

**UNCLASSIFIED**

**AD 400 516**

*Reproduced  
by the*

**ARMED SERVICES TECHNICAL INFORMATION AGENCY  
ARLINGTON HALL STATION  
ARLINGTON 12, VIRGINIA**



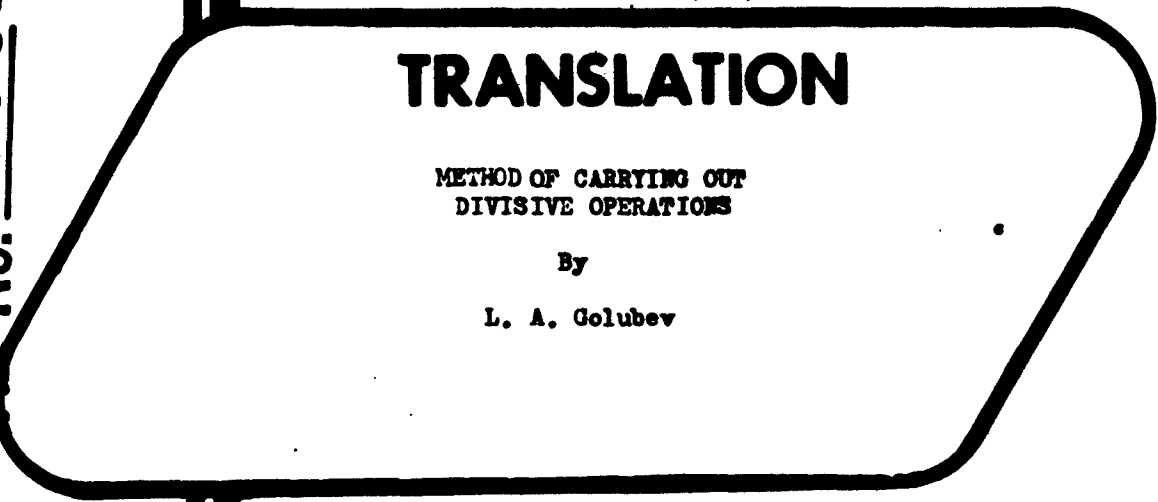
**UNCLASSIFIED**

**NOTICE:** When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

63-3-1

FTD-TT 62-1501

CATALOGED BY ASTIA  
AS AD No. 400516



# TRANSLATION

METHOD OF CARRYING OUT  
DIVISIVE OPERATIONS

By

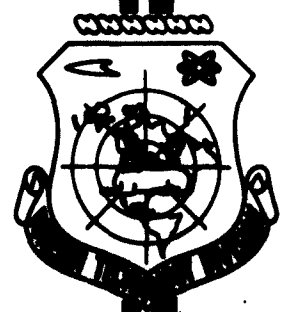
L. A. Golubev

## FOREIGN TECHNOLOGY DIVISION

AIR FORCE SYSTEMS COMMAND

WRIGHT-PATTERSON AIR FORCE BASE

OHIO



# UNEDITED ROUGH DRAFT TRANSLATION

METHOD OF CARRYING OUT DIVISIVE OPERATIONS

BY: L. A. Golubev

English Pages: 3

SOURCE: Russian Patent Nr. 145069 (698097/26),  
17 Feb 1961, pp 1-2

S/19-62-0-4

THIS TRANSLATION IS A RENDITION OF THE ORIGINAL FOREIGN TEXT WITHOUT ANY ANALYTICAL OR EDITORIAL COMMENT. STATEMENTS OR THEORIES ADVOCATED OR IMPLIED ARE THOSE OF THE SOURCE AND DO NOT NECESSARILY REFLECT THE POSITION OR OPINION OF THE FOREIGN TECHNOLOGY DIVISION.

PREPARED BY:

TRANSLATION SERVICES BRANCH  
FOREIGN TECHNOLOGY DIVISION  
WP-AFB, OHIO.

FTD-TT- 62-1501/1+2

Date 5 March 19 63

## Method of Carrying Out Divisive Operations

by

L. A. Golubev

Submitted February 17, 1961, No. 698097/26 to the Committee on Inventions and Discoveries at the Soviet of Ministers USSR

Published in Bulletin of Inventions No. 4, 1962.

Methods of speeding up division manipulations are known.

The proposed method of executing dividing operations without restoring the balance in digital computers is distinguished by the fact that to combine the deductions with displacement of the divisor, the divisor is written in an annular sliding register, and to analyze the shifting sign of the balance is used a computing device controlled by a cadence counter.

The described method is realized by a functional arrangement, shown in drawing.

In the (n+1)-annular discharge register 1 is situated the divisor which slides over a channel to the right. In the (n+1) - discharge sumator 2 is the dividend (balances). The circuit of the annular transfer is switched over from auxiliary (n+1) of discharge 3 of sumator to the II-nd discharge.

In the annular register 4 are recorded the discharges of the  $\frac{\text{quotient}}{\text{quotie}}$ . The  $\frac{\text{quotient}}{\text{quotie}}$  slides over the ring to the left. In schematic 5 the sign of the  $\frac{\text{quotient}}{\text{quotie}}$  is formed

The nature of the described method rests on the following: the addition (subtraction) is realized in (n+1) - with the discharge annular sumator, and right shift of the divisor - in (n+1) with the annular discharge register 1. It is indifferent how the number is situated in the annular sumator, and the right shift of the divisor i.e. in which of its discharges is situated the older discharge of the current balance.

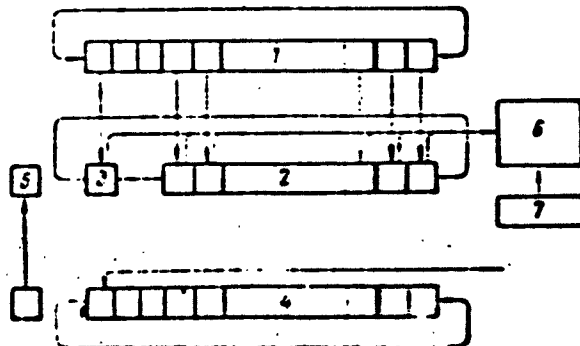
In addition, when subtracting (adding) in the discharge of the summator, preceding the older discharge of the current balance, is situated the sign of this balance. Consequently, if the discharge of the summator, preceding the older moving discharge of the current balance should be analyzed. It is then possible to control the operation of dividing analogous to the algorithm of the method of executing division without restoring the balance. For this (to analyze the moving sign of the balance) is used a computing device 6, controlled by the cadence counter 7.

The laws of dividing are ordinary: if the result sign of the preceding operation is positive, then in the quotient register is written "1" as the alternate discharge of the quotient. From the balance is deducted the divisor. If the sign of the result of preceding operation is negative, then into the quotient register is written "0" as the alternate discharge of the quotient, and the divisor is added to the balance.

In this way, the described method allows without loss in accuracy to combine addition with displacement by analyzing the moving sign discharge and it may find application when realizing division operations in digital computers.

#### Object of Invention.

Method of dividing without restoring the balance in digital computers, characterized by the fact that for the purpose of combining subtraction (addition) with the displacement of the divisor, the divisor is written into the annular moving register, and to analyze the moving sign of the balance is used a computing device controlled by a cadence counter.



. drawing.

DISTRIBUTION LIST

DEPARTMENT OF DEFENSE	Nr. Copies	MAJOR AIR COMMANDS	Nr. Copies
		AFSC	
		SCFDD	1
		ASTIA	25
HEADQUARTERS USAF		TDBIL	5
		TDEDP	5
AFCIN-3D2	1	SSD (SSP)	2
ARL (ARB)	1	AFPC (POF)	1
		ESD (ESY)	1
		RADC (RAY)	1
OTHER AGENCIES		AFSWC (SWF)	1
		AFETC (MTW)	1
CIA	1		
NSA	6		
DIA	9		
AID	2		
OTS	2		
AEC	2		
PWS	1		
NASA	1		
ARMY	3		
NAVY	3		
RAND	1		
NAFEC	1		