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Telephone:—Stafford 700.

Front Sheet.
Data Sheet 1.
Figure sheet S6/10017

DEUCE Subroutine No. 19 (B01)

Report by
C. Robinson.

SUMMARY.

The attached document contains working details of a DEUCE subroutine for altering a basic instruction word.

The subroutine, prepared at N.P.L., and tested at N.R.L. is a literal translation of the corresponding ACE Pilot Model Subroutine.

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NW

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Description.

This subroutine, which is always stored in DL1, constructs the required instruction from a basic instruction stored in TS13 and a Wait No. in TS14. It is particularly useful when using more than one D.L. as a continuous store.

If the basic instruction is N, A-B, c, W, T, and the Wait No. in TS14 is (32a + b), then the instruction formed and obeyed in m.c. 30 is

N (A+a)-B, c, W+b, T if the subroutine is entered in
1₂₄ (Fetch)

N A-(B+a), c, W+b, T if the subroutine is entered in
1₂₃ (Store)

N A-B, c, W+b, T if a = 0 is which case the
subroutine may be entered in
1₂₆ (Modify)

Thus 'Fetch' transfers (A+a)_{W+b} to B, and 'Store' transfers
A to (B+a)_{W+b}

Instructions for Use.

Stores Used.	13	14	
Contents at entry.	I	(32a+b)P ₁₇	for "Fetch" or "Store"
		bP ₁₇	for "Modify"
Contents at exit.	I ₁	aP ₅	for "Fetch"
		aP ₁₀	for "Store"
		bP ₁₇	for "Modify"

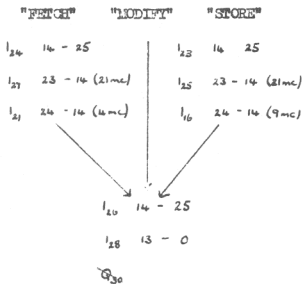
where I₁ is the appropriate modified instruction.

Occupies. D.L.1 m.c. 16, 21, 23-28

Constants available. 13-0 in 1₂₈

D.L.		Track					
Card Nos.							
INC	NIB	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
13							3
14							4
15							5
16	1	24	14	1	0	8	6
17							7
18							8
19							9
20							Y
21	1	24	14	1	0	3	X
22							0
23	1	14	25	0	0		1
24	1	14	25	0	1		2
25	1	23	14	1	1	21	3
26	1	14	25	0	0		4
27	1	23	14	1	4	24	5
28	0	13	0	0	0		6
29							7
30							8
31							9

Instruction I in TS13
Wait number in TS14



Next instruction Quasi 30