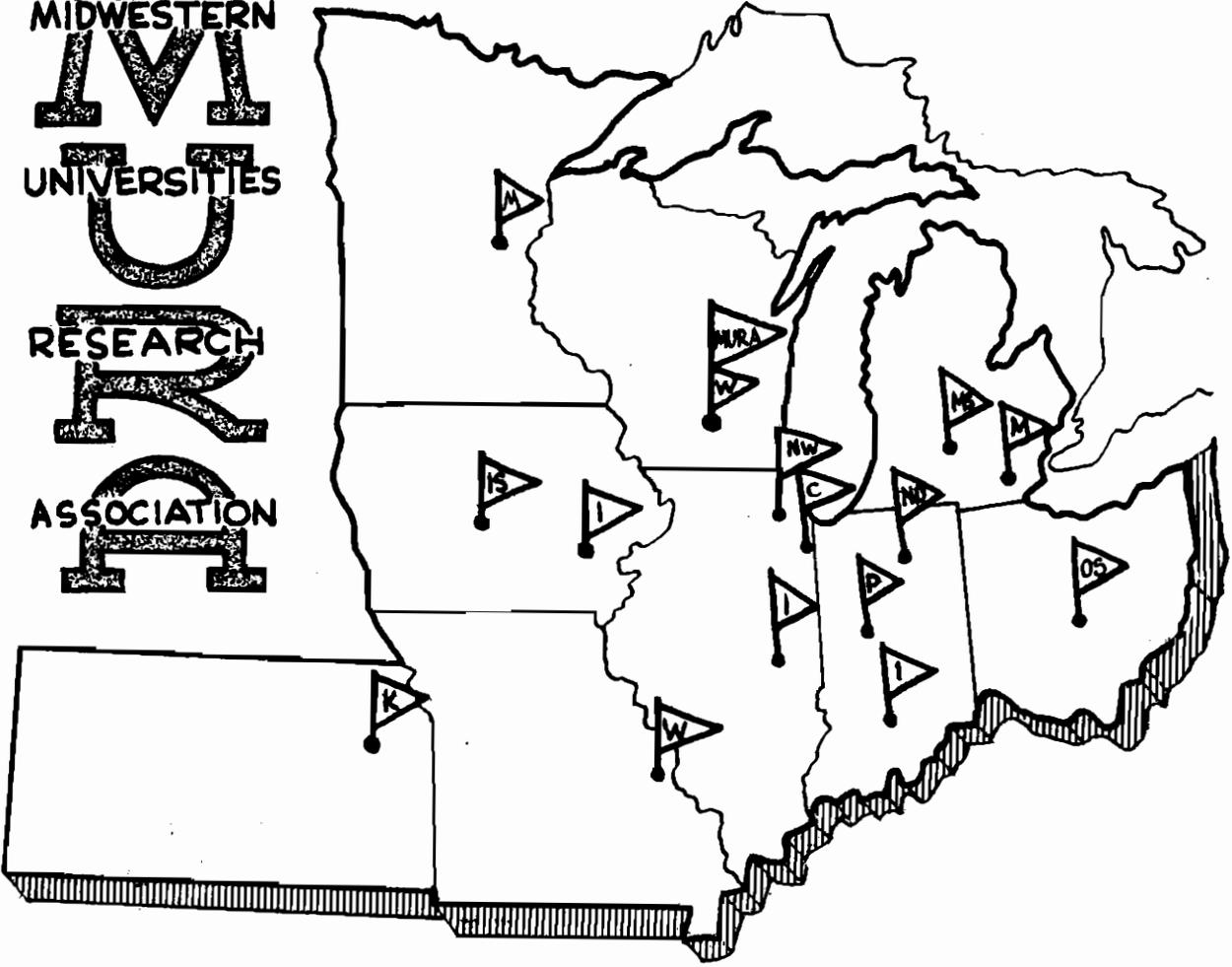


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**REPORT** FLOATING POINT OVERFLOW AND UNDERFLOW TEST, MU OUT?

**NUMBER** 346  
Internal  
IBM

APPROVED BY

J. F. Snyder

IDENTIFICATION

Floating Point Overflow and Underflow Test, MU OUT7

J. F. McNall - August 9, 1957

Midwestern Universities Research Association, Madison, Wisconsin

PURPOSE

To test for overflow and underflow after a floating point divide order and to place a normal zero in the MQ in case of underflow.

USAGE

Calling Sequence:

UA SAP		MURASS	
<u>Loc.</u>	<u>Instruction</u>	<u>Loc.</u>	<u>Instruction</u>
$\alpha$	TSX OUT7, 4	$\alpha$	BTSX A 4
$\alpha+1$	divide check return	$\alpha+1$	divide check return
$\alpha+2$	overflow return	$\alpha+2$	overflow return
$\alpha+3$	normal return	$\alpha+3$	normal return

Space Required:

22 words program at:

UA SAP

OUT7

MURASS

A

A normal zero is placed in the MQ in case of underflow.

CODING INFORMATION

The maximum time spent in this routine is 720 microseconds. The normal time is 96 microseconds. The overflow and divide check indicators are turned off by this routine.

OUT7	REM MURA OVERFLOW AND UNDERFLOW TEST 7	MU	OUT7
	DCT		0001
	TRA 1,4		OUT7 0002
	TOV OUT7+5		OUT7 0003
	TQO OUT7+9		OUT7 0004
	TRA 3,4		OUT7 0005
	TQO OUT7+7		OUT7 0006
	TRA 3,4		OUT7 0007
	LDG OUT7+21		OUT7 0008
	TRA 3,4		OUT7 0009
	RQL 1		OUT7 0010
	TQP 2,4		OUT7 0011
	SXD OUT7+20,4		OUT7 0012
	LXA OUT7+20,4		OUT7 0013
	RQL 1		OUT7 0014
	TQP OUT7+17		OUT7 0015
	LXD OUT7+20,4		OUT7 0016
	TRA OUT7+7		OUT7 0017
	TIX OUT7+13,4,1		OUT7 0018
	LXD OUT7+20,4		OUT7 0019
	TRA 2,4		OUT7 0020
	HTR 7		OUT7 0021
	HTR		OUT7 0022