

13th February, 1980

NOTES ON MEETING AT FILTRONA LIMITED,  
INSTRUMENT DIVISION, FEBRUARY 12TH, 1980

Present: N. Lanigan )  
A. Haddon ) - Filtrona Limited  
R. Bryant )  
J. Graham )  
  
P.H. Gannaway ) - B.A.T  
S.R. Evelyn )

Discussion on Filtrona CSM 300 and CSM 302 Smoking Machines

At the request of Mr. Lanigan (NL), SRE summarised the background for those present. Emphasis was placed on the commercial pressures for users of both machines in a league table or labelling situation and the cost of reformulating important brands.

SRE indicated that, in parallel with the investigations at Filtrona, Harry Dymond at GR&DC had set up a comparative programme to examine specific aspects of the smoking machines, while PHG had been re-examining results obtained previously in B.A.T interlaboratory cross-checks. As the final analyses at GR&DC have still to be completed, SRE said that he would be interested to hear what progress had been made at Filtrona.

Ray Bryant (RB) said that they had started by looking at the major differences between 300 and 302 machines. These are (a) dead volume in the tubing and pistons, (b) the position of the cigarettes in relation to the ashtray, (c) possible differences in airflow patterns, and (d) the piston. Their plan involved attempting to change one parameter at a time and their conclusions were as follows:

1. Increasing the dead volume of the 302 to match that of the 300 increased yields by up to 1 mg.

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2. Reducing flow rates and changes in temperature using a 302 either had no effect or reduced TPM values.
3. In respect of the 300 machine, no difference had been found in mean TPM values by inserting a tray under the cigarettes to simulate the ashtray in the 302. These experiments had been undertaken at low flow rates and there were only very small changes in the free burn rate and no difference was observed in the puff numbers.
4. Finally, Filtrona had coupled a 302 engine to a 300 smoke head and hood. TPM values using this combination were reproducible and approximately 0.5 mg lower than using the 300 machine.

Attempts had also been made to modify the puff profile of the CSM 302 but this work proved abortive in that it was not possible to adjust the pistons and valve mechanisms to produce a significant modification of the profile while retaining the correct puff volume. RB also said that he would like to investigate the effect of bringing forward the cigarettes in the 302 machine and thus effectively removing possible effects of the ashtray.

SRE outlined the programme of work which had been undertaken in Southampton and indicated that the experimental work on the high delivery cigarettes (CA 18 mg) was complete although further statistical analyses were in progress. It was hoped that the comparable experiments with low delivery cigarettes (8-9 mg) would be completed in the next few weeks. Analysis using a CSM 300 had been undertaken using higher than normal airflow rates and also with very low airflows. Further analytical results had been obtained with a baffle fitted inside the hood of the CSM 300 to simulate the outer casing of the 302 machine. The latter experiment had been undertaken with linear flow velocities of 4-7 ft per minute. The results indicated that flow rate over the cigarette was probably the most important single factor and statistically different reductions in TPM were obtained.

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Introduction of a simulated shelf in the 300 machine also produced significant decreases in TPM values. Reduced airflows had very little or no effect.

Experiments with the 302 machine were undertaken using a standard airflow over the cigarettes. No differences in mean TPM values were found by increasing the length of the tubing fitted between the solenoid and the piston to make it equivalent in length to that used in the 300 smoking machine. Simulating the introduction of silicone oil into the syringes had no significant effect. The preliminary statistical analysis suggests that there might be a decrease in the variability of TPM measurements with both modifications.

From the general discussion on both sets of results it was clear that, in practice, it would not be possible to modify the flow rates as these were laid down by ISO, but the work at Southampton indicated that it might be desirable to obtain improved instruments for measuring the flow rate. Since virtually all government agencies and the official figures are obtained using CSM 300 machines (this machine has been established for about 10 years), it was unlikely that Filtrona would be able to introduce an ashtray into the 300 machine should the effect noted by the introduction of a tray be established. For this reason, further consideration was given to the possibility of bringing the cigarette holders forward in the CSM 302. Although RB had attempted to modify the 302 in this way and had not been successful, AH thought that it would be possible, at least on an experimental basis, so that the important fact of shielding under the cigarette could be investigated.

SRE asked PHG to outline the results of the statistical analysis which had been undertaken on the results of two inter-laboratory cross-checks between various B.A.T laboratories. PHG said that, although differences were observed between the results of 300 and 302 users with the high delivery cigarettes, the differences had only become significant with the low

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delivery cigarettes. Nevertheless, it should not be implied that the differences are necessarily related to the TPM delivery.

Conclusions

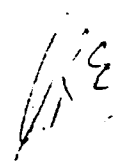
In general it was agreed that a number of important differences between the machines had been identified and it was agreed that Filtrona and GR&DC would write notes on the analytical results obtained so far and exchange all the information obtained. Further, GR&DC would finish off their programme in approximately two weeks and send the results to Filtrona as soon as the statistical analysis was completed. Filtrona agreed to make temporary modifications to the CSM 302 so that the cigarettes were smoked forward of the ashtray. It was agreed that every attempt should be made to complete the additional work and pool the results so that a further meeting could be held in approximately four weeks time.

SRE said that he still had a couple of commercial and/or political questions which he would like to put to NL. Firstly, SRE asked for priority on the delivery of one of the CSM 300 machines which had been ordered recently by B.A.T. AH said that priority could be given to this machine and he anticipated that it would be completed by the end of March. Assuming that no major defects were found at the final testing stage, he anticipated delivery in the first week of April.

SRE then asked NL whether he could provide B.A.T with a letter confirming that the CSM 302 machine is technically more advanced than the CSM 300. NL was somewhat surprised at the request and, although he gave it some consideration at the meeting, he indicated that it would be very difficult for Filtrona to give such information, even if some technical aspects of the machine were improvements on the 300. In response to his request for more information on the background to the request, SRE indicated that the company concerned had consulted their legal

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advisers and their view was that, in order to guarantee their legal rights in respect of figures printed onto packs, they would need such a letter from Filtrona. There was some discussion with NL and AH on this matter and it was obvious that NL thought he would have considerable difficulty in obtaining agreement from Filtrona to let B.A.T have such a letter. In response to a question, SRE indicated that, although he was uncertain of what use might be made of the letter, he assumed that it would probably be used if some legal action was taken against the B.A.T Associate Company and SRE suggested that such a restriction might make the situation easier for Filtrona. It was left that NL would consider the request.



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