

### Fundamental Research - Future Plans

Following the TSRT meeting in September 1991 it was decided that B&W and BATCF should jointly establish R&D programmes in response to a brief to develop blended products with superior Smoking Quality. Subsequent meetings between these companies concluded that all programs should be commercially oriented with priority on the near term (two years) but some programmes could generate building blocks for the 2-4 year future. B&W/BATCF have now identified projects, several of which were formerly undertaken by the FRC but which they now wish to undertake as part of their response to create superior smoking quality blended products. These call for additional effort in B&W and in BATCF.

In order to determine the consequence for the FRC, account must be taken of two important considerations.

1. BATCo has quite separately been given the challenge of developing a superior Virginia style product and several of the former FRC projects have a direct relevance to this goal (although some adaptation to purely Virginia target will be needed)
2. The brief for both blended and Virginia products addresses simply smoking quality and overlooks the need to pursue the longer term regulatory -related work that BAT Industries needs to ensure that it both discharges its duty of care and can continue to remain commercially competitive. There is a real danger that the research (for which R&D Southampton is the 'Centre of Excellence' ) for example to know how to modify smoke composition (nitrosamines, aldehydes, HCN, carbon monoxide) or to know how to reduce or otherwise manipulate sidestream smoke is not only subordinated to short term commercial goals, but is abandoned. In recognising the importance of such issues the apparent similarities, hitherto assumed between B&W and BATCF business environments, break down. Europe and indeed Canada or Brazil see regulatory issues as of relatively high priority.

The following table shows the additional resource requirements for B&W, BATCF and BATCo to undertake their new Smoke Quality projects and the resources required to undertake the regulatory projects at FRC.

The following notes summarise the support for those projects which are regulatory-driven rather than smoke quality-driven.

**911.01 Tobacco Modification**

Whilst those elements which relate to smoking quality will naturally be pursued by the Blended Centres, the original concept of this work area was to know how to reduce "other noxa" and this remains a valid Group goal.

**911.03 Ultra-Light weight structures**

This is seen as an attractive option for reducing all smoke components which make no positive contribution to smoking. Even B&W in their assessment of FRC projects identify this as of potential long term interest.

**911.04 Filter Materials**

Both Canada and Brazil support work on cellulose acetate degradation which is being pursued by FRC and it would need to be checked whether their interests are covered in the emerging BATCF programme.

**911.05 Tar Modification**

This is an important general area for regulatory concern and has particular relevance to the BAT thrust for ultra low tar/nic products.

**911.07 Special Analytical**

There is a resource requirement from this area to support Additives issues.

**911.08 Smoke Formation**

Although compound release and transfer will apparently be pursued by the Blended Centres, the work on mechanisms of sidestream formation and the modus operandi of the low sidestream papers is sound, basic work unparalleled by any other work in the Group.

**911.10 Environmental Tobacco Smoke**

The effort in this area has been significantly reduced over recent years but it is imperative that the Group retains expertise in this key area. The successful presentation of BAT's research at the Select Committee of UK Government on Indoor Air Quality, is a testimony to its value.

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FRC ref. no.	Subject	Current FRC	Blended BATCF	Blended B&W	Virginia BATCO	Regulatory All CACs
911.07	Special Analytical					
	100.0 Smoking superiority	1.5		2.0	1.0	
	200.0 Labelled studies	0.5			0.5	
	300.0 Sulphur/PPG	0.5	1.0			
	400.0 Chem Analysis Support	2.0			1.0	1.5
	500.0 Specialised analyses	1.0			0.5	1.5 <i>v Spread</i>
911.08	Smoke formation/Transfer					
	100.0 Compound release/transfer	0.7	1.0			0.7*
	200.0 S/S formation mechanisms	1.2				1.2
	300.0 Compound migration	1.0	1.0	1.0	0.5	
911.09	Tobacco rod Physical properties	1.7		2.0	1.7	
911.10	ETS					
	100.0 Chem.changes on ageing	2.0				<del>2.6</del> 2.6
	200.0 Personal exposure	0.6				
911.11	Ignition Propensity					
	100.0 Direct method	0.7		0.5		
	200.0 Indirect method	0.4		0.5		0.5 <i>transf. to B&amp;W</i>
911.12	Bioassays	3.4				3.4
911.13	Additives/Materials guide	3.6				3.6
911.14	Technical support to CAC	0.3				0.3
911.15	International Standards	0.2				0.2
911.16	Services/admin	11.8				6.7
					3.3	
					4.0	
						6.7
						3.7
	<b>Total man-yrs.</b>	<b>57.1</b>	<b>7.0</b>	<b>14.0</b>	<b>18.1</b>	<b>32.1</b>

In summary B&W gains 14 man years, BATCF gains 7 man years, BATCO takes 18.1 man years from FRC and the regulatory takes projects 32 man years from FRC. Assuming the BATCO work is undertaken in FRC, FRC reduces by 7 man years, although B&W and BATCF expect to absorb these staff in filling their vacancies.

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## Consequence for Effort required at the various R&amp;D Centres

FRC ref. no.	Subject	Current FRC	Blended BATCF	Blended B&W	Virginia BATCO	Regulatory All CACs	Site
911.01	Tobacco Modification						
100.0	Enzymes for Quality, improv recon, flavour reactions	3.5		4.0	1.7		18
200.0	Product-precursor rels.	2.0				2.0 ✓	
911.02	Sidestream						
100.0	Project FUSE	0.7			0.7		
200.0	New papers	0.7			0.7		
911.03	Ultra lightweight structures	3.0				3.0	
911.04	Filter Materials						
100.0	Degradability of CA	1.7	1.0			<del>1.0</del>	10
200.0	Carbon/Zeolite	1.0		1.0	0.5		
911.05	Tar Modification		1.0				
100.0	Greendot extension	3.9				<del>3.0</del> 2.0	19
911.06	Chemosensory Research						
100.0	Impact/irritation	2.5	2.0		1.5		
200.0	Aftertaste	2.0		2.0	2.0		
300.0	Body/mouthful	1.0		1.0	0.5		
400.0	Smoking behaviour	2.0			2.0		

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911.11 Ignition Propensity (indirect method development)

Although the US feels that this is a priority item for them, a considerable portion of the Group's expertise resides in FRC. In their assessment of FRC projects B&W request that BAT remains involved on the Coresta task force. This will only be meaningful if FRC is engaged on some practical work

911.12 Monitoring Bioassays

This topic is uniquely handled by FRC and even B&W in their analysis of FRC projects suggest that this is of long term importance and should be handled by Southampton.

911.13 Additives and Materials advice

Comments as for 911.12

911.14 Technical Support to CACs

Every year FRC is required to give specialist advice or send 'fire fighting' personnel to deal with various CAC Company problems.

911.15 International Standards, Coresta etc

Comments as for 911.12

911.16 Library, Information service

This facility is likely to grow in importance as a firm document retention policy is established in the Group R&D centres. A significant part of this facility should therefore be viewed as central in nature.

It is imperative that B&W and BATCF and indeed the other interests (ITL and Souza Cruz) reaffirm their needs for this type of research.

There remains, a sound case for continuing to centralise these generic activities in FRC. It is not possible to calculate the exact financial consequence of such a move at this stage. As an approximation, the revised cost of the centrally-funded part of FRC would be £2.33 m. (c.f. the planned programme cost of £4.15 m.). Using the newly-established turnover formula to decide contributions (based on 1991 predicted figures) the position would be:

B&W	£933,000
BATCo	£840,000
BATCF	280,000
ITL	£280,000

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