

USE OF HIGH SPEED BOMBES

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At the moment we have 2 High Speed Bombes of the Cobra type (Trinidad & Jamaica), and 11 of the Keen (Letchworth) type (Gibraltar, Fremantle, Sydney, Melbourne, Malta, Cyprus, Fiji, Aden, Tonga, Shetland & Zanzibar).

COBRA H.S. BOMBES

The two Cobras we have are permanently wired up for the β wheel, and so are useless to Hut 8 for this month. We thus have the full use of them. One of them - Trinidad - is being used for experiments on the G.P.O. Mammoth sensing equipment; the other is running ordinary jobs. It is expected that next month the β wheel will be used, and Hut 8 will want these Bombes for at least some of the time.

For running 3 - wheel jobs these Bombes are effectively 2 - bank ordinary Bombes. They have Double Input and C.S.K.O., and they do a run in about 30 minutes. They can run any wheel orders.

KEEN H.S. BOMBES

These Bombes have got sets of both β and γ wheels in the VF position, and so Hut 8 are using most of them on Shark this month. They will presumably continue to use them next month also.

Occasionally, however, we may have use of them for 3 - wheel jobs, but using them for these jobs is not so simple as for the Cobra Bombes.

The present enigma wiring is as follows, and the 4 - wheel w.o. β 1 2 3 would be set up as shown :-



The VF wheels are timed very carefully and ordinary wheels cannot be put on indiscriminantly in the VF position. But most of the Keen Bombes have got a set of 1 wheels , or a set of 2 wheels etc. timed for use in the VF position instead of the β (or γ) wheels. Straights are also provided to be put in the S position. Thus the 3 - wheel w.o. 1 2 3 would be set up as follows :-



β VF

l.h. wheel

The *umkehrwalze*, which is pluggable would have to be changed from Bruno to B for 3 - wheel running.

1 (F) middle wheel

2 (M) r.h. wheel

Thus a Bombe fitted up with a set of 1 wheels would be able to run all the 3 - wheel w.o.'s 1 . . , and would do each run in about 1½ minutes. Most of the time would be spent in changing wheels - which still takes about 10 minutes.

Straight

(S)

We hope eventually to use this fast running

to run “ delayed hoppities” (ie. all turnovers), but at present this is impossible for the following reason.

The F wheels on the Keen Bombes do not move continuously (as the F wheels on the ordinary Bombes do), but move in jerks - spending a relatively long time in contact with the segments, and a relatively short time moving from one segment to the next. This device, which is an aid to quicker running, is called “Drunken Drive”. The snag about it is that the F wheels are not easily settable (in order to alter the settings a man has to go round to the back of the machine with a screwdriver while someone else sets the wheels in front). This, of course, does not matter for 4 - wheel jobs, because then the F wheel is the l.h. wheel of the enigma and will be always set at Z. For 3 - wheel jobs the F wheel is the middle wheel of the enigma and so may be set at Z or A.

Thus a “delayed hoppity” on these Keen H.S. Bombes is impossible at present - it would require Drunken Drive wheel settings to be altered every 1½ minutes. And a menu with settings both ZZ and ZA is also extremely inconvenient.

Thus the best way to use these Bombes for 3 - wheel jobs is to run O.B. menus (two - at - a - time if possible) all of whose settings are ZZ.

A team of 5 would be able to run a complete 60 w.o. job. Odd Bombes must be used simply on the w.o.'s which they are able to run, other O.B.'s taking the remaining w.o.'s of the job.

The Bombes are 2 - bank machines. They have Single Input only, and are fitted with C.S.K.O.

The list of Bombes and the VF wheels for which they are timed is as follows :-

Tonga	}	
Zanzibar	}	1 . .
Malta	}	
Shetland	}	2 . .
Sydney	}	
Fiji	}	3 . .
Melbourne	}	

Cyprus } 4 . .

Aden 5 . .

N.B. Tonga and Sydney have at the moment no straights and so cannot yet be used for 3 - wheel jobs.

Gibraltar and Fremantle have not yet got pluggable *umkehrwalzer*, and so cannot be used for 3 - wheel jobs at all.

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