

IDENTIFICATION

PRODUCT CODE:	MAINDEC-8E=DØEB-D
PRODUCT NAME:	RANDOM TAD TEST
DATE CREATED:	JUNE 7, 1971
MAINTAINER:	DIAGNOSTIC GROUP
AUTHOR:	MICHAEL DAVIS

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1. ABSTRACT

THIS PROGRAM TESTS THE TAD INSTRUCTING OF THE PDP-8E, THE TAD INSTRUCTION, INSTRUCTION ADDRESS, OPERAND ADDRESS AND BOTH OPERANDS ARE PRODUCED BY RANDOM NUMBER GENERATORS.

2. REQUIREMENTS

2.1 EQUIPMENT

PDP-8E EQUIPPED WITH AT LEAST 4K OF MEMORY;

TELETYPE.

2.2 STORAGE

THE PROGRAM IS LOADED INTO LOCATIONS 6600 THRU 7577, THE TEST AREA IS 0000-6577, TEMPORARY STORAGE LOCATIONS ARE LOCATED ON PAGE 0.

2.3 PRELIMINARY PROGRAMS

MAINDEC=8E-D0AA, D0BA, D0CA, D0DA

3. LOADING PROCEDURE

THE STANDARD PROCEDURE FOR LOADING BINARY TAPES IS TO BE USED.

4. STARTING PROCEDURE

4.1 STARTING ADDRESS

0200

4.2 CONTROL SWITCH SETTINGS

SR00=1, SUPPRESS HALT ON ERROR
SR03=1, SUPPRESS END OF PASS TYPEOUT
SR09=1, HOLD DATA 1 CONSTANT
SR10=1, HOLD DATA 2 CONSTANT
SR11=1, HOLD INSTRUCTION CONSTANT

4.3 OPERATOR ACTION

4.3.1 SET SR TO 0200

4.3.2 PRESS LOAD ADDRESS SWITCH

4.3.3 SET SR TO 0000

4.3.4 PRESS CLEAR AND CONTINUE SWITCHES

5. OPERATING PROCEDURE

SAME AS 4.

6. ERRORS

6.1 ERROR HALT

IF THE RESULTS OF THE TAD INSTRUCTION ARE INCORRECT,
THAT IS IF THE ACTUAL AND SIMULATED LINKS, OR THE ACTUAL
AND SIMULATED SUMS DO NOT AGREE, THE PROGRAM
WILL HALT AT 7407 WITH DATA1 IN THE AC.

DEPRESS CONTINUE TO DISPLAY DATA2 IN THE AC,
DEPRESS CONTINUE TO DISPLAY TAD INSTRUCTION IN AC,
DEPRESS CONTINUE TO DISPLAY INSTRUCTION ADDRESS IN AC,
DEPRESS CONTINUE TO DISPLAY DATA2 ADDRESS IN AC,
DEPRESS CONTINUE TO DISPLAY INDIRECT POINTER (USED BY INDIRECT
TAD) IN AC.
DEPRESS CONTINUE TO RESUME TEST

6.2 ERROR RECOVERY

SEE 6.1

6.3

LOOPING

SET SR00=1 TO PREVENT HALT AFTER ERROR,
SET SR03=1 TO SUPPRESS END OF PASS TYPEOUT,
SET SR09-SR11=1 TO HOLD INSTRUCTION AND DATA CONSTANT,

7.

RESTRICTIONS

NONE

8.

EXECUTION TIME

THE PROGRAM PERFORMS 4096 RANDOM TESTS IN APPROXIMATELY 5
SECONDS. THE PROGRAM WILL TYPE "T" AFTER
EACH 4096 RANDOM TESTS UNLESS SR03=1.

9.

PROGRAM DESCRIPTION

THE PROGRAM IS LOADED INTO LOCATIONS 6600-7577,
WITH TEMPORARY STORAGE LOCATIONS ON PAGE 0;

THE PROGRAM USES SEPARATE RANDOM NUMBER GENERATORS TO GENERATE
THE TAD INSTRUCTION, INSTRUCTION AND DATA ADDRESSES, AND THE
TWO ARGUMENTS TO BE "TADDED". THE INSTRUCTIONS AND DATA ARE
STORED IN THEIR PREVIOUSLY GENERATED ADDRESSES. THE PROGRAM
TRANSFERS TO THE LOCATION OF THE INSTRUCTION AND EXECUTES IT.
THE PROGRAM THEN TRANSFERS TO A COMPARISON ROUTINE WHERE THE
ACTUAL RESULT OF THE TAD INSTRUCTION IS COMPARED TO A SIMULATED
TAD. THE SIMULATOR IS SIMILAR TO THE ONE USED IN MAINDEC-
8E-D0CA-D. NO TADS ARE USED IN THE PROGRAM ITSELF.

AFTER 4096 TESTS, THE PROGRAM TYPES "T" AND CONTINUES TESTING.