

RESTRICTED

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EFFECT OF REDUCING DELIVERY ON CHEMICAL  
AND BIOLOGICAL PROPERTIES OF SMOKE

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Background

The UK Independent Scientific Committee has indicated to the Tobacco Advisory Council that the analyses of smoke components other than tar, nicotine and carbon monoxide will feature in the forthcoming (October?) 3rd Report of the Committee. We also know that the UK Government Chemist is planning to monitor UK brands for formaldehyde, acrolein, NO and HCN - most probably on a routine basis in 1983. It is not known in what form, if any, the results will be widely published. The Finnish Government Chemist has for some time been monitoring Finnish brands for the same components, plus cadmium and lead.

The MPDC, on 30th July, 1982, agreed that GR&DC should analyse the major UK brands to establish where BAT stands. The possibility of GR&DC undertaking a similar survey of major European brands will be considered at a later date. (The advantage of having a common methodology was recognised.)

Over and above this growing interest in gaseous and vapour phases, at a recent ISC/TAC meeting, the ISC indicated a renewed interest in the "smoke profile" or "tar quality" of present-day cigarettes. The Committee appreciates the massive amount of effort that has been directed to the biological activity of smoke over the past 25 years, but feels that with 1980s technology it may be possible to identify significant changes in one or more of the commonly regarded "nasties" - though the Committee has not indicated just how many of the c 3000 components in smoke constituents are in their view potentially "nasty". By coincidence, we at GR&DC had asked ourselves the very same question only a week before the ISC/TAC meeting.

In simple terms, we asked the question: "As the nominal tar level is reduced by filtration, ventilation, or a combination of both, how do the deliveries of selected "nasties" diminish - at the same rate or faster or slower?" Further, if significant changes are identified, how do these relate to the biological activity?

Taken to the extreme, these questions could amount to a tremendous, virtually open-ended, programme of work. It should be possible, however, to design a feasible initial programme: for example, to design and manufacture cigarettes delivering 30, 20, 16, 10, 6 and 1 mg tar from a limited number of tobacco blends (e.g. flue-cured, US blend, European blend) and to analyse an agreed selection of smoke components (those cited above, plus nitrosamines, phenols, benzo(a)pyrene, etc.), using the most sensitive techniques we have, e.g. HPLC, FTIR.

It is proposed to discuss this proposal in some detail at the Conference with a view to implementing a programme in 1983.

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