

RESTRICTED

Reference No.
B1.2

Research Conference, Canada - August, 1982

Note for MPDC Members

DELIVERIES/SMOKING PARAMETERS

The MPDC instigated last year a programme to determine to what extent machine measured deliveries of tar, nicotine and carbon monoxide are dependent upon the smoking parameters selected.

The standard smoking parameters used by Industry and Governments are: 35 ml puff of 2 seconds duration at 1 minute intervals. At the time the study was started, it was known that individual smokers can vary widely about this regime, and the following range of parameters was selected:

4 puff volumes - 20, 35, 50 and 70 ml
2 puff durations - 2 and 3 seconds
3 puff intervals - 60, 40 and 20 seconds

Eleven products were chosen for the study. They covered Virginia and blended, ventilated and non-ventilated, conventional and innovative designs, at the following tar levels:

6 Ultra-low (2 BAT brands)
3 Low (1 BAT brand)
1 Low-middle (BAT brand)
1 Middle (BAT brand)

For each product, 100 cigarettes were smoked for each of the 24 combinations of parameters. A statistically randomised experimental design was used for the entire range of products and combinations of parameters.

In parallel with the machine smoking work, an analysis was made of the recent BAT/Institute of Psychiatry (Dr. Russell) study of human smoking patterns. This revealed that, while there was little difference in smoking patterns of the c. 200 subjects for low, low-middle, middle tar cigarettes, some smokers exceeded the range of parameters selected for the machine smoking study:

Puff Volume	Mean 40 ml	Range 10-76 ml
Duration	Mean 2 seconds	Range 1-5 seconds
Interval	Mean 42 seconds	Range 11-150 seconds
(Puff Number	Mean 13	Range 4-30)

Despite this wider range of human smoking pattern, it is believed that the machine parameters chosen for the study cover the smoking patterns for the majority of smokers.

The delivery data produced during the study is very considerable - running to some 189 paragraphs. It is also thought to be very reliable. It will be reported in two volumes, in a form that will be outlined to the MPDC. The cigarettes are identified by code, not by brand name.

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No attempt has been made to analyse the data in detail, but the immediate conclusion is that, although it has been found that smoke deliveries do depend strongly on machine smoking parameters - and hence, presumably on human smoking patterns - there is no significant dependence on cigarette design. Thus, all designs of ultra-low cigarettes exhibit the same general sensitivity to smoking parameters as do the low, low-middle and middle products - albeit the maximum possible delivery from the former is much lower than that from the latter.

The results of this study represent valuable industrial property - which clearly is of a very sensitive nature.

The MPDC will be asked to consider the security classification, the enclosed draft Executive Summaries and Technical Abstracts, and also the distribution of the reports throughout the Group.

DECISION

1. Formal GR&DC Report not to be issued.
2. Results of the study to be discussed at Research Conference.
3. Thereafter, results to be made available on a need-to-know basis.