

## THE ENGLISH ELECTRIC CO., LTD.

Tel. 700

NELSON RESEARCH LABORATORIES

STAFFORD

DEUCE Subroutine No. 66 (D12D)

Report No. NS t 59

Date 23.8.55

Reference

Order No.

Report by N.P.L.

Front Sheet

Data Sheet 1.

Figure sheet S6/10160

SUMMARY.

The attached document contains details of a DEUCE Subroutine which has been prepared and tested by N.P.L.

C. Robinson.

MATHEMATICAL PHYSICS LABORATORY.

NW

NELSON RESEARCH LABORATORIES  
STAFFORD E. E. CO. LTD.

NS t 59

Sheet No. : 1

Description. Programmed Division of double-length numbers with double-length signed quotient.  
First Order.

Data. a, b double-length numbers such that  $|a| \leq 2 \cdot |b|$   
p the number of binary places in the quotient  $31 \leq p \leq 61$

Result.  $c = 2^p \frac{a}{b}$  to nearest odd integer.  
(c is double-length).

Instructions for Use.

Stores Used.	13	14	15	20	21
Contents at Entry.	Link	-	-	b	a
Contents at Exit.	-	-	-	b	c
Entry.	m.c. 28				
Occupies.	m.c.'s 0-9, 11, 13-31.				
Time.	p + 6 m.s.				
Parameters.	P <sub>62-p</sub> in m.c. 16. P <sub>p-30</sub> and P <sub>32</sub> in m.c. 24.				
Failure Indication.	2 7-24 if b = 0				

August, 1955

2nd Edition.

D.L. 2		Track					
Card Nos.							
mc	NIS	S	D	C	W	T	
							Y
							X
							0
							1
0	2	27	13	0		2	2
1	2	7	24	0		30	3
2	2	21	28	d	0	1	4
3	2	21	22	d	1	2	5
4	2	31	2	2		11	6
5	1	30	29	0		23	7
6	2	30	2	0		1	8
7	2	13	27	0		8	9
8		store					Y
9	2	20	14	0		0	X
10							0
11	2	24	15	0		0	1
12							2
13	2	2	13	1		2	3
14	2	2	26	8		10	4
15	2	13	25	0		2	5
16		P(b2 - p)					6
17	2	13	25	0		1	7
18	2	2	28	20		26	8
19	2	27	25	0		0	9
20	2	26	27	0		0	Y
21	2	13	21	1		4	X
22	2	20	23	d	0	1	0
23	2	20	22	d	1	b	1
24		P(p-20), P 32.					2
25	2	27	25	0		4	3
26	2	13	2	1		4	4
27	1	2	21	0		1	5
28	2	13	1	0		0	6
29		store					7
30	2	20	28	d	0	1	8
31	2	21	15	0		2	9

