

*Contents. Simultaneous m / gunning of two chains where we can assume 25 -1 on both; we scan the first input only. A notation for describing the different sorts of machines, inputs and straights etc.*

It is quite obvious that bombs can be produced which will be considerably more powerful than Jumbo.

The suggestion in the second note was by no means final and improvements will possibly be made later.

Several refinements are under consideration, and we shall not know whether they are worth while until we have studied the performance of the various hypothetical machines on different types of menu

I have tried to produce a notation to simplify this work and have listed the standard methods of using the machines. We must investigate the weakest menus that can be run by each method on each machine calculating the risks involved and the running times

For a preliminary investigation I have assumed that the Mammoth have the special input described on page 5 of the second note. If there is too big a gap between menus which can be run with a 25/1 assumption and those which need a self-stecker assumption we may have to use a more complicated input which will make the machines stop when there is more than one straight in a position in spite of contradictions on the relay board. At present I am not assuming the double scanning on Baby Jumbo described on page 7, § 4,

but I think we should consider subsidiary chains control. It may also be worth considering the possibility of insisting on one or two confirmed steckers, as well as diagonal selection.

The running times will probably be approximately as follows.

	Jumbo	Stopping	4 secs.
	and Baby Jumbo	Scanning	3 secs.
		Testing	4 secs.
		Recording	3 secs.
25/1	Jumbo	Stopping	4 secs.
		Testing	4 secs.
		Recording	5 secs.
	Mammoth	Stopping	4 secs.
		Testing	-
		Recording	5 secs.

In the table of standard methods the meanings of columns are.

- A Reference number of job
- B Number and type of inputs used
- C Assumptions made
- D Conditions which cause a stop
- E Straights which survive scanning
- F Straights which are recorded.

This notation is as follows

Inputs			
	S	=	standard input
	C	=	cast iron input
	M	=	special Mammoth input

#### Assumptions

25/1	(a)	One straight on main chain
25/1	(a & b)	One straight on main chain and one on subsidiary chain
M25/1	(a)	One straight on main chain but not on a current entry line. Current entry stecker false.
M25/1	(a & b)	One straight on each of the two chains but not on a current entry line. Current entry stecker false
pss	(a)	One particular letter on main chain self-steckered particular
pss	(a & b)	One particular letter on each of the two chains self-steckered
a → b		The correct straight on the main chain must get onto the second chain.

{4}

#### Grouping and straights

G(a)	Grouping on main chain.
G(a + b)	Grouping on main chain accompanied by grouping on second chain.
G(a → b)	Grouping on main chain in which the cross stecker between the two chains do not all belong to the same group as the current entry stecker.
S(a)	An ordinary straight on the main chain, which cannot imply any letter of this chain being steckered to two different letters.
S(a → b)	An ordinary straight on the main chain, which gets onto the second chain.
S(a + b)	An ordinary straight on the main chain accompanied by an ordinary straight on the second chain.

{5}

- $S\{\alpha\}$  A straight on the main chain which involves no contradiction at all among the implied steckers of the letters of the main chain.
- $S\{\alpha \rightarrow \beta\}$  A straight on the main chain which gets on to the subsidiary chain and involves no contradiction among the implied steckers of the letters of the two chains.
- $S\{\alpha + \beta\}$  A straight in the main chain, accompanied by a straight on the subsidiary chain, which together involve no contradiction among the implied steckers of the letters of the two chains.
- $S[\alpha]$  A straight on the main chain, which involves no contradiction among all the implied steckers.
- $S[\alpha \rightarrow \beta]$  A straight on the main chain which gets on to the subsidiary chain and involves no contradiction among all the implied steckers.
- $S[\alpha + \beta]$  A straight on the main chain accompanied by a straight on the subsidiary chain which together involve no contradiction among all the implied steckers.

{6}