

WIP - A High Speed Brick Assembly Program

1.1 The basic function is to fetch and obey bricks as specified by codewords and, as such, is identical to S.I.P. 3 and G.I.P. 8. The time taken to interpret the codeword and to fetch bricks is significantly lower, (see appendix) equalling or out-performing ZC14T/1.

1.2 The W.I.P. pack contains:-

|      |        |   |
|------|--------|---|
| Card | 0000   | Initial Card  |
|      | 0001   | Clear drum (if DL11 is zero) set $12_{29-31}$ and $15/10_0$ |
|      | 0002   | Read to drum card   |
|      | 0003-8 | Tracks $15/_{12}$ to $15/_{15}$                             |
|      | 1001-9 | Read bricks   |

2.1 Codewords format is the same as for S.I.P.:-  
viz. a b c r

2.2 Functions available.

If  $r = 0$ , the codeword is ignored.  
 $r = 1$  to  $31$ , the indicated brick will be obeyed.  
 $r = 32$ ; Obey a brick from the reader.  
 $r = 33$ . Skip to codeword  $c$ .  
 $r = 47$ . Read a triad of 32 codewords to set  $c$ ,  
then skip to  $b$ .  
 $r = 48$ . Place  $a$ ,  $b$ ,  $c$ ,

No other  $r$  number may be used.





Thus, for  $c$  triads, codes 0 to  $(32c - 1)$  are available.

If less than three triads are read using this method, space for the complementary tracks is NOT retained and the first brick commences on the very next track.

### 3.3 EXCESSIVE CODEWORD ADDRESSING

If any codeword (or the natural progression in sequence) requires fetching of a codeword from beyond

- (a) using method 1, code 95, or
- (b) using method 2, code  $(32c - 1)$ ,

then the machine stops on 2, 13-26X

A single shot causes it to skip to codeword 0.

### 4.1 REPLACING SECTIONS ON THE DRUM

In S.I.P., the "read more sections" is inbuilt and called for by  
a 0 c 32.

- (1) If  $a = c = 0$ , an N.P.<sub>17</sub> parameter card is read and the following cards replace sections 1 to N.
- (2) Otherwise  $c$  sections will be read to replace sections  $a$  to  $(a + c - 1)$ .

NOTE If  $a = 0$ , it will be set to 1.

4.2 In W.I.P., the same codeword is required, only that the parameter card, (if needed) and the sections must be preceded by cards 1001-1009 of the W.I.P. pack.

Alternately, these cards (1001 - 1009) may be inserted with the original bricks as a one section, six track brick and referred to by its own  $r$  number (with  $b$  always zero) when required.

APPENDIX

RELATIVE TIMES OF VARIOUS SCHEMES

| 6.1   |  | G.I.P. 8     |             | S.I.P. 3     |             | W.I.P. 4     |             | ZC14T/1    |
|-------|--|--------------|-------------|--------------|-------------|--------------|-------------|------------|
|       |  | TS13<br>zero | TS13<br>-ve | TS13<br>zero | TS13<br>-ve | TS13<br>zero | TS13<br>-ve | -          |
| 6.1.1 | 8 DL's from same head<br>Head 15<br>Not Head 15                | -<br>1.27    | -<br>1.21   | -<br>.67     | -<br>.53    | .32<br>.34   | .26<br>.28  | .32<br>.34 |
| 6.1.2 | 8 DL's from two heads<br>Heads 15 and 14<br>Other Combinations | -<br>1.29    | -<br>1.22   | -<br>.71     | -<br>.56    | .34<br>.37   | .28<br>.31  | .37<br>.37 |
| 6.1.3 | 1DL<br>Head 15<br>Others                                       | -<br>1.03    | -<br>.96    | -<br>.47     | -<br>.33    | .17<br>.23   | .10<br>.16  | .17<br>.19 |

6.1.4 Note: The time for TS13-ve is the time taken if TS13 contains  $r_1 P_{17}$  at exit.

6.2 It should be remembered that ZC14T/1 requires a Master Routine to be written and added to it to produce a controlling programme, whereas W.I.P. is complete.

6.3 The times for W.I.P. with TS13 zero DO INCLUDE time taken to fetch and interpret a codeword.