THE TEST PLATE

The Test plate is essentially an electrically - driven enigma with separate stecker boards for the input and output. It can be put to a variety of uses, principally,

(1)   making catalogues (e.g. EINS catalogues, Rocket catalogues etc.);
(2)   typing a piece of enigma text in all positions of the machine for the breaking of important duds;
(3)   doing dotteries - but not making the counts;
(4)   running tapes.

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(1) <u>Making Catalogues</u>.
        Not of great interest to Hut 6. Every job has to be prepared in a way peculiar to itself.

2) <u>Typing a stretch of text in all positions</u>.
        The method is to run through all positions of the machine typing the given stretch of text repeatedly. Eg. a stretch of text 10 letters long would, on the first run, be typed in positions 1, 11, 21, 31 - etc.. On the next run the settings would be slightly altered to try positions 2, 12, 22, 32 - etc. Thus 10 runs would be necessary.
<u>Text</u> :-   the stretch of text can be anything from 1 to 13 letters long. It should be given as it stands, of course, - NOT unsteckered.
<u>Stecker</u> :- the full set of (known) steckers and self steckers should be given. Both input and output stecker boards must be plugged up to the known stecker.
<u>Wheel - order</u> :- the wheel order(s) must be given - normally the jobs will have to be run on 1 w.o. only.
<u>Ringstellung</u> :- The ringstellung must be specified so that the wheels turn over at the right positions. The ENGLISH ringstellung should be given. If the ringstellung is not known, or if the known ringstellung is expected to be wrong for the message chosen, "ZZZ ringstellung" should be specified.
<u>Sorting</u> :-   Mr. Freeborn will, if requested, sort the 17,576 stretches of decode into alphabetical order. In this form they are much easier to look through to spot German.

(3) <u>Dotteries</u>.
        For dotteries the Test Plate has to be connected to a "Counter".

<u>Message</u> :-   should be written out in banks of 26 in the usual way - doubtful letters may be left blank.
<u>Indicator</u> :-   the assumed inside indicator should be given as the STARTING POSITION, and the FINAL POSITION should also be stated to provide a check on the machine.
<u>Stories</u> :-   the stories must be found by hand. They should be written out on the left-hand side of squared paper leaving room on the right for 26 columns for the result of the count, and for putting in the value of the λ function. Each story should be given a serial number
N.B. ENGLISH ringstellung must be given.
<u>E.</u>g.

ABCDEFGHIJKLMNOPQRSTUVWXYZ λ-function

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145   TXJ   A/A L/U I/V   1.
            A/N L/L I/S   2.
      TXI   A/A L/X I/Z   3.

245   TXJ   A/S L/L I/I   4.
      TXI   A/A L/L I/Z   5.
            A/I L/V       6.
                  etc..
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<u>Stecker</u> :-   the stecker specified above refer only to the INPUT stecker board. The OUTPUT stecker board is always SELF-STECKERED.

<u>Example</u> :-   The first two or three dotteries should be done by hand as a check on the set-up of the machine.

<u>Results</u> :-   the numbers of occurrences of each letter are filled in from the counter.
       Some of Mr. Freeborn's operators will also work out the usual λ function

$$\Sigma_p \frac{n_p(n_p-1)}{N(N-1)}$$

<u>Size of Jobs</u> :- The Test Plate takes about 2 minutes to run through a message of ordinary length. About 1 minute is needed to change stecker etc. between runs.   Thus about 100 to 300 separate dotteries make quite a compassable job.

4.   <u>Running Tapes</u>.
              No job of this type has yet been done on the Test Plate. It would be necessary to find the stories by hand; and write them out as for Dotteries.

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              Anyone producing a job for the Test Plate should always see Mr. Freeborn, or his deputy, about it beforehand.

              Results are normally sent by tube to the N.R, - Extension 13.

O.H.Lawn.
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