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Note to TSG  
Through Mr.N.Davis

BAT Manufacturing Capacity - Interim Report

1. Purpose

The purpose of the report will be to determine Group production capacity to meet forecast sales and surge demand over the next four years and hence to evaluate the need for Group machinery investments on capacity grounds.

This interim report summarises the current Group production capacity and outlines the effect on this capacity of new technology and old technology machinery, different product specifications and the potential to increase capacity through longer working hours. However more detailed information is required in these areas and a final report will then be issued.

2. Background

This interim report is based on the information contained in the B&W Manufacturing Capacity Report 1993, but uses machine utilisation as a single measure to summarise the time for which a machine is used in order to meet the sales forecast as a ratio of the time for which it is available for use, rather than separate sales forecast, capacity and reserve figures.

However, utilisation can be calculated in a number of different ways depending on the factors which are taken into consideration e.g. working hours, time for cleaning or maintenance, machine performance etc. For the purposes of the final report, it is proposed to use the following definitions of machine utilisation.

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**Demand** = Sales forecasts, including contract manufacture, but without any production or other contingencies.

**Normal Utilisation** = 
$$\frac{\text{Demand}}{\text{Normal Capacity}}$$

Where "Normal Capacity" is based on current working hours, adjusted for time used for cleaning, maintenance, without any additional overtime or use of surplus machinery.

**Maximum Utilisation** = 
$$\frac{\text{Demand}}{\text{Maximum Capacity}}$$

Where "Maximum Capacity" is based on maximum working hours which can be achieved on a permanent basis. This will vary from one site to another depending on local environmental, legal or other restraints.

In this interim report machine utilisation figures have been calculated from the B&W values for sales forecasts and production capacities of major Group companies. It should be noted that, in contrast to the definitions above, the B&W sales forecasts included a production contingency usually 10% and the capacities included some extra overtime or additional shift working. Thus the calculated utilisation figures in this report will not be completely consistent with those in the final report, but they do give a general view of the overall Group position.

However utilisation figures calculated for the Group as a whole can give only a limited view of the actual situation at individual Group companies. Since machinery is not readily flexible from one product specification to another, overall utilisation figures do not identify where shortfalls or surpluses may exist for a particular product specification.

When considering Group production flexibility, the key product specifications are King Size Box and King Size Soft Cup. Demand for King Size Box is forecast to increase from 32% of total demand in 1994 to 42% in 1998. King Size Soft Cup, on the other hand, declines from 38% to 32% over that period. These changes reflect the increasing demand for King Size international brands in Hinge Lid versions, though there remains a strong regional demand for other product specifications e.g. demand for non King Size or Super Long specifications is still 16% of total demand in 1998.

The final report will therefore concentrate on the King Size product specifications, taking into account where there are different detail specifications within this segment e.g. Compact, Super Compact, Compressed Pack sizes.

The final report will also emphasise the utilisation of new technology machinery since it is these machines which are more likely to provide the necessary product quality and output to allow Group sourcing flexibility and which are more capable of being transferred from one Group location to another if required

In this respect, machinery is categorised as new technology where speed is greater than 7000 cigarettes per minute (or 350 packs per minute), intermediate technology from 4000 cpm to 7000 cpm (200-350 ppm) and old technology below 4000 cpm (200 ppm).

There is considerable interest within the Group to move towards longer working hours to improve machinery utilisation in general, where additional capacity is required, or to produce maximum return on machinery investment. Extended working hours can be very cost effective where wage costs are relatively low. However, this may not be cost effective compared to machinery investment where wage costs are high or where there are large additional shift or overtime premia required.

The final report will include Group capacity figures based on maximum utilisation defined above, in order to indicate where sourcing flexibility could be achieved.

### 3. Conclusions

- 3.1. Based on the B&W figures, there is an overall Group machine utilisation of 77% in 1994, rising to 78% in 1998 (Appendix 1).

In the key KS HL segment, machine utilisation is 72% in 1994, but this rises to 81% in 1998 reflecting increased utilisation at every company except ITL. There is thus overall spare capacity over the next four years, but there is considerable variation from one company to another. For example in 1994, BATCo A&B and Souza Cruz are shown to have only 59% utilisation, whereas BATCF has 84% and B&W has 85% utilisation (Appendix 2).

3.2 Although there appears to be little need at this time to invest in additional machinery for overall capacity purposes, investment will continue to be required e.g.:

- Replacement of old technology machinery, particularly where it is still being used for international or for drive brands
- Quality improvement
- Non standard production, such as Long Size Belmont in Venezuela or niche products such as 30s packs
- NBD, where there is generally a reluctance to consider transfer of old or intermediate technology machinery.

3.3 Group Production Capacity is achieved through a mix of machinery. In 1994 63% of overall capacity is planned to be from new technology machinery and this is forecast to rise to 74% in 1998 (Appendix 3).

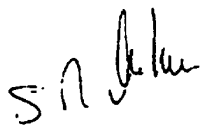
Within BATCo, indications are that where new technology co exists with intermediate or old technology machinery, then the new technology machines will be very highly utilised. The only situations where new technology machines are not highly utilised is where they are used as single machines for non standard or niche products when it has not been possible for the product to be made elsewhere for cost or other reasons (Appendix 4).

Since older machines will have little or no book value, they will tend to be retained as a reserve but not crewed. The extent to which new technology machines are utilised for the key product specifications will be addressed in the final report.

- 3.4 Some Group companies have already moved to extended working hours (Appendix 5). It is likely that there is still potential to extend this process to other operating companies, particularly where there is a low cost environment and where there are capacity pressures e.g. Chile, Indonesia, Venezuela. However, movement to the full Uberlandia 3 shift 7 day week may not be feasible in many companies due to the additional costs involved.

The final report will include Group capacity figures based on the maximum hours which a plant could achieve on a permanent basis.

- 3.5 Variations in product specifications throughout the Group remain a constraint to Group production flexibility. In these circumstances, opportunities to increase Group machine utilisation can only be addressed on an individual basis. The broad product segments used in the Group capacity study do not provide enough detail to allow this to take place. To achieve this level of control, a group wide data base of production capacity by product specification would be required, updated on an annual basis. This could be achieved through an extension of the existing BATCo system which holds records of each production capacity by product specifications for each factory within the Group. (Appendix 6).



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