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* V.D.M. PART NO. 92L0107-006A

RELEASED 10-29-70

620 TEST EXECUTIVE-PRELIM. TESTS

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THIS TEST PROGRAM IS A PART OF THE SIX TWENTY
TEST EXECUTIVE PROGRAM SYSTEM (STEPS)

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THIS LISTING CONTAINS A PRELIMINARY INSTRUCTION TEST AND A
PRELIMINARY MEMORY TEST FOR THE 620 COMPUTER.

INSTRUCTION TEST
ONLY A BASIC SET OF INSTRUCTIONS ARE TESTED TO GAIN CONFIDENCE
THAT STANDARD TEST PROGRAMS CAN BE LOADED.
MOST OF THE SUBTESTS BUILD FROM PRECEDING SUBTESTS AND ASSUME
THAT THE INSTRUCTIONS USED PREVIOUSLY ARE WORKING.

MEMORY TEST
LOCATIONS 0 THRU EME1 (APPROX 07420) ARE EXERCISED
WITH AN ALTERNATE BIT PATTERN, AND IT'S COMPLEMENT.
THE PREVIOUS CONTENTS ARE SAVED, AND RESTORED.

SWITCHES
USE SS2 TO LOOP ON ERROR AFTER HALT
USE SS3 TO LOOP ON BOTH PRELIMINARY TESTS

LOADER

THE BINARY LOADER WILL ADAPT TO THE PORTSTRAP
AND LOAD/EXEC THE NEXT PROGRAM.

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0008Z0

INSTRUCTION TEST

0NC 06500 066500

HLT TZA JAZ ENA1

ENST JSS2 ENA2

MLT 01 ENB0

04B STA JAN ENA3

04C STA JAN ENA4

JMP ENA0

ONFS LOA JAS JAZ ENB0

JSS2 ENA2

MLT 02

ONFS LDG

ERROR--TZA/DAR/JAZ/JAN

ERROR--TZA/DAR/STA

000820 0244623

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|--------|----------|------|------|------|------|--------------------|----------|--------|
| 006526 | 001020 | | JBZ | ENB1 | | | 000690 | |
| 006527 | 006533 R | | TZB | | | | 000700 | |
| 006530 | 005002 | | JBZ | ENB2 | | | 000710 | |
| 006531 | 001020 | | ENB1 | JSS2 | ENB0 | | 000720 | |
| 006532 | 006536 R | | | HLT | 3 | ERROR--LDB/JBZ/TZB | 000730 | |
| 006533 | 001200 | | ENB2 | IBR | | | 000740 | |
| 006534 | 006525 R | | | JBZ | ENB3 | | 000750 | |
| 006535 | 000003 | | | DBR | | | 000760 | |
| 006536 | 005122 | | ENB3 | JBZ | ENCO | | 000770 | |
| 006537 | 001020 | | | ENB3 | | | 000780 | |
| 006540 | 006544 R | | | HLT | 4 | ERROR--IBR/DBR | 000790 | |
| 006541 | 005322 | | | * | | | 000800 | |
| 006542 | 001020 | | | * | | | 000810 | |
| 006543 | 006547 R | | | * | | | 000820 | |
| 006544 | 001200 | | ENB3 | JSS2 | ENB0 | | 000830 | |
| 006545 | 006525 R | | | HLT | | | 000840 | |
| 006546 | 000004 | | | * | | | 000850 | |
| 006547 | 034631 | ENC0 | LDX | ONES | | | 000860 | |
| 006550 | 001040 | | JXZ | ENC1 | | | 000870 | |
| 006551 | 006555 R | | | TZX | | | 000880 | |
| 006552 | 005004 | | | JXZ | ENC2 | CONTINUE | 000890 | |
| 006553 | 001040 | | | | ENCO | | 000900 | |
| 006554 | 006560 R | | | ENC1 | JSS2 | | 000910 | |
| 006555 | 001200 | | | | HLT | | 000920 | |
| 006556 | 006547 R | | | ENC2 | IXR | | 000930 | |
| 006557 | 000005 | | | | JXZ | ENC3 | 000940 | |
| 006560 | 005144 | | | | | DXR | 000950 | |
| 006561 | 001040 | | | | | JXZ | END0 | 000960 |
| 006562 | 006566 R | | | | | | CONTINUE | 000970 |
| 006563 | 005344 | | | | | ENC3 | JSS2 | 000980 |
| 006564 | 001040 | | | | | | ENCO | |
| 006565 | 006571 R | | | | | | | |
| 006566 | 001200 | | | | | | | |
| 006567 | 006547 R | | | | | | | |
| 006570 | 000006 | | | | | | | |
| 006571 | 014607 | END0 | LDA | ONES | | | | |

| PAGE | 00005 | | | | | |
|--------|----------|------|------|-----------------|-----------------|--------|
| 006635 | 006620 | LDBI | 1 | (ALL ONES) | | 001300 |
| 006636 | 000001 | TBA | | | | 001310 |
| 006637 | 005021 | JAP | ENF1 | | | 001320 |
| 006640 | 001002 | ERA | UNFS | | | 001330 |
| 006641 | 006645 R | JAZ | ENG0 | CONTINUE | | 001340 |
| 006642 | 134536 | ENF1 | JSS2 | ENFO | | 001350 |
| 006643 | 001010 | HLT | 012 | ERROR--LDBI/TBA | | 001360 |
| 006644 | 006650 R | * | | | | 001370 |
| 006645 | 001200 | * | | | | 001380 |
| 006646 | 006632 R | * | | | | 001390 |
| 006647 | 000012 | * | | | | 001400 |
| 006650 | 014530 | ENG0 | LDA | ONES | | 001410 |
| 006651 | 054002 | | STA | **3 | | 001420 |
| 006652 | 005001 | | TZA | | | 001430 |
| 006653 | 006630 | | LDXI | 1 | (ALL ONES) | 001440 |
| 006654 | 000001 | | TXA | | | 001450 |
| 006655 | 005041 | | JAP | ENG1 | | 001460 |
| 006656 | 001002 | | ERA | ONES | | 001470 |
| 006657 | 006663 R | | JAZ | ENHO | CONTINUE | 001480 |
| 006660 | 134520 | | ENH0 | | | 001490 |
| 006661 | 001010 | | JSS2 | ENGO | | 001500 |
| 006662 | 006666 R | | HLT | 013 | ERROR--LDXI/TXA | 001510 |
| 006663 | 001200 | ENG1 | | | | 001520 |
| 006664 | 006650 R | | | | | 001530 |
| 006665 | 000013 | | | | | 001540 |
| 006666 | 024511 | ENHO | LDB | 0125 | CONSTANT=125252 | 001550 |
| 006667 | 005024 | | TRX | | | 001560 |
| 006670 | 001040 | | JXZ | ENH1 | | 001570 |
| 006671 | 006676 R | | TXA | | | 001580 |
| 006672 | 005041 | | ERA | 0125 | | 001590 |
| 006673 | 134504 | | JAZ | ENIO | CONTINUE | 001600 |
| 006674 | 001010 | | ENH1 | JSS2 | ENHO | |
| 006675 | 006701 R | | HLT | 014 | ERROR--LDB/TXA | |
| 006676 | 001200 | | | | | |
| 006677 | 006666 R | | | | | |
| 006700 | 000014 | | | | | |

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| | | | | | | 001610 |
| | | | | | | 001620 |
| | | | | | | 001630 |
| 006701 | 014475 | EN10 | LDA | D052 | CONSTANT=052525 | 001640 |
| 006702 | 134474 | | ERA | D052 | | 001650 |
| 006703 | 001010 | | JAZ | EN11 | CONTINUE | 001660 |
| 006704 | 006710 R | | | | | |
| 006705 | 001200 | | JSS2 | EN10 | | 001670 |
| 006706 | 006701 R | | | | | |
| 006707 | 000015 | | HLT | 015 | ERROR--LDA/ERA | 001680 |
| 006710 | 014467 | EN11 | LDA | D125 | CONSTANT=125252 | 001690 |
| 006711 | 034470 | | STA | TS01 | TEMP STORE | 001700 |
| 006712 | 005001 | | T2A | | | 001710 |
| 006713 | 014466 | | LDA | TS01 | | 001720 |
| 006714 | 001010 | | JAZ | EN12 | | 001730 |
| 006715 | 006721 R | | ERA | D125 | | 001740 |
| 006716 | 134461 | | JAZ | EN10 | CONTINUE | 001750 |
| 006717 | 001010 | | | | | 001760 |
| 006720 | 006724 R | | EN12 | JSS2 | EN11 | 001770 |
| 006721 | 001200 | | | | | |
| 006722 | 006710 R | | | | | |
| 006723 | 000016 | | HLT | 016 | ERROR--LDA/STA | 001780 |
| | | | | | | 001790 |
| | | | | | | 001800 |
| | | | | | | 001810 |
| 006724 | 024462 | EN10 | LDB | D052 | CONSTANT=052525 | 001820 |
| 006725 | 064464 | | STB | TS01 | TEMP STORE | 001830 |
| 006726 | 024463 | | LDE | TS01 | | 001840 |
| 006727 | 005021 | | TBA | | | 001850 |
| 006730 | 134466 | | ERA | D052 | | 001860 |
| 006731 | 001010 | | JAZ | EN10 | CONTINUE | 001870 |
| 006732 | 006735 R | | | | | |
| 006733 | 001200 | | JSS2 | EN10 | | 001880 |
| 006734 | 006724 R | | | | | |
| 006735 | 000017 | | HLT | 017 | ERROR--LDB/STB | 001890 |
| | | | | | | 001900 |
| | | | | | | 001910 |
| | | | | | | 001920 |
| 006736 | 034440 | EN10 | LOX | D052 | CONSTANT=052525 | 001930 |
| 006737 | 074442 | | STX | TS01 | TEMP STORE | 001940 |
| 006740 | 034441 | | LOX | TS01 | | 001950 |

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|--------|----------|------|------|----------------|--------|
| 006741 | 005041 | TXA | | | 001960 |
| 006742 | 134434 | ERA | 0052 | | 001970 |
| 006743 | 001010 | JAZ | ENLO | CONTINUE | 001980 |
| 006744 | 006750 R | | | | |
| 006745 | 001200 | JSS2 | ENKO | | 001990 |
| 006746 | 006736 R | | | | |
| 006747 | 000020 | HLT | 020 | ERROR--LDX/STX | 002000 |
| | * | | | | 002010 |
| | * | | | | 002020 |
| | * | | | | 002030 |
| 006750 | 005111 | ENLO | IAR | | 002040 |
| 006751 | 005001 | | TZA | | 002050 |
| 006752 | 005002 | | TZB | | 002060 |
| 006753 | 003010 | XAZ | ENLO | | 002070 |
| 006754 | 006750 R | | | | |
| 006755 | 006130 | ERAI | 1 | | 002080 |
| 006756 | 000001 | | | | |
| 006757 | 001010 | JAZ | ENL1 | CONTINUE | 002090 |
| 006760 | 006764 R | | JSS2 | ENLO | |
| 006761 | 001200 | | | | 002100 |
| 006762 | 006750 R | | | | |
| 006763 | 000021 | HLT | 021 | ERROR--XAZ | 002110 |
| | * | | | | 002120 |
| 006764 | 014414 | ENL1 | LDA | ONES | 002130 |
| 006765 | 003020 | | XBZ | FNLO | 002140 |
| 006766 | 006750 R | | | | |
| 006767 | 001010 | JAZ | ENMO | CONTINUE | 002150 |
| 006770 | 006774 R | | | | |
| 006771 | 001200 | JSS2 | ENLO | | 002160 |
| 006772 | 006750 R | | | | |
| 006773 | 000022 | HLT | 022 | ERROR--XBZ | 002170 |
| | * | | | | 002180 |
| | * | | | | 002190 |
| | * | | | | 002200 |
| 006774 | 007400 | ENMO | ROF | | 002210 |
| 006775 | 001001 | | JOF | ENM1 | 002220 |
| 006776 | 007002 R | | | | |
| 006777 | 007401 | | SOF | | 002230 |
| 007000 | 001001 | | JOF | ENMP | 002240 |
| 007001 | 007005 R | | | | |
| 007002 | 001200 | ENM1 | JSS2 | ENMO | 002250 |
| 007003 | 006774 R | | | | |

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|--------|----------|------|------|--------|--------------------|--------|
| 007004 | 000023 | | MLT | 023 | ERROR--RDF/SDF/JDF | 002260 |
| 007005 | 007400 | * | RDF | | | 002270 |
| 007006 | 001001 | ENN2 | JDF | ENN3 | | 002280 |
| 007007 | 007012 R | | | | | 002290 |
| 007010 | 001000 | | JMP | ENNO | CONTINUE | 002300 |
| 007011 | 007015 R | | | | | |
| 007012 | 001200 | ENN3 | JSS2 | ENN2 | | 002310 |
| 007013 | 007005 R | | HLT | 024 | ERROR--RDF/JDF/JMP | 002320 |
| 007014 | 000024 | * | | | | 002330 |
| | | * | | | | 002340 |
| | | * | | | | 002350 |
| 007015 | 014363 | ENN0 | LDA | ONES | | 002360 |
| 007016 | 002000 | | JMPM | ENN1 | | 002370 |
| 007017 | 007027 R | | | | | |
| 007020 | 001010 | | JAZ | END0-5 | CONTINUE | 002380 |
| 007021 | 007034 R | | | | | |
| 007022 | 001200 | | JSS2 | ENNO | | 002390 |
| 007023 | 007015 R | | | | | |
| 007024 | 000025 | | MLT | 025 | ERROR--JMPM/JMP* | 002400 |
| 007025 | 001000 | | JMP | END0-5 | | 002410 |
| 007026 | 007034 R | * | | | | |
| 007027 | 000007 | ENN1 | DATA | ? | ENTR - NONZER0 | 002420 |
| 007030 | 005001 | | TZA | | | 002430 |
| 007031 | 001000 | | JMP* | ENN1 | | 002440 |
| 007032 | 107027 R | | | | | 002450 |
| 007033 | 000026 | | HLT | 026 | ERROR--JMP* | 002460 |
| | | * | | | | 002470 |
| 007034 | 014722 | | LDA | 07757 | SIXTEEN HIT ? | 002480 |
| 007035 | 006130 | | ERA1 | 04011 | * | 002490 |
| 007036 | 004011 | | | | | |
| 007037 | 001010 | | JAZ | END5 | YES | 002500 |
| 007040 | 007111 R | | | | | |
| 007041 | 006010 | END0 | LOAD | 052525 | | 002510 |
| 007042 | 052525 | | | | | |
| 007043 | 004263 | | LWLA | 18 | A#125232 | 002520 |
| 007044 | 134333 | | ERA | D129 | | 002530 |
| 007045 | 001010 | | JAZ | END1 | CONTINUE | 002540 |
| 007046 | 007052 R | | | | | |
| 007047 | 001200 | | JSS2 | ENNO | | 002550 |

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|--------|----------|------|------|--------|--------------|--|--------|
| 007050 | 007041 R | | | | | | 002560 |
| 007051 | 000027 | * | HLT | 027 | ERROR--LRLA | | 002570 |
| 007052 | 005002 | END1 | TZR | | | | 002580 |
| 007053 | 006010 | | LDAI | 052525 | | | 002590 |
| 007054 | 052525 | | | | | | |
| 007055 | 004561 | | LLSR | 17 | A=0 B=125252 | | 002600 |
| 007056 | 001010 | | JAZ | END2 | | | 002610 |
| 007057 | 007063 R | | | | | | |
| 007060 | 001200 | | JSS2 | END1 | | | 002620 |
| 007061 | 007052 R | | | | | | |
| 007062 | 000030 | * | HLT | 030 | ERROR--LLSR | | 002630 |
| 007063 | 005021 | END2 | TBA | | | | 002640 |
| 007064 | 134313 | | ERA | 0125 | | | 002650 |
| 007065 | 001010 | | JAZ | END3 | CONTINUE | | 002660 |
| 007066 | 007072 R | | | | | | 002670 |
| 007067 | 001200 | | JSS2 | END1 | | | 002680 |
| 007070 | 007052 R | | | | | | 002690 |
| 007071 | 000031 | * | HLT | 031 | ERROR--LLSR | | 002700 |
| 007072 | 004461 | END3 | LLRL | 17 | A=052525 B=0 | | 002710 |
| 007073 | 134303 | | ERA | 0052 | | | 002720 |
| 007074 | 001010 | | JAZ | END4 | | | 002730 |
| 007075 | 007101 R | | | | | | 002740 |
| 007076 | 001200 | | JSS2 | END1 | | | 002750 |
| 007077 | 007052 R | | | | | | |
| 007100 | 000032 | | HLT | 032 | ERROR--LLRL | | 002760 |
| 007101 | 005021 | END4 | TBA | | | | 002770 |
| 007102 | 001010 | | JAZ | END0 | | | 002780 |
| 007103 | 007155 R | | | | | | 002790 |
| 007104 | 001200 | | JSS2 | END1 | | | |
| 007105 | 007052 R | | | | | | |
| 007106 | 000033 | | HLT | 033 | ERROR--LLRL | | 002800 |
| 007107 | 001000 | | JMP | END0 | | | 002810 |
| 007110 | 007155 R | * | | | | | 002820 |
| | | * | | | | | 002830 |
| | | * | | | | | 002840 |
| 007111 | 014265 | END5 | LDA | 0052 | | | 002850 |
| 007112 | 004261 | | LRLA | 17 | A=125252 | | 002860 |

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|--------|--------|------|--------|-----------------|
| 007195 | 014220 | ENP0 | LDA | D001 |
| 007196 | 124222 | | ADD | DNE9 |
| 007197 | 001010 | JAZ | | ENP1 |
| 007198 | 007164 | R | | QK |
| 007199 | 001200 | JSS2 | ENP0 | |
| 007200 | 007155 | R | MLT | 034 |
| 007201 | 000034 | ENP1 | ADD1 | 0177777 |
| 007202 | 006120 | JAZ | | |
| 007203 | 177777 | R | ORAT | 0177777 |
| 007204 | 006110 | ERA1 | | |
| 007205 | 177777 | R | 003260 | 0177777 |
| 007206 | 006130 | JAZ | ENG0 | |
| 007207 | 177777 | R | 003270 | |
| 007208 | 001010 | JSS2 | ENP0 | CONTINUE |
| 007209 | 007177 | R | 003280 | |
| 007210 | 001800 | JSS2 | ENP0 | |
| 007211 | 007155 | R | 003290 | 003291 |
| 007212 | 000035 | JSS2 | ENP0 | 003300 |
| 007213 | 007177 | R | 003310 | 003310 |
| 007214 | 001200 | JSS2 | ENP0 | CONSTANT=032925 |
| 007215 | 007155 | R | 003320 | 003320 |
| 007216 | 000035 | JSS2 | ENP0 | CONTINUE |
| 007217 | 007177 | R | 003330 | 003330 |
| 007218 | 000035 | JSS2 | ENP0 | CONTINUE |
| 007219 | 001200 | JSS2 | ENP0 | |
| 007220 | 001200 | JSS2 | ENP0 | |
| 007221 | 007206 | R | 003340 | 003340 |
| 007222 | 001200 | JSS2 | ENP0 | 003350 |
| 007223 | 007206 | R | 003360 | 003360 |
| 007224 | 001200 | JSS2 | ENP0 | 003370 |
| 007225 | 007206 | R | 003380 | 003380 |
| 007226 | 001200 | JSS2 | ENP0 | 003390 |
| 007227 | 007206 | R | 003400 | 003400 |
| 007228 | 001200 | JSS2 | ENP0 | 003410 |
| 007229 | 007206 | R | 003420 | 003420 |
| 007230 | 001200 | JSS2 | ENP0 | 003430 |
| 007231 | 007206 | R | 003440 | 003440 |
| 007232 | 001200 | JSS2 | ENP0 | 003450 |
| 007233 | 007206 | R | 003460 | 003460 |
| 007234 | 001200 | JSS2 | ENP0 | 003470 |
| 007235 | 007206 | R | 003480 | 003480 |
| 007236 | 001200 | JSS2 | ENP0 | 003490 |

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|--------|----------|------|-----|------|
| 007217 | 014161 | ENS0 | LDA | ONES |
| 007220 | 024160 | LDS0 | LDS | ONES |
| 007221 | 005103 | INCR | DAR | 03 |
| 007225 | 005311 | DAR | DBR | |
| 007227 | 005322 | DBR | JAZ | EN82 |
| 007230 | 001000 | JAZ | JLT | 040 |
| 007231 | 001000 | JLT | JMP | ENTO |
| 007232 | 007233 R | JMP | JMP | EN81 |
| 007233 | 001020 | ENS2 | JZT | ENTO |
| 007234 | 007237 R | JZT | JMP | |
| 007235 | 001000 | JZT | JMP | |
| 007236 | 001000 | JZT | JMP | EN80 |
| 007237 | 007238 R | JZT | JMP | |

ERROR--INCR 03

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|--------|----------|------|------|------|
| 007238 | 001020 | ENTO | DEC0 | 02 |
| 007239 | 001000 | ENTO | DEC0 | 02 |
| 007240 | 006302 | ENTO | DEC0 | 02 |
| 007241 | 003021 | TBA | ERA | ONES |
| 007242 | 134136 | TBA | ERA | ENU0 |
| 007243 | 001010 | JAZ | JAZ | |
| 007244 | 007280 R | JAZ | JAZ | |
| 007245 | 001200 | JAZ2 | JZT | 041 |
| 007246 | 007287 R | JAZ2 | JLT | 041 |
| 007247 | 0000041 | JAZ2 | JLT | 041 |

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|--------|----------|------|------|------|
| 007257 | 008002 | ENTO | T20 | |
| 007258 | 008021 | ENTO | DEC0 | 02 |
| 007259 | 134136 | TBA | ERA | ONES |
| 007260 | 001010 | JAZ | JAZ | |
| 007261 | 007280 R | JAZ | JAZ | |
| 007262 | 001200 | JAZ2 | JAZ2 | |
| 007263 | 007287 R | JAZ2 | JLT | 042 |
| 007264 | 0000041 | JAZ2 | JLT | 042 |

ERROR--DEC0 02

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|--------|----------|------|------|-----|
| 007265 | 005103 | ENTO | INCK | 03 |
| 007266 | 005124 | ENTO | INCR | 032 |
| 007267 | 005032 | TBA | ERA1 | 03 |
| 007268 | 005032 | TBA | ERA1 | |
| 007269 | 005032 | TBA | ERA1 | |
| 007270 | 005032 | TBA | ERA1 | |
| 007271 | 005032 | TBA | ERA1 | |
| 007272 | 005032 | TBA | ERA1 | |
| 007273 | 005032 | TBA | ERA1 | |
| 007274 | 005032 | TBA | ERA1 | |
| 007275 | 005032 | TBA | ERA1 | |
| 007276 | 005032 | TBA | ERA1 | |
| 007277 | 007283 R | TBA | ERA1 | |
| 007278 | 001200 | ERA1 | ERA1 | |
| 007279 | 007283 R | ERA1 | ERA1 | |
| 007280 | 001200 | ERA1 | ERA1 | |
| 007281 | 007283 R | ERA1 | ERA1 | |
| 007282 | 001200 | ERA1 | ERA1 | |
| 007283 | 007283 R | ERA1 | ERA1 | |
| 007284 | 001200 | ERA1 | ERA1 | |
| 007285 | 007283 R | ERA1 | ERA1 | |
| 007286 | 001200 | ERA1 | ERA1 | |
| 007287 | 007283 R | ERA1 | ERA1 | |
| 007288 | 001200 | ERA1 | ERA1 | |
| 007289 | 007283 R | ERA1 | ERA1 | |
| 007290 | 001200 | ERA1 | ERA1 | |
| 007291 | 007283 R | ERA1 | ERA1 | |
| 007292 | 001200 | ERA1 | ERA1 | |
| 007293 | 007283 R | ERA1 | ERA1 | |
| 007294 | 001200 | ERA1 | ERA1 | |
| 007295 | 007283 R | ERA1 | ERA1 | |
| 007296 | 001200 | ERA1 | ERA1 | |
| 007297 | 007283 R | ERA1 | ERA1 | |
| 007298 | 001200 | ERA1 | ERA1 | |
| 007299 | 007283 R | ERA1 | ERA1 | |

ERROR--MERC 032

| | | | | |
|--------|----------|------|------|---------------|
| 003820 | | | | |
| 003130 | | | | |
| 003840 | | | | |
| 003850 | | | | |
| 007263 | 006010 | ENVO | LDAI | 0100 |
| 007264 | 000100 | | | |
| 007265 | 004346 | | LSRA | 6 |
| 007266 | 005311 | | DAR | |
| 007267 | 001010 | | JAZ | ENVO |
| 007270 | 007274 P | | | |
| 007271 | 001200 | | J382 | ENVO |
| 007272 | 007263 P | | | |
| 007273 | 000043 | | HLT | 043 |
| | | | | ERROR=LSRA 6 |
| | | | | |
| 007274 | 006030 | ENHO | LOXI | 0123 |
| 007275 | 007400 R | | | |
| 007276 | 005001 | | TZA | |
| 007277 | 015000 | | LDA | 0,1 |
| 007300 | 134077 | | ERA | D125 |
| 007301 | 001010 | | JAZ | ENVO |
| 007302 | 007306 R | | | |
| 007303 | 001200 | | J382 | ENHO |
| 007304 | 007274 R | | | |
| 007305 | 000044 | | HLT | 044 |
| | | | | ERROR=LDA 0,1 |
| | | | | |
| 007306 | 005001 | ENHO | TZA | |
| 007307 | 054072 | | STA | TS01 |
| 007310 | 006030 | | LOXI | TS01 |
| 007311 | 007402 R | | | |
| 007312 | 014065 | | LDA | D125 |
| 007313 | 055000 | | STA | 0,1 |
| 007314 | 134065 | | ERA | TS01 |
| 007315 | 001010 | | JAZ | ENVO |
| 007316 | 007322 R | | | |
| 007317 | 001200 | | J382 | ENHO |
| 007320 | 007306 R | | | |
| 007321 | 000045 | | HLT | 045 |
| | | | | ERROR=STA 0,1 |

007322 014056 ENVO LDA ONES
 007323 006150 ANAI 0125252
 007324 125252 ERA 0125
 007325 001010 JAZ 0125
 007326 001200 ENV0
 007327 007331 007322 R
 007328 000046 HLT 046
 007329 007332 000046
 * * * * *
 004150 004160 LDA
 004170 004180
 004190
 004200
 004210
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 0049F0
 0049G0
 0049H0
 0049I0
 0049J0
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 0049M0
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 0049O0
 0049P0
 0049Q0
 0049R0
 0049S0
 0049T0
 0049U0
 0049V0
 0049W0
 0049X0
 0049Y0
 0049Z0
 005001
 007401
 007360
 C05001
 EN20
 TZA
 SOF
 004160
 004170
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 004190
 004200
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 0049H0
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 0049K0
 0049L0
 0049M0
 0049N0
 0049O0
 0049P0
 0049Q0
 0049R0
 0049S0
 0049T0
 0049U0
 0049V0
 0049W0
 0049X0
 0049Y0
 0049Z0
 005001
 007401
 ERROR--XIP 022

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| | | | | |
|--------|----------|------|-----------|--------|
| 007362 | 001011 | JIF | 011,EN22 | 004470 |
| 007363 | 007371 R | | | |
| 007364 | 001200 | EN21 | JSS2 EN20 | 004480 |
| 007365 | 007360 R | | | |
| 007366 | 000051 | HLT | 051 | 004490 |
| 007367 | 001000 | JMP | EMEM | 004500 |
| 007370 | 007403 R | | | |
| 007371 | 007400 | EN22 | ROF | 004510 |
| 007372 | 001011 | JIF | 011,EN21 | 004520 |
| 007373 | 007364 R | | | |
| 007374 | 001000 | JMP | EMEM | 004530 |
| 007375 | 007403 R | | | |

ERROR--JIF 011

DATA TABLE

| | | | | | |
|--------|--------|------|------|---------|--------|
| 007376 | 000001 | D001 | DATA | 1 | 004590 |
| 007377 | 052525 | R052 | DATA | 052525 | 004600 |
| 007400 | 125252 | D125 | DATA | 0125252 | 004610 |
| 007401 | 000001 | ONES | DATA | 1 | 004620 |
| 007402 | 000007 | T801 | DATA | 7 | 004630 |

WILL BE MADE ALL ONES
TEMP. STORAGE, 7 FOR NON-ZERO BOOTSTRAP
FORMAT

620 PRELIMINARY MEMORY TEST

* TEST LOCATIONS 0 THRU EME1 WITH 052525 AND 125252 PATTERNS 004730
* CONTENTS OF CELLS ARE SAVED AND RESTORED. 004740

| | | | | | |
|--------|--------|------|-----|------|--|
| 007403 | 014052 | EMEM | LDA | EMDA | 052525 DATA WORD 004770 |
| 007404 | 054053 | | STA | EMDC | CURRENT TEST WORD 004780 |
| 007405 | 054053 | | STA | EMTS | TEMP STORE FOR ORG CONTENTS OF A LOCATION 004790 |
| 007406 | 005001 | | TZA | | 004800 |
| 007407 | 014051 | | LDA | EMTS | 004810 |
| 007410 | 134047 | | ERA | EMDC | 004820 |
| 007411 | 001010 | | JAZ | *+4 | 004830 |

CURRENT TEST WORD

| | DATA | 1111111111111111 |
|--------|--------|------------------|
| 007462 | 000001 | 005170 |
| 007463 | 000001 | |
| 007464 | 000001 | |
| 007465 | 000001 | |
| 007466 | 000001 | |
| 007467 | 000001 | |
| 007470 | 000001 | |
| 007471 | 000001 | |
| 007472 | 000001 | |
| 007473 | 000001 | |
| 007474 | 000001 | |
| 007475 | 000001 | |
| 007476 | 000001 | |
| 007477 | 000001 | |
| 007478 | 000001 | |
| 007479 | 000001 | |
| 007501 | 000001 | 005180 |
| 007502 | 000001 | |
| 007503 | 000001 | |
| 007504 | 000001 | |
| 007505 | 000001 | |
| 007506 | 000001 | |
| 007507 | 000001 | |
| 007508 | 000001 | |
| 007509 | 000001 | |
| 007510 | 000001 | |
| 007511 | 000001 | |
| 007512 | 000001 | |
| 007513 | 000001 | |
| 007514 | 000001 | |
| 007515 | 000001 | 005200 |
| 007516 | 000001 | |
| 007517 | 000001 | |
| 007518 | 000001 | |
| 007519 | 000001 | |
| 007520 | 000001 | |
| 007521 | 000001 | |
| 007522 | 000001 | |
| 007523 | 000001 | |
| 007524 | 000001 | |
| 007525 | 000001 | 005210 |
| 007526 | 000001 | |
| 007527 | 000001 | |
| 007528 | 000001 | |
| 007529 | 000001 | |
| 007530 | 000001 | |
| 007531 | 000001 | |
| 007532 | 000001 | |
| 007533 | 000001 | |
| 007534 | 000001 | |
| 007535 | 000001 | |
| 007536 | 000001 | |
| 007537 | 000001 | |

DATA 1111111111111111

005170 BUFFER BETWEEN PROGRAMS

DATA 1111111111111111

005180

DATA 1111111111111111

005200

DATA 1111111111111111

005210

PAGE 0023

| | | | | | | |
|--------|----------|-------|--------|--|--|--------|
| 007520 | 007555 R | | | | | |
| 007521 | 014247 | LDA | 07771 | | | 005500 |
| 007522 | 006150 | ANAI | 0100 | | | 005510 |
| 007523 | 000100 | | | | | |
| 007524 | 001010 | JAZ | *+4 | | | 005520 |
| 007525 | 007530 R | | | | | |
| 007526 | 006020 | LDBI | CONT+9 | | | 005530 |
| 007527 | 007566 R | | | | | |
| 007530 | 006030 | LOXI | END+3 | | | 005540 |
| 007531 | 007612 R | | | | | |
| 007532 | 074003 | STX | *+4 | | | 005550 |
| 007533 | 034002 | LDX | *+3 | | | 005560 |
| 007534 | 015000 | LDA | 0,1 | | | 005570 |
| 007535 | 006030 | STA I | 1 | | | 005580 |
| 007536 | 000001 | | | | | |
| 007537 | 005341 | DECR | 041 | | | 005590 |
| 007540 | 001010 | JAZ | BEG1 | | | 005600 |
| 007541 | 007547 R | | | | | |
| 007542 | 016000 | LDA | 0,2 | | | 005610 |
| 007543 | 055000 | STA | 0,1 | | | 005620 |
| 007544 | 005122 | IDR | | | | 005630 |
| 007545 | 001000 | JMP | *-10 | | | 005640 |
| 007546 | 007533 R | | | | | |
| 007547 | 006010 | BEG1 | LDAI | LOAD | | 005650 |
| 007550 | 007630 R | | | | | |
| 007551 | 054027 | STA | LHLT+2 | | | 005660 |
| 007552 | 005101 | INCR | 01 | | | 005670 |
| 007553 | 001000 | JMP | LHLT+1 | | | 005680 |
| 007554 | 007600 R | | | | | |
| | 007555 R | CONT | EQU | * | | 005690 |
| | * | | | * | | 005700 |
| 007577 | 000007 | ORG | 07577 | | | 005710 |
| 007577 | 000007 | LHLT | HLT | 7 | | 005720 |
| 007600 | 002000 | CALL | ROFF=1 | OPERATOR SETS MODE
RDR OFF // WILL = (LOAD) | | 005730 |
| 007601 | 007465 R | | | | | |
| 007602 | 001000 | JMP | *-3 | HALT FOR OPERATOR | | 005740 |
| 007603 | 007577 R | | | | | |
| | * | | | * | | 005750 |
| | * | | | BINARY LOAD ROUTINE | | 005760 |
| | * | | | * | | 005770 |
| 007604 | 007400 | ROF | ROF | | | 005780 |
| 007605 | 005002 | TZB | TZB | | | 005790 |

PAGE .0025

| | | | | | | | |
|--------|----------|-------|-------|------------------|----------------------|--|--------|
| 007656 | 007604 R | | | | | | |
| 007657 | 002000 | CALL | LWRD | GET ADDR | | | 006070 |
| 007660 | 007701 R | TBX | | | | | |
| 007661 | 005024 | STB | FRST | | | | 006080 |
| 007662 | 064067 | LDATA | CALL | LWRD | SAVE ADDR | | 006090 |
| 007663 | 002000 | | | | GET DATA OR CHECKSUM | | 006100 |
| 007664 | 007701 R | LDA | RCDL | | | | |
| 007665 | 014066 | JAZ | END | (END OF RCD) | | | 006110 |
| 007666 | 001010 | DAR | | | | | 006120 |
| 007667 | 007607 R | STA | RCDL | COUNT WORDS READ | | | |
| 007670 | 005311 | LDA | MODE | | | | 006130 |
| 007671 | 054062 | JAN | *+3 | | | | 006140 |
| 007672 | 014060 | STB | 0,1 | | | | 006150 |
| 007673 | 001004 | IXR | | SET NEXT ADDR | | | 006160 |
| 007674 | 007676 R | JMP | LDATA | | | | |
| 007675 | 065000 | | | | | | 006170 |
| 007676 | 005144 | | | | | | 006180 |
| 007677 | 001000 | | | | | | 006190 |
| 007700 | 007663 R | | | | | | |

* READ AND CHECKSUM BINARY WORD

| | | | | | | | |
|--------|----------|------|-------|--------------------|--|--|--------|
| 007701 | 000007 | LWRD | DATA | 7 | ENTR POINT, DATA FOR LOADING PURPOSES ONLY | | 006200 |
| 007702 | 005103 | INCR | | 3 | | | 006210 |
| 007703 | 005111 | IAR | | | | | 006220 |
| 007704 | 054072 | LWR1 | STA | TEMP | SET LOOP COUNTER | | 006230 |
| 007705 | 002000 | CALL | | INPT | GET SIX BITS | | 006240 |
| 007706 | 007732 R | SUB | K40 | | | | 006250 |
| 007707 | 144036 | ERA | K40 | | REMOVE CODE | | 006260 |
| 007710 | 134035 | ASLB | 5 | | | | 006270 |
| 007711 | 004005 | LRLB | 1 | | | | 006280 |
| 007712 | 004041 | MERG | 032 | | ASSEMBLE DATA WORD | | 006290 |
| 007713 | 005032 | LSRA | 6 | | | | 006300 |
| 007714 | 004346 | DAR | | | | | 006310 |
| 007715 | 005311 | JAP | END+3 | | ERROR | | 006320 |
| 007716 | 001002 | | | | | | 006330 |
| 007717 | 007612 R | ADD | TEMP | | | | 006340 |
| 007720 | 124056 | JAP | LWR1 | | | | 006350 |
| 007721 | 001002 | TBA | | | | | 006360 |
| 007722 | 007704 R | ERA | CKSM | CALCULATE CHECKSUM | | | 006370 |
| 007723 | 005021 | | | | | | 006380 |
| 007724 | 134024 | | | | | | 006390 |

| | | | | | | |
|--------------------|----------|------|-------|----------|------------------------|--------|
| 007725 | 054023 | | STA | CKSM | | 006400 |
| 007726 | 001000 | | JMP* | LWRD | | 006410 |
| 007727 | 107701 R | | | | | |
| * INPUT PAPER TAPE | | | | | | |
| 007730 | 007733 R | IN | DATA | INPT+1 | CIA | |
| 007731 | 001000 | | JMP | * | RETURN | |
| 007732 | 007731 R | | | | | 006420 |
| 007732 | | INPT | BES | 0 | *ENTRY | 006430 |
| 007733 | 000001 | | DATA | 1,IN | SEN IBFR RDY | 006440 |
| 007734 | 007730 R | | JMP | *=2 | | 006450 |
| 007735 | 001000 | | | | | 006460 |
| 007736 | 007733 R | | | | | 006470 |
| 007737 | 103101 | OUT | OAR | 01 | | 006480 |
| 007740 | 001000 | | JMP | * | | 006490 |
| 007741 | 007740 R | | | | | 006500 |
| 007741 | | OTPT | BES | 0 | | 006510 |
| 007742 | 101101 | | SEN | 0101,OUT | | 006520 |
| 007743 | 007737 R | | JMP | *=2 | | 006530 |
| 007744 | 001000 | | | | | 006540 |
| 007745 | 007742 R | | | | | 006550 |
| 007746 | 000040 | K40 | DATA | 040 | | 006560 |
| 007747 | 000221 | XON | DATA | 0221 | READER ON | 006570 |
| 007750 | 000223 | XOFF | DATA | 0223 | READER OFF | 006580 |
| 007751 | 000000 | CKSM | DATA | 0 | LOAD CHECKSUM | 006590 |
| 007752 | | FRST | BSS | 1 | INITIAL DUMP ADDR | 006600 |
| 007753 | | MODE | BSS | 1 | | 006610 |
| 007754 | | RCDL | BSS | 1 | RCD LENGTH | 006620 |
| | | * | | | RELOCATED INSTRUCTIONS | 006630 |
| 007555 | | ORG | CONT | | | 006640 |
| 007612 | | LOC | END+3 | | | 006650 |
| 007612 | 014135 | I001 | LOA | XOFF | READER OFF | 006660 |
| 007613 | 002000 | | CALL | OTPT | *** TTY DA801 | 006670 |
| 007614 | 007741 R | | | | * | |
| 007615 | 014133 | | LOA | CKSM | | 006680 |
| 007561 | | | ORG | CONT+4 | | 006690 |
| 007632 | | | LOC | LOAD+2 | | 006700 |
| 007632 | 014114 | | LOA | XON | READER ON | 006710 |
| 007633 | 002000 | | CALL | OTPT | * | 006720 |
| 007634 | 007741 R | | | | | |

```

    CIA    01 0101201      INPUT TO CA)
    DATA 007635 102501      SEN 18FR RDY
    NRG  007636 101201      CONT+9
    LOC  007566             END+S
    NOP  007612             READER OFF
    SEL  006770             *** HSPT DA=37
    NOP  006780             *
    NOP  006790             *
    NOP  006800             *
    ORG  006810             *
    LOAD+2 006820           READER ON
    SEL  0537             *
    NOP  006830             *
    NOP  006840             *
    NOP  006850             *
    CIA  037              INPUT TO CA)
    DATA 0101037      SEN 18FR RDY
    SET 07777             *
    END  007577 R            TEMP
    END  007577 R            LHI T
    END  006860             *

```

LITERALS

POINTERS

SYNTHESIS

| | | |
|---|----------|------|
| 0 | 007777 | TEMP |
| 0 | 007612 R | 1027 |
| 0 | 007612 R | 1001 |
| 1 | 007784 R | REG1 |
| 1 | 007763 R | REG2 |
| 1 | 007762 R | PAS1 |
| 1 | 007761 R | CRA1 |
| 1 | 007759 R | 1021 |
| 1 | 007742 R | XON |
| 1 | 007737 R | OUT |
| 1 | 007741 R | 01P1 |
| 1 | 007732 R | INP1 |
| 1 | 007730 R | IN |
| 1 | 007704 R | LWR1 |
| 1 | 007701 R | LWR0 |
| 1 | 007663 R | LOAD |

007635 R LRCD
007630 R LOAD
007607 R END
007608 R STX
007605 R T28
007604 R ROF
007677 R LHLT
007555 R CONT
007647 R SEC1
007617 R SEC1
007486 R NOF
007461 R ENTS
007460 R ENDC
007467 R ENDS
007466 R ENDA
007461 R ENED1
007461 R ENED2
007417 R ENDE
007416 R EHE1
007405 R EHED
007402 R TSO1
007401 R ONE8
007400 R ONE5
007397 R D652
007396 R D001
007371 R EN28
007360 R EN29
007357 R EN21
007347 R EN20
007333 R EN20
007327 R EN20
007326 R EN20
007325 R EN20
007324 R EN20
007323 R EN20
007322 R EN20
007321 R EN20
007320 R EN20
007319 R EN20
007318 R EN20
007317 R EN20
007316 R EN20
007315 R EN20
007314 R EN20
007313 R EN20
007312 R EN20
007311 R EN20
007310 R EN20
007309 R EN20
007308 R EN20
007307 R EN20
007306 R EN20
007305 R EN20
007304 R EN20
007303 R EN20
007302 R EN20
007301 R EN20
007300 R EN20
007299 R EN20
007298 R EN20
007297 R EN20
007296 R EN20
007295 R EN20
007294 R EN20
007293 R EN20
007292 R EN20
007291 R EN20
007290 R EN20
007289 R EN20
007288 R EN20
007287 R EN20
007286 R EN20
007285 R EN20
007284 R EN20
007283 R EN20
007282 R EN20
007281 R EN20
007280 R EN20
007279 R EN20
007278 R EN20
007277 R EN20
007177 R ENCD

| | |
|---|---------------|
| 1 | 007164 R ENP1 |
| 1 | 007155 R ENP0 |
| 1 | 007147 R EN09 |
| 1 | 007140 R EN08 |
| 1 | 007131 R EN07 |
| 1 | 007121 R EN06 |
| 1 | 007111 R EN05 |
| 1 | 007101 R EN04 |
| 1 | 007072 R EN03 |
| 1 | 007063 R EN02 |
| 1 | 007052 R EN01 |
| 1 | 007041 R EN00 |
| 1 | 007027 R EN11 |
| 1 | 007019 R ENN0 |
| 1 | 007018 R ENH3 |
| 1 | 007005 R ENM2 |
| 1 | 007002 R ENH1 |
| 1 | 006774 R ENH0 |
| 1 | 006764 R ENL1 |
| 1 | 006750 R ENL0 |
| 1 | 006736 R ENK0 |
| 1 | 006724 R ENJ0 |
| 1 | 006721 R ENI2 |
| 1 | 006710 R ENI1 |
| 1 | 006701 R ENI0 |
| 1 | 006676 R ENH1 |
| 1 | 006666 R ENH0 |
| 1 | 006645 R ENF1 |
| 1 | 006630 R ENG0 |
| 1 | 006627 R ENE1 |
| 1 | 006615 R ENE0 |
| 1 | 006612 R END1 |
| 1 | 006602 R END0 |
| 1 | 006605 R END2 |
| 1 | 006600 R ENC3 |
| 1 | 006555 R ENC1 |
| 1 | 006547 R ENC0 |
| 1 | 006544 R ENB3 |

| | | |
|---|----------|------|
| 1 | 006536 R | EHS2 |
| 1 | 006533 R | EHS1 |
| 1 | 006500 R | EHS1 |
| 1 | 006510 R | EHA1 |
| 1 | 006503 R | EHA0 |
| 1 | 006516 R | EHA2 |
| 1 | 006525 R | EHD0 |