINTER DAP31090
3226 04340 0 01 04330 JMP LU2 INCREMENT THE WORD COUNTER DAP31100
3227 04341 0 12 04264 IRS UAC GO BACK FOR NEXT DIGIT PAIR DAP31110
3228 04342 -0 01 04264 JMP* UAC INCREMENT RETURN ADDRESS DAP31120
3229 * DAP31130
3230 * DAP31140
3231 EJCT ***** DAP31150
***** DAP31160
```

```

3232          *
3233          *   OPT : OCIAL IO ASCII CONVERSION ROUTINE
3234          *
3235          *
3236          *   CALLING SEQUENCE:
3237          *       LDA  VALJ
3238          *       JSI  UPT
3239          *       VFD  B,D,B,COL
3240          *
3241          *   WHERE:
3242          *
3243          *   VALU - OCTAL VALUE THAT IS TO BE CONVERTED, POSITIONED
3244          *           SU THAT THE FIRST DIGIT IS IN A(1-3), ECT.
3245          *   D   - NUMBER OF DIGITS TO BE CONVERTED
3246          *   COL - ONE LESS THAN THE STARTING COLUMN
3247          *           NUMBER IN WHICH THE RESULT IS TO BE PLACED
3248          *
3249          *
3250 04343    0 000000  OPT  DAC  **           OCTAL - ASCII CONVERSION ROUTINE
3251 04344    000201          IAB           PLACE VALUE IN B REGISTER
3252 04345   -0 02 04343  LDA*  OPI        FETCH PARAMETER WORD
3253 04346    141140          ICL          POSITION DIGIT COUNT
3254 04347    140407          TCA          COMPLEMENT THE COUNT
3255 04350    0 04 00477  STA  VFD2     SAVE THE COUNT
3256 04351   -0 02 04343  LDA*  OPI        FETCH PARAMETER WORD
3257 04352    141050          CAL          ISOLATE COLUMN NUMBER
3258 04353    0 04 04361  STA  OPCL       PLACE IT IN CHAR. INSERTION CALLING SEQ.
3259 04354    0 12 04343  IRS  OPI        INCREMENT RETURN ADDRESS
3260 04355    140040          LOPT CRA
3261 04356    0410 75          LLL  3       POSITION NEXT DIGIT
3262 04357    0 06 00643  ADD  C260      CONVERT IT TO ASCII
3263 04360    0 10 04430  JST  CSRT      PLACE IT IN LISTING BUFFER
3264 04361    000000          OPCL OCT  0   COLUMN POINTER
3265 04362    0 12 04361  IRS  *-1       INCREMENT COLUMN POINTER
3266 04363    0 12 00477  IRS  VFD2     INCREMENT DIGIT COUNT
3267 04364    0 01 04355  JMP  LOPT      GO BACK FOR NEXT DIGIT
3268 04365   -0 01 04343  JMP*  OPI        EXIT

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```

3269          *
3270          *   ADV : ADVANCE CHARACTER POINTER TO NEXT FIELD
3271          *
3272          *
3273          *   CALLING SEQUENCE:
3274          *       JSI  ADV
3275          *       .....RETURN
3276          *
3277          *
3278          *   RESULTS:
3279          *
3280          *       CHRC IS SET TO POINT TO THE FIRST CHARACTER
3281          *       IN THE NEXT STATEMENT FIELD.
3282          *
3283          *
3284 04366    0 000000  ADV  DAC  **           ADVANCE TO NEXT FIELD
3285 04367    0 12 00522  IRS  ADVP        ADVANCE FIELD LIST POINTER
3286 04370   -0 02 00522  LDA*  ADVP        FETCH POINTER TO FIRST CHAR. IN NEXT FIELD
3287 04371    0 04 00521  STA  CHRC       SET THE CHARACTER POINTER
3288 04372   -0 01 04366  JMP*  ADV        EXIT
3289          *
3290          *
3291          *   EJCT *****

```

```
3292 *
3293 * BLIN: INITIALIZE OBJECT TEXT BLOCK POINTERS
3294 *
3295 *
3296 * CALLING SEQUENCE:
3297 *     JSI BLIN
3298 *     .....RETURN
3299 *
3300 *
3301 * RESULTS:
3302 *
3303 *     POUT&@OUTB+3%
3304 *     BLKS&-56
3305 *     CKSM&ROOM&0
3306 *
3307 *
3308 04373 0 000000 BLIN DAC ** INITIALIZE BLOCK POINTERS
3309 04374 0 02 00713 LDA OUIB SET BLOCK POINTER TO ADDRESS
3310 04375 0 04 00523 STA POUT OF OUTB+3
3311 04376 0 04 04675 STA OUIB SAVE IT FOR CLEARING THE BUFFER
3312 04377 0 02 00710 LDA M56 SET WORD COUNTER TO -56
3313 04400 0 04 00512 STA BLKS
3314 04401 0 06 00671 ADD M1 ADD NEGATIVE ONE SO THAT THE LAST WORD
3315 04402 0 04 04676 STA OUIB+1 OF THE BUFFER IS CLEARED
3316 04403 140040 CRA
3317 04404 0 04 00513 STA ROOM SET BUFFER ROOM CONSTANT TO ZERO
3318 04405 0 04 00515 STA CKSM SET CHECKSUM TO ZERO
3319 04406 -0 04 04675 STA* OUIB ZERO THE BUFFER
3320 04407 0 12 04675 IRS OUIB INCREMENT ADDRESS
3321 04410 0 12 04676 IRS OUIB+1 BUMP COUNTER, FINISHED YET
3322 04411 0 01 04406 JMP *-3 IF NOT, LOOP
3323 04412 -0 01 04373 JMP* BLIN EXIT
3324 *
3325 *
3326 * EJCT *****DAP31770
3327 * DAP31780
3328 * DAP31790
3329 * DAP31800
3330 * DAP31810
3331 * DAP31820
3332 * DAP31830
3333 * DAP31840
3334 * DAP31850
3335 * DAP31860
3336 * DAP31870
3337 * DAP31880
3338 * DAP31890
3339 * DAP31900
3340 * DAP31910
3341 * DAP31920
3342 * DAP31930
3343 * DAP31940
3344 * DAP31950
3345 * DAP31960
3346 * DAP31970
3347 * DAP31980
3348 * DAP31990
3349 * DAP32000
3350 * DAP32010
3351 * DAP32020
3352 * DAP32030
3353 * DAP32040
3354 * DAP32050
3355 * DAP32060
3356 * DAP32070
3357 * DAP32080
3358 * DAP32090
3359 * DAP32100
3360 * DAP32110
```

```
3327 *
3328 * CHR : FEICH NEXI CHARACIER FROM INPUT BUFFER
3329 *
3330 *
3331 * CALLING SEQUENCE:
3332 *     JSI CHR
3333 *     .....RETURN NEXT CHARACTER IN A ON RETURN
3334 *
3335 *
3336 * RESULTS:
3337 *
3338 *     TERM&INPB(CHRC)
3339 *     CHRC&CHRC+1
3340 *
3341 *
3342 04413 0 000000 CHR DAC ** FETCH NEXI CHARACTER
3343 04414 0 02 00521 LDA CHRC FETCH CHARACTER COUNTER
3344 04415 0406 77 ARR 1 A(1)& CHAR. POINTER, A(2-16)& WORD NUMBER
3345 04416 0 06 00714 ADD INPD ADD BUFFER ADDRESS TO WORD NUMBER
3346 04417 140320 CSA C&CHARACTER POINTER, A(1)& 0
3347 04420 0 04 00520 STA MSK SAVE WORD POINTER
3348 04421 -0 02 00520 LDA* MSK FETCH CHAKACTER PAIR FROM SOURCE BUFFER
3349 04422 101001 SSC SKIP IF FETCHING LOW ORDER CHAR.
3350 04423 141340 ICA REPOSITION HIGH ORDER CHARACTER
3351 04424 141050 CAL ISOLATE LOW ORDER CHARACTER
3352 04425 0 04 00444 STA TERM PLACE IT IN TERM FOR FUTURE REFERENCE
3353 04426 0 12 00521 IRS CHRC INCREMENT THE CHARACTER COUNT
3354 04427 -0 01 04413 JMP* CHR EXIT
3355 *
3356 *
3357 * EJCT *****DAP32120
3358 * DAP32130
3359 * DAP32140
3360 * DAP32150
3361 * DAP32160
3362 * DAP32170
3363 * DAP32180
3364 * DAP32190
3365 * DAP32200
3366 * DAP32210
3367 * DAP32220
3368 * DAP32230
3369 * DAP32240
3370 * DAP32250
3371 * DAP32260
3372 * DAP32270
3373 * DAP32280
3374 * DAP32290
3375 * DAP32300
3376 * DAP32310
3377 * DAP32320
3378 * DAP32330
3379 * DAP32340
3380 * DAP32350
3381 * DAP32360
3382 * DAP32370
3383 * DAP32380
3384 * DAP32390
3385 * DAP32400
3386 * DAP32410
3387 * DAP32420
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3358 *
3359 * CSRT: INSERT CHARACTER IN LISTING BUFFER DAP32430
3360 * DAP32440
3361 * DAP32450
3362 * DAP32460
3363 * CALLING SEQUENCE: DAP32470
3364 * LDA CHAR DAP32480
3365 * JSI CSRT DAP32490
3366 * UCI COL DAP32500
3367 * .....RETURN DAP32510
3368 * DAP32520
3369 * WHERE: DAP32530
3370 * CHAR - CHARACTER TO BE INSERTED DAP32540
3371 * COL - ONE LESS THAN COLUMN NUMBER THAT THE DAP32550
3372 * CHARACTER IS TO BE PLACED DAP32560
3373 * DAP32570
3374 04430 0 00000 CSRT DAC ** INSERT CHARACTER IN LISTING BUFFER DAP32580
3375 04431 141050 CAL A(1-8)60 DAP32590
3376 04432 0 04 04452 STA TRUN SAVE THE CHARACTER DAP32600
3377 04433 -0 02 04430 LDA* CSRT FETCH COLUMN POINTER DAP32610
3378 04434 0406 17 ARR 1 DAP32620
3379 04435 0 06 00715 ADD DCUN ADD BUFFER ADDRESS TO WORD NUMBER DAP32630
3380 04436 140320 CSA C&POSITION INDICATOR, A(2-16)&WORD DAP32640
3381 04437 0 04 00520 STA MSK SAVE LIST BUFFER WORD POINTER DAP32650
3382 04440 -0 02 00520 LDA* MSK DAP32660
3383 04441 101001 SSC FETCH CURRENT CONTENTS OF BUFFER WORD DAP32670
3384 04442 141340 ICA SKIP IF CHAR. GOES TO LOW HALF OF WORD DAP32680
3385 04443 141044 CAR SWAP CHAR. FOR THE INSERTION DAP32690
3386 04444 0 05 04452 ERA TRUN A(9-16)60 DAP32700
3387 04445 101001 SSC INSERT NEW CHARACTER DAP32710
3388 04446 141340 ICA SKIP IF CHAR. IN RIGHT ORDER DAP32720
3389 04447 -0 04 00520 STA* MSK REORDER THE CHARACTERS DAP32730
3390 04450 0 12 04430 IRS CSRT REPLACE THE CHARACTER PAIR DAP32740
3391 04451 -0 01 04430 JMP* CSRT INCREMENT THE RETURN ADDRESS DAP32750
3392 * DAP32760
3393 * DAP32770
3394 * DAP32780
EJCT *****DAP32790

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3395 *
3396 * TRUN: TERMINATE OBJECT TEXT BUFFER DAP32800
3397 * DAP32810
3398 * DAP32820
3399 * CALLING SEQUENCE: DAP32830
3400 * JSI TRUN DAP32840
3401 * .....RETURN DAP32850
3402 * DAP32860
3403 * DAP32870
3404 * DAP32880
3405 * DAP32890
3406 * <SKP,=,NOP>:EXIT DAP32900
3407 * OUTB(POUT)&LHW DAP32910
3408 * BLKS&BLKS+1 DAP32920
3409 * DAP32930
3410 * DAP32940
3411 04452 0 00000 TRUN DAC ** TERMINATE OBJECT TEXT BUFFER DAP32950
3412 04453 0 02 04164 LDA SKP DAP32960
3413 04454 0 04 04455 STA *+1 DAP32970
3414 04455 0 00 00000 *** ** PLACE IT IN BRANCH DAP32980
3415 04456 -0 01 04452 JMP* TRUN SKP OR NOP DAP32990
3416 04457 0 02 00516 LDA LHW EXIT IF IT WAS A NOP DAP33000
3417 04460 0 10 04473 JST FIL DAP33010
3418 04461 0 12 00512 IRS BLKS DAP33020
3419 04462 101000 NOP OVERFLOW IS POSSIBLE DAP33030
3420 04463 -0 01 04452 JMP* TRUN DAP33040
3421 * DAP33050
3422 * DAP33060
3423 * DAP33070
EJCT *****DAP33080

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3424 *
3425 * SETC: PLACE LOCATION COUNTER IN OBJECT TEXT BUFFER DAP33090
3426 * DAP33100
3427 * DAP33110
3428 * CALLING SEQUENCE: DAP33120
3429 * JST SETC DAP33130
3430 * .....RETURN DAP33140
3431 * DAP33150
3432 * DAP33160
3433 * RESULTS: DAP33170
3434 * DAP33180
3435 * OUIB(POUT)&CLUC DAP33190
3436 * BLKS&BLKS+1 DAP33200
3437 * SKP&NOP DAP33210
3438 * DAP33220
3439 * DAP33230
3440 04464 0 000000 SETC DAC ** DAP33240
3441 04465 0 02 00405 LDA CLUC PLACE LOC. COUNTER IN OBJECT TEXT BUFFER DAP33250
3442 04466 0 10 04473 JST FIL FETCH THE LOCATION COUNTER DAP33260
3443 04467 0 12 00512 IRS BLKS PLACE COUNTER IN OBJECT TEXT BUFFER DAP33270
3444 04470 0 02 04462 LDA NOP INCREMENT THE WORD COUNT DAP33280
3445 04471 0 04 04164 STA SKP FETCH 'NOP' INSTRUCTION DAP33290
3446 04472 -0 01 04464 JMP* SEIC PLACE IT IN BRANCH POINT DAP33300
3447 * DAP33310
3448 * DAP33320
3449 * EJCT ***** DAP33330
***** DAP33340
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3450 *
3451 * FIL : PLACE WORD IN OBJECT TEXT BUFFER DAP33350
3452 * DAP33360
3453 * DAP33370
3454 * CALLING SEQUENCE: DAP33380
3455 * LDA WORD VALUE TO BE INSERTED IN A ON ENTRY DAP33390
3456 * JST FIL DAP33400
3457 * .....RETURN DAP33410
3458 * DAP33420
3459 * RESULTS: DAP33430
3460 * DAP33440
3461 * OUIB(POUT)&A DAP33450
3462 * POUT&POUT+1 DAP33460
3463 * CKSM&CKSM.XOR.A DAP33470
3464 * DAP33480
3465 * DAP33490
3466 04473 0 000000 FIL DAC ** DAP33500
3467 04474 -0 04 00523 STA* POUT PLACE WORD IN OBJECT TEXT BUFFER DAP33510
3468 04475 0 12 00523 IRS POUT PLACE THE WORD IN BUFFER DAP33520
3469 04476 0 05 00515 ERA CKSM INCREMENT THE BUFFER POINTER DAP33530
3470 04477 0 04 00515 STA CKSM UPDATE THE CHECKSUM DAP33540
3471 04500 -0 01 04473 JMP* FIL SAVE NEW CHECKSUM VALUE DAP33550
3472 * DAP33560
3473 * DAP33570
3474 * EJCT ***** DAP33580
***** DAP33590
```

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3475
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3484 04501 0 000000 SLST DAC **
3485 04502 0 02 00436 LDA ZP
3486 04503 100400 SPL
3487 04504 -0 01 04501 JMP* SLST
3488 04505 0 02 00411 LDA TTLF
3489 04506 100040 SZE
3490 04507 0 01 04525 JMP **14
3491 04510 0 02 00723 LDA EMES
3492 04511 -0 13 00717 IMA* DCN2
3493 04512 0 04 00520 STA MSK
3494 04513 0 02 00723 LDA EMES
3495 04514 -0 13 00720 IMA* DCN3
3496 04515 0 04 00510 STA ICUN
3497 04516 0 15 00517 STX MOD
3498 04517 0 10 00000 CALL D$HD
3499 04520 0 35 00517 LDX MOD
3500 04521 0 02 00520 LDA MSK
3501 04522 -0 04 00717 STA* DCN2
3502 04523 0 02 00510 LDA ICUN
3503 04524 -0 04 00720 STA* DCN3
3504 04525 0 12 00411 IRS TTLF
3505 04526 0 02 00410 LDA LSIW
3506 04527 100040 SZE
3507 04530 0 01 04542 JMP SLI1+4
3508 04531 0 02 04052 LDA LGCT
3509 04532 100040 SZE
3510 04533 0 01 04536 JMP SLI1
3511 04534 0 02 00461 LDA TSI

```

* SLST: OUTPUT LISTING BUFFER
 * CALLING SEQUENCE:
 * JSI SLST
 *RETURN
 *

OUTPUT LISTING BUFFER
 FETCH PASS INDICATOR
 SKIP IF OUTPUT PASS
 NOT OUTPUT PASS - EXIT
 FETCH HEADING SWITCH
 SKIP IF HEADING HAS NOT BEEN SET
 SPACE SPACE
 PLACE SPACE IN 1ST TWO CHARS. OF LINE NO.
 SAVE FIRST TWO DIGITS OF LINE NUMBER
 SPACE SPACE
 PLACE SPACE IN 2ND TWO CHARS. OF LINE NO.
 SAVE SECOND TWO CHARACTERS OF LINE NUMBER
 INITIALIZE THE HEADING
 RESTORE THE LINE NUMBER
 SET HEADING SWITCH
 FETCH LISTING SWITCH
 SKIP IF LISTING IS ENABLED
 FETCH ERROR/LINE COUNTER
 SKIP IF NO ERROR FLAGS ON LINE
 ERRORS ON LINE - LIST IT
 FETCH PARAMENTER WORD

DAP33600
 DAP33610
 DAP33620
 DAP33630
 DAP33640
 DAP33650
 DAP33660
 DAP33670
 DAP33680
 DAP33690
 DAP33700
 DAP33710
 DAP33720
 DAP33730
 DAP33740
 DAP33760
 DAP33770
 DAP33780
 DAP33790
 DAP33800
 DAP33810
 DAP33820
 DAP33830
 DAP33840
 DAP33850
 DAP33860
 DAP33870
 DAP33880
 DAP33890
 DAP33910
 DAP33920
 DAP33930
 DAP33940

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3512 04535 0414 76 LGL 2
3513 04536 0 15 00517 SLTI STX MOD
3514 04537 101400 SMI
3515 04540 0 10 00000 CALL D$UL
3516 04541 0 35 00517 LDX MOD
3517 04542 0 10 04253 JST CLEO
3518 04543 -0 01 04501 JMP* SLST
3519
3520
3521

```

A(1)&ERROR ONLY LISTING FLAG
 SKIP IF ERROR ONLY LISTING
 LIST THE LINE
 CLEAR THE LISTING BUFFER
 EXIT

 EJCT *****

DAP33950
 DAP33980
 DAP33990
 DAP34000
 DAP34010
 DAP34020

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|-------------|---|----------|---------|--|----------|
| 3522 | * | | | | DAP34030 |
| 3523 | * | BUFFERS | | | DAP34040 |
| 3524 | * | | | | DAP34050 |
| 3525 | * | | | | DAP34060 |
| 3526 04544 | * | OTPB BSS | 14 | LISTING BUFFER | DAP34070 |
| 3527 | * | | | | DAP34080 |
| 3528 | * | | | | DAP34090 |
| 3529 04562 | * | INPB BSS | 46 | SOURCE BUFFER | DAP34100 |
| 3530 | * | | | | DAP34110 |
| 3531 | * | | | | DAP34120 |
| 3532 04640 | * | DBLK BSS | 29 | LIST STORAGE FOR MULTIFIELD PSUEDO-OPS | DAP34130 |
| 3533 | * | | | | DAP34140 |
| 3534 | * | | | | DAP34150 |
| 3535 04675 | * | OUTB BSS | 62 | OBJECT TEXT BUFFER | DAP34160 |
| 3536 | * | | | | DAP34170 |
| 3537 004676 | * | OTBX EQU | OUIB+1 | | DAP34180 |
| 3538 | * | | | | DAP34190 |
| 3539 | * | | | | DAP34200 |
| 3540 004640 | * | TAB1 EQU | DBLK | | DAP34210 |
| 3541 004704 | * | T136 EQU | TAB1+36 | | DAP34220 |
| 3542 004705 | * | T137 EQU | TAB1+37 | | DAP34230 |
| 3543 004705 | * | TAB2 EQU | TAB1+37 | | DAP34240 |
| 3544 004751 | * | T236 EQU | TAB2+36 | | DAP34250 |
| 3545 004752 | * | T237 EQU | TAB2+37 | | DAP34260 |
| 3546 | * | | | | DAP34270 |
| 3547 | * | | | | DAP34280 |
| 3548 | * | EJCT | ***** | | DAP34290 |

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| | | | | | |
|------------|---|--|---|-------------|----------|
| 3549 | * | | | | DAP34300 |
| 3550 | * | OPCODE TABLE | | | DAP34310 |
| 3551 | * | | | | DAP34320 |
| 3552 | * | | | | DAP34330 |
| 3553 | * | EACH ENTRY IN THE OPCODE TABLE HAS THE FOLLOWING FORMAT: | | | DAP34340 |
| 3554 | * | | | | DAP34350 |
| 3555 | * | | | | DAP34360 |
| 3556 | * | WORD 1 : | BIT 1 : PSEUDO-OP FLAG | | DAP34370 |
| 3557 | * | | BIT 2 : ADDRESS REQUIRED FLAG | | DAP34380 |
| 3558 | * | | BIT 3 : INDIRECT/INDEX ALLOWED FLAG | | DAP34390 |
| 3559 | * | | BIT 4 : UNUSED | | DAP34400 |
| 3560 | * | | BITS 5-16 : FIRST TWO CHARACTERS OF NAME | | DAP34410 |
| 3561 | * | | | | DAP34420 |
| 3562 | * | WORD 2 : | BIT 1 : IF MACHINE-OP, SHIFT INSTRUCTION FLAG | | DAP34430 |
| 3563 | * | | IF PSEUDO-OP, FORCE ASSEMBLY FLAG | | DAP34440 |
| 3564 | * | | BIT 2 : I/O INSTRUCTION FLAG | | DAP34450 |
| 3565 | * | | BIT 3 : MEMORY REFERENCE INSTRUCTION FLAG | | DAP34460 |
| 3566 | * | | BIT 4 : GENERIC INSTRUCTION FLAG | | DAP34470 |
| 3567 | * | | BITS 5-16 : SECOND TWO CHARACTERS OF NAME | | DAP34480 |
| 3568 | * | | | | DAP34490 |
| 3569 | * | WORD 3 : | BITS 1-16 : IF MACHINE-OP, THE OPCODE | | DAP34500 |
| 3570 | * | | IF PSEUDO-OP, ADDRESS OF PROCESSOR | | DAP34510 |
| 3571 | * | | | | DAP34520 |
| 3572 | * | | | | DAP34530 |
| 3573 04773 | * | OPS BSS | 0 | | DAP34540 |
| 3574 04773 | * | OCT | 65255 | JMP/ADR/IND | DAP34550 |
| 3575 04774 | * | OCT | 20060 | MR | DAP34560 |
| 3576 04775 | * | OCT | 2000 | | DAP34570 |
| 3577 04776 | * | OCT | 65444 | LDA/ADR/IND | DAP34580 |
| 3578 04777 | * | OCT | 20041 | MR | DAP34590 |
| 3579 05000 | * | OCT | 4000 | | DAP34600 |
| 3580 05001 | * | OCT | 64156 | ANA/ADR/IND | DAP34610 |
| 3581 05002 | * | OCT | 20041 | MR | DAP34620 |
| 3582 05003 | * | OCT | 6000 | | DAP34630 |
| 3583 05004 | * | OCT | 66364 | STA/ADR/IND | DAP34640 |
| 3584 05005 | * | OCT | 20041 | MR | DAP34650 |
| 3585 05006 | * | OCT | 10000 | | DAP34660 |

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|------|-------|--------|-----|--------|-------------------|----------|
| 3586 | 05007 | 064562 | OCT | 64562 | ERA/ADR/IND | DAP34670 |
| 3587 | 05010 | 020041 | OCT | 20041 | MR | DAP34680 |
| 3588 | 05011 | 012000 | OCT | 12000 | | DAP34690 |
| 3589 | 05012 | 064144 | OCT | 64144 | ADD/ADR/IND | DAP34700 |
| 3590 | 05013 | 020044 | OCT | 20044 | MR | DAP34710 |
| 3591 | 05014 | 014000 | OCT | 14000 | | DAP34720 |
| 3592 | 05015 | 066365 | OCT | 66365 | SUB/ADR/IND | DAP34730 |
| 3593 | 05016 | 020042 | OCT | 20042 | MR | DAP34740 |
| 3594 | 05017 | 016000 | OCT | 16000 | | DAP34750 |
| 3595 | 05020 | 065263 | OCT | 65263 | JST/ADR/IND | DAP34760 |
| 3596 | 05021 | 020064 | OCT | 20064 | MR | DAP34770 |
| 3597 | 05022 | 020000 | OCT | 20000 | | DAP34780 |
| 3598 | 05023 | 065162 | OCT | 65162 | IRS/ADR/IND | DAP34790 |
| 3599 | 05024 | 020063 | OCT | 20063 | MR | DAP34800 |
| 3600 | 05025 | 024000 | OCT | 24000 | | DAP34810 |
| 3601 | 05026 | 026072 | OCT | 26072 | PZE/IND | DAP34820 |
| 3602 | 05027 | 020045 | OCT | 20045 | MR | DAP34830 |
| 3603 | 05030 | 000000 | OCT | 0 | | DAP34840 |
| 3604 | 05031 | 021212 | OCT | 021212 | *** /IND | DAP34850 |
| 3605 | 05032 | 020012 | OCT | 20012 | MR | DAP34860 |
| 3606 | 05033 | 000000 | OCT | 0 | | DAP34870 |
| 3607 | 05034 | 021212 | OCT | 021212 | ****--INDIRECT*** | DAP34880 |
| 3608 | 05035 | 021212 | OCT | 021212 | MR | DAP34890 |
| 3609 | 05036 | 100000 | OCT | 100000 | | DAP34900 |
| 3610 | 05037 | 045743 | OCT | 45743 | OCP/ADR | DAP34910 |
| 3611 | 05040 | 040060 | OCT | 40060 | IUT | DAP34920 |
| 3612 | 05041 | 030000 | OCT | 30000 | | DAP34930 |
| 3613 | 05042 | 046353 | OCT | 46353 | SKS/ADR | DAP34940 |
| 3614 | 05043 | 040063 | OCT | 40063 | IUT | DAP34950 |
| 3615 | 05044 | 070000 | OCT | 70000 | | DAP34960 |
| 3616 | 05045 | 046355 | OCT | 46355 | SMK/ADR | DAP34970 |
| 3617 | 05046 | 040053 | OCT | 40053 | IUT | DAP34980 |
| 3618 | 05047 | 170000 | OCT | 170000 | | DAP34990 |
| 3619 | 05050 | 045156 | OCT | 45156 | INA/ADR | DAP35000 |
| 3620 | 05051 | 040041 | OCT | 40041 | IUT | DAP35010 |
| 3621 | 05052 | 130000 | OCT | 130000 | | DAP35020 |
| 3622 | 05053 | 045764 | OCT | 45764 | OTA/ADR | DAP35030 |

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|------|-------|--------|-----|--------|---------|----------|
| 3623 | 05054 | 040041 | OCT | 40041 | IUT | DAP35040 |
| 3624 | 05055 | 170000 | OCT | 170000 | | DAP35050 |
| 3625 | 05056 | 045447 | OCT | 45447 | LGR/ADR | DAP35060 |
| 3626 | 05057 | 100062 | OCT | 100062 | SHF | DAP35070 |
| 3627 | 05060 | 040400 | OCT | 40400 | | DAP35080 |
| 3628 | 05061 | 044162 | OCT | 44162 | ARS/ADR | DAP35090 |
| 3629 | 05062 | 100063 | OCT | 100063 | SHF | DAP35100 |
| 3630 | 05063 | 040500 | OCT | 40500 | | DAP35110 |
| 3631 | 05064 | 044162 | OCT | 44162 | ARR/ADR | DAP35120 |
| 3632 | 05065 | 100062 | OCT | 100062 | SHF | DAP35130 |
| 3633 | 05066 | 040600 | OCT | 40600 | | DAP35140 |
| 3634 | 05067 | 045447 | OCT | 45447 | LGL/ADR | DAP35150 |
| 3635 | 05070 | 100054 | OCT | 100054 | SHF | DAP35160 |
| 3636 | 05071 | 041400 | OCT | 41400 | | DAP35170 |
| 3637 | 05072 | 044154 | OCT | 44154 | ALS/ADR | DAP35180 |
| 3638 | 05073 | 100063 | OCT | 100063 | SHF | DAP35190 |
| 3639 | 05074 | 041500 | OCT | 041500 | | DAP35200 |
| 3640 | 05075 | 044154 | OCT | 44154 | ALR/ADR | DAP35210 |
| 3641 | 05076 | 100062 | OCT | 100062 | SHF | DAP35220 |
| 3642 | 05077 | 041600 | OCT | 41600 | | DAP35230 |
| 3643 | 05100 | 005054 | OCT | 5054 | HLT | DAP35240 |
| 3644 | 05101 | 010064 | OCT | 10064 | GEN | DAP35250 |
| 3645 | 05102 | 000000 | OCT | 0 | | DAP35260 |
| 3646 | 05103 | 004556 | OCT | 4556 | ENB | DAP35270 |
| 3647 | 05104 | 010042 | OCT | 10042 | GEN | DAP35280 |
| 3648 | 05105 | 000401 | OCT | 401 | | DAP35290 |
| 3649 | 05106 | 005156 | OCT | 5156 | INH | DAP35300 |
| 3650 | 05107 | 010050 | OCT | 10050 | GEN | DAP35310 |
| 3651 | 05110 | 001001 | OCT | 1001 | | DAP35320 |
| 3652 | 05111 | 006255 | OCT | 6255 | RMP | DAP35330 |
| 3653 | 05112 | 010060 | OCT | 10060 | GEN | DAP35340 |
| 3654 | 05113 | 000021 | OCT | 21 | | DAP35350 |
| 3655 | 05114 | 004562 | OCT | 4562 | ERM | DAP35360 |
| 3656 | 05115 | 010055 | OCT | 10055 | GEN | DAP35370 |
| 3657 | 05116 | 001401 | OCT | 1401 | | DAP35380 |
| 3658 | 05117 | 006360 | OCT | 6360 | SPS | DAP35390 |
| 3659 | 05120 | 010063 | OCT | 010063 | GEN | DAP35400 |

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|------|-------|----------|-----|--------|---------|----------|
| 3660 | 05121 | 101200 | OCT | 101200 | | |
| 3661 | 05122 | 006360 | OCT | 6360 | SPN | DAP35410 |
| 3662 | 05123 | 010056 | OCT | 10056 | GEN | DAP35420 |
| 3663 | 05124 | 100200 | OCT | 100200 | | DAP35430 |
| 3664 | 05125 | 006353 | OCT | 6353 | SKP | DAP35440 |
| 3665 | 05126 | 010060 | OCT | 10060 | GEN | DAP35450 |
| 3666 | 05127 | 100000 | OCT | 100000 | | DAP35460 |
| 3667 | 05130 | 006372 | OCT | 6372 | SZE | DAP35470 |
| 3668 | 05131 | 010045 | OCT | 10045 | GEN | DAP35480 |
| 3669 | 05132 | 100040 | OCT | 100040 | | DAP35490 |
| 3670 | 05133 | 006360 | OCT | 6360 | SPL | DAP35500 |
| 3671 | 05134 | 010054 | OCT | 10054 | GEN | DAP35510 |
| 3672 | 05135 | 100400 | OCT | 100400 | | DAP35520 |
| 3673 | 05136 | 005657 | OCT | 5657 | NOP | DAP35530 |
| 3674 | 05137 | 010060 | OCT | 10060 | GEN | DAP35540 |
| 3675 | 05140 | 101000 | OCT | 101000 | | DAP35550 |
| 3676 | 05141 | 006356 | OCT | 6356 | SNZ | DAP35560 |
| 3677 | 05142 | 010072 | OCT | 10072 | GEN | DAP35570 |
| 3678 | 05143 | 101040 | OCT | 101040 | | DAP35580 |
| 3679 | 05144 | 006355 | OCT | 6355 | SMI | DAP35590 |
| 3680 | 05145 | 010051 | OCT | 10051 | GEN | DAP35600 |
| 3681 | 05146 | 101400 | OCT | 101400 | | DAP35610 |
| 3682 | 05147 | 004362 | OCT | 4362 | CRA | DAP35620 |
| 3683 | 05150 | 010041 | OCT | 10041 | GEN | DAP35630 |
| 3684 | 05151 | 140040 | OCT | 140040 | | DAP35640 |
| 3685 | 05152 | 104346 | OCT | 104346 | CF1/POP | DAP35650 |
| 3686 | 05153 | 000021 | OCT | 21 | | DAP35660 |
| 3687 | 05154 | 0 003273 | DAC | CF1 | | DAP35670 |
| 3688 | 05155 | 104346 | OCT | 104346 | CF3/POP | DAP35680 |
| 3689 | 05156 | 000023 | OCT | 23 | | DAP35690 |
| 3690 | 05157 | 0 003267 | DAC | CF3 | | DAP35700 |
| 3691 | 05160 | 104346 | OCT | 104346 | CF4/POP | DAP35710 |
| 3692 | 05161 | 000024 | OCT | 24 | | DAP35720 |
| 3693 | 05162 | 0 003271 | DAC | CF4 | | DAP35730 |
| 3694 | 05163 | 104346 | OCT | 104346 | CF5/POP | DAP35740 |
| 3695 | 05164 | 000025 | OCT | 25 | | DAP35750 |
| 3696 | 05165 | 0 003267 | DAC | CF5 | | DAP35760 |
| | | | | | | DAP35770 |

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|------|-------|----------|-----|--------|-----------------|----------|
| 3697 | 05166 | 104556 | OCT | 104556 | END/POP | DAP35780 |
| 3698 | 05167 | 100044 | OCT | 100044 | | DAP35790 |
| 3699 | 05170 | 0 003024 | DAC | END | | DAP35800 |
| 3700 | 05171 | 104651 | OCT | 104651 | FIN/POP | DAP35810 |
| 3701 | 05172 | 000056 | OCT | 56 | | DAP35820 |
| 3702 | 05173 | 0 003366 | DAC | FIN | | DAP35830 |
| 3703 | 05174 | 164441 | OCT | 164441 | DAC/POP/ADR/IND | DAP35840 |
| 3704 | 05175 | 020043 | OCT | 20043 | MR | DAP35850 |
| 3705 | 05176 | 0 001544 | DAC | DAC | | DAP35860 |
| 3706 | 05177 | 107041 | OCT | 107041 | XAC/POP | DAP35870 |
| 3707 | 05200 | 020043 | OCT | 20043 | | DAP35880 |
| 3708 | 05201 | 0 002642 | DAC | XAC | | DAP35890 |
| 3709 | 05202 | 104561 | OCT | 104561 | EQU/POP | DAP35900 |
| 3710 | 05203 | 000065 | OCT | 65 | | DAP35910 |
| 3711 | 05204 | 0 003314 | DAC | EQU | | DAP35920 |
| 3712 | 05205 | 106345 | OCT | 106345 | SET/POP | DAP35930 |
| 3713 | 05206 | 000064 | OCT | 64 | | DAP35940 |
| 3714 | 05207 | 0 003313 | DAC | SET | | DAP35950 |
| 3715 | 05210 | 105045 | OCT | 105045 | HEX/POP | DAP35960 |
| 3716 | 05211 | 010070 | OCT | 10070 | | DAP35970 |
| 3717 | 05212 | 0 003507 | DAC | HEX | | DAP35980 |
| 3718 | 05213 | 106646 | OCT | 106646 | VFD/POP | DAP35990 |
| 3719 | 05214 | 010044 | OCT | 10044 | | DAP36000 |
| 3720 | 05215 | 0 003565 | DAC | VFD | | DAP36010 |
| 3721 | 05216 | 105146 | OCT | 105146 | IFZ/POP | DAP36020 |
| 3722 | 05217 | 100072 | OCT | 100072 | | DAP36030 |
| 3723 | 05220 | 0 003644 | DAC | IFZ | | DAP36040 |
| 3724 | 05221 | 105146 | OCT | 105146 | IFN/POP | DAP36050 |
| 3725 | 05222 | 100056 | OCT | 100056 | | DAP36060 |
| 3726 | 05223 | 0 003646 | DAC | IFN | | DAP36070 |
| 3727 | 05224 | 105146 | OCT | 105146 | IFP/POP | DAP36080 |
| 3728 | 05225 | 100060 | OCT | 100060 | | DAP36090 |
| 3729 | 05226 | 0 003650 | DAC | IFP | | DAP36100 |
| 3730 | 05227 | 105146 | OCT | 105146 | IFM/POP | DAP36110 |
| 3731 | 05230 | 100055 | OCT | 100055 | | DAP36120 |
| 3732 | 05231 | 0 003652 | DAC | IFM | | DAP36130 |
| 3733 | 05232 | 104554 | OCT | 104554 | ELSE/POP | DAP36140 |

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|------|-------|----------|-----|--------|----------|----------|
| 3734 | 05233 | 106345 | OCT | 106345 | | DAP36150 |
| 3735 | 05234 | 0 003676 | DAC | ELSE | | DAP36160 |
| 3736 | 05235 | 104556 | OCT | 104556 | ENDC/POP | DAP36170 |
| 3737 | 05236 | 104443 | OCT | 104443 | | DAP36180 |
| 3738 | 05237 | 0 003713 | DAC | ENDC | | DAP36190 |
| 3739 | 05240 | 104641 | OCT | 104641 | FAIL/POP | DAP36200 |
| 3740 | 05241 | 005154 | OCT | 5154 | | DAP36210 |
| 3741 | 05242 | 0 003734 | DAC | FAIL | | DAP36220 |
| 3742 | 05243 | 105762 | OCT | 105762 | ORG/POP | DAP36230 |
| 3743 | 05244 | 000047 | OCT | 47 | | DAP36240 |
| 3744 | 05245 | 0 003240 | DAC | ORG | | DAP36250 |
| 3745 | 05246 | 106245 | OCT | 106245 | REL/POP | DAP36260 |
| 3746 | 05247 | 000054 | OCT | 54 | | DAP36270 |
| 3747 | 05250 | 0 003254 | DAC | REL | | DAP36280 |
| 3748 | 05251 | 104142 | OCT | 104142 | ABS/POP | DAP36290 |
| 3749 | 05252 | 000063 | OCT | 63 | | DAP36300 |
| 3750 | 05253 | 0 003250 | DAC | ABS | | DAP36310 |
| 3751 | 05254 | 105457 | OCT | 105457 | LOAD/POP | DAP36320 |
| 3752 | 05255 | 004144 | OCT | 4144 | | DAP36330 |
| 3753 | 05256 | 0 003246 | DAC | LOAD | | DAP36340 |
| 3754 | 05257 | 105557 | OCT | 105557 | MOR/POP | DAP36350 |
| 3755 | 05260 | 000062 | OCT | 62 | | DAP36360 |
| 3756 | 05261 | 0 003362 | DAC | MOR | | DAP36370 |
| 3757 | 05262 | 105451 | OCT | 105451 | LIST/POP | DAP36380 |
| 3758 | 05263 | 006364 | OCT | 6364 | | DAP36390 |
| 3759 | 05264 | 0 003276 | DAC | LIST | | DAP36400 |
| 3760 | 05265 | 105654 | OCT | 105654 | NLST/POP | DAP36410 |
| 3761 | 05266 | 006364 | OCT | 6364 | | DAP36420 |
| 3762 | 05267 | 0 003300 | DAC | NLST | | DAP36430 |
| 3763 | 05270 | 104552 | OCT | 104552 | EJCT/POP | DAP36440 |
| 3764 | 05271 | 004364 | OCT | 4364 | | DAP36450 |
| 3765 | 05272 | 0 003302 | DAC | EJCT | | DAP36460 |
| 3766 | 05273 | 104263 | OCT | 104263 | BSS/POP | DAP36470 |
| 3767 | 05274 | 000063 | OCT | 63 | | DAP36480 |
| 3768 | 05275 | 0 003416 | DAC | BSS | | DAP36490 |
| 3769 | 05276 | 104245 | OCT | 104245 | BES/POP | DAP36500 |
| 3770 | 05277 | 000063 | OCT | 63 | | DAP36510 |

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|------|-------|----------|-----|--------|----------|----------|
| 3771 | 05300 | 0 003424 | DAC | BES | | DAP36520 |
| 3772 | 05301 | 104263 | OCT | 104263 | B5Z/POP | DAP36530 |
| 3773 | 05302 | 000072 | OCT | 72 | | DAP36540 |
| 3774 | 05303 | 0 003373 | DAC | B5Z | | DAP36550 |
| 3775 | 05304 | 104445 | OCT | 104445 | DEC/POP | DAP36560 |
| 3776 | 05305 | 010043 | OCT | 10043 | GEN | DAP36570 |
| 3777 | 05306 | 0 003504 | DAC | DEC | | DAP36580 |
| 3778 | 05307 | 105743 | OCT | 105743 | OCT/POP | DAP36590 |
| 3779 | 05310 | 010064 | OCT | 10064 | GEN | DAP36600 |
| 3780 | 05311 | 0 003510 | DAC | OCI | | DAP36610 |
| 3781 | 05312 | 104243 | OCT | 104243 | BCI/POP | DAP36620 |
| 3782 | 05313 | 010051 | OCT | 10051 | GEN | DAP36630 |
| 3783 | 05314 | 0 003432 | DAC | BCI | | DAP36640 |
| 3784 | 05315 | 104357 | OCT | 104357 | CUMN/POP | DAP36650 |
| 3785 | 05316 | 005556 | OCT | 5556 | | DAP36660 |
| 3786 | 05317 | 0 003334 | DAC | COMN | | DAP36670 |
| 3787 | 05320 | 104341 | OCT | 104341 | CALL/POP | DAP36680 |
| 3788 | 05321 | 025454 | OCT | 25454 | MR | DAP36690 |
| 3789 | 05322 | 0 002615 | DAC | CALL | | DAP36700 |
| 3790 | 05323 | 106365 | OCT | 106365 | SUBR/POP | DAP36710 |
| 3791 | 05324 | 004262 | OCT | 4262 | | DAP36720 |
| 3792 | 05325 | 0 002662 | DAC | SUBR | | DAP36730 |
| 3793 | 05326 | 104556 | OCT | 104556 | ENT/POP | DAP36740 |
| 3794 | 05327 | 000064 | OCT | 64 | | DAP36750 |
| 3795 | 05330 | 0 002662 | DAC | ENI | | DAP36760 |
| 3796 | 05331 | 104570 | OCT | 104570 | EXT/POP | DAP36770 |
| 3797 | 05332 | 000064 | OCT | 64 | | DAP36780 |
| 3798 | 05333 | 0 002741 | DAC | EXI | | DAP36790 |
| 3799 | 05334 | 104570 | OCT | 104570 | EXD/POP | DAP36800 |
| 3800 | 05335 | 000044 | OCT | 44 | | DAP36810 |
| 3801 | 05336 | 0 003261 | DAC | EXD | | DAP36820 |
| 3802 | 05337 | 105470 | OCT | 105470 | LXD/POP | DAP36830 |
| 3803 | 05340 | 000044 | OCT | 44 | | DAP36840 |
| 3804 | 05341 | 0 003264 | DAC | LXD | | DAP36850 |
| 3805 | 05342 | 106345 | OCT | 106345 | SETB/POP | DAP36860 |
| 3806 | 05343 | 006442 | OCT | 006442 | | DAP36870 |
| 3807 | 05344 | 0 003342 | DAC | SEIB | | DAP36880 |

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|------|-------|----------|---------|--------|------------------------------|----------|
| 3808 | 05345 | 106345 | OCT | 106345 | SETC/POP | DAP36890 |
| 3809 | 05346 | 006443 | OCT | 006443 | | DAP36900 |
| 3810 | 05347 | 0 003370 | DAC | CSET | | DAP36910 |
| 3811 | 05350 | | OP4 BSS | 0 | END OF LEGAL DDP-416 OPCODES | DAP36920 |
| 3812 | 05350 | 064341 | OCT | 64341 | CAS/ADR/IND | DAP36930 |
| 3813 | 05351 | 020063 | OCT | 20063 | MR | DAP36940 |
| 3814 | 05352 | 022000 | OCT | 022000 | | DAP36950 |
| 3815 | 05353 | 065155 | OCT | 65155 | IMA/ADR/IND | DAP36960 |
| 3816 | 05354 | 020041 | OCT | 20041 | MR | DAP36970 |
| 3817 | 05355 | 026000 | OCT | 026000 | | DAP36980 |
| 3818 | 05356 | 065560 | OCT | 65560 | MPY/ADR/IND | DAP36990 |
| 3819 | 05357 | 020071 | OCT | 20071 | MR | DAP37000 |
| 3820 | 05360 | 034000 | OCT | 034000 | | DAP37010 |
| 3821 | 05361 | 064451 | OCT | 64451 | DIV/ADR/IND | DAP37020 |
| 3822 | 05362 | 020066 | OCT | 20066 | MR | DAP37030 |
| 3823 | 05363 | 036000 | OCT | 036000 | | DAP37040 |
| 3824 | 05364 | 045462 | OCT | 45462 | LRL/ADR | DAP37050 |
| 3825 | 05365 | 100054 | OCT | 100054 | SHF | DAP37060 |
| 3826 | 05366 | 040000 | OCT | 40000 | | DAP37070 |
| 3827 | 05367 | 045462 | OCT | 45462 | LRS/ADR | DAP37080 |
| 3828 | 05370 | 100063 | OCT | 100063 | SHF | DAP37090 |
| 3829 | 05371 | 040100 | OCT | 40100 | | DAP37100 |
| 3830 | 05372 | 045462 | OCT | 45462 | LRR/ADR | DAP37110 |
| 3831 | 05373 | 100062 | OCT | 100062 | SHF | DAP37120 |
| 3832 | 05374 | 040200 | OCT | 40200 | | DAP37130 |
| 3833 | 05375 | 045454 | OCT | 45454 | LLL/ADR | DAP37140 |
| 3834 | 05376 | 100054 | OCT | 100054 | SHF | DAP37150 |
| 3835 | 05377 | 041000 | OCT | 41000 | | DAP37160 |
| 3836 | 05400 | 045454 | OCT | 45454 | LLS/ADR | DAP37170 |
| 3837 | 05401 | 100063 | OCT | 100063 | SHF | DAP37180 |
| 3838 | 05402 | 041100 | OCT | 41100 | | DAP37190 |
| 3839 | 05403 | 045454 | OCT | 45454 | LLR/ADR | DAP37200 |
| 3840 | 05404 | 100062 | OCT | 100062 | SHF | DAP37210 |
| 3841 | 05405 | 041200 | OCT | 41200 | | DAP37220 |
| 3842 | 05406 | 006343 | OCT | 6343 | SCA | DAP37230 |
| 3843 | 05407 | 010041 | OCT | 10041 | GEN | DAP37240 |
| 3844 | 05410 | 000041 | OCT | 41 | | DAP37250 |

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|------|-------|--------|-----|--------|-----|----------|
| 3845 | 05411 | 005662 | OCT | 5662 | NRM | DAP37260 |
| 3846 | 05412 | 010055 | OCT | 10055 | GEN | DAP37270 |
| 3847 | 05413 | 000101 | OCT | 101 | | DAP37280 |
| 3848 | 05414 | 005141 | OCT | 5141 | IAB | DAP37290 |
| 3849 | 05415 | 010042 | OCT | 10042 | GEN | DAP37300 |
| 3850 | 05416 | 000201 | OCT | 201 | | DAP37310 |
| 3851 | 05417 | 006362 | OCT | 6362 | SRC | DAP37320 |
| 3852 | 05420 | 010043 | OCT | 10043 | GEN | DAP37330 |
| 3853 | 05421 | 100001 | OCT | 100001 | | DAP37340 |
| 3854 | 05422 | 006362 | OCT | 6362 | SR4 | DAP37350 |
| 3855 | 05423 | 010024 | OCT | 10024 | GEN | DAP37360 |
| 3856 | 05424 | 100002 | OCT | 100002 | | DAP37370 |
| 3857 | 05425 | 006362 | OCT | 6362 | SR3 | DAP37380 |
| 3858 | 05426 | 010023 | OCT | 10023 | GEN | DAP37390 |
| 3859 | 05427 | 100004 | OCT | 100004 | | DAP37400 |
| 3860 | 05430 | 006362 | OCT | 6362 | SR2 | DAP37410 |
| 3861 | 05431 | 010022 | OCT | 10022 | GEN | DAP37420 |
| 3862 | 05432 | 100010 | OCT | 100010 | | DAP37430 |
| 3863 | 05433 | 006362 | OCT | 6362 | SR1 | DAP37440 |
| 3864 | 05434 | 010021 | OCT | 10021 | GEN | DAP37450 |
| 3865 | 05435 | 100020 | OCT | 100020 | | DAP37460 |
| 3866 | 05436 | 006363 | OCT | 6363 | SSR | DAP37470 |
| 3867 | 05437 | 010062 | OCT | 10062 | GEN | DAP37480 |
| 3868 | 05440 | 100036 | OCT | 100036 | | DAP37490 |
| 3869 | 05441 | 006363 | OCT | 6363 | SSC | DAP37500 |
| 3870 | 05442 | 010043 | OCT | 10043 | GEN | DAP37510 |
| 3871 | 05443 | 101001 | OCT | 101001 | | DAP37520 |
| 3872 | 05444 | 006363 | OCT | 6363 | SS4 | DAP37530 |
| 3873 | 05445 | 010024 | OCT | 10024 | GEN | DAP37540 |
| 3874 | 05446 | 101002 | OCT | 101002 | | DAP37550 |
| 3875 | 05447 | 006363 | OCT | 6363 | SS3 | DAP37560 |
| 3876 | 05450 | 010023 | OCT | 10023 | GEN | DAP37570 |
| 3877 | 05451 | 101004 | OCT | 101004 | | DAP37580 |
| 3878 | 05452 | 006363 | OCT | 6363 | SS2 | DAP37590 |
| 3879 | 05453 | 010022 | OCT | 10022 | GEN | DAP37600 |
| 3880 | 05454 | 101010 | OCT | 101010 | | DAP37610 |
| 3881 | 05455 | 006363 | OCT | 6363 | SS1 | DAP37620 |

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|------|-------|--------|-----|--------|-----|----------|
| 3882 | 05456 | 010021 | OCT | 10021 | GEN | DAP37630 |
| 3883 | 05457 | 101020 | OCT | 101020 | | DAP37640 |
| 3884 | 05460 | 006363 | OCT | 6363 | SSS | DAP37650 |
| 3885 | 05461 | 010063 | OCT | 10063 | GEN | DAP37660 |
| 3886 | 05462 | 101036 | OCT | 101036 | | DAP37670 |
| 3887 | 05463 | 006363 | OCT | 6363 | SSP | DAP37680 |
| 3888 | 05464 | 010060 | OCT | 10060 | GEN | DAP37690 |
| 3889 | 05465 | 140100 | OCT | 140100 | | DAP37700 |
| 3890 | 05466 | 006363 | OCT | 6363 | SSM | DAP37710 |
| 3891 | 05467 | 010055 | OCT | 10055 | GEN | DAP37720 |
| 3892 | 05470 | 140500 | OCT | 140500 | | DAP37730 |
| 3893 | 05471 | 006354 | OCT | 6354 | SLN | DAP37740 |
| 3894 | 05472 | 010056 | OCT | 10056 | GEN | DAP37750 |
| 3895 | 05473 | 101100 | OCT | 101100 | | DAP37760 |
| 3896 | 05474 | 006354 | OCT | 6354 | SLZ | DAP37770 |
| 3897 | 05475 | 010072 | OCT | 10072 | GEN | DAP37780 |
| 3898 | 05476 | 100100 | OCT | 100100 | | DAP37790 |
| 3899 | 05477 | 004350 | OCT | 4350 | CHS | DAP37800 |
| 3900 | 05500 | 010063 | OCT | 10063 | GEN | DAP37810 |
| 3901 | 05501 | 140024 | OCT | 140024 | | DAP37820 |
| 3902 | 05502 | 006243 | OCT | 6243 | RCB | DAP37830 |
| 3903 | 05503 | 010042 | OCT | 10042 | GEN | DAP37840 |
| 3904 | 05504 | 140200 | OCT | 140200 | | DAP37850 |
| 3905 | 05505 | 004343 | OCT | 4343 | CCA | DAP37860 |
| 3906 | 05506 | 010041 | OCT | 10041 | GEN | DAP37870 |
| 3907 | 05507 | 140240 | OCT | 140240 | | DAP37880 |
| 3908 | 05510 | 004363 | OCT | 4363 | CSA | DAP37890 |
| 3909 | 05511 | 010041 | OCT | 10041 | GEN | DAP37900 |
| 3910 | 05512 | 140320 | OCT | 140320 | | DAP37910 |
| 3911 | 05513 | 004355 | OCT | 4355 | CMA | DAP37920 |
| 3912 | 05514 | 010041 | OCT | 10041 | GEN | DAP37930 |
| 3913 | 05515 | 140401 | OCT | 140401 | | DAP37940 |
| 3914 | 05516 | 006443 | OCT | 6443 | TCA | DAP37950 |
| 3915 | 05517 | 010041 | OCT | 10041 | GEN | DAP37960 |
| 3916 | 05520 | 140407 | OCT | 140407 | | DAP37970 |
| 3917 | 05521 | 006343 | OCT | 6343 | SCB | DAP37980 |
| 3918 | 05522 | 010042 | OCT | 10042 | GEN | DAP37990 |

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|------|-------|--------|----------|--------|------------------------------|----------|
| 3919 | 05523 | 140600 | OCT | 140600 | | DAP38000 |
| 3920 | 05524 | 004143 | OCT | 4143 | ACA | DAP38010 |
| 3921 | 05525 | 010041 | OCT | 10041 | GEN | DAP38020 |
| 3922 | 05526 | 141216 | OCT | 141216 | | DAP38030 |
| 3923 | 05527 | 004157 | OCT | 4157 | AOA | DAP38040 |
| 3924 | 05530 | 010041 | OCT | 10041 | GEN | DAP38050 |
| 3925 | 05531 | 141206 | OCT | 141206 | | DAP38060 |
| 3926 | 05532 | 004470 | OCT | 4470 | DXA | DAP38070 |
| 3927 | 05533 | 010041 | OCT | 10041 | GEN | DAP38080 |
| 3928 | 05534 | 000011 | OCT | 11 | | DAP38090 |
| 3929 | 05535 | 004570 | OCT | 4570 | EXA | DAP38100 |
| 3930 | 05536 | 010041 | OCT | 10041 | GEN | DAP38110 |
| 3931 | 05537 | 000013 | OCT | 13 | | DAP38120 |
| 3932 | 05540 | | | | | DAP38130 |
| 3933 | 05540 | 066364 | OPF1 BSS | 0 | END OF LEGAL DDP-116 OPCODES | DAP38140 |
| 3934 | 05541 | 020070 | OCT | 66364 | STX/ADR/IND | DAP38150 |
| 3935 | 05542 | 032000 | OCT | 20070 | MR | DAP38160 |
| 3936 | 05543 | 065444 | OCT | 032000 | | DAP38170 |
| 3937 | 05544 | 020070 | OCT | 65444 | LDX/ADR/IND | DAP38180 |
| 3938 | 05545 | 072000 | OCT | 20070 | MR | DAP38190 |
| 3939 | 05546 | 064454 | OCT | 072000 | | DAP38200 |
| 3940 | 05547 | 020044 | OCT | 064454 | DLD/ADR/IND | DAP38210 |
| 3941 | 05550 | 004000 | OCT | 020044 | MR | DAP38220 |
| 3942 | 05551 | 064463 | OCT | 004000 | | DAP38230 |
| 3943 | 05552 | 020064 | OCT | 064463 | DST/ADR/IND | DAP38240 |
| 3944 | 05553 | 010000 | OCT | 020064 | MR | DAP38250 |
| 3945 | 05554 | 064441 | OCT | 010000 | | DAP38260 |
| 3946 | 05555 | 020044 | OCT | 064441 | DAD/ADR/IND | DAP38270 |
| 3947 | 05556 | 014000 | OCT | 020044 | MR | DAP38280 |
| 3948 | 05557 | 064463 | OCT | 14000 | | DAP38290 |
| 3949 | 05560 | 020042 | OCT | 064463 | D5B/ADR/IND | DAP38300 |
| 3950 | 05561 | 016000 | OCT | 020042 | MR | DAP38310 |
| 3951 | 05562 | 004341 | OCT | 016000 | | DAP38320 |
| 3952 | 05563 | 010062 | OCT | 4341 | CAR | DAP38330 |
| 3953 | 05564 | 141044 | OCT | 10062 | GEN | DAP38340 |
| 3954 | 05565 | 004341 | OCT | 141044 | | DAP38350 |
| 3955 | 05566 | 010054 | OCT | 4341 | CAL | DAP38360 |
| | | | OCT | 10054 | GEN | DAP38370 |

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| 3956 | 05567 | 141050 | OCT | 141050 | | | |
| 3957 | 05570 | 005143 | OCT | 5143 | | ICL | DAP38370 |
| 3958 | 05571 | 010054 | OCT | 10054 | | GEN | DAP38380 |
| 3959 | 05572 | 141140 | OCT | 141140 | | | DAP38390 |
| 3960 | 05573 | 005143 | OCT | 5143 | | ICR | DAP38400 |
| 3961 | 05574 | 010062 | OCT | 10062 | | GEN | DAP38410 |
| 3962 | 05575 | 141240 | OCT | 141240 | | | DAP38420 |
| 3963 | 05576 | 005143 | OCT | 5143 | | ICA | DAP38430 |
| 3964 | 05577 | 010041 | OCT | 10041 | | GEN | DAP38440 |
| 3965 | 05600 | 141340 | OCT | 141340 | | | DAP38450 |
| 3966 | 05601 | 104442 | OCT | 104442 | | DBP/POP | DAP38460 |
| 3967 | 05602 | 000060 | OCT | 60 | | | DAP38470 |
| 3968 | 05603 | 0 003475 | DAC | DBP | | | DAP38480 |
| 3969 | 05604 | 004442 | OCT | 4442 | | DBL | DAP38490 |
| 3970 | 05605 | 010054 | OCT | 10054 | | GEN | DAP38500 |
| 3971 | 05606 | 000007 | OCT | 7 | | | DAP38510 |
| 3972 | 05607 | 006347 | OCT | 6347 | | SGL | DAP38520 |
| 3973 | 05610 | 010054 | OCT | 10054 | | GEN | DAP38530 |
| 3974 | 05611 | 000005 | OCT | 5 | | | DAP38540 |
| 3975 | 05612 | 005156 | OCT | 005156 | | INK | DAP38550 |
| 3976 | 05613 | 010053 | OCT | 10053 | | GEN | DAP38560 |
| 3977 | 05614 | 000043 | OCT | 43 | | | DAP38570 |
| 3978 | 05615 | 005764 | OCT | 005764 | | OIK | DAP38580 |
| 3979 | 05616 | 010053 | OCT | 010053 | | GEN | DAP38590 |
| 3980 | 05617 | 171020 | OCT | 171020 | | | DAP38600 |
| 3981 | 05620 | 000000 | OPE | BSZ | 3 | | DAP38610 |
| 3982 | | | END | *400 | | END OF DPM2UP | DAP38620 |

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|------|---------|------|---------|------|---------|------|---------|
| ABS | 003250A | ABS | 000406A | ADRF | 000424A | ADV | 004366A |
| ADVD | 000573A | ADVP | 000522A | AER | 000556A | AERR | 003736A |
| ALFA | 000460A | ASMB | 001152A | ASTR | 000721A | B1 | 000616A |
| B12 | 000622A | B174 | 000623A | B2 | 000617A | B3 | 000620A |
| B4 | 000621A | BCE9 | 000604A | BCEK | 003473A | BCL | 003432A |
| BCL | 003446A | BCL1 | 003463A | BEGF | 004236A | BES | 003424A |
| BLIN | 004373A | BLKS | 000512A | BOPS | 000503A | BSS | 003416A |
| BSYM | 000471A | B5Z | 003373A | BSZ1 | 003405A | C10X | 000703A |
| C12 | 000626A | C13 | 000707A | C15 | 000627A | C17 | 000630A |

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| C2 | 000624A | C20 | 000631A | C23 | 000632A | C240 | 000635A |
| C244 | 000636A | C252 | 000637A | C253 | 000640A | C254 | 000641A |
| C255 | 000642A | C260 | 000643A | C29 | 000633A | C3 | 000743A |
| C301 | 000644A | C303 | 000645A | C305 | 000646A | C306 | 000647A |
| C311 | 000650A | C314 | 000651A | C315 | 000652A | C317 | 000653A |
| C320 | 000654A | C322 | 000655A | C323 | 000656A | C324 | 000657A |
| C325 | 000660A | C326 | 000661A | C330 | 000662A | C332 | 000663A |
| C4 | 000767A | C520 | 000664A | C77 | 000634A | C7X | 000625A |
| CAL1 | 002626A | CALL | 002615A | CBT1 | 000472A | CBT2 | 000474A |
| CDAT | 002212A | CUTA | 000546A | CER | 000557A | CERR | 003741A |
| CF1 | 003273A | CF3 | 003267A | CF4 | 003271A | CF5 | 003267A |
| CHR | 004413A | CHR2 | 000665A | CHRC | 000521A | CHRD | 000575A |
| CKSG | 002416A | CKSM | 000515A | CLE | 000532A | CLEU | 004253A |
| CLER | 001261A | CLOC | 000405A | CM12 | 000666A | CNTR | 000412A |
| CNV8 | 002023A | CNV9 | 002022A | CUM | 000542A | CUML | 000502A |
| COMM | 001157A | COMN | 003334A | CUMX | 000611A | CUMY | 003732A |
| CUND | 003661A | CUOT | 003664A | CPC | 000545A | CRP | 000414A |
| CSC1 | 000667A | CS2 | 000670A | CSEI | 003370A | CSRD | 000574A |
| CSRT | 004430A | CSYM | 000470A | CVPC | 002204A | DSCB | 000435A |
| DSSZ | 000434A | D3TP | 000433A | DAC | 001544A | DACC | 002173A |
| DACF | 000432A | DACX | 001522A | DATA | 004163A | DBCI | 000477A |
| DBFL | 000422A | DBIP | 000530A | DBLK | 004640A | DBNM | 000500A |
| DBOT | 002552A | DBP | 003475A | DBP1 | 000501A | DBZR | 002602A |
| DCN1 | 000716A | DCN2 | 000717A | DCN3 | 000720A | DCUN | 000715A |
| DDD | 002577A | DEC | 003504A | DECF | 000430A | DELU | 001363A |
| DEND | 001627A | DEOT | 000466A | DINS | 001632A | DL1 | 002527A |
| DL4 | 002547A | DLG | 000547A | DLO9 | 000603A | DLOC | 001550A |
| DLOP | 001561A | DUCT | 000443A | DSP1 | 004144A | DSYM | 000473A |
| DUMP | 000544A | DUS | 002517A | DUS1 | 000543A | DWRD | 001765A |
| DXIT | 001651A | DXT | 004245A | E | 000420A | E1 | 000421A |
| EABS | 003110A | ECON | 003077A | EDOL | 003045A | EDUP | 003070A |
| EER | 000560A | EERR | 003745A | EFIN | 003115A | EJCI | 003307A |
| EJCT | 003302A | ELSE | 003676A | EMES | 000723A | END | 003024A |
| ENDC | 003713A | ENDL | 004234A | ENT | 002662A | EWU | 003314A |
| EGUI | 003315A | ERCT | 000413A | ERD | 000441A | EXD | 003261A |
| EXT | 002741A | EXTE | 002375A | EXTR | 002357A | FAIL | 003734A |
| FUMP | 003227A | FER | 000561A | FERK | 003751A | FIL | 004473A |

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|------|---------|------|---------|------|---------|------|---------|
| FILL | 004242A | FIN | 003366A | FINP | 000525A | FINP | 000554A |
| FINX | 003175A | FIRN | 003204A | FIRS | 004221A | FLDP | 000704A |
| FND | 002604A | FREE | 000462A | FRE+ | 000722A | FSTP | 003231A |
| GENR | 001173A | GO | 000535A | GOP | 002021A | HEX | 003507A |
| HEXM | 001375A | HLT | 003127A | ICON | 000510A | IUMS | 000744A |
| IER | 000562A | IERR | 003755A | IFM | 003652A | IFN | 003646A |
| IFP | 003650A | IFZ | 003644A | INDA | 000425A | INDF | 000426A |
| INHT | 003725A | INPB | 004562A | INPU | 000714A | IUOP | 002044A |
| ISCN | 002505A | ISCP | 002512A | ITSI | 000576A | JSM | 004162A |
| JSMH | 004211A | KDS | 000711A | L1 | 001161A | LUMP | 003457A |
| LEND | 003153A | LERR | 003760A | LET | 001415A | LET1 | 001425A |
| LGCT | 004052A | LHW | 000516A | LIN | 000553A | LINE | 001042A |
| L1ST | 003276A | LITF | 000506A | LITP | 001427A | LITS | 001443A |
| LOAD | 003246A | LUDF | 000407A | LOGR | 004042A | LUPT | 004355A |
| LSIZ | 000416A | LSTD | 000551A | LSTW | 000410A | LU1 | 004324A |
| LU2 | 004330A | LUdT | 004277A | LXD | 003264A | M1 | 000671A |
| M12 | 000676A | M2 | 000672A | M3 | 000673A | M4 | 000674A |
| M56 | 000710A | M6 | 000675A | M60 | 000712A | M7 | 000677A |
| MDE | 001654A | MDEF | 003765A | MDFP | 000570A | MERR | 003767A |
| MESG | 003156A | MESL | 003164A | MOD | 000517A | MUR | 003362A |
| MR1 | 002112A | MRS | 002142A | MRO | 002175A | MKOP | 002056A |
| MRR | 002171A | MSK | 000520A | MSL1 | 003173A | NLST | 003300A |
| NOP | 004462A | NUM | 000445A | NUM1 | 000446A | NUM2 | 000447A |
| NUM3 | 000450A | OBT | 000514A | OBTD | 000577A | OBTX | 004061A |
| OC2P | 003546A | OC2W | 003543A | OC3W | 003553A | OCT | 003510A |
| UCTD | 003561A | OCK | 001376A | UCTR | 003553A | OCTT | 003517A |
| OER | 000563A | OERR | 003773A | ONE | 000700A | OP4 | 005350A |
| OPCL | 004361A | OPE | 005620A | OPF1 | 005540A | OPS | 004773A |
| OPSI | 001501A | OPS2 | 001536A | OP53 | 001540A | OPSH | 001470A |
| OPT | 004343A | OPTD | 000600A | OR2 | 003243A | OKG | 003240A |
| URG1 | 004247A | OTPB | 004676A | OTPB | 004544A | OUTB | 004675A |
| UUTP | 000713A | PEND | 003125A | PERK | 003777A | PLUS | 002434A |
| PMS | 000607A | PMSC | 002440A | PNCH | 004104A | PND | 000537A |
| POPB | 002003A | POPY | 002016A | POUI | 000523A | RZ | 000571A |
| R6C | 003016A | RBIT | 000417A | REG9 | 000602A | REGL | 001140A |
| REGU | 001132A | REGP | 001136A | REL | 003254A | RELI | 003257A |
| RELV | 000463A | RERR | 004006A | RES | 000540A | RESG | 001020A |

| | | | | | | | |
|------|---------|------|---------|------|---------|------|---------|
| RESS | 000550A | REST | 001006A | ROOM | 000513A | RP2 | 003146A |
| RRT | 004135A | R5G | 000541A | SBA | 000536A | SBL1 | 002713A |
| SCHW | 002766A | SER | 000564A | SERR | 004012A | SET | 003313A |
| SETB | 003342A | SETC | 004464A | SET+ | 000431A | SETJ | 001643A |
| SGN | 000534A | SGNA | 002404A | SGNX | 002436A | SHOP | 002027A |
| SIGN | 000453A | SIGT | 000457A | SKP | 004164A | SKPI | 004202A |
| SLST | 004501A | SLT1 | 004536A | SMI | 003435A | SNZ | 003704A |
| SPL | 003605A | SSET | 001003A | SSYN | 001752A | SIAR | 001365A |
| STBX | 003357A | STF | 001445A | STRI | 001000A | SUBC | 001721A |
| SUBF | 000507A | SUBP | 001716A | SUBK | 002662A | SUBX | 001734A |
| SUM | 000423A | SWAP | 001270A | SYL | 000450A | SYL1 | 000454A |
| SYL2 | 000464A | SYL3 | 000465A | SYLA | 001337A | SYLC | 000504A |
| SYLL | 001300A | SYLO | 001314A | SYLP | 000505A | SYLR | 000533A |
| SYMC | 000467A | SYMF | 000526A | SYMS | 004207A | SZE | 003632A |
| T | 000475A | T136 | 004704A | T137 | 004705A | T236 | 004751A |
| T237 | 004752A | TAB1 | 004640A | TAB2 | 004705A | TAG | 000427A |
| TCMP | 000476A | TCND | 003653A | TCNI | 000415A | TER | 000565A |
| TERM | 000444A | TERR | 004016A | TLOC | 002353A | TUPS | 000774A |
| TRM1 | 001151A | TRT | 000606A | TRTG | 001224A | TRUN | 004452A |
| TST | 000461A | TILF | 000411A | TWOR | 004227A | UAC | 004264A |
| UACD | 000552A | UER | 000610A | UERR | 004022A | UND1 | 001220A |
| UNDE | 001177A | UNPK | 003002A | UPAK | 000605A | VAR | 002224A |
| VARD | 000612A | VARF | 000613A | VARX | 002230A | VER | 000566A |
| VERR | 004026A | VF | 000531A | VFD | 003565A | VFD2 | 000477A |
| VFD3 | 000500A | VFD5 | 000701A | VFD6 | 000702A | VFD7 | 003623A |
| VFD8 | 003573A | VFD9 | 003625A | VFDX | 000501A | VFDZ | 003634A |
| VFS | 002244A | VL1 | 002262A | VL2 | 002333A | VNUM | 002344A |
| VNUX | 002351A | VRI | 002234A | VSC2 | 001126A | VSC9 | 000601A |
| VSCN | 001125A | VVAL | 002347A | W2 | 000440A | WCNI | 000442A |
| WORD | 000437A | WORT | 000524A | WSUB | 001760A | XAC | 002642A |
| XAC1 | 002652A | XCHK | 000555A | XCK | 002444A | XER | 000567A |
| XERR | 004032A | XF1 | 000775A | XF4 | 000776A | XF5D | 000777A |
| XLV | 002464A | ZERR | 004036A | ZERX | 000614A | ZLOP | 002477A |
| ZP | 000436A | ZPT | 000511A | ZPTX | 000527A | ZSC | 000572A |
| ZSCN | 002471A | ZX3 | 000615A | | | | |

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