

THE ENGLISH  ELECTRIC CO., LTD.

NELSON RESEARCH LABORATORIES

STAFFORD

MATHEMATICS DEPARTMENT - S.

Report No. NS t 180

Date 5.3.57.

Reference

Order No.

Telephone:—Stafford 700.

Front Sheet.

Data Sheet 1.

Figure Sheets S6/10731.

DEUCE Subroutine No. 197 (M12/1)

Report by

R.A.E.

SUMMARY.

The attached document contains details of a DEUCE Subroutine which has been prepared and tested by R.A.E.

MATHEMATICS DEPARTMENT.

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HLF

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NS t 180
Sheet No.: 1.

Description. Fast multiplication with fixed shift of two places. The routine takes 2 instructions less than M12 (14).

Data. a, b.

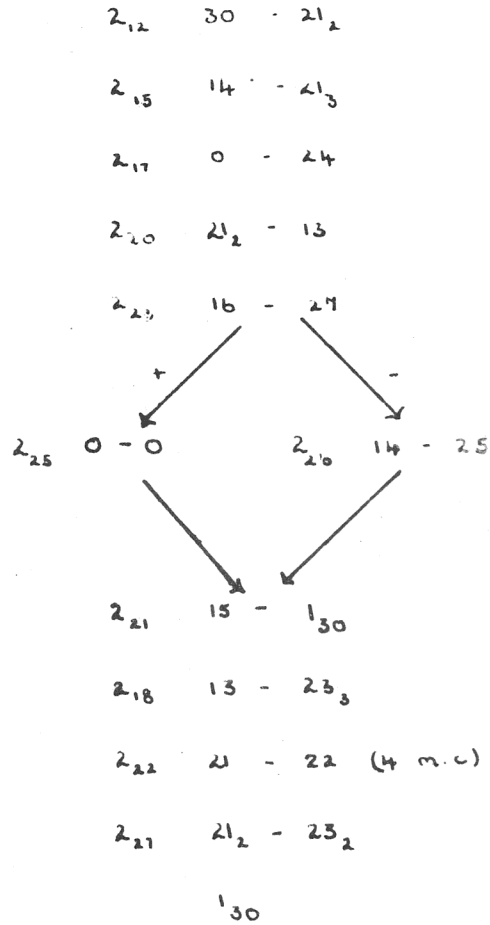
Result. $c = 2^{-30} ab.$

Instructions for Use.

Stores Used.	13	14	15	16	21 ₂	21 ₃
Contents at Entry.	-	a	link	b	-	-
Contents at Exit.	sign correction	a	link	b	zero	c ₁ (rounded)
Occupies.	D.L. 2 ₁₂ , 15, 17-18, 20-23, 25-27*					
Entry.	2 ₁₂					
Time.	2 $\frac{2}{3}$ m.s.					

NOTE: It is not possible to use this routine with the machine 'stopped'.

mc	NIS	S	D	C	W	T	
							Y
							X
							0
							1
0							2
1							3
2							4
3							5
4							6
5							7
6							8
7							9
8							Y
9							X
10							0
11							1
12	2	30	21		0	1	2
13							3
14							4
15	2	14	21		0	0	5
16							6
17	2	0	24		0	1	7
18	2	13	22		1	2	8
19							9
20	2	21	13		0	1	Y
21	2	15	1		7	27	X
22	2	21	22	1	0	3	0
23	2	16	27		0	0	1
24							2
25	2	0	0		0	26	3
26	2	14	25		0	25	4
27	1	21	23		1	1	5
28							6
29							7
30							8
31							9



FLOW DIAGRAM AND CODING FOR DEUCE SUBROUTINE

NO. 197 (M12/1) First multiplication rounded off with fixed shift.

Date

File Ref.

Sheet Ref. 56/10731