

40 Years of Research: No Holy Grail



WORLD NO TOBACCO DAY FORUM on TOBACCO INDUSTRY DOCUMENTS

This paper was written by
Cynthia Callard.

The opinions expressed are
those of the author and do not
necessarily reflect those of
Health Canada or Physicians
for a Smoke-Free Canada

1962: The Crisis Hits.

The Board recognises that this problem must be tackled from two sides, the first being medical research on the origin of lung cancer and bio-assay on the biological effects of smoke, and the second being the composition of smoke and the possibilities of modifying it.

Sir Charles Ellis
BAT Research
Conference, 1962



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By the early 1960s, tobacco companies were publicly denying that smoking caused lung cancer, but could no longer internally deny that they were in a crisis of global proportion. One of the first global responses of the British America Tobacco Company was to bring its scientists and managers from around the world in the now famous 1962 meeting in Southampton.

The research strategy announced to the family of BAT companies was two-fold: collaboration with other tobacco companies and scientists in medical research, and more proprietary research on the chemistry of smoke and the development of safer cigarettes. Great confidence was expressed that this secret research campaign could either disprove the link between lung cancer and smoking, or it would lead to the isolation and removal of the chemicals which caused cancer.

In the subsequent years, more than 6,000 mice met an unhappy end when their backs were painted with cigarette tar in the laboratories in Harrogate. The results were often unhappy ones for BAT. In 1962, they hoped that "fresh" smoke condensate would prove less deadly than the "old" tar used on early experiments. By 1965, they knew that fresh smoke was actually more dangerous.

They were no closer to figuring out how to clean the smoke of substances which caused cancer – but they were still optimistic that it could be done.

1968: What Is Healthier?

Although there may, on occasions, be conflict between saleability and minimal biological activity, two types of product should be clearly distinguished, viz:

- a) A Health-image (health-reassurance) cigarette.
- b) A Health-orientated (minimal biological activity) cigarette, to be kept on the market for those consumers choosing it.

1968 BAT R&D Conference



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By the late 60s, research was underway in earnest at BAT laboratories to respond to the growing health concerns of smokers and governments.

Both Leo Laporte, head of Imperial Tobacco Canada, and his senior scientist, R.S. Wade were present in 1968 at a meeting in South Carolina which looked at both the "smoking and health" crisis and new product development. The minutes show that the meeting was contentious, and that two strategies were agreed upon. The first was to sell cigarettes which made smokers feel better about smoking. The second strategy was to continue with research into ways to make cigarettes that were actually less harmful.

The scientists were still confident that this could be done:

"It is clear that a number of features of cigarettes can modify the biological activity of smoke condensate. These include the incorporation of PCL and CRS, the form of the smoking vehicle, the type of tobacco, the presence of additives and the volume of puff taken in smoking the cigarette."

"There was general agreement that a cigarette with such reduced mouse-skin biological activity should be produced, other biological features, e.g. irritation, ciliastasis, must also be satisfied simultaneously."

1969: Bad news gets worse

The conclusion of the Conference was that at at the present time the Industry had to recognise the possibility of distinct adverse health reactions to smoke aerosol:

- (a) Lung Cancer
- (b) Emphysema and bronchitis

1969 BAT R&D Conference



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By 1969, things were beginning to look very dismal indeed to the scientists gathered at BAT's annual meeting, Imperial Tobacco Canada's Robert Wade among them.

BAT's research into smoking and disease was returning bad news. The mice kept dying, the evidence was (at least internally) undeniable.

The first experiments with safer-cigarettes were not encouraging. BAT laboratories had developed way of delivering nicotine without smoke (Project Ariel), but it failed to impress. "The ARIEL project was reviewed and samples were distributed by Dr. Hughes. It was agreed that this had been well worth pursuing, but it was felt that this should not be taken further at this stage. It was also agreed that the patent coverage might well be reduced to a few key countries."

There was still, however, some optimism about making conventional cigarettes a little safer. Using reconstituted tobacco, or tobacco substitutes, new filters and greater dilution was seen as the way forward.

1970: Dreaming of a rosy post-cigarette future

It was agreed that, if and when total cigarette consumption declined, great opportunities for supplying the demands of other socially acceptable habits could follow...

Particular attention should be given to buccal administration of nicotine and other physiologically active ingredients.

1970 BAT R&D Conference



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By 1970, when the BAT scientists gathered at a resort north of Montreal, they admitted freely to one another that people smoked for nicotine – and an optimism was brewing that smoking might be replaced by other forms of nicotine use (although they drew the line at food!).

They agreed to the following assumptions to guide their research program:

"Research can be profitable and that new products may now be expected from research."

"Nicotine is important and there is probably a minimum level necessary for consumer acceptance in any given market. The chemical form of nicotine has been shown to affect the rate of absorption by the smoker."

"Government involvement with the industry continues to increase."

"The smoking and health problem is at least partially amenable to a research solution."

"It was accepted that, without inhalation, no association between smoking and respiratory disease could reasonably be alleged." [i.e. non-inhalable nicotine would be okay].

1973: Marc Lalonde is asked to help

we believe that a working hypothesis that smoking is harmful should be accepted and that our joint objective should be to render it less so, starting with present knowledge, or even theories, and improving the attack as new knowledge is gained.

R.M. Gibb, ITL Canada



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In April 10, 1973, the Canadian Tobacco Manufacturers Council met with the Minister of Health, Marc Lalonde, to propose joint research into the development of less hazardous cigarettes. In August that year, follow-up meetings were held with the ADM of Health and Welfare Canada, Dr. Morrison, and senior scientists from Imperial Tobacco Canada Limited and BAT.

Imperial Tobacco sought BAT's permission before making an overture to the Canadian government, and provided head office with the materials prepared for the meetings. These documents are unexpectedly frank. Smokers seek nicotine, ITL scientists admit. Compensation can diminish the benefits of low-tar cigarettes, they warn. Ultra-low tar cigarettes are of minimal benefit, they admit.

ITL and the other Canadian companies propose a detailed research plan, examining smokers behaviour, respiratory physiology and pathology, and the potential of six different types of cigarettes.

In late November, Marc Lalonde writes CTMC head Paul Pare to decline the offer. "The department's independence ... [would be] compromised if we were to engage in such a program."

1977: HWC Tries to Go It Alone

The Dept of Health & Welfare, Canada, whilst having illusions of grandeur in trying to emulate the N.C.I. programme in the U.S.A., do not have a hope of realizing this dream.

RJR Memo on Health Canada "less-harmful cigarette" meetings



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In January 1977, Agriculture Canada and Health Canada met with researchers at the University of Waterloo and Guelph to discuss the development of less hazardous cigarettes. The minutes of this meeting ended up in the files of RJR-Macdonald's (now JTI-Macdonald) head office. So did an unflattering memo from the head of Macdonald Tobacco's head scientist, D.A. Crawford.

"The NCI programme (also towards a less hazardous cigarette) has been in existence for approximately 6-10 years with not only tens but hundreds of millions of dollars in support. They have made progress but are far from the total truth – as they would admit. However, here in Canada, the D. of H&W has grandiose ideas of emulating this programme (plus a bit more) with a shoe-string budget. It is just not possible."

"In a nutshell, I cannot think that anything was achieved other than a clear cut case being presented to department of H& W that it was an enormous programme to undertake, it will take a long time and will be extremely expensive. Their whole philosophy is riddled with holes, their knowledge is extremely limited, their findings to-date are minimal and do not throw any new light on the subject.

1979: Still dreaming

We are searching explicitly for a socially acceptable addictive product involving:

- a pattern of repeated consumption
- a product which is likely to involve repeated handling
- the essential constituent is most likely to be nicotine or a 'direct' substitute for it

1979 BAT R&D Meeting



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From the mid-1970s to the mid-1980s, BAT scientists spun their wheels, trying to come to terms whether they were most interested in cleaning up the smoke in regular cigarettes, or in developing a whole new style of cigarette.

The vision of safer-nicotine was still in their minds, and just as elusive was the way of getting there.

Uppermost in their mind was providing smokers with an alternative to quitting. "We have to satisfy the 'individual' who is either about to give up or has just done so, i.e., in other words, customers in danger of extinction."

But they had not yet given up hope that regular cigarettes could be made less harmful.

1985: EMN – Eliminate, Modify, Neutralize

In the case of carcinogens, smoke contains not just one carcinogen but a galaxy of them. Furthermore it is, at present, inconceivable that carcinogens would not be produced during the pyrolysis of any organic material.

Elimination of carcinogens does not therefore appear to be feasible.

BAT Science Advisor, Francis Roe, on ITL's EMN proposals



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ITL's was highly confident in the mid 1980s that it could reduce the harm of cigarettes. Despite the scepticism of BAT Researchers, Imperial Tobacco Canada Ltd. remained bullish on the prospects of a reduced-harm cigarette.

ITL proposed a new research programme - EMN. This was designed to:

Eliminate the carcinogens.

Modify the smoke

and **Neutralize** other adverse effects of smoke (i.e. those that caused emphysema).

With merged research strategies, however, ITL was limited in how it could move forward without the support of BAT head office. And head office was hard to convince.

Senior scientific advisor, Francis Roe, pronounced his view. In addition to his conclusion that carcinogens could not be eliminated, he also thought that the public would not accept a modified cigarette, nor that it was possible to neutralize the adverse effects of smoke.

"Project EMN... has the features of a light-weight patchwork quilt of 1960 design," he wrote. "I am sorry to have spilt tea on it!"

1986: BAT Neutralizes “EMN”

Since there is such a wide discrepancy between your approach and that of the rest of the Group, I thought that I should write to explain why it is that I cannot support your contention that we should give a higher priority to projects aimed at developing a 'safe' cigarette

BAT Chairman Patrick Sheehy to ITL CEO Purdy Crawford



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Both within BAT and within the tobacco industry, very different strategies developed in the 1990s with respect to 'safer' cigarettes.

Not long after BAT's initial rejection of Project EMN, RJR-Reynolds introduced the Premier cigarette into the U.S. Market. An earlier version of the current Eclipse cigarette, the Premier was designed to heat, not burn tobacco. The level of toxic compounds was significantly reduced – but neither the public, nor public health officials responded favourably to Eclipse.

BAT's objections to the ITL's desire to pursue safer cigarettes was based on reasons other than acceptance by smokers or governments. They also felt it was heading in the wrong direction.

The message from the highest levels of BAT (CEO Patrick Sheehy) to ITL's CEO Purdy Crawford was clear.

“The BAT objective is and should be to make the whole subject of smoking acceptable to the authorities and to the public at large since this is the real challenge facing the Industry... in attempting to develop a 'safe' cigarette you are, by implication in danger of being interpreted as accepting that the current product is 'unsafe' and this is not a position that I think we should take.”

1988-89: Another Day, Another Try

MARKETING BRIEF

PROJECT DAY WILL EXPLORE POTENTIAL ALTERNATIVES
TO CONVENTIONAL CIGARETTES THAT CREDIBLY OFFER
THE ELEMENTS OF TRADITIONAL TOBACCO PLEASURE
WITH A GREATER LEVEL OF "SAFETY".

Presentation on Project Day at BAT



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Imperial Tobacco persevered in promoting a research agenda for less harmful cigarettes. Perhaps it was the introduction of RJR's Premier that strengthened ITL's resolve to resist head-office.

By the later 1980s, ITL's efforts had focused around "Project Day" which was to be:

"A tobacco combustion project [i.e. it looked like a regular cigarette] with:

- Substantial reduction in biological activity of condensate
- reduced carbon monoxide and other gas phase components
- significantly reduced sidestream smoke
- Adequate nicotine
- Acceptable taste and flavour.

When BAT's head of research, Alan Heard, visited ITL again in 1990, he remained almost as unenthusiastic about Project Day as he had been about its precursor, Project EMN.

1992: A Trans-Atlantic Stand-off

The Chairman advised Mr Crawford that BAT does not mind one way or the other whether Imasco is in Group R&D or not, but emphasised that, if Imasco is in, then it must be on BAT's terms. If the terms are not acceptable to Imasco, then they are not to participate.

BAT Memo



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The disagreements over Projects EMN and DAY were not the only points of friction between Imperial Tobacco and BAT regarding research strategy. ITL also wanted to be able to “opt out” of projects which were not of concern to Canadian smokers.

BAT hung firm. ITL, it appears, blinked. (They remained part of BAT group research).

1996 & 1998: Health Canada Extends Invitation

Notes from Conversation with Dr. Bill Rickert

1. Has been asked to chair a new Expert Committee for the Canadian Health Ministry whose title is tentatively "Harm Reduction How to Measure Progress".

Philip Morris Memo



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Twenty three years after BAT scientists first approached Health and Welfare Canada to conduct joint research into reduced harm cigarettes, Health Canada reciprocated the invitation.

In 1996 and again in 1998, Canada's leading cigarette analyst, Dr. Bill Rickert, was asked to chair a panel to review ways of modifying cigarettes to improve public health. Both times, Dr. Patrick Dunn of ITL was on the panel.

A transcripts of the Panel's proceedings was issued as reports. Patrick Dunn from ITL Canada did not share the results of over 30 year's of Canadian research into reducing the harm from burning tobacco.