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PRODUCT DEVELOPMENT	
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PRODUCT DEVELOPMENT:

FUTURE TRENDS AND NEEDS, AND THE ROLE OF MILLBANK

Product Development is at the very heart of our business. It is enormous in scope, and is being actively pursued by all Associates and by GR&DC.

To initiate discussion, I plan to comment on three aspects:

- A. BATCo strategy on Product Innovation
- B. Technical possibilities for the longer term
- C. Better understanding of the Consumer

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A. BATCO STRATEGY ON PRODUCT INNOVATION

We all know that there has been a general progressive trend to low deliveries.

FIGURE 1 [Sales weighted average tar]

FIGURE 2 [Sales weighted average nicotine]

The basic assumption is that there will be a continuous trend towards lower deliveries in all markets. Despite the fact that the Group competitive position within the lower delivery segments varies widely, the BAT policy is to lead the industry in this trend.

In considering the Key Area of Product Innovation in January this year, the BMB accepted three main strategies:

(1) Cigarettes Designed to offer Low Deliveries

Identified product segments/opportunities are:

- deliveries in the lower part of League Tables
- deliveries in the lowest position
- smoke constituents below stated critical levels

Let me summarise the position for the six countries represented at this conference - as estimated by Millbank Market Research, December 1980.

FIGURE 3 [size of market segments: cumulative]

FIGURE 4 [Histogram of segment sizes/BAT shares]

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Despite all the efforts that have been made by Associates and by Millbank, there is clearly still a long way to go.

Much of the GR&DC effort is relevant, either directly or indirectly, to the design and characterisation of low delivery products:

- computer aided design
- combustion
- filters/tipping/paper
- ventilation
- expanded tobacco
- reduction of carbon monoxide
- flavour precursors/enhancers
- biological activity

I shall comment on some of these activities in Section (B) below.

The 3rd segment, which concerns 'critical levels' was, of course, initiated by Dr Gio Gori of the US National Cancer Institute. While his hypothesis has not been taken up by any authority - and indeed there could be problems for companies if it were to receive overt publicity - we believe that the underlying concept of threshold levels for tar, nicotine, CO, NO, acrolein and HCN can be used to guide us in the development of products. The MPDC has asked Marketing Department and GR&DC to work together to draw up a recommendation.

(2) Cigarettes Designed to Offer Social Reassurance

Identified product segments/opportunities are:

- cigarettes giving less smell, eye irritation and visual smoke
- cigarettes with very low (or non-existent) levels of allegedly harmful sidestream components

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Again, a significant part of the GR&DC effort is directed to this area, which clearly is of growing importance:

- . reduced (at least 50%) sidestream emissions
- . panel method for subjective assessment of sidestream
- . assessment of minimum percentage reduction perceived by consumers
- . analysis and reduction of nitrosamines

Downstream Sidestream

(3) New High Quality/Low Cost Product

The basic assumption here is that in countries with rising prices/lower disposable incomes, there will be a demand for a total product (including wrapping materials) which offers high quality at minimum cost.

If this assumption is true, we have the opportunity of developing such a product segment and of retaining a profitable share of the reduced costs.

The MPDC has initiated a project, and this will be discussed in detail at the Research Conference in August. The key targets have been set as:

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- . King size
- . low delivery (5-10 mg tar)
- . standard paper cylinder and circumference
- . standard filter material
- . ultra-low density (down to c 150 mg/cc)
- . simple pack/over wrapped in transparent material/bulk quantities shrink-wrapped.

This project may be a suitable vehicle for developing "structured" designs that incorporate ultra-low weights of tobacco.

(B) TECHNICAL POSSIBILITIES FOR THE LONGER TERM

Looking back even as little as 10 years ago, the changes in cigarette design and smoking characteristics have been enormous. And there is no doubt that many medical authorities associate the lower deliveries with lower health risks.

In terms of product performance, however, there is potential for further considerable changes in the product and relevant research and development is underway at GR&DC

FIGURE 5 [Product Research and Development]

A schematic of the main technical objectives of the cigarette of the future is shown in:

FIGURE 6 [schematic of future cigarette]

If significant advances were to be made in each (or most) of the component areas, the cigarette of the 1990's could be very different again from that of today.

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In parallel with the experimental research and developments indicated in Figure 5, a "Technological Forecast of the Future Cigarette" is planned to be started later this year (to be undertaken by Dr K D Kilburn).

I do not have time to dwell on the various technical objectives that are being worked on, but you might be interested to hear about three items that I believe are of particular importance:

(i) Carbon Monoxide

A project is underway with the objective of substantially reducing the level of carbon monoxide relative to that of tar. Figure 7 summarises the position.

FIGURE 7 [CO/Tar for commercial and experimental cigarettes]

Samples to be used

(ii) Physical properties of tobacco

A project has been established with the broad commercial goal of reducing cigarette cost through density reduction - but with maximal retention of other desirable cigarette physical features, eg firmness, pressure drop, ends stability, hot collapse, taste and flavour.

The project will investigate the relationship between the bulk properties of cut tobacco and individual particle characteristics, and will focus on the influence of primary process conditions and tobacco expansion on these basic parameters.

I propose to comment specifically on expanded tobacco at the end of this talk.

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(iii) I am pleased to be able to report that this heavy old chestnut at last looks as though it is going to become a commercial reality. Briefly, we are about to cease work on the Bridon fibrillation process and to concentrate on working with Hercules to develop superior products based on spun fibre.

DEMONSTRATION [Tow samples CA vc PP]

(C) BETTER UNDERSTANDING OF THE CONSUMER

In the past three years important advances have been made in the general area of consumer awareness. The behavioural research Group at GR&DC, which includes behavioural psychologists, is working on a broad front using as an overall guideline a schematic model of smoking behaviour.

FIGURE 8 [Model of smoking behaviour]

FIGURE 9 [Consumer Awareness Studies]

The way these various programme objectives inter-relate with 'The Smoker' and 'The Product' is indicated in Figure 10.

FIGURE 10 [some aspects of GR&DC Behavioural Research]

I believe that an important reason for the good progress is the very close working relationship that has been established between the GR&DC team and (a) Millbank Marketing Department (b) a number of Associates.

An item not specifically referred to in Figure 9, which continues

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to receive attention, is the central issue of the role of nicotine in smoking - and in particular, whether low nicotine can lead to quitting. Figure 11 summarises present views:

FIGURE 11 [Nicotine and Smoking Behaviour]

FIGURE 11.2 [Low delivery cigarettes as a disincentive]

This reference to nicotine leads on to the wider issue of what are the characteristics of importance to the smoker and which he desires as deliveries are reduced.

FIGURE 12 [Change from high to low delivery]

I believe that all characteristics are important and also that they interact in a complex way. Certainly I believe that we are presently overly concerned with Taste and Flavour - at the exclusion of developing a real understanding of the way that impact, irritation and mouth feel influence smoker acceptability and of the precise origin of these various factors. We are giving thought as to how best we can broaden our research to cover more than just taste and flavour.

EXPANDED TOBACCO

[Separate notes]

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