DELAYED HOPPITIES

We have several times recently been running menus for all turnovers and, now that we have a large number of ordinary Bombes, we may be able to do this more often in the future.

The question arises: when is it better to run a job in this way instead of making it up into a large number of (usually horrid) menus ?

The following figures are given for average running times :-

Plugging time	=	15 mins. per bank
Wheel-changing time	=	5 mins. per bank
Running time	=12 mins.	

I have assumed that when the total menu is a 3-at-a-time menu (eg. 11_2) it has to be run 12 times, & when it is a 2-at-a-time menu (eg. 14_1) it has to be run 14 times. The menus nade up in the ordinary way would in practice be almost always 2-at-a-time ones.

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32 w.o. job

Delayed hoppity, 3-at-a-time menu, on 6 Bombes,

$$\text{Time} = 6\left[45 + \frac{32}{6} . 5 + \frac{32}{18} . (12 . 12)\right] = 6 [45 + 27 + 256]$$

$$= 6 [328]$$
$$= \underline{1,968} \text{ bombe- mins.}$$

Delayed hoppity, 2-at-a-time menu, on 6 Bombes,

$$\text{Time} = 6\left[30 + \frac{32}{6} . 5 + \frac{32}{18} . (14 . 12)\right] = 6 [30 + 27 + 448]$$

$$= 6 [505]$$
$$= \underline{3,030} \text{ bombe- mins.}$$

Ordinary running, 2-at-a-time menus, each on 2 Bombes,

$$\text{Time for each run} = 2\left[30 + \frac{32}{2} . 5 + \frac{32}{4} . 12\right]$$

$$= 2 [30 + 80 + 96]$$
$$= 2 [206]$$
$$= 412 \text{ bombe- mins.}$$

$$\frac{1,968}{412} = 4.8 \qquad\qquad \frac{3,030}{412} = 7.3$$

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These figures have not allowed for the fact that the four or five horrid menus would in practice probably give more trouble than the total menu run as a delayed hoppity. However, they show,

 (i) that the criterion for running a delayed hoppity is independent of the number of wheel-orders,

 (ii) that a delayed hoppity takes about the same time as 4 - 5 two - at - a - time ordinary menus when the hoppity menu itself is three - at - a - time,

 (iii) that a delayed hoppity takes about the same time as 7 - 8 two - at - a - time menus when the hoppity menu itself is only two - at - a - time,

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Thus a job should only be run as a delayed hoppity when,

 (i) the total menu is a 3 - at - a - time menu,

and   (ii) the job makes up into at least 4 two - at - a - time menus - of tolerable clinginess.

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The method for sending the jobs up to the Bombe Huts is to write a second (turnover) alphabet on the crib and give the "settings" to be run. The Bombe Hut has the tables of "settings".

When a Bombe is running "Setting K" the turnover from ZZ to ZA will be at K of the turnover alphabet.

Eg.

turnover alphabet

    Z Y X W V U T S R Q P O N M L K J I H G F E D C B A
    A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

    T V I J R Q B Z I L . E . R J V S . I S . . I J Q A
    E I N S A T Z B E R E I T S Q A F T S M E L D U N G
    x x   x x x   x   x   x x x   x
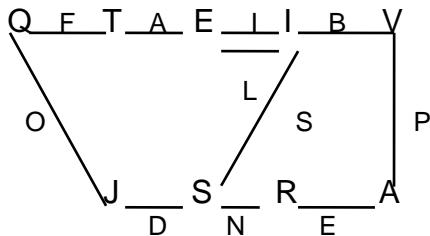
    to be run with settings   A I L M N P S V W X Z

Note All of the above applies only to running Delayed Hoppities on ordinary bombes. We cannot yet use the High Speed Keen Bombes to run them.

When we are able to do so the criteria and the notation will be completely different.

                                                O.H.L.
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