

R E S T R I C T E D

RESEARCH CONFERENCE

PICHLARN, AUSTRIA

24-28 AUGUST 1981

PRESENT: Dr L C F Blackman
Mr R M Gibb
Mr A L Heard
Mr R G Nicholls
Herrn E Rittershaus
Dr R A Sanford
Dr F Seehofer
Dr C J P de Siqueira

Dr C I Ayres) Present for
Dr M J Hardwick) Part I only

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S U M M A R Y

The Draft 3-year Group R&D Programme for 1982-84 was agreed, subject to the changes or recommendations detailed in the notes that follow.

A paper on research progress and policy to be submitted to the BATCo Management Board on 1 October 1981 will refer to the main conclusions of the Conference.

Although final figures will not be available until later, it is estimated that if the BATCo Board accept the recommendations regarding DIET and Secondary Automation, the effect of all changes to the Draft Programme will be to reduce the cost of the Group R&D Programme in 1982 from the draft figure of £7.228 m to about £6.5 m (in constant 1981 terms), ie to below the 1981 budget of £6.837 m.

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P A R T I

GROUP R&D PROGRAMME 1982-1984

BIOLOGICAL (Work Area 01)

1. There was considerable discussion as to the strategy to be adopted by BAT in the whole area of biological research and testing. The way in which BAT could exploit products of low specific biological activity must be established.
2. The objectives in the draft Programme emphasised the development of products with low biological activity, whereas the projects seemed mainly concerned with testing and method development. It was noted that no mention was made of how to exploit the results of past studies.
3. While it is necessary to establish as soon as possible a standard protocol of testing at GR&DC, the bulk of the remaining effort should be directed to a better understanding of why certain components (eg stem) or processes (eg sheet) lead to significant reductions in specific biological activity. This must be at the expense of reduced priority given to Project 1. Only in this way will it be possible to prepare a "design manual" for the possible future construction of low-activity products. It was recognised that a wholly scientific approach would involve a massive undertaking and, therefore, that some degree of empiricism will be necessary.

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4. Project 3[b] concerning bronchitis should not proceed until the proposed model is substantiated by expert opinion.

FILTERS (Work Area 02)

5. The Strategic Objective should be rewritten:
"To develop novel filters and novel filter technology aimed at the development of marketable low-tar products, paying particular regard to human smoking patterns".
6. The Programme should be reshaped to give much greater emphasis to fundamental principles.
7. It was recognised that selective filtration may not be so important with ultra-low delivery products. It was agreed, however, that fundamental research is necessary to ensure that the Group is always in a position to be competitive with regard to any components that may assume significance in S&H terms. The current priority of likely components was seen as: Nitrosamines/HCN/Aldehydes. (It was noted that CO is not amenable to selective filtration.)
8. Particular points were:
 - The Zorbonite approach to NO_x reduction, Project 1[a], should be omitted from the Group R&D Programme and charged direct to relevant Operating Companies.
 - The projects on Programmed Filter 2 and New Filter Design 3 should be merged. More emphasis should be given to understanding how the smoker reacts to changes in filter design.

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- Work on turbulence at GR&DC, Project 3[b] should concentrate on the filter (as opposed to B&W work which concentrates on turbulent effects in the mouth).
- Project 4[b] should be recast to concentrate on reducing product variability rather than simply on further automating the filter-maker.
- Disappointment was expressed that BAT's central position in polypropylene filter technology might be weakened by the new arrangement between Souza Cruz and Hercules. Project 5[a] should be reworded to broaden the basis of the activity that will continue at GR&DC.
- The HEE filter Project 5[b], aimed at developing a commercially viable machine, should no longer form part of the Group R&D Programme. (Further work on shaped or programmed filters will be covered by the merged Projects 2 and 3.)
- The evaluation of external ideas and new materials (Project 5[c]) should continue, but care must be taken to avoid duplicating the activities of Operating Companies.

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TIPPING AND PAPER (Work Area 03)

9. Approved.

CIGARETTE DESIGN (Work Area 04)

10. General approval of Programme. Particular points were:

- Work on the use of chemical additives to reduce NO_x and CO should be terminated.
- The MPDC Project 4 on high quality/low cost products should not form part of the Group R&D programme as most large companies are engaged in similar work. Available resources should concentrate on the design of ultra-low cigarettes and on the fundamental principles relevant to the achievement of 'desired' smoking mechanics.

COMBUSTION (Work Area 05)

11. Strong support for the Programme, but Project 7 on the "Formation of Other Smoke Components" should be deleted. Nicotine and sidestream should be given high priority.
12. Particular attention should also be given to evaluating the influence of fundamental changes in combustion on the specific biological activity of smoke.

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SIDESTREAM (Work Area 06)

13. The broadly based Programme was approved. Particular points were:

- It was agreed that GR&DC should continue short-term testing (inhalation, Ames etc) to get a better understanding of the relative specific activity of sidestream and mainstream smoke. This should form a basis for a future decision as to the need, or otherwise, for more extensive biological testing (eg mouse-skin painting) of sidestream smoke.
- Information on inorganic fibres thought to be available in Canada from prior use in cigar wrapper should be evaluated with respect to the current cigarette sidestream project.

SMOKE RETENTION/HUMAN SMOKING (Work Area 07)

14. General support of the Programme. Particular points were:

- Project 2[c] should be broadened to cover smoking patterns of a range of product designs, rather than concentrate on the HEE filter design.
- The need for a professional respiratory physiologist at GR&DC was accepted, but external advice should be sought on the proposed work programme.

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- There should be greater emphasis on experimental research into how different products are smoked - including detailed surreptitious observation. A document should be circulated which outlines the details of the smoking behavioural project which will be jointly undertaken by GR&DC, BAT Germany, ITL and B&W.

PSYCHOLOGY AND SENSORY TESTING (Work Area 08)

15. The general Programme was approved, but there was some concern as to the number of projects proposed.
16. The word "placebo" in Project 2[b] was considered confusing; the Project should focus on what smokers believe they gain from smoking - with particular respect to ultra-low delivery products.
17. There was a split of opinion regarding Projects 5[b] and 5[c] which concern the influence of variability in physical attributes on the subjective assessment of cigarettes. Dr Oldman should discuss with ITL and B&W their experience to date to decide whether the proposed projects are justified.

TASTE AND FLAVOUR (Work Area 09)

18. The general Programme was approved. The importance of broadening the objectives to include mouth-feel, irritation, impact, smoke mechanics etc was stressed.

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LEAF AND BIOTECHNOLOGY (Work Area 10)

19. There was a general support for the need for BAT to participate in the rapidly developing area of Biotechnology and, in particular, in single cell culture. The experience of BAT Germany should be reviewed.
20. The Leaf Steering Committee projects constitute £160,000 of the Group R&D Programme and it was felt necessary to increase, via the three GR&DC representatives, the research input into the Committee. In particular, Project 1[a] on the use of specific varieties in cigarette design requires clarification as to the research content.
21. Past B&W work on the action of enzymes on fermentation should be thoroughly reviewed before Project 1[c] is undertaken.
22. Project 4 on the pressure treatment of green leaf was accepted as speculative research, but a critical review of any related past studies should be undertaken.

TOBACCO PROCESSING (Work Area 11)

23. There was strong support for both the objectives and the projects - which now reflect more appropriately the Group need for a better understanding of fundamental principles in processing. It was stressed that the emphasis should remain on bench level studies rather than on trials with commercial equipment.
24. Particular points were:
 - GLT processing and subsequent aging may irreversibly influence both

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physical and chemical properties.
Consideration should be given,
therefore, to the feasibility of basing
the Programme on cured tobacco prior to
aging, rather than on conventionally
aged commercial material.

- More details should be specified for
Project 1 relating to the physical
properties of tobacco to the final
cigarette.
- Work on Project 3[iv] should only proceed
when fundamental principles point to the
relevance of fluidised beds.
- There is a need to establish a set of common
physical test methods for use throughout the
Group.

EXPANDED TOBACCO (Work Area 12)

25. The commercial exploitation of DIET throughout the
Group is clearly located in Production Department.
Any GR&DC support work should no longer form part of
the Group R&D Programme but should be under contract
to Production Department.
26. Project 12[b] on alternative expansion processes should
be given priority in view of the increasingly strong
position being developed by our competitors. BAT must
attempt to establish its own technology base. The
innovative effort should be increased - for example, by
the inclusion of Dr K Kilburn.

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SECONDARY AUTOMATION (Work Area 13)

27. The content of the Programme was approved - but it was felt that both the responsibility, and the funding, should now be firmly located in Production Department: GR&DC should act as a contractor to the Group Project.

VENTILATED CIGARETTE TECHNOLOGY (Work Area 14)

28. Approved.

TEST METHOD DEVELOPMENT (Work Area 15)

29. The concept of test method development forming part of the Group R&D Programme was accepted. Particular points were:

- Collaboration with CORESTA, ISO etc was supported, but a low profile should be adopted regarding the development of methods for new "nasties", eg acrolein.
- Clarification should be sought on Project 2 - the updating of existing chemical methods.
- Projects 6[a], [c] and [d] on off-line permeability, filling value and hot collapse should be deleted from the Group Programme as BAT Germany now have adequate methods available.

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- Routine analysis of pesticides should not form part of the Group R&D Programme - but research expertise should be maintained at GR&DC.
- A critique should be prepared of what is now possible in the whole area of quality control in making and packing.
- Thought must be given as to how best to minimise the advantage to competitors from the commercial sale of instruments developed within the Group.

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P A R T I I

GENERAL ISSUES - POLICY & STRATEGY

FUNDING

30. Despite the significant reduction (13%) in staff numbers over the past two years as intimated to the TCAC, the cost of the proposed Group R&D Programme is higher in real terms in 1982 than in 1981 - although the cost is budgeted to decline thereafter. The cause of the increase in 1982 over 1981 was the more refined assessment of the activities that should constitute the Group R&D Programme. (On the draft figures as presented, 85% of all technical effort is devoted to the Group R&D Programme - 203 technical staff against 36 for "non-levy" Technical Support.)

The changes called for by the Conference should significantly reduce the cost for 1982.

PROJECT SELECTION

31. There was a general feeling that we may be attempting to work on too many individual projects, rather than on concentrating the effort on fewer priority areas. This will be looked at again.

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ROLE OF TECHNOLOGY

32. It was agreed that there will be a trend towards increasing marketing opportunities based on technical advance. In certain technical developments, however, (such as sidestream and CO), BAT should give careful consideration as to the relative merits of sharing them with the Industry in the common interest, as opposed to attempting to use the developments competitively.

CARBON MONOXIDE

33. Though the political relevance of medical opinion on the importance of CO varies between countries, it was agreed that GR&DC should continue to seek means of reducing the CO/tar ratio of the main types of products. Before any such products are offered commercially, it would be advisable that they should have been examined in the context of human smoking patterns.
34. One approach presently being adopted by B&W is to substitute ventilation for filtration - accepting that lower pressure drop filters now appear to be commercially tenable.

COMPENSATION

35. It is felt that the time is close when Government agencies worldwide will take more notice of compensation - and of the scale of the differences, for a given commercial product, between smoking machine numbers and the dose of smoke actually obtained by smokers. This issue may well go beyond the simple technical measurement of deliveries. If for no other reason than defence, we must pay increasing attention as to how our products -

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especially new products - are smoked by different categories of smokers.

ADDITIVES

36. While additives will assume increasing importance in product design, the freedom to use them could become increasingly restricted. GR&DC should prepare a critique covering (a) past and current experience in UK and elsewhere on the clearance of additives (b) the GR&DC protocol for biological testing, and (c) guidelines as to how other countries may proceed in this area.

COMMUNICATIONS ON RESTRICTIONS

37. Concern was expressed that BAT had not yet established a central system for informing and updating Associates on restrictions that are in force in different countries. It was understood that Marketing Department (Millbank) was working with GR&DC to this end.

COMPETITOR INTELLIGENCE

38. There are several examples where either Philip Morris or Reynolds have followed one another in the launch of a new product concept so rapidly (eg within a month) that clearly there must have been active competitor intelligence. BAT does not actively seek information regarding competitors, nor does it process centrally any information that is obtained from anywhere throughout the Group. An attempt will be made to establish at

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GR&DC a computer-based system to record competitor technical information (eg from Patents, technical articles, press). Initial emphasis will be on processes, and will probably start with Europe. This action leaves unanswered, however, the means by which the Group might actively seek up-to-date information.

FLAVOUR CONFERENCE

39. A Flavour Conference will be held in Germany at the end of February 1982 to bring together both flavourists and flavour research workers. Participants should be at the bench level. There will also be selected contributions from invited consultants and academics - but not from flavour houses. Members will give formal response to Dr Erhard Köhn by the end of October 1981.

MEETINGS

40. The format of this Research Conference should be retained for the 1982 Conference in Canada. A date in early September is suggested.
41. Following the general success of the May 1981 meeting, a regular Technical Exchange Meeting should be held each year in May at Southampton at which senior Research Managers from the CAC companies will review the progress of the GR&DC work programme. Selected topics for the meeting will be proposed early in the New Year.
42. A third type of meeting - Specialist Technical Meeting - should involve specialists in a given area of importance to the Group, and should be held in different countries

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as appropriate. Flavour is the subject for February 1982 in Hamburg, and it is proposed that the next meeting (for late 1982 or early 1983) should be on Smoking Behaviour and held in the USA. A tentative proposal for 1984 is Tobacco Processing, to be held in Brazil.

LCFB/SM

9 September 1981

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