

PART 3

CONFIDENTIAL FILING

British Technology Group (formerly National Enterprise Board (NEB))  
Disposal of NEB's shareholders interests  
NEB Relations with the TUC  
The Industry Bill  
Relations Between NEB and the NRDC

S  
3008

INDUSTRIAL POLICY

PT1: May 1979

PT3: February 1989

Referred to	Date	Referred to	Date	Referred to	Date	Referred to	Date
<del>11.5.89</del> 4.3.92 10.3.92							
PREM 19/3804							

## Published Papers

The following published paper(s) enclosed on this file have been removed and destroyed. Copies may be found elsewhere in The National Archives.

British Technology Group News Release dated 16 March 1989  
101 Newington Causeway  
London SE1 6BU

Signed J. Gray Date 16/9/2017

**PREM Records Team**

cc AV  
nSPM

DHP

10/3

Treasury Chambers, Parliament Street, SW1P 3AG

Rt Hon Peter Lilley MP  
Secretary of State for Trade and Industry  
Department of Trade & Industry  
Ashdown House  
123 Victoria Street  
LONDON SW1

10 March 1992

*Dear Peter*

BTG PRIVATISATION

Thank you for your letter of 10 March. *- with BP*

I agree that negotiations have now made sufficient progress for you to sign a sale agreement with the CIN/Venture management consortium in time for an announcement tomorrow, although I share your view of the importance which must be attached to the conditions set out in your letter.

In particular, there must be no room for doubt that the equity is fully subscribed at the time of signature and within the 15% limit (except for the employee share trust), even though some minor adjustments in the line up of the syndicate may be permissible over the next couple of weeks. I am concerned also that given the need for the statutory declaration under Section 151 of the Companies Act, this sale agreement could be interpreted as an option to buy, but I believe that a satisfactory outcome to today's meeting with the Chairman and Chief Executive of BTG should leave the Government in a defensible position on that score. Finally, I am content with the arrangements which have been negotiated for adjusting the final price in the light of the cash and net liabilities position, and I share your view that the monitoring which has been put in place should ensure that the present healthy cash position is maintained to the end of this month.

I am copying this letter to recipients of yours.

FRANCIS MAUDE

Ind PA BTG Pt 3





ceps

The Rt. Hon. Peter Lilley  
Secretary of State for Trade and Industry

**POLICY IN CONFIDENCE**  
**COMMERCIAL IN CONFIDENCE**

The Hon Francis Maude MP  
Financial Secretary  
HM Treasury  
Parliament Street  
LONDON  
SW1P 3AG

Department of  
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Ashdown House  
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071-215 5000

10 March 1992

nsp  
RHP  
10/3

Dear Francis

**BTG PRIVATISATION**

Negotiations are now virtually complete on the sale of BTG to the management-led consortium, as envisaged in my letter of 4 March.

As you will see from the attached draft PQ answer, the proceeds remain essentially the same. As expected, following our firm refusal under any circumstances to entertain the idea of assistance towards their consortium formation costs, the consortium reduced their initial consideration to £14.15m. However, they wished to have a copy of the DTI-commissioned PA report on BTG's technologies, and agreed to raise their initial consideration to £14.25m in recognition of the costs incurred.

There has been a change in the arrangements for dealing with cash and net current liabilities at completion on 31 March to accommodate the consortium's wish to have not less than £2 million cash in the company. As a result, if cash turns out to be lower than £2m, HMG will meet the deficit. If cash turns out to be higher than £2m, HMG will be paid the excess together with any improvement in the net current liabilities from minus £2.5m. Although there is a downside to this, I believe that the risk is small because of BTG's present healthy cash position (£17m) and promising prospects for revenues to be received before the end of March. Moreover, I intend to ensure that the consortium and BTG accept the need for close monitoring of their cash position during this period to ensure that no avoidance occurs.

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**dti**

the department for Enterprise





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In all other respects, the proceeds remain as envisaged earlier, and I am satisfied with the initial and prospective proceeds.

I am also satisfied with the likely composition of the consortium. CIN Venture Managers Limited are clearly in the lead, but it is not surprising for a number of institutions to allow one to represent their interests. The other potential investors are listed in the Annex. They comprise financial institutions, venture capital companies, 14 universities, and the French state-owned research organisation ANVAR. Not all will end up as equity subscribers because of the difficulties they may face in raising finance by the completion date. However, the consortium is confident that it will raise enough equity finance before the agreement is signed (and this will be a condition of signature), and it has promised to accommodate as many universities as possible who can raise the funds before completion.

The conditionality attached to the financing is not unusual in itself, but it is inescapable if we wish to avoid losing the opportunity for signing the agreement before a possible General Election intervenes. There is a risk that failure of the Board of BTG to make a statutory declaration of solvency (to enable the banks to take security over their assets) could jeopardise the bank finance, but I would prefer that the deal should be lost through faint-heartedness on the part of the buyers, rather than on the part of Government. I shall try to ensure that "material adverse changes" in the eyes of the banks do not threaten completion by asking my officials to seek last-minute reassurances from the Chairman and Chief Executive of BTG that they know of no matters which might give rise to concern.

A further risk to the deal is that the Office of Fair Trading will recommend referral to the MMC. (This would be handled by John Redwood to avoid any conflict of interest). It has not proved to be possible to settle this beforehand. We shall just have to live with the consequences.

I therefore hope you will agree that, subject to assurances of full subscription for the equity finance, and if the Chairman and Chief Executive of BTG indicate no cause for concern about the running of the business, and subject to the need for close monitoring of BTG's cash position before completion is accepted by BTG and the consortium, the agreement can be signed on my behalf on 10 March.

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... I propose to announce the sale in answer to PQs in the Commons and Lords on 11 March in terms of the attached draft.

Incidentally, there was an error in my letter to you of 4 March arising from misunderstanding of the IPR clawback terms that had been offered by the consortium. My letter indicated that annual payments were envisaged whereas a single cumulative payment at the end of five years was the option under consideration. (For the avoidance of doubt, this option would not involve repayment by HMG.) However, the assessment remains valid, the indicative figures for the net present value for the competing bids was correct, and in accordance with Price Waterhouse's recommendations.

I am copying this letter to the Prime Minister, Kenneth Clarke, John Gummer, Professor Stewart (Chief Scientific Adviser) and Sir Robin Butler.

*Yours ever*

*Peter*

PE3191

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SCHEDULE 4

Pool of equity subscribers in Purchaser

1. CINVEN
2. ANVAR
3. County NatWest Ventures Limited
4. Kleinwort Benson Development Capital Limited
5. Lloyds Development Capital Limited
6. Nuffield Foundation
7. Royal Insurance plc
8. Candover Investments Limited
9. Commercial Union Asset Management Limited
10. Grosvenor Venture Managers Limited
11. Oxford University
12. Advent Limited
13. Any or all of the following universities as principal:

Bangor  
Bath  
Bradford  
Bristol  
Exeter  
Keele  
Lancaster  
Leicester  
Loughborough  
Nottingham  
Southampton  
Surrey

~~King's College London~~

University of Wales College of Medicine

14. The ESOP



## DRAFT PQ

### QUESTION:

### ANSWER:

I am pleased to announce that an agreement for the sale of British Technology Group was entered into yesterday, 10 March, following negotiations between Government and a management-led consortium. The initial proceeds will be £27.75 million.

The consortium represents a balance between financial institutions, individuals, and organisations. The lead investor is CIN Venture Managers Limited (CIN Ven) the second largest European Venture Capital house. (CIN Ven manages the unquoted securities portfolios of the pension funds of British Coal, British Rail and Barclays Bank.) The consortium members include six other financial institutions, BTG management and staff, and 14 UK universities, mostly under the aegis of the CVCP (the Committee of Vice Chancellors and Principals). A holding company has been formed to take over the shares. Management and staff will participate in the company both directly, through individually subscribing for shares, and indirectly, through an employee share owning trust which will acquire up to 25% of the share capital. Apart from the trust, no individual member of the consortium will own more than 15% of the voting rights.

The consortium was selected as the preferred purchaser following a two-stage competitive bidding process against a number of

criteria, including price and commitment to the continuation of BTG's technology transfer business in the long term. The Government is convinced that the consortium offers the best prospect that BTG's present activities will be continued as an independent organisation.

The sale negotiations were conducted on a basis which provides value for money for the taxpayer. The terms of the sale will be examined by the National Audit Office in due course.

The proceeds of the sale will be made up from two elements. The initial proceeds will be:

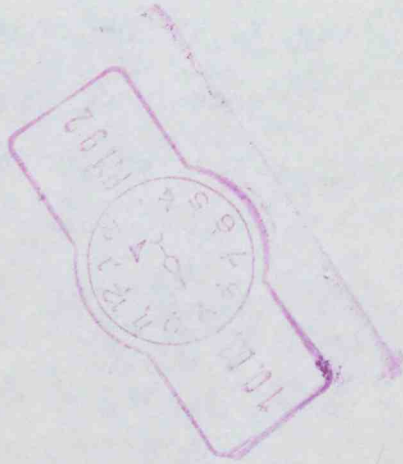
	<u>£ million</u>
Initial consideration	14.25
Special dividend to be paid on completion	12.0
Dividend paid in February in respect of NEB	<u>1.5</u>
<b>Total</b>	<u>27.75</u>

The initial consideration is dependent on certain working capital requirements being met at completion, which is due to take place on 31 March 1992 provided that certain conditions of the type commonly found in share purchase agreements are fulfilled by that date.

Future proceeds will arise if over the next five years the business performs at a level in excess of the net revenues forecast by BTG management in its business plan. The Government will be entitled to 60% (less tax) by which aggregate net

revenues exceed the target agreed with the purchaser. Net revenues principally comprise the revenues from licences which accrue to the company less the payments which are made to inventors from those licence income streams. Further proceeds may also arise from clawback on the proceeds of sale of real property.

IND POL : BTA PT3



CEPU



NSM  
RHP  
S/S

Treasury Chambers, Parliament Street, SW1P 3AG

The Rt Hon Peter Lilley MP  
Secretary of State for Trade & Industry  
Ashdown House  
123 Victoria Street  
LONDON SW1

4<sup>th</sup> March 1992

*De Peter*

BTG PRIVATISATION

4? Attached

Thank you for your letter of 3 March.

We clearly need to have good arguments if we are to accept the lower of the two remaining bids. But I note that the price differential of the gross proceeds is not great, and that the offer which you prefer is still at the upper end of the most recent valuation of the business. So having reviewed all the considerations in your letter, I am content to go along with your preference to offer exclusive negotiating rights to the CIN Venture/management consortium.

This closing stage of negotiations may present its own difficulties, and the consortium may make demands which would reduce the proceeds to a price which could not be defended as good value for money. So we should give some thought to possible fallback positions. It may be worth ensuring that when we stand down the RCT bid, this is not done in terms which make it impossible to return to it if exclusive negotiations with the CIN Venture/management consortium go badly.

I am copying this letter to Kenneth Clarke.

FRANCIS MAUDE

070



ce 11

The Rt. Hon. Peter Lilley  
Secretary of State for Trade and Industry

**POLICY IN CONFIDENCE  
COMMERCIAL IN CONFIDENCE**

The Hon Francis Maude MP  
Financial Secretary  
HM Treasury  
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071-215 5000

*Revised for  
7.4.3.*

4 March 1992

*Dear Minister*

**BTG PRIVATISATION**

We are now in the final stages of the sale process, having succeeded in achieving genuine competition throughout. Four consortia put in preliminary bids on January 6th. One dropped out before final bids were received because they could not put together a consortium. Of the three who submitted final bids, Technology Marketing Corporation admitted that their consortium did not have the necessary financial backing to continue, and they have been eliminated. The competition was therefore between two consortia, one led by CIN Venture Managers, with the backing of the management (advised by Lazards), and the other led by Research Corporation Technologies (roughly, the American equivalent of British Technology Group) whose adviser is Barclays de Zoete Wedd.

As a result of a number of meetings to clarify the positions of the two consortia, I propose to offer exclusivity in negotiations to the management consortium because they offer the best prospect of continuity of the business in the long term as a consortium, as we have promised Parliament.

As far as price is concerned, the management consortium are offering approximately £14.8 million, whilst RCT have offered £20.0 million. From the management consortium's offer should be netted off £0.65 million if we are unsuccessful in resisting the consortium's request for assistance for the setting up of their consortium; the RCT consortium figure may be adjusted by small amounts for net working capital and investment commitments. Of more immediate relevance, however, are the

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"headline" figures for proceeds from the sale<sup>1</sup>, ie after adjustments are made for, inter alia, leaving the promised amount of cash in the business, and when account is taken of the cash and dividends extracted before sale, which are £27.65 million from the management consortium and £30.4 million from the RCT consortium. These are the figures that would be announced as the immediate proceeds from the sale.

Two other price elements also need to be taken into account. First, the proceeds from outstanding litigation, where the RCT consortium has promised 100% of the net proceeds, which should amount to at least £5 million; the management consortium on the other hand are offering only to include such proceeds in their general clawback arrangement which, if triggered, would yield 60% of the net proceeds, say £3 million.

The second additional price element is general clawback where the RCT consortium is offering annual payments, at a rate of 50% on revenue in excess of "plan", over 9 years, on existing and new technology portfolio items. Management are offering annual payments at a 60% clawback rate, but only on existing portfolio items over 5 years, and with offsetting arrangements when performance falls below "plan".

On balance, therefore, the RCT consortium offers a higher price. You will appreciate that quantitative comparison of the general clawback element, although apparently simple (£3.7 million RCT, £2.0 million for management - for 10% above "plan"), can only be illustrative given the minimal possibility of outturn being a fixed percentage above "plan". Indeed, as the purpose of general clawback is to catch unpredicted catch\_"bonanzas" which come in well above "plan", the higher rate of clawback from the management may outweigh the four further years offered by RCT because of the time delay for the latter.

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<sup>1</sup> Additional proceeds would arise from:

- net debtors received as at the date of completion (31 March), paid say two months thereafter
- IPR clawback receivable for some years after sale
- possible clawback of amounts received for litigation under way at the time of sale.



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However, our objective for the privatisation is to maximise the proceeds consistent with achieving a good prospect for the continuation of BTG's technology transfer activities. To reassure Parliament on the latter point we introduced conditions on control and ownership (no individual consortium member controls more than 15% of the voting rights), to underpin the long term continuity of BTG's technology transfer activities. We explained that the 15% benchmark might be applied flexibly to secure sale to the right consortium - ie one that would offer the best long term prospects for the continuity of BTG's business.

The structure of the RCT consortium gives me major cause for concern. It is complex with investors other than RCT providing funds in proportion to which they receive in equal measure both ordinary shares (and voting rights) and senior preference shares. In the process, these investors put up 28.8% of the total finance. RCT receives no senior preference shares, but in return for 46% of the equity, it receives 20% of the voting equity (still above the 15% indicated to Parliament) and junior preference shares. The remaining 45% of the total finance comes as debt. This reveals the dominant role envisaged for RCT in the consortium. My real concern, however, is for the position after five years when, in the event of a vote to abolish the 15% limit on the holding of shares - which must be the most likely scenario - other investors must choose to redeem their senior preference shares or convert them into ordinary shares, whilst RCT converts its junior preference shares into ordinary shares. Under either alternative, RCT would be left as the majority shareholder which is contrary to the spirit of the assurances given to Parliament to avoid a trade sale to a single buyer. (I regard the alternative that after 5 years the institutional investors will not choose to take their exit in the above fashion as unlikely, given their general approach of seeking high returns and avoiding long-term exposure.)

Therefore, despite the price advantage offered by the RCT consortium, I favour the management consortium because its structure is less suggestive of dominance by a single company. There are also supporting arguments, the most important of which is that the management consortium, under the influence of the existing management team is relying on the existing business plan. This in my view provides an enhanced prospect of a continuation of the business, with respect for the independence, integrity and impartiality of the business that BTG have consistently argued to be crucial.





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A further point is the United Kingdom orientation of the two bids. BTG has been giving increasing emphasis to providing a service to companies; just over 50% of inventions now come from sources other than universities. By contrast RCT focus entirely on universities, and their consortium would give BTG's other services a lower priority. As you will know, I regard the promotion of innovation as a high priority for my department. I would find it difficult to reconcile being instrumental in reducing the assistance that BTG provides in helping companies to exploit their inventions.

I propose therefore to offer the management consortium exclusivity. An unusual feature of what is proposed is that the management consortium is not yet firm. All the potential members are primed ready to approve membership once exclusivity has been granted. They are all acceptable to us. Whilst it is unusual to grant exclusivity in these circumstances, I see no overriding reason why we should not proceed in this way.

I hope to be in a position to do this early tomorrow. My aim is to agree the sale by March 9, although we must not put ourselves in a position of losing value for money as a result of having to meet a deadline. In practice, I expect the impact of the deadline to be precisely the opposite - that the consortium will wish to tie up the deal before the uncertainty of a possible election intervenes. I propose to announce the granting of exclusivity in a parliamentary answer tomorrow, in terms of the attached draft.

I look forward to receiving your support for this way forward.

I am copying this letter to the Prime Minister, Kenneth Clarke, John Gummer, Professor Stewart (Chief Scientific Adviser) and Sir Robin Butler.

Yours sincerely  


(Approved by the Secretary of State  
and signed in his absence.)

SH1833

Robert Hughes (Harrow West)

To ask the Secretary of State for Trade and Industry if he will make a statement about the sale of the British Technology Group

Mr Peter Lilley

Following consideration of the final bids, the Government has decided to conduct exclusive negotiations with a consortium led by management and employees and CIN Venture Managers. The terms of their bid meet the objectives for the sale of obtaining value for money whilst providing adequate safeguards for the long-term continuity of the business. Parliament will be informed of the outcome of the negotiations in the usual way.



dti

the department for Enterprise

cc P4  
(letter only)

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Dr. R. F. Coleman CB  
Chief Engineer and Scientist

STRICTLY PRIVATE AND CONFIDENTIAL

Professor W D P Stewart  
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Our ref

Your ref

Date 9 October 1991

Don Bill

BRITISH TECHNOLOGY GROUP PRIVATISATION

You will be aware that the Bill paving the way for the privatisation of the British Technology Group is now in its final stages, and is expected to be passed when Third Reading is taken in the House of Lords on October 15.

Plans for the sale of BTG are fairly well advanced. An Information Memorandum will be issued by the Department's financial advisers, Price Waterhouse on behalf of the Secretary of State, before the end of this month. I attach a draft copy for your information and consideration. the final version is not expected to differ substantially. The Information Memorandum will be sent to specified potential investors, who will use it as a basis for deciding whether to carry out further investigations into BTG's business, and for determining any preliminary proposals to acquire shares in the privatised Company.

This is a very important document which needs to be as accurate as possible both about the BTG's business, and about Government's policies so far as they directly affect the business. I am therefore writing to you and other colleagues on EA(ST)(O) to get confirmation that there is nothing in the Information Memorandum which cuts across Government policy, and that there is no information missing which is so material that it needs to be included in the Memorandum.



the department for Enterprise

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I should be grateful for responses by Monday 14 October.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Ron Coleman', is written above the printed name. The signature is fluid and cursive.

RON COLEMAN

**SECURITY COVER**

**4TH DRAFT - 6 OCTOBER 1991**

**[Note: One major section is still to be drafted on Capital Structure].**

**BRITISH TECHNOLOGY GROUP**

**Information Memorandum issued by Price Waterhouse  
on behalf of The Secretary of State for  
Trade and Industry [for The United  
Kingdom]**

To:

Copy No:

INFORMATION MEMORANDUM ISSUED ON BEHALF OF THE SECRETARY OF STATE FOR TRADE  
AND INDUSTRY [FOR THE UNITED KINGDOM]

BY

PRICE WATERHOUSE

BRITISH TECHNOLOGY GROUP

xx October 1991

Price Waterhouse is authorised by the Institute of Chartered Accountants in England and Wales to carry on investment business.



Copy No.

This Memorandum is issued to you by Price Waterhouse of No 1 London Bridge, London SE1 9QL (a partnership authorised by the Institute of Chartered Accountants in England and Wales to carry on investment business) on behalf of the Secretary of State for Trade and Industry in connection with the proposed privatisation of British Technology Group ("BTG" or "the Company") and in accordance with the detailed conditions set out in the Conduct of Sale Undertaking that you have signed. The principal provisions of the Conduct of Sale Undertaking in relation to this Memorandum are reflected in the following paragraphs.

This Memorandum is for the exclusive use of the persons to whom it is addressed and the information and opinions contained in it are strictly private and confidential and accordingly neither this Memorandum nor any of its contents and no other information or opinions subsequently supplied or given in connection with the proposed privatisation may be distributed, reproduced, copied or disclosed to any person other than your professional advisers.

The purpose of this Memorandum is to assist the recipient in deciding whether it wishes to proceed with a further investigation of BTG and in determining any preliminary proposal to acquire shares in the Successor Company. Unless stated otherwise, the financial information contained in this Memorandum is as at the Company's latest year end, 31 March 1991. Neither this Memorandum nor any of the information contained in it constitutes an offer or invitation for the sale or purchase of any shares in the Successor Company or any interest therein, nor shall it form the basis of any contract for the sale of shares in the Successor Company.

No representation or warranty, express or implied, is or will be given and no responsibility or liability is or will be accepted by Price Waterhouse, the Company, the Secretary of State for Trade and Industry or their respective advisers or any of their respective officers, directors or employees or any other person as to the accuracy or completeness of the contents of this Memorandum or of any other written or oral information made available at any time in connection with the proposed privatisation of the Company or as to any information contained in this Memorandum. No information set out in this Memorandum or any such other written or oral information will form the basis of any contract and any purchaser of shares in the Successor Company must rely exclusively on the terms of the contract for sale of such shares. Any such purchaser will be required to acknowledge in such contract that it has not relied on or been induced to enter into such contract by any representation or warranty, ~~express or implied~~, save as expressly set out in such contract.

This Memorandum has been delivered to interested parties for information only and upon the express understanding that such parties will use it only for the purpose set out above. Neither the Secretary of State, Price Waterhouse nor the Company undertake any obligation to provide the recipient with access to any additional information or to update this Memorandum or any additional information or to correct any inaccuracies therein which may become apparent, and they reserve the right, without advance notice, to change the procedure for the sale of shares in the Successor Company or terminate negotiations at any time prior to the signing of any binding contract without giving any reason therefor. The issue of this Memorandum shall not be construed as having created any form of commitment on the part of the Secretary of State to proceed with any transaction.

[Neither the receipt of this Memorandum by any person nor any information contained in it or supplied with it or subsequently communicated to any person in connection with the proposed sale of the issued share capital of the Company constitutes, or is to be taken as constituting, the giving of investment advice by Price Waterhouse to any such person. Each such person should make its own independent assessment of the merits or otherwise of acquiring the issued share capital of the Company and should take its own professional advice].

[No shares or other securities of the Company have been registered or otherwise qualified for sale or resale under Federal or State laws in the United States of America or Federal or Provincial laws in Canada. Each recipient of this Memorandum doing business in or organised under laws in the United States of America or in areas subject to its jurisdiction or who is resident in Canada represents that it is a corporation or an institutional investor expressing an interest for its own account and agrees not to offer any securities of the Company or any interests therein except in compliance with the above laws. This Memorandum has not received a visa of the Commission des Operations de Bourse in France and, accordingly, no securities of the Company may be offered to members of the public in France.]

You will on request return or procure the return of the Memorandum and all further information and material sent or made available to you in connection with the proposed privatisation of the Company, without retaining any copies.

## DEFINITIONS

AFRC	Agricultural & Food Research Council
APEX	Association of Professional Executive Clerical and Computer Staff
BTG or the Company	<u>National Research Development Corporation and National Enterprise Board which, since 20 July 1991 have been operating together under the name of British Technology Group (BTG)</u>
BTG USA	The business of British Technology Group USA Inc and of the US branch of BTG ICL Ltd
CVCP	<u>Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom</u>
DTI	Department of Trade and Industry
E&IT division	Electronics and Information Technology division
I-CL division	The international business of British Technology Group Inter-Corporate Licensing Limited ("BTG I-CL Ltd") carried on from the UK
IPMS	Institution of Professionals, Managers and Specialists
IPR	Intellectual property rights including patents, know-how, copyrights, <u>registered and unregistered designs and trade marks</u>
MRC	Medical Research Council
MRI	Magnetic resonance imaging, a technology licensed by BTG
NEB	National Enterprise Board
NRDC	National Research Development Corporation
R&D	Research and Development
Secretary of State	The Secretary of State for Trade and Industry [for the United Kingdom]
SERC	<u>Science and Engineering Research Council</u>
Special Share	A share which confers special rights (in this case via a £1 share in the Successor Company to be issued to the Secretary of State) on the shareholder which are defined in the Articles of Association.

Successor  
Company

A Public Limited Company to be nominated by the Secretary of State and wholly owned by the Crown, into which all the property, rights and liabilities of BTG will be vested.

Special Shareholder The holder of the Special Share

Torotrak

A form of continuously variable transmission currently under development by [\*], a wholly owned subsidiary of BTG.

"Top 50"

Those individual technologies, other than MRI and Pyrethrin, already licensed or close to being licensed, which BTG considers from time to time as capable of generating a potential revenue of more than £1 million over their future lives or more than £0.5 million in any single future year.

The make up and number of technologies included in the "Top 50" may accordingly vary from time to time. References in this Memorandum to the "Top 50" are to the technologies currently included, following a review of BTG's portfolio as at 31 March 1991.

## GLOSSARY

### [Commercialisation]

Development project	Funding provided by BTG to develop an invention.
Development subsidiary	A subsidiary of NRDC formed to develop and commercialise a particular technology.
Industrial Joint Venture	The provision of [non-recourse] finance to an industrial company seeking to develop an innovative product, technique or process. The company retains the resulting IPR but BTG earns a return from a levy generated by the sale of the new product, technique or process.
Invention	A single product, technique or process capable of being protected by patents, copyright or other methods.
Licence	An agreement allowing a third party use of BTG's IPR in the manufacture or sale of its products for a consideration in the form of option payments and/or down payments and/or annual royalties for an agreed period, which in the case of a patent licence is normally for all or part of the residual life of the IPR. A licence will often encompass a number ("family") of Inventions but may be restricted to certain markets, geographical territories or uses. A technology may be licensed exclusively or to a number of licensees.
Net Licence Revenue	Licence income arising out of an Invention after deducting all BTG's costs. Such costs include Revenue sharing, (see below) the expense of obtaining and renewing patents, costs incurred in litigation and any investment expenditure on a development project.
Technology	A collection of associated IPR which may comprise some or all of patents, know-how, copyrights, registered and unregistered designs and trademarks. A Technology often encompasses a number of separate patented Inventions.
Revenue Sharing	[ ]
Patent	A national patent or issued by a patent granting authority, or, in the case of a granted regional patent (e.g. a European patent) a designated patent right equivalent to a national patent.
Patent Application	Applications for patents pending in national Patent Offices and individual national designations of pending regional and international patent applications.

Family

A term applied to a package of associated Inventions or multiple licenses granted in respect of a single package of Inventions.

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## SECTION 1

### EXECUTIVE SUMMARY

#### Introduction

The British Technology Group (BTG) was formed in 1981 when the Government merged the operations of the National Research Development Corporation (NRDC) with those of the National Enterprise Board (NEB).

NRDC is a technology transfer organisation established under the Development of Inventions Act 1948. NEB was established under the Industry Act 1975 as an investment holding organisation.

As both Acts are still in force, notwithstanding the operational merger and common management of both, NRDC and NEB continue to be treated as separate legal entities. However, NEB activities having disposed of its investment portfolio, are now minimal. Therefore, unless otherwise indicated, all references in this document to BTG relate to the ongoing technology transfer activities of NRDC.

The British Technology Group Bill which provides for the vesting of the assets and liabilities of NRDC and NEB in the Successor Company is expected to receive Royal Assent by 30 October 1991. The Successor Company is to be formed as a public limited company registered under the Companies Act 1985, and will be wholly owned by the Crown until the date of sale.

HM Government has appointed Price Waterhouse to act as its financial adviser in connection with the proposed privatisation. This Memorandum, which is issued by Price Waterhouse, contains information about BTG and is designed to assist potential purchasers in formulating their preliminary proposals for the purchase of shares in the Successor Company.

#### Business of BTG

BTG is one of the world's foremost specialist technology transfer organisations. Its objective is the profitable commercialisation of technology by:

- \* Identifying, developing and protecting what it considers are commercially viable new technologies arising from research carried out by private individuals, universities and research establishments;
- \* licensing the resulting IPR to companies throughout the world and sharing the resulting income with the inventive sources;
- \* assessing the IPR position and commercial potential of companies' proprietary technology and licensing this technology to other companies worldwide;
- \* investing in companies developing new products and processes either directly by way of equity and loan investment or by the provision of industrial project funding;



- \* investing in companies developing new products and processes either directly or by way of equity and loan investment or by the provision of industrial project funding.

### **Invention sources and markets**

BTG's current activities are regulated by the Development of Inventions Act 1967 which has historically been geared towards the commercialisation of Inventions from publicly funded research. In 1985, BTG's right of refusal on the commercialisation of Intellectual Property Rights ("IPR") arising from work funded by UK Research Councils was removed, thereby establishing a free market in the commercialisation of publicly funded research. Notwithstanding the removal of this right, a substantial proportion of Inventions submitted to BTG still comes from these sources.

BTG currently earns more than 75% of its revenue overseas from the international licensing of a portfolio of Inventions, 95% of which are obtained from sources in the United Kingdom. BTG is currently seeking to build up its reputation of successfully commercialising UK Inventions by:

- \* increasing the proportion of Inventions sourced from overseas, particularly from Europe and the USA;
- \* sourcing corporate technology which is usually closer to the market place as compared to academic Inventions;
- \* increasing the volume of licensing business both in countries it currently operates in such as the USA, where it has recently established a subsidiary, Japan and Europe and by taking the first steps in exploring new market areas such as India and Eastern Europe.

### **Investment**

BTG can be offered Inventions in various stages of development. Some Inventions may only require patent protection before commercialisation, others may require significant funding to develop them to a stage where they can be patented. In the latter case BTG enters into development projects, where it will commit funding to develop the Technology to the point where the invention can be patented for a commercial application. All IPR arising out of the Technology remains BTG's property. In the year ended 31 March 1991 73% of BTG's investment expenditure was incurred on development projects and obtaining patent protection for Inventions.

BTG also funds the development of new technology through equity and loan investments in companies. 26% of investment in the year ended 31 March 1991 took this form.

Another form of funding is industrial joint ventures, where BTG will assist industrial companies in the commercial exploitation of a new product or process in return for a levy on the sale of such products and processes or occasionally on total company turnover. In the year ended 31 March 1991 1% of investment took this form.

## Principal technologies

BTG's most significant revenue earning technology to date has been the cephalosporin group of antibiotics which earned revenues of £152 million for BTG up to mid 1987 when the patents eventually expired.

BTG's current revenues are dominated by two major technologies, MRI and Synthetic Pyrethrins.

MRI is an alternative to x-rays for complex scanning procedures and is now used routinely to generate detailed pictures of tissue structure within the human body. Licence income from MRI is expected to be high throughout the 1990's.

Pyrethrin analogue insecticides are highly effective against insect pests and do not have known adverse effects on the environment or mammals. Synthetic Pyrethrins have earned cumulative gross revenues of £94 million for BTG. The remaining major pyrethrin patents expire in 1993 and 1994 and the revenue is projected to decline between now and then. There is no revenue sharing on pyrethrin although BTG makes discretionary awards to inventors.

BTG has recognised, for some time, that it would need to broaden its revenue base to avoid undue dependence on one or two major Inventions to provide it with the majority of its revenue. This is evidenced by the fact that although 64% of BTG's revenues in the year end 31 March 1991 came from MRI and Pyrethrin, this still represents a significant broadening of the revenue base. In 1985, more than 70% of BTG's total revenues of # [] million came from a single Invention.

BTG has also built up a portfolio of Technologies which it believes will have the potential to be significant revenue earners in future years. These Technologies, many of which have already begun to generate income, are known as the "Top 50" and are described in more detail in Section 4.

## Trading record

BTG's recent trading record is set out below:

	Years ended 31 March		
	1989	1990	1991
	£m	£m	£m
Revenues	23.9	29.5	30.7
[Revenue sharing]			
Operating expenses	10.6	13.9	17.0
Administrative expenses	<u>7.8</u>	<u>8.8</u>	<u>10.2</u>
Operating profit	5.5	6.8	3.5
Interest receivable	2.4	3.2	3.0
Employee profit share	(0.4)	(0.5)	-
	—	—	—
Profit before tax	<u>7.5</u>	<u>9.5</u>	<u>6.5</u>

This table illustrates that BTG's revenue has grown by 28% over the three year period, although operating profit in 1991 fell from 1990 levels. This fall was caused principally by the additional costs of establishing the new BTG USA operation, amounting to some £1.2 million, together with a further increase in the proportion of revenue shared with inventors.

In addition 1990 profits were boosted as a result of a dividend from a development subsidiary, (Hovercraft Development Limited) following the settlement it received from the Pentagon as compensation for infringing its hovercraft patents.

BTG's financial results have historically depended on the successful licensing of a small number of major Technologies to some of the worlds leading multinationals. However these mask the scale of BTG's total operations in technology transfer. The following statistics do, however give some indication of the scale of BTG's activities. In the year ended 31 March 1991 BTG:

- \* [registered] 684 new Inventions and accepted 269 for commercialisation;
- \* received 330 requests for project funding and authorised funding on 99 new development projects together with further funding on 67 existing projects;
- \* signed 52 licences.

As at 31 March 1991 BTG owned:

- \* 1,672 Inventions of which 205 were under development, 637 licensed and 830 unlicense;
- \* 485 licences of which 296 were earning; and
- \* 8,833 patents and patent applications.

The maintenance of a large portfolio of Technologies is an important part of BTG's strategy as it provides a pool from which the next generation of revenue earners can emerge.

### Strengths

Although there are other organisations, including financial institutions and research foundations, which compete in part with BTG, particular distinguishing features which management consider are essential to BTG's success are:

- \* a diverse portfolio [including the "Top 50"] covering a wide range of Technologies in Science, Engineering, Electronics and Information Technology and Pharmaceuticals;
- \* a network of personal contacts accessing inventive sources and potential licensees;
- \* access to major companies around the world but in particular in the USA, Europe and Japan;
- \* a reputation for independence, impartiality and integrity which they believe attract:
  - inventors who perceive that their Invention will be commercialised in a manner best calculated to maximise their return because BTG, being independent of vested industrial interests, has no particular motivation to promote or suppress a particular technology;
  - potential licensees who are prepared to divulge highly sensitive commercial information on their future plans in the full confidence that such information will not be passed on to their competitors.
- \* a team of in-house experts to identify, protect and commercialise technologies and to patent them in a way which will make commercial exploitation of the Invention more successful.
- \* a reputation for having run a self-financing business in a high risk, long term environment for over twenty years.

BTG's Council and its Executive Management believe that the private sector offers it the best chance for further growth and success. They believe however that the maintenance of BTG's independence, integrity and impartiality, and secondly, the preservation of the critical mass of corporate know how and experience are essential for the continuation of the business.

## Prospects

The potential market for internationally traded IPR is substantial. Although much of this market is dominated by trade between large corporates, BTG occupies a leading position as a specialist technology transfer organisation. BTG management believe that the Company's size in relation to the market as a whole offers significant potential for expansion.

BTG's revenues have historically been dominated by a small number of highly successful products. The importance of major projects should not be underestimated, particularly the relationship between investment and return. This is demonstrated by the following analysis of investment and revenues on BTG's three most successful technologies.

	Investment	£'000 Revenue
Cephalosporin	862	152,440
Pyrethrin	4,235	93,911
MPI*	797	27,930

\* Before revenue sharing

BTG's strategy has therefore been to build up a large and diverse portfolio of Technologies from which future successes can emerge as revenues from existing Technologies decline. BTG is also seeking to diversify and expand its business by:

- \* increasing the proportion of Inventions sourced from outside the UK;
- \* taking advantage of the opportunities offered by the large US market;
- \* managing IPR portfolios for large corporates. This activity can generate returns within a shorter timeframe than most of BTG's traditional activities.

BTG's long term strategic plans are contained in a Corporate Plan covering BTG's business and financial status for the forthcoming decade. The most recent Corporate Plan was prepared in [March 1991] and approved by BTG's Council in [April] 1991.

The next five years projections between 1991/92 and 1995/96 have been extracted from the Corporate Plan and key lines are summarised below.

	1992	1993	1994	1995	£m 1996
Gross revenue	28.1	28.9	32.0	34.3	40.2
Operating profit	2.5	3.2	3.8	4.7	7.6
Cash generated from operations	9.5	11.1	13.1	14.0	18.4

Whilst the projections have been produced after due and careful consideration the assumptions on which they have been based are largely subjective and cover a wide range of matters, many of which are of a volatile or uncertain nature; the projections must be treated accordingly.

### Safeguards

HM Government intends to include safeguards into the articles of association of the Successor Company protected through the Special Share. These include:

- \* a 15% limit on voting control; and
- \* a restriction on substantial disposals of assets equal to or greater than 25% of net asset value or 25% of average income without the Special Shareholder's consent.

The primary purpose of the 15% limit on voting control is to preserve BTG's independence. However, HM Government has recognised that, in certain circumstances, this objective might be achieved if the Successor Company were sold to a consortium including certain individual shareholdings of 15% or more. Lord Reay, the Government Minister in the House of Lords, explained to the House that:

"The 15% limit on individual shareholdings follows the precedent of other privatisations. But in the circumstances of this privatisation it is not intended to be absolutely rigid. With only a small number of shareholders it may be possible for the make up of individual shareholdings to include one or more somewhat above 15%, yet without control of the Company passing to any one shareholder. Thus while 15% will be our benchmark, we will be prepared to consider possible ownership structures involving higher shareholdings. Each will be considered on its merits, taking into account the preservation of BTG's independence, the determination to continue BTG's activities and of course the price offered."

In addition, the articles will also provide for one director of the Successor Company to be appointed by the CVCP in consultation with the Committee of Directors of Polytechnics and for another director who appears to the Company to be a person with experience of and to have shown capacity in the development, promotion or exploitation of public research. The Special Share will be redeemed five years after privatisation, but may be redeemed earlier if so required by the Secretary of State after consultation with the Company.

### Sale process

HM Government will entertain proposals only from pre-constituted consortia or other potential investors seeking to take a minority stake as part of a consortium to be formed. Introductions can be effected by Price Waterhouse after receipt of preliminary proposals.

Pages [ ] to [ ] of this Memorandum outline the actions that prospective purchasers should now take if they wish, to be considered for the next stage of the privatisation process. It is accepted that prospective purchasers will not wish, and are not being invited, to make definitive offers to acquire shares in BTG until they have had the opportunity to make further enquiries and have received responses on matters of specific relevance to their particular circumstances. Accordingly, prospective purchasers are invited to submit preliminary proposals only at this stage. Prospective purchasers are invited to submit their preliminary proposals to Price Waterhouse by [ ] on [ ] at the latest.

On the basis of these preliminary proposals, short-listed prospective purchasers will then have the opportunity to refine their proposals in consultation with HM Government and Price Waterhouse. A Long Form Accountants Report has been prepared by Messrs Coopers and Lybrand Deloitte which will be available to prospective purchasers at this stage.

It is expected that these parties will submit bids within [ ] weeks from the date of notification that they have been short-listed. Those chosen to go forward to the next stage of the process will be notified by [ ] or as soon as possible thereafter.

## SECTION 2

### HISTORY OF BTG

#### **Origins of BTG : merger of National Research Development Corporation and National Enterprise Board.**

In July 1981 the activities of NRDC and NEB were combined and have operated since then under the name of British Technology Group (BTG), although they exist as separate statutory entities. However, NEB activity is minimal and BTG's present business is in effect that of NRDC. The assets and liabilities of NRDC and NEB will vest in the Successor Company.

#### **National Research Development Council**

##### **1948 and 1967 Development of Inventions Acts**

NRDC was established in 1949 under the Development of Inventions Act 1948. This Act was subsequently repealed in 1967 and it is the 1967 Act that now governs NRDC's activities.

NRDC's statutory functions, as defined by the Development of Inventions Act 1967, were geared towards the exploitation of Inventions arising from publicly funded research or from other sources if this was considered in the public interest. The functions of the NRDC under the 1967 Act include to acquire, hold or dispose of "rights in connection with Inventions resulting from public research and, where the public interest so requires in connection with Inventions resulting from other sources". NRDC was required under the 1967 Act to exercise its functions so as to generate sufficient returns to cover its outgoings taking one year with another.

##### **Loss of right of first refusal**

Under a Treasury directive issued in 1950, government departments, subject to certain exceptions, were required to give a right of first refusal to NRDC in respect of potentially exploitable Inventions arising from research council funding.

An important development in BTG's recent history came in 1983 when the Prime Minister announced that NRDC's right of first refusal to Inventions arising from publicly funded research would be withdrawn in 1985. At the same time it was decided that BTG would operate on a commercial basis. This coincided with the appointment of the present Chairman, Sir Colin Barker.

## NEB

### Original establishment and purpose

NEB was established under the Industry Act 1975 by the then Labour Government. Its functions included:

- \* the provision of finance for industrial investment, particularly for the expansion and modernisation of productive facilities in the manufacturing industry. [Its investments included Celltech, Inmos (microchips) and Nexos (office technology)]; and
- \* to act as a holding company in respect of companies in which the Government had shareholdings that were transferred to it on its establishment. The principal holdings at that time were in British Leyland Limited, Rolls Royce Limited, Ferranti Limited and Herbert Limited.

### 1983 Announcement by Secretary of State

In September 1983 the Secretary of State announced that the future role of NEB would consist of disposing of its existing investments to the private sector as soon as commercially practicable. NEB activity is now minimal having only one holding of any significance, Oakwood Loan Finance Limited, which has a mortgage loan, cash and deposits of approximately £2 million.

### The British Technology Group Bill

The British Technology Group Bill completed its passage through Parliament on 15 October 1991 and is expected to receive Royal Assent by 30 October 1991. It provides for the vesting of the assets and liabilities of NEB and NRDC in the Successor Company and for the dissolution of NEB and NRDC and the repeal of the relevant provisions of the Acts governing them. The Successor Company is to be formed and registered under the Companies Act 1985, limited by shares and wholly owned by the Crown. The Bill, when enacted, will empower the Secretary of State for Trade and Industry, with the consent of HM Treasury, to direct the Successor Company to issue shares to himself, HM Treasury and others.



## SECTION 3

### THE BUSINESS

#### Nature of the Business

BTG is one of the world's foremost specialist technology transfer organisations. Its objective is the profitable commercialisation of Technology by:

- \* identifying, developing and patenting Technology from individuals, universities and other research organisations which BTG considers will be commercially viable;
- \* licensing the resulting IPR to companies throughout the world and sharing the resulting income with the inventive sources;
- \* assessing the patent position and commercial potential of companies' proprietary Technology and licensing this Technology to other companies worldwide;
- \* investing in companies developing new products and processes.

[An important feature of BTG's business is also the ability, demonstrated successfully on a number of occasions in the recent past, to challenge patent infringers and to take them to court.]

Although there are other organisations, including financial institutions and research foundations, which compete in part with BTG, particular distinguishing features which management consider are essential to BTG's success are:

- \* a diverse portfolio [including the "Top 50"] covering a wide range of Technologies in Science, Engineering, Electronics and Information Technology and Pharmaceuticals;
- \* a network of personal contacts accessing inventive sources and potential licensees;
- \* access to major companies around the world but in particular in the USA, Europe and Japan.
- \* a reputation for independence, impartiality and integrity which they believe attract
  - inventors who perceive that their Invention will be commercialised in a manner best calculated to maximise their return because BTG being independent of vested industrial interests has no particular motivation to promote or suppress a particular technology;
  - potential licensees who are prepared to divulge highly sensitive commercial information on their future plans in the full confidence that such information will not be passed on to their competitors.
- \* a team of in-house experts to identify, protect and commercialise technologies and to patent them in a way which will make commercial exploitation of the Invention more successful.

\* a reputation for having run a self-financing business in a high risk, long term environment for over twenty years.

## Market for Technology Transfer

### Inventions sources

Historically, BTG has obtained the vast majority of its Inventions and ideas from the UK, particularly from publicly funded sources such as universities and research establishments. Until 1985, under the terms of a Treasury directive, BTG was offered the right of first refusal on all Inventions arising out of UK publicly funded research. However, it also received a significant number of Inventions which were not subject to this right.

Although the right of first refusal was withdrawn as from 1985, a significant proportion of BTG's Invention submissions in the UK still come from this source.

[table -1]

Notwithstanding the fact that BTG's Inventions are sourced primarily in the UK, in the year ended 31 March 1991 79% of its total income was derived from abroad, principally from international licensing of Technologies. BTG believes that there is considerable scope for expanding the business further by looking also to sources overseas for its Inventions.

BTG's business in the long term depends on an adequate flow of new Inventions. This in turn depends on the general level of research activity in the market and the extent to which Inventions from these sources are offered to BTG. There was a small drop in Inventions offered to BTG in 1985/86 when first refusal rights were withdrawn but since then there has been a steady growth in numbers, to the extent that the number of new Inventions submitted per annum is in excess of the number received per annum prior to the loss of first refusal rights.

### Patents and licences

As at 31 March 1991 BTG owned about 9,000 patents and patent applications for 1,627 Inventions. Each Invention may have many underlying patents in order to protect the Invention on an international basis. The Invention portfolio can be analysed as follows:

Licensed	637
Unlicensed	830
Under development	<u>205</u>
	<u>1,672</u>

The graph below analyses granted patents, held at [June 1991,] by expiry date. The number of patents expiring increases from 65 in 1992 to 410 in 2005 indicating the increasing number of patents granted to BTG in recent years. There are few granted patents expiring after this date because the time taken to grant a patent and the typical life of a patent of 20 years from application together mean that few such patents would yet exist.

[TABLE 2]

### International expansion

BTG is beginning to access overseas universities and other academic sources particularly in continental Europe, and through BTG USA in, the US BTG has subject to contract, a technology transfer agreement with Amsterdam University and is working with a number of other European sources such as the European Institute of Technology and Eurotech. It has recently entered into a joint venture with a Finnish technology transfer company for the development of Technology from the Soviet Union and has signed a technology transfer agreement with a biotechnology institute near Moscow.

#### USA

BTG USA Inc, a subsidiary of NRDC, opened during the year ended 31 March 1991 in [ ], with the following objectives:

- (i) to license BTG's Technologies more effectively to the US corporate sector
- (ii) to assist smaller US companies with the commercialisation of their Technology
- (iii) to commercialise the research efforts of selected US Universities

BTG USA is able to concentrate on a wide range of technology sectors because its executives are not involved in early stage development. However, BTG USA is concentrating on certain broad fields which complement BTG's UK expertise.

#### India

In May 1990, NRDC signed a memorandum of understanding to set up a joint venture with Credit Capital Finance Corporation, an Indian Merchant Bank partly owned by Lazard Brothers & Co. Limited, under which they agreed to establish British Technology Group India Private Limited (BTG India), a company to be 50% owned by each partner.

Government [•] consent on the joint venture proposal is expected by [•].

The joint venture is intended to be a marketing vehicle. However it may ultimately develop into a trading company. The venture is BTG's first joint venture in technology transfer but, if successful, could herald similar ventures elsewhere.

In commercial terms BTG considers that it is easier to do business in India than in some other countries because it possesses a commercial and legal system broadly similar to that of the UK. BTG considers this a particularly attractive market for the I-CL Division because of the demand for proven Technology. It currently has a number of licensing proposals and other transactions under discussion.

Japan

Japan has been a very important market for BTG for nearly three decades. It currently provides some 17% of BTG's licence revenues. BTG has licensed a number of major Japanese companies in Technologies as diverse as dental cements and MRI. BTG has been represented in Japan for over 25 years by Rayden Japan Ltd. BTG's Chief Executive is a non-executive director of the company. Although Rayden also represents other UK companies, it is intended in the near future to establish a wholly owned subsidiary, BTG Japan Ltd, which will effectively operate as a marketing company managed by Rayden.

### Competitors

In the United Kingdom, BTG has maintained and strengthened its position in the academic world despite the many initiatives launched to establish closer direct industry/university links.

BTG's principal competition is from the corporate sector in the UK where there has been an increased level of industrial funding of research in academic institutions. This frequently involves strategic research at a fairly early stage of the research cycle and gives the industrial partner direct access to the results of the research.

At the same time, universities and polytechnics have set up centralised liaison functions to co-ordinate links with industry and to facilitate technology transfer. The universities however have limited resources for this purpose in terms of suitably qualified personnel, time and funds.

In addition to this many universities have created limited companies to handle intellectual property and to exploit inventions. These include UNILINK at Heriot-Watt, United Technologies at Edinburgh and IMPEL at Imperial College. However, although many universities have now established their own research exploitation companies, BTG believes that its own patenting skills together with a knowledge of the requirements of the commercial market are advantages which most universities themselves cannot match. BTG is therefore confident that it can still attract the high quality and potentially lucrative inventions from the UK market whilst expanding its inventive sources overseas.

The Department of Trade and Industry (DTI) actively encourages technology transfer and has a range of programmes designed to assist companies to make the best use of technology. Two recent initiatives are to provide financial support for the establishment or strengthening of Industrial Units at Higher Educational Institutions and subsidised Technology Audits (to identify exploitable existing technologies). A total of £6 million has been set aside for these latter activities.

As well as the above activities two private sector technology transfer companies Defence Technology Enterprises (DTE) and 3i Research Exploitation Ltd (3i Research) were set up in the UK following the abolition of the first refusal rights. BTG management understand that DTE has now ceased to take on new business.

Most major European countries have some form of national technology agency but technology transfer is not their main activity.

All the relevant organisations within the European Community, including BTG, are members of Eurotech which is 50% financed by the European Commission. This forum allows for the exchange of ideas and offers opportunities to identify licensees across the European Community by means of a database of Technologies which can be licensed and which are available to all Eurotech members. Any member who introduces a licensee to another member receives a fee. This forum does not act as a means of accessing overseas sources of Technology.

### Investment Strategy

Because successful Technologies cannot be identified at the point of acceptance of Inventions for commercialisation, BTG's success is due in part to the maintenance of a wide portfolio of Technologies from which it is hoped that significant revenue earners will ultimately emerge. This approach is necessary because the chances of success of individual Inventions are not high, and therefore BTG relies upon a relatively few major successes to fund the failures. In addition, many of BTG's Inventions have a long lead time since they are taken on at a very early stage in their development when there is no way of identifying with any certainty the likely success of an Invention.

BTG is widening its activities to the corporate sector where Technologies sought by I-CL are usually closer to the market and thus generally in less need of development. This role is being assumed in particular by BTG USA and the Inter-Corporate Licensing and Electronics and Information Technology Divisions.

### Forms of Investment

Inventions may be offered to BTG in various stages of development. Some Inventions may be ready for patenting, others may require further development.

When it is necessary to expend money in order to promote the effective commercialisation of Technologies, BTG's investment take four basic forms:

- \* Development projects

An idea or basic Invention may require further development to a stage where it can be protected by IPR. In such cases BTG invests in a development project, usually, but not always, at the institution providing the idea or Invention. All IPR arising out of the project remains BTG's property. However, the inventor and/or his institution are entitled to a share of the net revenues arising from the commercialisation of the IPR relating to the Inventions.

It is however important to understand that in the process of extracting value from individual Inventions, it is rarely possible to relate the size of an investment to the size of the potential reward. Thus in the case of Cephalosporin, BTG's most successful Technology, a cumulative investment of just under £1 million yielded revenues of over £152 million. On the other hand there have been many items in the portfolio which despite considerable investment have only provided modest returns, such as the Hovercraft.

During the lifetime of a project the relevant executive and patent agent will maintain regular contact with and visit the source to ensure that the project is progressing in accordance with agreed milestones.

\* Development subsidiaries

In some cases the only way of developing specific Technologies requiring extensive co-ordination and control, or involving complex technical and commercial arrangements, is by forming a subsidiary company to carry out the development. Two specific examples of such subsidiaries are Hovercraft Development Ltd which was established to develop Hovercraft and the Torotrak companies working on the development and licensing aspects of CVT.

\* Equity and loan investments

BTG also funds the development of new Technology through equity and loan investments in companies. Although BTG currently has only a small number of equity and loan investments, the individual amounts invested can sometimes be significant. BTG expects to earn its return from the ultimate sale of the investment.

\* Industrial joint ventures

Industrial joint ventures are in many ways similar in concept to development projects. In these cases, BTG will assist a commercial organisation in the commercial exploitation of a new product or process. Generally the IPR will remain with the commercial organisation but BTG will receive an agreed levy on sales of the final product, or on the turnover of the joint venture partner. Mainly because of poor returns on past investment, the number of new industrial joint ventures has been falling steadily in recent years.

### Appraisal Summary

Before an Invention is accepted by BTG it is assessed by both the operating division executive and a member of the patents department. The appraisal is primarily to establish:

- \* if the Invention has commercial potential;
- \* if it is protectable by patent or other means and the likely costs of such protection;
- \* the likely costs of further development.

If an Invention meets the first two criteria it will be accepted. However, any expenditure on patenting or developing must be approved.

A detailed financial evaluation is carried out if the development project or patent expenditure requires approval by the central Investment Committee because the cost is over a certain threshold.

The investment appraisal procedure is shown diagrammatically below:

TABLE 4

## Patent protection

BTG believes that it has developed significant skills and abilities in the field of patent protection. The patent department has 28 staff of whom 14 are qualified patent agents. The patent agents have a highly specialised training and their detailed understanding of the various Technologies is very important to BTG's business.

The aim of the patent department is to develop licensable patent rights in respect of an invention. This involves more than just filing and prosecution of patent applications. It usually requires a group of patents to be secured on an international basis around an invention to protect it from infringement. In order to do this, the patent agents work closely with operating executives who manage the inventions.

Much of the patent department's work involves overseas IPR. Of BTG's portfolio of about 9,000 patents, approximately 80% are overseas rights, particularly in the USA, France, Germany, Italy, The Netherlands and Japan.

[Table - 3]

## Licensing

BTG identifies potential licensees, often before an invention is fully developed but after patent applications have been filed and negotiates a licence or series of licences for a Technology, possibly encompassing a number of inventions. BTG shares the royalties earned with the inventor/source on a basis determined by the revenue sharing agreement. BTG's licence terms vary between agreements and are subject to negotiation on an individual basis. There is, however, a standard framework agreement. The income structure varies from licence to licence but may include:

- \* an option period and fee;
- \* a further fee on exercise;
- \* payments during the development process on the achievement of certain "milestones";
- \* a royalty usually based on a fixed percentage of sales throughput on production costs. These payments are normally made quarterly or half-yearly in arrear;
- \* a minimum revenue level below which BTG may terminate the licence.

Each Technology may be made up of more than one invention and may have a number of licensees although exclusivity may be granted on a territorial or worldwide basis, as appropriate.

At 31 March 1991 BTG had 485 licences of which 296 were earning. Over the past few years BTG's licence stock has declined in number but the number of revenue earning licences has remained roughly constant. This is primarily as a result of an effort to improve the quality of licence stock.

## Revenue Sharing

In consideration for receiving an assignment of all present and future rights in an Invention, BTG enters into a Revenue Sharing Agreement ("RSA"). The RSA confers rights and imposes obligations on the inventive source.

The basic right conferred on the inventor by the RSA is the right to receive a form of contingent deferred consideration, namely a share of any future revenues arising from the Invention in an agreed proportion. Usually this share is calculated as follows:

- (i) The first £5,000 of revenue;
- (ii) Up to 20% of the gross licence revenues until BTG has recovered all its relevant costs, i.e. the cost of providing project finance, patenting and litigation (if appropriate) and the initial £5,000; and
- (iii) 50% of the cumulative net licence revenue thereafter.

However agreements do vary, the principal variations being that where BTG provides project finance there is a tapering off of the revenue sharing arrangements in favour of BTG so that over a certain "net revenue" position (usually £10 million) BTG keeps an increasing proportion of the revenue.

The present revenue sharing terms are being reviewed to evaluate whether they are still appropriate to BTG's business. However, even if these terms were changed they would not apply retrospectively and, therefore, would have no impact on any of the current Technologies in the BTG portfolio.

## Monitoring

Monitoring and review are seen by BTG as vital in the management of a long term high risk business. All activity is monitored regardless of the actual investment involved, so that everything from individual Inventions to individual licences is formally reviewed at varying levels within the organisation.

Monitoring is also an ingredient in the performance appraisal process of all operating executives.

## Litigation

[Litigation against licence breachers and patent infringers is also an important part of BTG's business. BTG's demonstrated willingness and ability to litigate together with its financial resources are important factors in negotiating commercial settlements. There are currently three significant cases outstanding, which are set out in Appendix 4.



In the last five years, BTG has fought a number of legal actions to protect patents and enforce licence agreements. Significant settlements have been achieved from Johnson & Johnson (re MRI) and GC Dental (re glass ionomer cement) and from the US Pentagon from which \$6.1 million was received in March 1990 in respect of BTG's claim for the patent infringement on Hovercraft.

Details of significant recently settled cases are also set out in Appendix 4.

## SECTION 4

### PRINCIPAL TECHNOLOGIES

#### Introduction

This section sets out a brief description of BTG's principal Technologies. These are summarised in the following table which, in addition to the Pyrethrin insecticides and MRI which are not classified as part of the "Top 50", shows the first fifteen of the "Top 50" technologies ranked in order of cumulative gross licence revenue to 31 March 1991.

Technology	Division	Cumulative Revenue to 1990/91 £000	Annual Revenue 1990/91 £000
Pyrethrin analogue insecticides	Science	94,036	[ ]
Magnetic resonance imaging	Engineering	<u>28,765</u>	[ ]
<b>"Top 50"</b>			
Cholesterol assay	Science	9,340	[ ]
Glass ionomer cement	Engineering	4,046	[ ]
Enhanced luminescence assays	Science	2,039	[ ]
BTG 1501	Pharmaceuticals	713	[ ]
New polymer developments	Pharmaceuticals	633	[ ]
Torotrak	Engineering	457	[ ]
Tumour inhibitors - ICRF 187	Pharmaceuticals	265	[ ]
Pulsincap	Pharmaceuticals	200	[ ]
Matrix display	E&IT	163	[ ]
Oriented polymers	Science	143	[ ]
Grain stripper	Engineering	99	[ ]
Atmosol	Engineering	-	[ ]
Contact lens production techniques	I-CL	-	[ ]
Epiphyseal hip prosthesis	Engineering	-	[ ]
NQR spectrometer	Engineering	-	[ ]
		—	—
Total		<u>18,098</u>	[ ]
Total of "Top 50"		<u>24,976</u>	[ ]
First 15 as a percentage of "Top 50"		<u>72.4%</u>	[ ]

Historically there have been three highly successful products which have been or are significant revenue earners for BTG. These are Cephalosporin, Pyrethrin analogue insecticides and MRI.

## MAJOR SUCCESSES

### Cephalosporin

The Cephalosporin group of antibiotics is closely related to penicillins, and BTG has earned revenues in excess of £150 million over the life of the related licences. Cephalosporin revenues ceased following expiry of patents in the mid 1980's.

### Pyrethrin Analogue insecticides

Pyrethrin analogue insecticides are BTG's second largest revenue earner ever and have earned cumulative revenues to date of £94 million. Synthetic pyrethrins are highly effective in agriculture against insect pests and do not have known adverse effects on the environment or mammals. They are also used as public health and veterinary insecticides. Synthetic pyrethrins account for 18% of the global crop insecticide market and represent sales to the end user of some \$1,360 million per annum. BTG licensed formulations constitute a large proportion of these sales. Pyrethrin revenues will cease in 1994/95 with the expiry of the BTG patents. In the UK current licensees are The Wellcome Foundation, ICI, Mitchell Cotts and Shell and overseas licensees include ICI Americas Inc, FMC, Sumitomo and Roussel UCLAF.

### Magnetic Resonance Imaging

MRI, which is an alternative to x-rays for imaging procedures has generated cumulative revenues to 31 March 1991 of approximately £28 million and is expected to generate revenues at least until the end of this century. MRI is now used routinely to generate detailed pictures of tissue structure deep within the human body. BTG holds a portfolio of 20 or so separate inventions within this field relating to different aspects of MRI including real time imaging and "slice selection", a technique employed almost universally in present-day imaging systems. BTG has now licensed over 95% of the world's MRI production. Amongst the companies which BTG has licensed to use its patents in MRI products are GEC-Picker, Hitachi, Philips, Toshiba, Siemens and Shimadzu.

## "TOP 50" TECHNOLOGIES

### Cholesterol assay

This is a method used around the world for testing blood cholesterol levels. With an estimated 500 million cholesterol tests carried out each year it is one of the most widely used of all diagnostic tests. BTG has a cross-licence agreement on complementary technology with Boehringer Mannheim revenues from the portfolios being shared equally by the two parties. The patents in most territories expire in 1992 and 1993 but one major Boehringer Mannheim patent in the USA extends to 1997.

## Glass ionomer cement

This is a translucent dental cement developed at the Laboratory for the Government Chemist in the 1970's with NRDC funding. It represents a significant advance on other dental cements in its adhesive properties and ability to bond with tooth material. It is used for filling anterior teeth, as a cavity liner and for general cementation purposes in the mouth.

The patents are beginning to expire but there are a number of on-going projects to develop the next generation of dental materials which it is hoped will be licensed to existing licensees.

## Enhanced luminescence assays

This is a Technology which enables emitted light to be used as an end point in diagnostic systems. Enhanced luminescence assays are, however, just one type of diagnostic reagent in a total market of around \$1 billion per annum. The patents covering this technique were assigned to BTG through the United Kingdom's Department of Health and Social Security and are currently licensed non-exclusively to Amersham International in the UK and to Enfer in Ireland, to a leading Japanese immuno-diagnostic company. Additionally a major US diagnostic company holds an option to a licence.

## BTG 1501 (SC-48274)

This compound is being developed for the treatment of anxiety. Tests in animals suggest that it may be free of the undesirable side effects associated with traditional anti-anxiety drugs. It is licensed exclusively to GD Searle & Co and it is currently in Phase II clinical trials. The market for anxiolytic drugs is about \$2,000 million per annum [but once the Phase II and subsequent Phase III trials are successful BTG believe that it will be some years before BTG 1501 reaches the market.] BTG's current income from GD Searle is based on milestone payments.

## New polymer developments

[BTG has a number of inventions relating to drug delivery systems which potentially have medical and non-medical applications. BTG currently has two licensees and one optionee, Controlled Therapeutics (Scotland) Ltd which is developing polymer forms for application as suppositories and pessaries [Controlled Therapeutics Inc (Pennsylvania)] and Scherer DDS Limited (formerly Polysystems Limited), respectively]. Controlled Therapeutics' most advanced product is a pessary containing prostaglandins which is used in childbirth and which has a potential worldwide market of £50-£100 million per annum. It was launched in the UK in 1990 but subsequently withdrawn for modification in the light of wider experience in real use. A modified version was introduced in late 1991.

## Pulsincap

Pulsincap is an application for oral drug delivery which arose out of BTG's involvement in new Polymer developments. Scherer DDS Limited, a subsidiary of RP Scherer Corporation, a major drug delivery company, is developing an oral application which releases its drug content at a predetermined time and therefore potentially at a specific site in the gastrointestinal tract.

## Torotrak

BTG has invested about £5 million in a wholly owned subsidiary involved in the development and collection of patents and know-how relating to a form of continuously variable transmissions ("CVTs"). Torotrak (a form of CVT being developed by BTG) is now running in prototype form in Rover 800 demonstration cars and is achieving 11% improvement in fuel economy over existing transmission systems and significant reduction in emissions. The development is aimed at the executive passenger car market and commercial vehicles and a number of car manufacturers and their component suppliers are evaluating the Technology.

## Tumour inhibitors (ICRF 187)

This compound, originally thought to have tumour inhibiting properties, is now used to alleviate damaging side effects to the heart caused by a widely used anti-cancer drug, Adriamycin. BTG has patent protection only in the USA and the drug is licensed exclusively to Adria Laboratories which produces Adriamycin. ICRF 187 is in the final stages of clinical trials and submission to the Food and Drug Administration for a product licence is planned for late 1991/early 1992.

## Matrix display

This is an alternative to the cathode ray tube with improved speed and resolution. The invention works by using a thin film matrix of cadmium selenide transistors in immediate contact with the light emitting cell. BTG believes that there is a potentially large market for the product. Currently BTG has two licence options but no firm licence.

## Oriented polymers

This is a Technology for producing better quality and strength polymer mouldings. The market for injection moulding components which could potentially benefit from this process is probably over £1 billion worldwide per annum. BTG currently has three companies holding options on licences. BTG USA Inc has established a wholly owned subsidiary, Scortec Inc, which it is intended will commercialise the Technology in the USA and recent exposure of the Technology has generated considerable interest.

## Grain stripper

This invention arose from the Agricultural and Food Research Council ("AFRC") and is a method of harvesting grain and other crops. A rotating drum of V shaped combs is used to strip grain from the standing crops leaving the stalks rooted to the ground. The Technology is licensed in the UK to Shelbourne Reynolds Engineering and is in its fourth year in the market place. The fundamental benefit of grain stripping is that throughput can be increased by up to 80% with lower grain losses as a consequence of not needing to deal with large volumes of straw. This translates into faster and more efficient harvesting or the opportunity to use lighter and less powerful machines.

## **Atmosol**

Atmosol is an aerosol system and BTG's patents and trade marks cover the invention of a pressure balance valve which is designed to give constant flow at decreasing pressures in an aerosol can as its contents are used. This is a 'green' product using compressed air or nitrogen as a propellant rather than chlorofluorocarbon ("CFC") gas and therefore its success will depend on the continued demand for products which are 'kinder' to the environment. It is also safer than the ozone friendly but dangerous hydro-carbon propellants such as butane which the industry is currently using as an alternative to CFCs. Technical risks are perceived to be low and a number of leading companies are considering Atmosol for use.

## **Contact lens production techniques**

This is a method of making contact lenses, both disposable and non disposable, more quickly and efficiently. The Technology is being marketed worldwide by I-CL division with BTG USA Inc marketing in the US to certain major contact lens manufacturers although no licences have yet been signed.

## **Epiphyseal hip prosthesis**

This is an alternative to the conventional total hip joint which is used in 500,000 replacement operations each year.

The Technology has been tested in the UK at the University of Cambridge under laboratory conditions and the next step is to manufacture prostheses capable of being implanted in patients and to carry out necessary dynamic and bio-compatibility tests. Success will only be assured if it can be demonstrated that the prosthesis works as well as or better than existing ones, and will last for **at least** an equivalent time.

## **NQR spectrometer**

Nuclear Quadropole Magnetic Resonance Spectrometry is a technique developed at London University for the finger printing of nitrogen in various states within certain compounds. The method relies on the phenomenon by which the materials under investigation, when excited by electromagnetic fields, produce an identifiable signal which can be used to determine the nature of the material in which the nitrogen atoms exist. This leads to the use of the equipment to detect explosives or drugs. BTG is at an advanced stage in the project and companies are studying terms for licences in two market segments, the airport security market and the market for smaller letter bomb detectors.

## SECTION 5

### CORPORATE STRUCTURE AND ORGANISATION

BTG's corporate structure is set out in Appendix 1.

### OPERATING DIVISIONS

BTG's business is conducted in five operating divisions: Science, Pharmaceuticals, Engineering, Electronics and Information Technology, and Inter-Corporate Licensing. These are supported from the centre by a number of departments.

#### Science division

BTG's Science division focuses on three main business areas:

- \* Agrichemicals, including pyrethrins and other forms of crop protection. The agrichemicals market is worth approximately \$20 billion per annum with 24 companies holding 99% of the market. New products need to be more environmentally benign than existing or past products.
- \* Diagnostics, of which cholesterol assay and enhanced luminescence are the leading Technologies. This is a difficult market for which to source new technology because there are few research institutes in the UK which specifically target diagnostics.
- \* New materials, covering a whole range of products including polymers, glasses and ceramics. This is a diverse activity and the potential number of licensees is large. BTG management consider that there is potential for future earnings in new materials in applications such as telecommunications, fibre optics, electronics, the automotive industry and aerospace.

#### Pharmaceuticals division

BTG's Pharmaceuticals division encompasses pharmaceutical and biological products for both human and veterinary healthcare with notable expertise in the fields of anti-infectives, cancer treatment, neuro-pharmacology, cardiovascular products, immunology and drug delivery technology. Some of BTG's pharmaceutical projects have now passed much of the development stage and are close to coming to market. These projects include new polymer developments and the related Pulsincap and ICRF187.

The potential for revenue earning within this industry is high as the market is large, estimated at around \$160 billion per annum, and the number of new products marketed each year is relatively small. BTG sees continued opportunities within this market.

## **Engineering division**

BTG's Engineering division focuses on five main areas of Technology:

- \* Medical Engineering which is concerned with diagnostic imaging and medical electronics, orthopaedic implants surgical and other devices and consumables.
- \* Engineering Sciences covering instrumentation, measurement and control within the scientific and advanced manufacturing areas which also includes engineering software and health and safety equipment.
- \* Process Engineering which deals with chemical, textiles, plastics and food process industries.
- \* Metal Manufacturing covers mainly the area of agricultural engineering for arable and dairy farming with the occasional valuable invention from the metal forming area.
- \* Torotrak.

## **Electronics and Information Technology division**

BTG's Electronics and Information Technology division specialises in four principal areas:

- \* Communications devices including the universal cordless telephone and pagers.
- \* Systems and application software which has been included, for example, in electronic musical instruments.
- \* Opto-electronics and displays such as electrochromic glass which changes colour when an electric current passes through it.
- \* Speech and vision systems such as methods for verifying and authenticating signatures.

This division deals extensively with "know-how" in the form of, for example, computer software as well as patentable inventions. Software is generally protected by copyright rather than patents, making it more difficult to defend and consequently the division's Technologies tend to be developed over shorter timescales and to have a shorter commercial life than for the other divisions. The division also invests heavily in equity investments. It has in the past made joint venture investments.

## **Inter-Corporate Licensing division**

BTG's Inter-Corporate Licensing division was established in 1987. Its business is now carried out through a subsidiary. The division commercialises developed Technologies for companies wishing to use licensing as a marketing channel both at home and overseas.



The division is still in its infancy but BTG believes its activities are important for its future success, particularly as income from this source can be generated in a shorter time than from the more usual development projects. The division received a major boost in 1989 with the acquisition of a portfolio of 130 patents from Johnson & Johnson.

Much of BTG USA's activity is focused on licensing of corporate technology.

### **Central support departments**

The five technology based operating divisions are backed by Patent, Legal, Finance, Commercial Business Development, Management Information and Personnel departments. All these teams work from BTG's London headquarters, with support from two regional offices in Edinburgh and Manchester, forming an experienced group of professionals who are collectively able to deal with most aspects of technology transfer. In addition, BTG USA Inc has a support staff of six.

BTG believe that the strength of the Company lies in the combination in-house of operating divisions and the central support departments. As Sir Colin Barker stated in his introduction to the 1991 Annual Report "The continued success of the organisation depends crucially on the ability to combine the specialist skills of our highly experienced lawyers, patent agents and other professional staff with the technical and commercial skills of our licensing executives in converting the mass of IPR into commercially viable products".

## SECTION 6

### MANAGEMENT AND EMPLOYEES

In a business such as BTG's, the management and employees are particularly crucial. The contacts they have developed, both with the sources of inventions and with their licensees, are integral to the success of the business. They form an experienced and well qualified group, who have an array of industry, science and technology and academic contacts.

The BTG Council, which includes the Chairman and Chief Executive but is largely non-executive, include senior executives and former executives from research, commerce and industry.

#### General Management

The general management of BTG is set out in the diagram below.

[Diagram : Organisation Chart]

Sir Colin Barker B Comm, aged 65, is Chairman working on a part time basis. Between 1971 and 1980 he held various positions at Standard Telephones and Cables including Director of Finance. From 1980 to 1983 he was Managing Director Finance at British Steel Corporation. He joined BTG in 1984.

He is also Chairman of CIN Management Ltd, Anglian Windows Ltd and British Investment Trust and non-executive director of a number of [other] listed companies.

Ian Harvey MA, MBA, aged 46, is Chief Executive. Between 1975 and 1982 he held various positions including Financial Analyst and Senior Loan Officer at the World Bank. In 1983, after a two year sabbatical in Europe and the USA, he became a partner in Logan Associates, a firm of consultants established by himself. He joined BTG in 1985.

Derek Schafer MA, DPhil, aged 47, is President and Chief Executive Officer BTG USA Inc. Between 1969 and 1974 he was Head of the Peptide Laboratory at Reckitt & Colman. He joined BTG in 1974 and became Operations Director in 1986, moving to his current job in [1990].

John Morton PhD, aged 49, is Secretary. Between 1969 and 1985 he was with the Civil Service and served in the Ministry of Technology, the DTI and HM Treasury. Between 1985 and 1987 he was seconded from the Civil Service to BTG and then joined BTG permanently in 1987.

Rusi Kathoke BA, FCA, aged 43, is Finance Director. Between 1975 and 1978 he worked as Financial Controller/Secretary at Security Pacific Finance Limited. From 1978 to 1979 he was a Financial Analyst at Conoco North Sea Inc. He joined the NEB in 1979 and was involved in the disposal of the NEB portfolio of [] companies. He became Finance Director in 1986.

The operational management of BTG is as follows.

**Maurice Martin** FICMA, aged 48, is Director of Engineering division. Between 1968 and 1972 he qualified as a cost and management accountant with Bradbury Wilkinson. From 1972 to 1979 he worked in financial management and strategic planning with Revertex and ITT. He joined BTG in 1979.

**Martin Sandford** BSc, MSc, C.Eng, [MICE], aged 41, is Director of Science division. Between 1980 and 1982 he was Planning Manager for Delta Group Overseas. From 1982 to 1984 he was Investment Manager with the Commonwealth Development Finance Company Limited. He joined BTG in 1984.

**Peter Bailey** BSc, PhD, aged 51, is Director of Pharmaceuticals division. Between 1966 and 1970 he was involved in post doctoral research at the Universities of Hamburg and Freiburg. From 1970 to 1980 he was a researcher at Glaxo, where he became Head of the Strain Development Section. He joined BTG in 1980.

**James McElroy** BSc, PhD, aged 53, is Director of E&IT division. Between 1965 and 1971 he carried out research at DESY Research Laboratory, Hamburg. From 1971 to 1972 he was an internal consultant in the Digital Systems Division of Ferranti Limited. He joined BTG in 1972.

**Stewart Block** BSc(Hons), MSc, aged 45, is Director of ICL division. Between 1975 and 1977 he was Management Information Manager at Conoco. From 1977 to 1980 he was at International Marketing Department and International Controllers Department of Conoco Inc, Houston. He joined BTG in 1981.

**Norman Davis** BSc, C.Eng, CPA, aged 61, is Director of Patent Services division. Between 1954 and 1961 he worked in the Patent department of Associated Electrical Industries. He joined BTG in 1961.

**Clifford Leach** MA, LIm (Cantab), aged 63, is Director of Legal Affairs. From 1956 to 1964 he was a Resident Magistrate in Tanganyika with HM Colonial Legal Service. Following spells with Nestle and the Civil Service Commission, he joined Philips Group in 1968 where he held various legal and company secretarial positions. He joined BTG in 1987, and is retiring in November 1991.

**David James** FCA, Aged 52, is Commercial Director. A chartered accountant, he qualified with Coopers & Lybrand, before joining 3i (8 years) and subsequently Barclays Merchant Bank - now BZW (8 years). Joined NEB in 1981, became Director of Small Companies Division, Director of Investments Division and, in 1986, Commercial Director. [DATES]

**Peter Tanner** BSc, Eur.Ing., C.Eng., C.Phys. FIEE, FlinstP, FRSA, aged 61, is Director of Business Development. From 1954 to 1962 he was a Senior Engineer, first with Marconi Radar and then at the AEI Fundamental Research Laboratory, Aldermaston before moving on to marketing development with AEI. He joined BTG in 1963 and prior to his present appointment in 1986 was Director of E & IT Division.

Jeffrey Colin James, aged 49, [qualifications] is Director Management Information Division. He has worked in Business Systems Development for 25 years. From 1966 to 1969 he worked for what is now British Steel Corporation. He then worked for Alfa UK Ltd from 1969 to 1978. He joined BTG in 1979 and became Director Management Information in 1986.

T.Green FCA, aged 55, is Financial Controller. From 1969 till 1978 he was involved at Senior Management level in Financial Management in the Engineering Contracting Industry. From 1978 to 1985 he was a senior consultant with Booz Alan and Hamilton International. He joined BTG as a consultant in 1985 and became Financial Controller in 1989. He is employed on a service contract. It is a fixed term contract until October 1992 and is renewable on a six monthly basis thereafter.

## Employees

The number of staff employed by BTG in the UK at 31 March 1991 was 193. Of the 193 staff, 122 are in executive grades, 68 in support and clerical and 3 temporary who are not employed directly by BTG. These can be analysed by main operational areas as follows:

	Number of Staff
Executive Management	8
Operating Divisions and support functions	
Engineering	23
Science	12
Pharmaceuticals	12
E&IT	13
I-CL	8
Commercial	5
Patents	30
Legal	<u>13</u>
	<u>116</u>
Corporate	
Finance	21
Business Development and marketing	24
Management Information	9
Personnel	3
Administration	<u>9</u>
	<u>66</u>
Temporary staff	<u>3</u>
	<u>193</u>

In addition, BTG USA Inc headed by Derek Schafer, has 16 staff, 10 executive and 6 support.

### Age profile

The age profile of staff at 31 March 1991 (excluding temporary staff) was as follows:

Age	Executive staff	Support staff
20-29	16	29
30-39	27	16
40-49	34	7
50-59	36	14
60-69	<u>9</u>	<u>2</u>
	<u>122</u>	<u>68</u>

Of the executive staff some 55% have service in excess of 11 years. Over recent years an effort has been made to encourage a slightly higher staff turnover through a more attractive early retirement policy.

### **Remuneration**

BTG sets its own pay scales which are not linked to civil service rates. The bands for each grade are wide and overlap to some extent to allow for flexibility. The last salary review was on 1 July 1991. The next review date is to be June 1992 and annually thereafter.

### **Union representation**

BTG has recognition agreements with the Institute of Professionals Managers and Specialists ("IPMS") and the Association of Professional Executive Clerical and Computer Staff ("APEX"). Some 93 staff paid union subscriptions through payroll deductions in March 1991, but precise details of membership cannot be obtained since some staff pay subscriptions directly.

BTG has a history of good relations with the unions and has **not** suffered any industrial action. [However, neither of the last two annual pay awards has yet been agreed by the unions nor has the change in review date from December to June.] BTG and the unions have agreed to use the services of ACAS as part of an agreed conciliation procedure in an attempt to resolve any dispute. [BTG redraft]

### **Pension arrangements**

BTG runs a contributory contracted-out final salary pension scheme for its UK employees. Membership, which is voluntary, is available to all employees [Torotrak?]. [non-UK employees?]

Employee contributions are 5% of base salary. On the advice of the actuary, BTG has not contributed to the fund since September 1986. In his valuation report as at 1st April 1987, the actuary anticipated that the contribution holiday could continue until March 1998 and that after this employer's contributions were anticipated at 19.4% of salary. However, the latest valuation in 1990 revealed a further surplus accruing to the scheme, and that contributions would not be required for a further ten years.

### **Service contracts**

Sir Colin Barker and Ian Harvey are appointed by the Secretary of State. Sir Colin Barker's current appointment extends until 31 March 1992 or the day before the assets and liabilities of NRDC and NEB vest in the Successor Company, whichever is sooner. Mr Harvey's current appointment expires on 31 March 1992 or on vesting, whichever is sooner. Notice terms under Mr Harvey's contract as Managing Director of NRDC are six months on either side. Mr Harvey has a parallel contract as an employee of NRDC.

Rusi Kathoke and John Morton are required to give six months notice if termination occurs prior to 1 April 1993. Thereafter three months notice is required. If their employment is terminated by NRDC or its Successor Company prior to 1 April 1993 a minimum lump sum payment equal to three years salary in lieu of notice would be due, or severance terms in force at termination whichever was greater.

Other Heads of Division are required to give three months notice. In most cases if employment is terminated by NRDC or its successors prior to 1 April 1993 a minimum lump sum payment of two years salary in lieu of notice would be due.

Other executive grade staff are on standard terms and conditions of employment. [Details]

## SECTION 7

### FINANCIAL INFORMATION

#### Trading results

The results shown below comprise the results of BTG which in 1991 consolidate the results of BTG USA. The results of certain development subsidiaries are not consolidated, neither are those of NEB which is a separate corporation. The accounting policies used here are those set out in BTG's 1991 annual report and accounts.

	Year ended 31 March		
	1989 £'000	1990 £'000	1991 £'000
Revenues			
Licence income			
Pyrethrin	8,480	9,206	8,099
MRI	4,119	7,625	11,657
*Top 50*	3,767	4,637	4,793
Other	<u>3,182</u>	<u>3,701</u>	<u>3,682</u>
Total licence income	19,548	25,169	28,231
Levies from J.V.'s	3,125	1,741	1,763
Other income	<u>1,227</u>	<u>2,620</u>	<u>716</u>
 Total revenues	 <u>23,900</u>	 <u>29,530</u>	 <u>30,710</u>
 Operating expenses			
Revenue sharing	3,610	5,530	7,860
Amortisation	6,430	7,360	8,170
Other	<u>580</u>	<u>1,020</u>	<u>1,010</u>
	<u>10,620</u>	<u>13,910</u>	<u>17,040</u>
 Administrative expenses			
Staff costs	4,080	4,890	6,090
Other	<u>3,690</u>	<u>3,890</u>	<u>4,150</u>
	<u>7,770</u>	<u>8,780</u>	<u>10,240</u>
 Operating profit	5,510	6,840	3,430
Interest receivable	2,390	3,240	3,040
Employee profit share	<u>(370)</u>	<u>(570)</u>	<u>-</u>
 Profit before tax	7,530	9,510	6,470
Tax	<u>(2,320)</u>	<u>(2,700)</u>	<u>(2,230)</u>
 Profit after tax	 <u>5,210</u>	 <u>6,810</u>	 <u>4,240</u>

## Income

### Licence income

BTG's licence income is predominantly made up of royalties from Pyrethrin and MRI. The proportion of total revenues attributable to these two Technologies was 53% in 1989, 57% in 1990 and 64% in 1991. More than 50% of BTG's other licence income comes from royalties from "Top 50" Technologies.

Total revenues have increased by over 28% over the three years largely as a result of the effect of increasing income from MRI. To a large extent, this is due to the receipt of significant back payments of royalties on the signing of new licences. As with most recent Technologies, net revenue from MRI is shared 50:50 with the sources and consequently only about 50% of this increased revenue each year flows through to operating profits.

Pyrethrin revenues have also been a major contributor for several years accounting for income of £8.1 million in the year ended 31 March 1991. This income is not subject to revenue sharing and is subject only to relatively minor discretionary awards.

Over 70% of BTG's licensees are UK based, followed by those in the US, Germany and Japan. However, 86% of licence income was derived from overseas for the year to 31 March 1991, continuing the trend of recent years where the majority of revenues arose overseas.

### Levies from Joint Ventures

This revenue arises from joint venture arrangements where BTG provides [non-recourse] funding for development in exchange for a levy on sales. There are currently some [50] income producing industrial projects. The level of income from joint ventures has declined in the last two years and no significant increase is planned in the medium term. This vehicle is no longer a favoured route for investment.

### Other income

This category includes dividends and profit or losses on the sale on equity investments. Other income was boosted in 1990 with the receipt of a dividend of £2.3 million from Hovercraft Development Limited (a subsidiary formed to exploit the hovercraft technology), primarily in respect of a litigation settlement received from the US government.

## Expenses

### Revenue sharing

BTG enters into a standard contract with its inventive sources to allow licence revenues to be shared with inventors.



For some Inventions assigned to BTG under its statutory right of first refusal no revenue sharing agreement was required. As a result, for some major Technologies, including Pyrethrin insecticides, BTG makes nothing in the way of revenue sharing payments, although a small percentage has been passed back to inventors through industry awards.

The cost to BTG of revenue sharing has increased over the last three years, as the amount of total income subject to revenue sharing increases.

#### Amortisation

Expenditure on development projects and associated patents is generally written off over eight years starting two years after the expenditure is first incurred. Investments in industrial joint ventures are amortised over the income stream and are reviewed on a regular basis and expenditure written off if it is unlikely to be covered by future revenues. This process is set out in more detail on page [ ] of this Memorandum.

The reason for the recent increase is that equity and loan investment amortisation contains provisions against certain investments which are no longer considered likely to realise their book value. BTG make such provisions as soon as any diminution in value has been identified.

BTG's accounts and the accounting policies underlying them are prepared under a direction from the then Secretary of State in the Development of Inventions Act 1967. These policies, including the policy on amortisation are set out in more detail in Appendix 3.

#### Administrative expenses

Administrative expenses include all salary related costs as well as the expenses of the US subsidiary, the building in Newington Causeway and other overhead costs.

The major reason for the increase in administrative expenses in 1991 is the opening of BTG's US subsidiary. The launch and operating costs of BTG USA were approximately £1.2 million in its first seven months. After accounting for normal UK inflation and the additional costs of BTG USA, administration expenses were at or about the levels of 1990.

## Proforma (combined) balance sheet of BTG

	Year ended 31 March 1991		
	NRDC	NEB	Combined
	£'000	£'000	£'000
Tangible fixed assets	9,970	-	9,970
	<u>          </u>	<u>          </u>	<u>          </u>
Other capital assets			
Development projects	24,530	-	24,530
Joint ventures	1,320	-	1,320
Investments for resale	6,530	1,500	8,030
Development subsidiaries	2,340	-	2,340
	<u>          </u>	<u>          </u>	<u>          </u>
	34,720	1,500	36,220
	<u>          </u>	<u>          </u>	<u>          </u>
Current assets			
Debtors	5,820	-	5,820
Deferred litigation	910	-	910
Cash and short term deposits	22,110	1,913	24,023
	<u>          </u>	<u>          </u>	<u>          </u>
	28,840	1,913	30,753
	<u>          </u>	<u>          </u>	<u>          </u>
Creditors	(12,350)	(96)	(12,446)
	<u>          </u>	<u>          </u>	<u>          </u>
Net current assets	16,490	1,817	18,307
	<u>          </u>	<u>          </u>	<u>          </u>
Provisions for liabilities and charges	(10,400)	-	(10,400)
	<u>          </u>	<u>          </u>	<u>          </u>
Net assets	50,780	3,317	54,097
	<u>          </u>	<u>          </u>	<u>          </u>
	<u>          </u>	<u>          </u>	<u>          </u>
Reserves			
Reserves under Section 10			
Development of Inventions Act 1967	17,500		
Revaluation reserve	1,550		
Profit and loss account	31,730	3,317	
	<u>          </u>	<u>          </u>	<u>          </u>
	50,780	3,317	
	<u>          </u>	<u>          </u>	<u>          </u>
	<u>          </u>	<u>          </u>	<u>          </u>

Although the accounts of NRDC and NEB are not consolidated, the proforma Balance Sheet above shows the assets and liabilities that would have been transferred to the Successor Company had vesting taken place on 31 March 1991.

### **Tangible fixed assets**

A substantial part of the tangible fixed assets represents a recent professional valuation of BTG's premises.

BTG owns freehold property located at 99 and 101 Newington Causeway (approximately 51,000 sq.ft.) purchased in 1982 at a cost of £6,150,000. The property was revalued at £6,750,000 on 31 March 1991 by Messrs Cluttons, Chartered Surveyors on the basis of the value of the freehold interest subject to an existing lease on a small part of the property, but otherwise with vacant possession. Immediately prior to the March revaluation, the property had a book value of £5.2 million [as at 1 May 1991.] The surplus on revaluation including accumulated depreciation on the property was credited to the revaluation reserve. [The lease related to a warehouse and ancillary offices attached to the main building and leased to Mitre Textiles for 3 years from 1 September 1988 at a rent of £50,000 per annum and has now expired but is being renewed.]

A valuation carried out in August 1991 by Debenham Tewson Chinnocks for the DTI valued the property at £4.1m, being the market value of the freehold interest on the assumption that the properties were held for disposal with the benefit of full vacant possession.

BTG's other premises are all leasehold. The only lease of any significance is that of BTG USA's offices at Renaissance Boulevard, Renaissance Business Park Gulph Mills, Philadelphia. The lease is for five years from 1 August 1990 at a starting annual rental of \$300,000 per annum. Other leases are short-term leases for small office premises in Edinburgh and Manchester and storage space. These are not capitalised.

The second main component of tangible fixed assets is "computers and software", a large part of which (£1.2 million) is capitalised software and development costs for the new VAX system, to be depreciated over three years.

The balance of tangible fixed assets is conventional, being depreciated furniture, equipment and motor vehicles.

### **Other capital assets**

Development projects and patents, representing BTG's largest single category of asset, has risen in recent years from £16.9 million in 1988/89 to £24.5 million in 1990/91. This is on account of increased levels of project investment. These balances represent the cumulative costs of patenting and project costs, less cumulative amortisation. For all material projects, the net book value is exceeded by the estimate of aggregate "net revenues" over the next ten years.

Joint ventures have decreased in significance in recent years as BTG has preferred alternative methods of investment. Net book value represents only 12.5% of cost, reflecting a large number of fully written off projects. As with development projects, BTG project net revenues over the next ten years are in excess of net book value.

Investments held for resale are accounted for at cost less amortisation, as BTG does not consolidate or equity account its investments held in companies. The rationale is that their treatment should be no different from that of any of BTG's other investments in development projects or joint ventures and therefore it would be misleading to consolidate or equity account. As with BTG's other forms of investment, if diminution in value is recognised, equity investments are written down, either partially or in full.

The net book value of investments held for resale by NRDC has remained fairly steady at between £6 million and £7 million in recent years. Whilst BTG has continued to make investments in certain companies with particular projects, it has written off a number of its investments in accordance with its stated policy.

[table and commentary - to be obtained]

Currently, BTG's only material investment is Agriculture Genetics Co Ltd, a 22% associate which is held at its original cost of £3.8 million.

As with investments held for resale, BTG does not consolidate its development subsidiaries. Despite its ownership of 100% of the share capital, it accounts for them as if they were development projects, for the reasons stated above and amortises them on a regular basis.

Currently, BTG only has two development subsidiaries, the principal one of which is an [•] per cent stake in Torotrak (Holdings) Ltd at a book value of £2.2 million. The company was formed to commercialise CVT technology being developed by BTG's subsidiary, Torotrak (Development) Limited.

### **Current assets**

Debtors of £5.8 million includes £3.6 million of trade debtors. BTG does not normally invoice royalties as the amount of income due is not known until a return is made by the relevant licensee generally every 6 months. Thus the majority of trade debtors represent amounts accrued in respect of royalties and levy income for expired royalty or levy periods.

Other debtors of £1.1 million is primarily VAT repayable and an amount due from a subsidiary.

Prepayments and accrued income of £1.1 million represents mainly interest receivable and deferred revenue sharing resulting from a lump sum paid in advance by a licensee where the income was spread over future years and the resulting revenue sharing expense was treated in a similar manner, of which 50% was passed on to the invention source. The total prepayments figure has reduced substantially since 1990, when prepayments and accrued income included an exceptional accrued dividend of £2.3 million from a subsidiary (Hovercraft Development Limited) relating to the settlement of the dispute with the US Government over patent infringement.

Amounts due from Technology Transfer subsidiaries of £1.6 million represents (....).

Deferred litigation of £910,000 relates to the costs of the Pyrethrin arbitration case. These costs were capitalised, and are being amortised over the life of the remaining patents which were the subject of the arbitration.

[The cash and short term deposits of BTG, stood at over £22 million at 31 March 1991. HM Government intends to leave £10 million of the cash and short term deposits of BTG in the Successor Company on sale as working capital. The remaining £12 million would be withdrawn by way of a dividend before the sale.

#### Creditors

Creditors of £12.4 million include project creditors of £7.5 million. This figure includes accruals for revenue sharing and for development projects. Other creditors include a proposed dividend of £1.3 million, corporation tax of £1.5 million and MRI deferred income of £0.9 million, as well as various smaller sundry creditors and accruals.

Whilst the overall creditors figure has increased only gradually over recent years, there have been some fairly substantial changes within each category of creditors. Project creditors have increased fairly substantially each year, mainly in respect of increased revenue sharing on MRI revenue. Conversely the deferred income accrual has reduced each year offsetting the lump sum royalty paid in advance by one of BTG's US licensees.

#### Provision for liabilities and charges

Provisions for liabilities and charges are made up primarily of a provision of £7.6 million for deferred tax. BTG makes full provision for deferred tax, although it is possible that the liability will not crystallise in the foreseeable future given the continuing growth in BTG's business.

In addition, there are minor provisions for unspecified litigation costs and for pension costs. In 1991, an additional provision of £1.6 million was set up as an extraordinary item for the costs of privatisation, including an estimate of cost of registering the change in ownership of all patent rights worldwide. The degree to which this provision will be used up has yet to be ascertained.

## Summary cash flows of BTG

	Years ended 31 March		
	1989 £'000	1990 £'000	1991 £'000
Operating profit plus amortisation	11,940	14,200	11,600
Other cash items	<u>210</u>	<u>(2,100)</u>	<u>3,410</u>
Cash generated before investment	12,150	12,100	15,010
Investment expenditure	<u>(8,650)</u>	<u>(11,080)</u>	<u>(12,880)</u>
Net funds generated from operations	<u>3,500</u>	<u>1,020</u>	<u>2,130</u>
Operating profit	<u>5,510</u>	<u>6,840</u>	<u>3,430</u>

The summary cash flows clearly demonstrate the commitment stated by BTG towards investing for the future, from their own internally generated resources.

## SECTION 8

### PROSPECTS

#### Market

The value of international traded technology transfer was estimated at approximately US\$15 billion per annum in 1983 (the latest available data). BTG have estimated that this trading of intellectual property reflects [turnovers of] products with a market value of some US\$300 billion per annum.

The international technology transfer market is dominated by large corporates licensing technologies to other large corporates.

BTG's market niche is as a specialist in technology transfer in the search for and development of inventions and the multiple patenting and licensing of a very wide range of technologies. BTG believes itself to be one of the foremost operators in this field.

BTG has come to this conclusion as a result of its own success and the lack of success of a number of its competitors over the last ten years in particular those technology transfer operations established in the United Kingdom in the early part of the 1980's.

Management has also seen potential in the market for Inter-Corporate Licensing (I-CL) and as a result has established a subsidiary in Pennsylvania to concentrate on this sector of the US market. In addition, other technology transfer opportunities are being pursued in Finland, India, Japan and the Netherlands.

#### Critical success factor

BTG believe that their primary strategic aim must be to ensure that major technologies are successfully licensed and that a sufficiently high proportion of licensed inventions earn revenues on a consistent basis.

#### Investment return

BTG's experience over the last 20 years has shown that only a small number of investments need to succeed. For the three most successful products the financial returns to date, net of initial investment have been:-

	£ million
Cephalosporin	151
Pyrethrin	89
Magnetic Resonance Imaging	27

## **New business activities**

Apart from its traditional activities including I-CL, BTG is looking at the opportunity for increasing revenues by:

- \* extending its operations to manage other IPR portfolios; and
- \* entering into fee generating consultancy.

## **Revenues**

It is recognised that BTG's current revenues are dependent on Pyrethrin and MRI. The last Pyrethrin patent expires in 1994 but MRI should continue until at least 2000.

It is difficult for management to budget revenues with any certainty. However, a large proportion of future revenues will probably be derived from the "Top 50" products on which detailed assessments are made annually and further updates are conducted on a rolling six-monthly basis.

Apart from specific products, revenues are earned from other licence income. These comprise revenues from three separate sources.

- \* Inventions currently licensed and earning revenues;
- \* Inventions currently not licensed. At present, this category includes 62% of BTG's portfolio; and
- \* revenues projected from inventions accepted for commercialisation in future years.

## **Corporate plan**

BTG produces annually a corporate plan which is a strategic document, which looks at BTG's business and financial status for the forthcoming decade.

The most recent Corporate Plan was prepared in March and approved by BTG's Council in May 1991.

The Plan reflects BTG's Council and management's estimates of future corporate performance. The next five years projections between 1991/92 and 1995/1996 have been extracted from the Corporate Plan and are summarised below. These illustrative projections are highly sensitive to a number of assumptions, particularly in respect of revenues.

Whilst the projections have been produced after due and careful consideration, the assumptions on which they have been based are largely subjective and cover a wide range of matters, many of which are of a materially volatile or uncertain nature; the projections, which have been extracted from the most recent Corporate Plan, do not represent forecasts which will actually be achieved. The principal financial projections and the assumptions on which these projections have been based are set out below.



## Summarised financial projections

### Trading projections

All figures in 1991/92 £

	Years ending March				
	1992	1993	1994	1995	1996
	£m	£m	£m	£m	£m
Revenue	28.1	28.9	32.0	34.3	40.2
Revenue sharing	(6.9)	(7.2)	(8.9)	(9.9)	(12.3)
	—	—	—	—	—
Net revenue	21.2	21.7	23.1	24.4	27.9
Total costs	(18.7)	(18.5)	(19.3)	(19.7)	(20.3)
	—	—	—	—	—
Operating profit (before interest receivable)	2.5	3.2	3.8	4.7	7.6
	—	—	—	—	—

### Cash flow projections

All figures in 1991/92 £

	Years ending March				
	1992	1993	1994	1995	1996
	£m	£m	£m	£m	£m
Operating profit	2.5	3.2	3.8	4.7	7.6
Adjustment for non cash items	7.0	7.9	9.3	9.3	10.8
	—	—	—	—	—
Cash generated from operations	9.5	11.1	13.1	14.0	18.4
	—	—	—	—	—
Projected capital expenditure	11.0	10.5	10.7	11.2	11.7
	—	—	—	—	—

### Principal assumptions

General:

- \* these projections adopt BTG's normal accounting policies;
- \* there are no material acquisitions or disposals of any business;
- \* there is no material change in the inflation rates or exchange rates set out below or in legislative environment on patents and licensing in the UK and abroad;

- \* there is no material disruption of BTG's business arising out of industrial disputes;
- \* there is no material change in the willingness of universities, polytechnics, corporates and other inventors in bringing invention ideas to BTG;
- \* there is no material change in current attitudes of potential licensees to BTG;
- \* competition in the market served by BTG remains at similar levels to those currently being experienced;
- \* no existing material revenue ensuing products are attached successfully by competitive products, otherwise than at the normal end of product lines.

Financial:

- \* General and salary inflation is 7%; and
- \* Exchange rates used are as follows:

	<u>1991/92</u>	<u>Thereafter</u>
US Dollar	1.79	1.79
Deutchmark	2.92	2.90
Yen	2.42	2.35

- \* Disposal of equity investments: for investment expenditure from 1991/92 onwards:
  - 25% will fail in year 3;
  - 25% will fail in year 4;
  - 25% will fail realise 3 times cost in year 5; and
  - 25% will realise 6 times cost thereafter.
- \* Revenue sharing is calculated for Pyrethrin at ½% of gross revenue, and MRI at 50%. All other revenue sharing is assumed to increase progressively from 25% in 1991/92 to 0% in 1995/96;
- \* There is a long term growth of 7½% per annum in operating profits;
- \* To be cash neutral in the medium term.

## SECTION 9

### GENERAL INFORMATION

#### Litigation

BTG is not engaged in any litigation or arbitration proceedings other than in the normal course of business as detailed on page [ ], and no litigation, arbitration or claims are known to BTG to be pending or threatened against BTG which may have a significant effect on the financial position of BTG or the Successor Company.

#### Taxation

Under the British Technology Group Bill, when enacted, the taxation liabilities and, in general, taxation relief of NRDC and NEB pass to the Successor Company. However, the capital losses of NRDC and NEB will not be available for offset against future gains.

The tax computations for NRDC and NEB have historically been prepared adopting special bases for certain items in the accounts. Following a change in Tax District and discussions originated by BTG, the new Inspector of Taxes has undertaken to review the basis for the tax computations of NRDC and NEB so that income and expenditure are treated in accordance with accepted principles of taxation. BTG expect that this review will result in a basis for taxation no less favourable than that currently adopted.

#### Attitude of HM Opposition to the privatisation

Spokesmen for the Labour Party expressed their views on the privatisation of BTG during the debate on the BTG Bill in the Commons second reading on 12 February 1991 and during the Committee stage. During the Commons second reading the Labour Party spokesman gave an assurance that a privatised BTG would not be renationalised. The Labour Party's intention as stated in Parliament and in Opportunity Britain (April 1991) is to set up a new British Technology Enterprise with responsibilities for the commercialisation of inventions and investment in high technology.

#### Additional Information on BTG

Additional information on BTG is available from a number of documents in the public domain. These documents, and the places from which they may be obtained, are listed below:

Those documents listed as available from Price Waterhouse may be obtained from Mr Simon Leary (071-939-3000).

## SECTION 10

### BASIS FOR SUBMISSION OF PROPOSALS

#### General

[DTI policy issues to be resolved]

It is accepted that prospective purchasers will not wish to make definitive offers to acquire shares in the Company until they have had the opportunity to make further enquiries and have received responses on matters of specific relevance to their circumstances.

Accordingly, prospective purchasers are invited to submit preliminary proposals only at this stage, in accordance with the framework set out below. Those prospective purchasers who are then short-listed to go forward to the next stage of the sale process will have the opportunity to refine their proposals in consultation with HM Government and Price Waterhouse.

#### Ownership restrictions

The Articles of Association of the Successor Company to be adopted on privatisation will contain a number of provisions concerning asset disposals and voting control. The share capital will include a special share which will be held by the Secretary of State. The following actions will require the approval of the special shareholder:

- \* any disposal of the whole or a material part of the assets, materiality being determined by reference to 25% of the net asset value of the Company and its subsidiaries ("the Group"), or where 25% of the Group's average income is attributable;
- \* instigation of certain winding up and insolvency procedures in relation to the Successor Company;
- \* alteration of the Article which prevents any person, directly or indirectly, owning or controlling the right to cast 15% or more of the votes at a general meeting of the Successor Company;
- \* alteration of the Article providing for the above approvals.

The special share will be redeemed five years after privatisation. The Secretary of State may require the Successor Company to redeem the share at any time prior to that date after consultation with the Successor Company.

In addition the Articles contain provisions regarding the appointment of directors;

- \* one director is to be appointed by the Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom following consultation with the Committee of Directors of Polytechnics of the United Kingdom;

- one director in addition to the one appointed by the CVCP, shall be a person who appears to BTG to have wide experience of and have shown capacity in the development, promotion or exploitation of public research;

### **Warranties and indemnities**

In the agreement for the sale of the share capital of the company, HM Government intends (in accordance with HM Government's policy with regard to sales by private treaty) to warrant title to the shares to be sold but otherwise to give no warranties or indemnities whatsoever.

### **Framework for preliminary proposals**

In arriving at the short-list of prospective purchasers, HM Government will attach particular importance both to the terms and conditions of proposals and to the nature of any commitments that prospective purchasers are prepared to make in regard to the specific matters set out in items 4 to 8 below. Prospective purchasers are therefore invited to put forward their preliminary proposals in writing under the headings outlined below. Items 1 to 3 identify certain general information to be supplied by prospective purchasers relating to their existing activities. Items 4 to 11 identify specific matters in relation to BTG to be addressed by prospective purchasers at this stage.

The preliminary proposals should be in English and dated and signed by each prospective purchaser, or a duly authorised officer, whose capacity should be stated. Ten copies of these preliminary proposals should be sent to:

HJ Hyman Esq  
Price Waterhouse  
No 1 London Bridge  
London SE1 9QL

as soon as possible and in any event so as to arrive no later than 10 am on [     ].

### **Preliminary proposals**

State whether you intend to participate in the sale as:

- \* a member of a consortium which is bidding for 100% of the Successor Company if so, please name the other members of the consortium and their prospective percentage shareholdings;
- \* an investor proposing to bid on its own account for less than [100%] of BTG, in which case you may, if shortlisted, be invited to form with other investors in this category a consortium to bid for 100% of BTG. Please indicate your prospective equity interest, including an indication of a minimum and maximum percentage consideration of any equity stake you may wish to take.

## General information about the prospective purchasers

### 1 Contacts and ownership

- full name
- address
- telephone and facsimile numbers
- name and telephone number of principal contact
- place of establishment and principal place of business
- details of shareholdings in each of the prospective purchasers greater than 3% of the voting share capital on the last available date before the preliminary proposals are submitted and the names of the ultimate parent companies of such shareholders
- ultimate parent company of the prospective purchaser and details of shareholdings therein greater than 3% of the voting share capital on the same date.

### 2 Copies of the most recent audited accounts and current list of directors of

- the prospective purchasers
- the ultimate parent companies of persons with shareholdings in the prospective purchasers greater than 3%
- the ultimate parent companies of the prospective purchasers

### 3 Any other information that may be useful in understanding the prospective purchaser's business and its plans for the future.

## Specific matters relating to the proposed purchase of BTG

### 4 Clawback

In accordance with established precedent in previous privatisations [the sale contract] will contain provisions entitling HM Government to further consideration in the event that exceptional gains arise from the sale of the Company's real property [within ten years from privatisation. In determining such gains allowance will be made for the effects of inflation and the extent to which proceeds are reinvested in similar property].

HM Government are also concerned to ensure that the Exchequer receives due benefit from income arising from BTG's intellectual property to the extent that this significantly exceeds the amounts envisaged in BTG's business plan. Prospective purchasers are invited to indicate how they would address such a situation in structuring their offer for the shares of the Successor Company.

5 Finance

An explanation of how the prospective purchasers would finance the initial acquisition and subsequent funding requirements (if any) of the Company.

Furthermore, the prospective purchasers views on the capital structure of the successor company including the amount of distributable reserves and cash balances that should remain immediately prior to sale.

6 Employee participation in the purchase

An indication of the nature and extent of any arrangements that the prospective purchaser would establish with regard to management and employee participation in the privatisation and/or in the success of the business in the private sector.

7 Assurances regarding BTG

The assurances that the prospective purchaser would expect to give as part of its final offer concerning:

- \* His intention to be an investor in the successor company for at least the first five years after privatisation
- \* Long term continuity of the core business of profitable commercialisation of technology
- \* Continued relationships with UK universities
- \* Intentions with regard to international expansion of BTG's business.

8 Future intentions

A statement of prospective purchasers' intentions for the operation and management of the Company, addressing inter alia:

- \* BTG's management and organisation structure
- \* Plans for material disposals of assets including IPR
- \* The funding and future of the BTG pension scheme
- \* Composition of the first Board of Directors, including the proposed cvcp nominee and the other nomination having wide experience of public research.

9 Major conditions

Details of any shareholder approvals, regulatory consents or other conditions which would have to be obtained or satisfied in order to allow the prospective purchasers to implement their offer(s).

10 The nature and extent of any further information that the prospective purchasers would request should **key** be short-listed for the next stage of the sale process.

- 11 Any other information that the prospective purchasers wish to submit in support of their preliminary proposals.

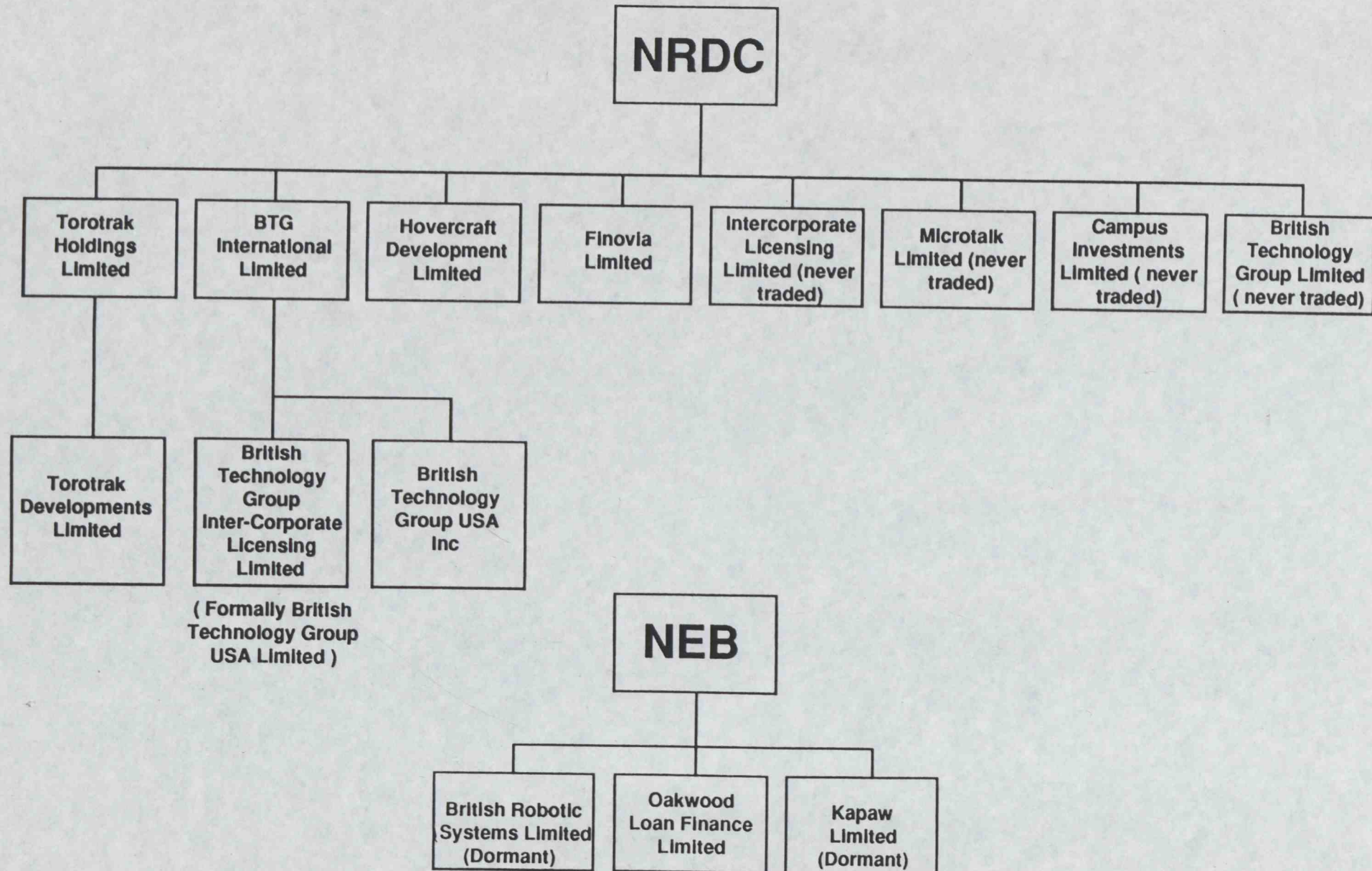
**Timetable**

It is expected that prospective purchasers who are short-listed to go forward to the next stage of the sale process will be notified by [ ] or as soon as possible thereafter.

[ ] October 1991



# BRITISH TECHNOLOGY GROUP CORPORATE STRUCTURE



## APPENDIX 2

### THREE YEAR FINANCIAL RECORD

#### Profit and loss accounts

Set out below are the consolidated profit and loss accounts of BTG for the three years ended 31 March 1991 as extracted from the audited accounts of NRDC. These results include, in the year ended 31 March 1991, those of BTG USA which commenced trading in September 1990. On pages [] to [] BTG's 1990/91 accounts balance sheets, statement of source and application of funds and notes to the accounts are included.

	Notes	Years ended 31 March		
		1989 £'000	1990 £'000	1991 £'000
Revenues	2	23,900	29,530	30,710
Operating expenses	3	(10,620)	(13,910)	(17,040)
Administrative expenses	4	(7,770)	(8,780)	(10,240)
Operating profit		5,510	6,840	3,430
Interest receivable		<u>2,390</u>	<u>3,240</u>	<u>3,040</u>
		7,900	10,080	6,470
Employee profit sharing		<u>(370)</u>	<u>(570)</u>	—
Profit on ordinary activities before taxation		7,530	9,510	6,470
Tax on profit on ordinary activities		<u>(2,320)</u>	<u>(2,700)</u>	<u>(2,230)</u>
Profit on ordinary activities after tax		5,210	6,810	4,240
Extraordinary items	5	—	—	<u>(1,700)</u>
		5,210	6,810	2,540
Dividends		(2,610)	(3,410)	(1,270)
Special payment to HM Government		<u>(6,000)</u>	—	—
Retained profit for the year		<u>(3,400)</u>	<u>3,400</u>	<u>1,270</u>

## Balance sheets\*

	Notes	Years ended 31 March		
		1989 £'000	1990 £'000	1991 £'000
Tangible fixed assets	6	<u>7,460</u>	<u>7,710</u>	<u>9,970</u>
<b>Other capital assets</b>				
Development projects and patents		16,940	19,890	24,530
Joint venture projects		2,100	1,820	1,320
Investments held for resale		6,070	6,760	6,530
Development subsidiaries		<u>1,310</u>	<u>1,330</u>	<u>2,340</u>
		26,420	29,800	34,720
<b>Current assets</b>				
Debtors	7	5,180	8,850	5,820
Deferred litigation		1,510	1,210	910
Cash and short term deposits		<u>22,410</u>	<u>21,790</u>	<u>22,110</u>
		29,100	31,850	28,840
Creditors	8	<u>(11,200)</u>	<u>(12,870)</u>	<u>(12,350)</u>
Net current assets		<u>17,900</u>	<u>18,980</u>	<u>16,490</u>
Total assets less current liabilities		51,780	56,490	61,180
Provision for liabilities and charges	9	<u>(7,120)</u>	<u>(8,430)</u>	<u>(10,400)</u>
Reserves		<u>44,660</u>	<u>48,060</u>	<u>50,780</u>
Reserves under Section 10 Development of Inventions Act 1967		17,500	17,500	17,500
Revaluation reserve	10	-	-	1,550
Profit and loss account		<u>27,160</u>	<u>30,560</u>	<u>31,730</u>
		<u>44,660</u>	<u>48,060</u>	<u>50,780</u>

[\*Note: Only NRDC consolidated not NEB.]

## Statements of Source and Application of Funds\*

	Years ended 31 March		
	<u>1989</u>	<u>1990</u>	<u>1991</u>
	£'000	£'000	£'000
<b>Revenues</b>	23,900	29,530	30,710
Less: licence income shared with investors	<u>(3,610)</u>	<u>(5,530)</u>	<u>(7,860)</u>
	20,290	24,000	22,850
Other net capital receipts	<u>1,090</u>	<u>690</u>	<u>200</u>
	21,380	24,690	23,050
Investment in projects	(8,650)	(11,080)	(12,880)
Patent maintenance costs	(580)	(1,020)	(1,010)
Administrative expenses	(7,390)	(8,530)	(9,430)
Purchase of fixed assets	<u>(740)</u>	<u>(1,120)</u>	<u>(1,730)</u>
	4,020	2,940	(2,000)
Decrease/(increase) in net current assets	(770)	(2,240)	3,920
Increase in provision for pension costs	<u>250</u>	<u>320</u>	<u>210</u>
Net funds generated from operations	3,500	1,020	2,130
<b>Other items</b>			
Interest receivable	2,390	3,240	3,040
Privatisation costs	-	-	(110)
Corporation tax	(1,700)	(2,270)	(1,350)
Dividends paid	(1,920)	(2,610)	(3,410)
Special payment	<u>(6,000)</u>	<u>-</u>	<u>-</u>
Increase/(decrease) in cash and short term deposits	<u>(3,730)</u>	<u>(620)</u>	<u>300</u>

[\*not NEB]

## NOTES TO THE ACCOUNTS

### 1 Accounting policies

#### A Basis of presentation of accounts

The form of the accounts, which have been prepared under the historical cost convention, modified to include the revaluation of land and buildings, is laid down by the Direction made by The Secretary of State. The principal areas in which these accounts do not comply in all respects with the Statements of Standard Accounting Practice (SSAP) are as follows:

##### (i) Treatment of subsidiary companies

There are two types of subsidiaries, those which are involved in the Technology Transfer Business ("Technology Transfer subsidiaries") and those which exist for the purpose of developing specific technologies ("Development subsidiaries"). The former are consolidated in the Group Profit and Loss Account, Balance Sheet and Source and Application of Funds Statement. The latter are not consolidated as it is considered that a consistent and meaningful presentation of all investments can best be achieved if the development and commercialisation of inventions are accounted for in the same way regardless of the legal form taken by individual investments.

Investments in subsidiaries are stated at the lower of cost and Council's valuation in NRDC's Balance Sheet. Similarly only dividends received and receivable are credited to its Profit and Loss Account.

##### (ii) Research and development

The policy on charging research and development to the Profit and Loss Account is set out in C below.

##### (iii) Basis of consolidation

The Group accounts consolidate the accounts of NRDC with those of its Technology Transfer subsidiaries, all made up to 31 March 1991 - BTG International Limited, British Technology Group Inter-Corporate Licensing Limited (previously known as British Technology Group (USA Limited) and British Technology Group USA Inc.

No Profit and Loss Account is presented for NRDC itself. However, its profit before tax for the financial year was £7.72 million (1990: £9.51 million).

#### B Other capital assets

Other capital assets are stated at the lower of cost and Council's valuation including the proportion of general administrative overheads charged to patents. For accounting purposes investments are classified as follows:

- (i) Development projects and patents
  - (a) Development projects: The cost of projects undertaken on a sole risk basis with the objective of deriving commercially valuable intellectual property rights ("IPR").
  - (b) Patents: The cost of obtaining patent protection for IPR on technologies obtained from sources, whether or not they have been the subject of development projects. Income from patents is derived through licensing and other agreements.

- (ii) Joint venture projects

Projects undertaken in association with industrial companies under agreements which provide for a commercial return if a project is successful, usually by means of a levy on sales.

- (iii) Investments held for resale

These comprise equity and loans in companies where the equity holding is less than 50%, and where the Group's return is derived from the eventual sale of the investment.

- (iv) Development subsidiaries

These comprise loans to and investments in the share capital of companies formed to develop specific technologies.

## C Amortisation

The amortisation policy as applied to the four main classes of investment is as follows:

- (i) Development projects and patents

Any expenditure on pure research is written off in the year in which such expenditure is incurred. Expenditure on applied research is capitalised as part of project costs since such expenditure is undertaken with a view to commercialisation of the resulting IPR. Expenditure is generally written off over a maximum of eight years, in equal instalments, commencing in the third year after than in which the expenditure is incurred. All such expenditure is reviewed annually and, in cases where it is thought that the project's objectives will not be achieved, a total write off is applied. Expenditure on patents not associated with projects is written off over ten years from the year in which the expenditure is incurred.

- (ii) Joint venture projects

Cumulative cost is written off in proportion to estimated future income streams commencing with the year when income is expected to be first receivable.

- (iii) Investments held for resale

These are valued at the lower of cost and Council's valuation.

(iv) **Development subsidiaries**

These are valued at cost less any provision for permanent diminution in value.

**D Technology Transfer subsidiaries**

Technology Transfer subsidiaries are consolidated into the Group accounts.

**E Tangible fixed assets**

These are stated at cost, less depreciation thereon, calculated on a straight line basis, at the following rates:

Freehold buildings	2%
Leasehold property	20%
Computers	20%
Motor vehicles	25%
Furniture and equipment	10% to 20%
Software	33%

**F Leases**

A Technology Transfer subsidiary has entered into operating leases. Rentals under such leases are charged on a straight line basis over the term of each lease.

**G Licence income**

Credit for licence income is taken into the accounts on an accruals basis based on royalty accounting periods completed in the financial year. Payments received in respect of future royalty periods are credited to the Profit and Loss Account in the relevant accounting years, related revenue sharing payments are similarly deferred.

**H Deferred taxation**

Full provision is made for deferred taxation to take account of timing differences arising due to the differing treatment for accounting and taxation purposes.

**I Treatment of foreign currencies**

In the accounts of individual subsidiaries, foreign currency transactions are translated into sterling at the rate ruling on the transaction date. Assets and liabilities resulting from hedging of foreign currency are translated into sterling and reflected in the Balance Sheet at the rate ruling on the date of the transaction. Other foreign currency assets and liabilities are translated at the rate ruling on the Balance Sheet date and any profit or loss resulting therefrom is reflected in the Profit and Loss Account.

For the purpose of consolidation the closing rate method is used, under which translation gains or losses are shown as a movement on reserves. Profit and Loss Accounts of overseas Technology Transfer subsidiaries are translated at the average exchange rate.

**J Pension costs**

The charge to the Profit and Loss Account is based on an actuarial calculation and represents a regular cost, allowing for any actuarial surplus or deficit, so as to systematically allocate pension costs of employees over their expected future working lives.

**K Deferred litigation costs**

Litigation costs are deferred where the circumstances are such that there is a future income stream and that income stream is certain. The costs are amortised over the life of the income stream.

**L Revaluation reserve**

Surpluses or deficits arising on the revaluation of individual fixed assets are charged to a non-distributable reserve known as the Revaluation Reserve. Where depreciation charges are increased following a revaluation, an amount equal to such increase is transferred annually from this reserve to the Profit and Loss Account below the profit for the financial year.

**Addendum**

- (i) Where changes have occurred in accounting policies; the figures have been presented on a consistent basis in accordance with the 1990/91 accounting policies.
- (ii) The notes to the accounts are a composite of the notes presented in the various accounts.



## 2 Revenues

	Years ended 31 March		
	1989 £'000	1990 £'000	1991 £'000
Licence income	19,548	25,169	28,231
Levies from JV's	3,125	1,741	1,763
Other project income	164	2,422	343
Profit/loss on sales of investments	907	(177)	157
Miscellaneous income	156	375	216
	—	—	—
<b>Revenues</b>	<b><u>23,900</u></b>	<b><u>29,530</u></b>	<b><u>30,710</u></b>

## 3 Operating expenses

	Years ended 31 March		
	1989 £'000	1990 £'000	1991 £'000
Revenue sharing	3,610	5,530	7,860
Amortisation	6,430	7,360	8,170
Patent renewal fees	540	550	580
Litigation costs	<u>40</u>	<u>470</u>	<u>430</u>
	<b><u>10,620</u></b>	<b><u>13,910</u></b>	<b><u>17,040</u></b>

### Amortisation costs

	Years ended 31 March		
	1989 £'000	1990 £'000	1991 £'000
Project and associated patent expenditure	3,008	3,051	3,720
Patent costs	<u>1,062</u>	<u>1,109</u>	<u>1,190</u>
	4,070	4,160	4,910
Joint venture projects	1,260	710	350
Equity and loan investments	730	2,190	2,610
Deferred litigation	<u>370</u>	<u>300</u>	<u>300</u>
	<b><u>6,430</u></b>	<b><u>7,360</u></b>	<b><u>8,170</u></b>

#### 4 Administrative expenses

	<u>Years ended 31 March</u>		
	<u>1989</u>	<u>1990</u>	<u>1991</u>
	£'000	£'000	£'000
Staff costs	4,080	4,890	6,090
Other costs	2,940	3,070	3,240
Depreciation	750	820	910
	—	—	—
	<u>7,770</u>	<u>8,780</u>	<u>10,240</u>

#### 5 Extraordinary item

The extraordinary item of £1.7 million relates to a provision made principally to cover the costs of re-registration of overseas patents, necessary as a consequence of privatisation.

#### 6 Tangible fixed assets

	<u>Net Book Value</u>		
	<u>1989</u>	<u>1990</u>	<u>1991</u>
	£'000	£'000	£'000
Freehold property	5,430	5,300	6,760
Computers and software	280	900	1,790
Furniture and equipment	1,130	810	590
Motor vehicles	<u>620</u>	<u>700</u>	<u>830</u>
	<u>7,460</u>	<u>7,710</u>	<u>9,970</u>

#### 7 Debtors

	<u>Years ended 31 March</u>		
	<u>1989</u>	<u>1990</u>	<u>1991</u>
	£'000	£'000	£'000
Due within one year:			
Licence income and levies	2,990	3,350	3,580
Other debtors	320	1,000	1,110
Prepayments and accrued income	<u>1,680</u>	<u>4,050</u>	<u>1,130</u>
	4,990	8,400	5,820
Due after one year:			
Prepayments and accrued income	<u>190</u>	<u>450</u>	—
	<u>5,180</u>	<u>8,850</u>	<u>5,820</u>

## 8 Creditors

	Years ended 31 March		
	<u>1989</u>	<u>1990</u>	<u>1991</u>
	£'000	£'000	£'000
<b>Amounts due within one year</b>			
Project creditors	3,000	4,540	7,540
Bank overdraft	-	-	20
Corporation tax	1,320	760	1,470
Deferred income	2,180	1,350	910
Other creditors	1,700	1,900	1,140
Provision for dividend	<u>2,610</u>	<u>3,410</u>	<u>1,270</u>
	10,810	11,960	12,350
<b>Amounts due after one year</b>			
Deferred income	<u>390</u>	<u>910</u>	<u>-</u>
	<u>11,200</u>	<u>12,870</u>	<u>12,350</u>

## 9 Provision for liabilities and charges

	Years ended 31 March		
	<u>1989</u>	<u>1990</u>	<u>1991</u>
	£'000	£'000	£'000
Deferred tax	6,430	7,420	7,590
Provision for litigation costs	440	440	440
Provision for pension costs	250	570	780
Provision for privatisation costs	<u>-</u>	<u>-</u>	<u>1,590</u>
	<u>7,120</u>	<u>8,430</u>	<u>10,400</u>

## 10 Revaluation reserve

[            ]

## BRITISH TECHNOLOGY GROUP

## Selection of licensees of BTG

Adria Laboratories	Ferranti	Picker International
Ahlborn Orgel	First Security Group	Philips Research Laboratories
Allen-Bradley	FMC Corporation	Pitman-Moore
American Microscan	GEC	Polysystems
American Monitor Corporation	GEC Mechanical Handling	Plessey
Amersham International	Glaxo	Prime Computer CAD/CAM
Asahi Chemical Industries	General Electric	Pragma
Baxter Healthcare	Graseby Medical	Prosys Technology
BDH Chemicals	Health Images	Racal Safety
Beckman Instruments	Hiltcraft	Richard Mozley
Biomedical Sensors	Hitachi	Richards Medical
Biomet	Hoechst	Rolls-Royce Mateval
Boehringer Mannheim	Hoffman La Roche	Rotheroe & Mitchell
British Industrial Sand	HowMedica	Roussel Uclaf
British Telecom	IBM	Rover Group
BTR Silvertown	ICI	Sandoz
BWN Vortoil	ICI Americas	Schering Corporation
BYG Systems	Institute of Carlo Erba	GD Searle
Celltech	Jeol	Shelbourne Reynolds
CIBA-Corning Diagnostics Corporation	John Deere	Sherwood Medical Industries
Clement Clarke International	Kinetic Concepts	Shofu Dental Manufacturing
Controlled Therapeutics Corporation	Klockner Humboldt Deutz	Siemens
Coulter Electronics	Kubota	Sinclair Research
Crompton Parkinson	Kyowa Hakko Kogyo	Slumberland Holdings
De La Rue	Laboratories Biotrol	Smith & Nephew Medical
Dentsply	Laurence Scott & Electromotors	Snia Fibre
Dow Instruments & Reagents	Leicester Polytechnic	Specmat
Draeger Safety Group	Liquipak International	Sterling-Winthrop Group
Dupuy Division of Biodynamics	Malthus Instruments	Sturtevant Engineering
Eastman Kodak	Mari Advanced Microelectronics	Sumitomo Chemical
EFTPOS UK	Maskinfabriken Taarup	Technicon Instruments
Electro-Nucleonics	Mediscus Products	Twyford Pharmaceutical
EM Industries	Meta Machines	Deutschland
Englehard Industries	Miles Laboratories	Vector Fields
Envirotech	Mitchell Cotts Chemicals	Warner Lambert
Espe Fabrik	Negretti Automation	The Wellcome Foundation
Pharamazeutischer Praparate	Nokia	Wormold International
	Ocli Optical Coatings	York Technology
	Olympus Optical	Zimmer
	Oxford Instruments	

## APPENDIX 4

### LITIGATION CASES

#### Current cases include:

- Varian

BTG has filed a claim in the US District Court of New Jersey alleging that Varian Associates, a US company, has infringed a BTG patent in relation to spectrographic analysis of material. Varian has responded amongst other defences that the patent is not valid. The case is proceeding through the preparatory stages of litigation and as yet no date has been set for the trial of fundamental issues. Costs have so far totalled around £830,000 and could total some £1,000,000. No detailed estimate of the likely proceeds of a successful outcome have been prepared and an initial decision on the validity and infringement is not likely until 1992. [Explain size of costs].

- Wellcome and Mitchell Cotts

BTG recently took out a construction summons requesting the Court's interpretation of the effect of the Patent Act 1977 on the expiry date of certain patents and therefore the associated licences. In a judgement delivered on 22 July 1991 with respect to Wellcome, (one of the two UK Pyrethrin licensees), those materials manufactured and sold in the UK were exempt from royalties but royalties continued to be payable in respect of sales to overseas territories where a patent still existed. Back royalties could amount to in excess of £100,000 pa. The same principle applies to Mitchell Cotts (the second UK Pyrethrin licensee) except that any royalties due from Mitchell Cotts will be offset by a claim by Mitchell Cotts against BTG involving a separate dispute.

- Perbury

BTG originally developed CVT technology with Perbury Engineering Limited and at that time an agreement set out the scope of the IPR eligible for revenue sharing when BTG developed CVT further. As is normal in revenue sharing agreements, BTG was entitled to allocate revenue deriving from a number of inventions from different sources, between the inventions at its discretion. Accordingly it attributes 21.5% of revenue from Torotrak technology to Perbury inventions. The revenue sharing agreement also placed a restrictive covenant on Perbury and its director.

The director is disputing the revenue sharing agreement and the restrictive covenant. He has lodged a complaint with the European Commission. BTG has issued a High Court writ in the UK claiming breach of the restrictive covenants. Neither claim has been heard yet and BTG are confident that the claims will not result in any settlement materially adverse to BTG.

Settled cases include:

- Johnson & Johnson (1986)

This was a breach of contract case which was very important for BTG as it set a precedent for royalty income from MRI. A settlement was reached prior to litigation and back royalties amounted to [ ].

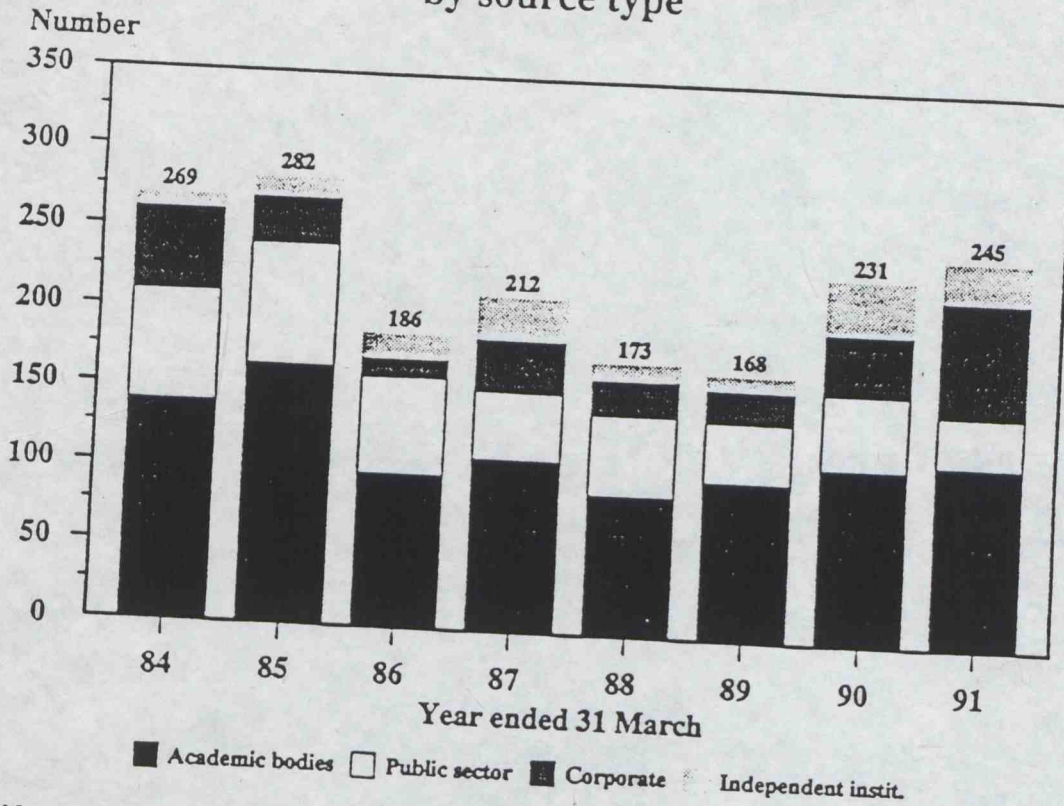
- GC Dental (1988/89)

This was a patent infringement case relating to BTG's Glass ionomer cement patents in Japan and the USA. This was settled prior to litigation and back royalties amounted to [ ].

- Hovercraft (1990)

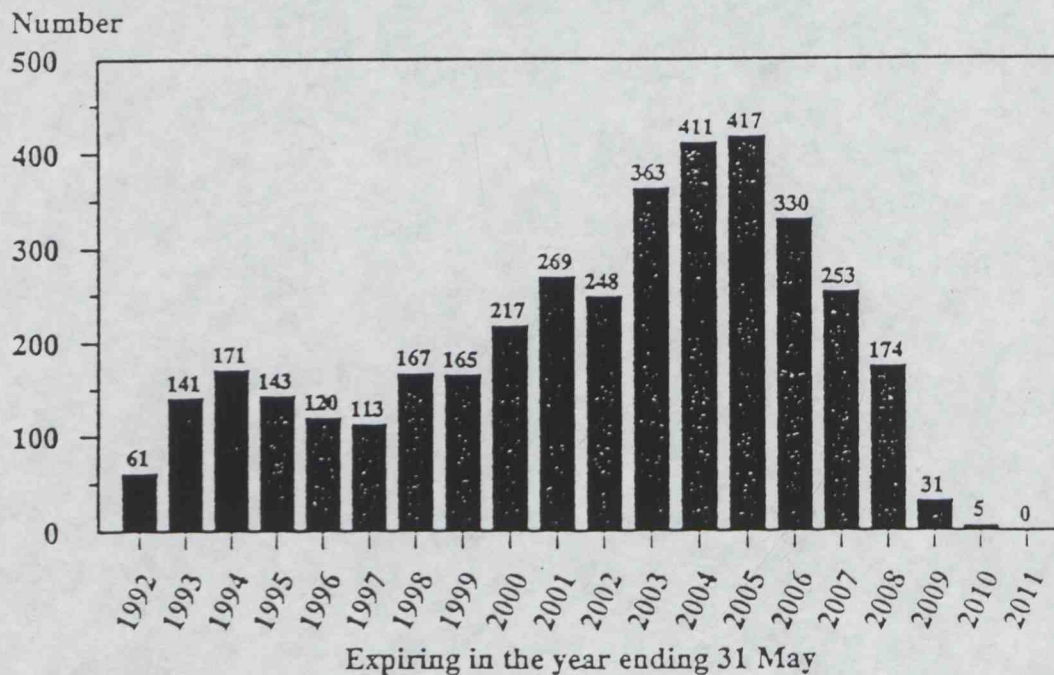
This case related to patent infringement against the US Government. The claim was initiated in the early 1980's by BTG who claimed that the US Government had manufactured a number of hovercraft which infringed BTG's hovercraft patents. BTG's claim was successful and the US Government settled in March 1990 for \$6.1 million compared to BTG's litigation fees of around £1 million.

## Number of inventions accepted by source type



Note: In 1988/89 an additional 130 cases were accepted from Johnson & Johnson in a single one - off agreement, not included in the above to avoid confusion.

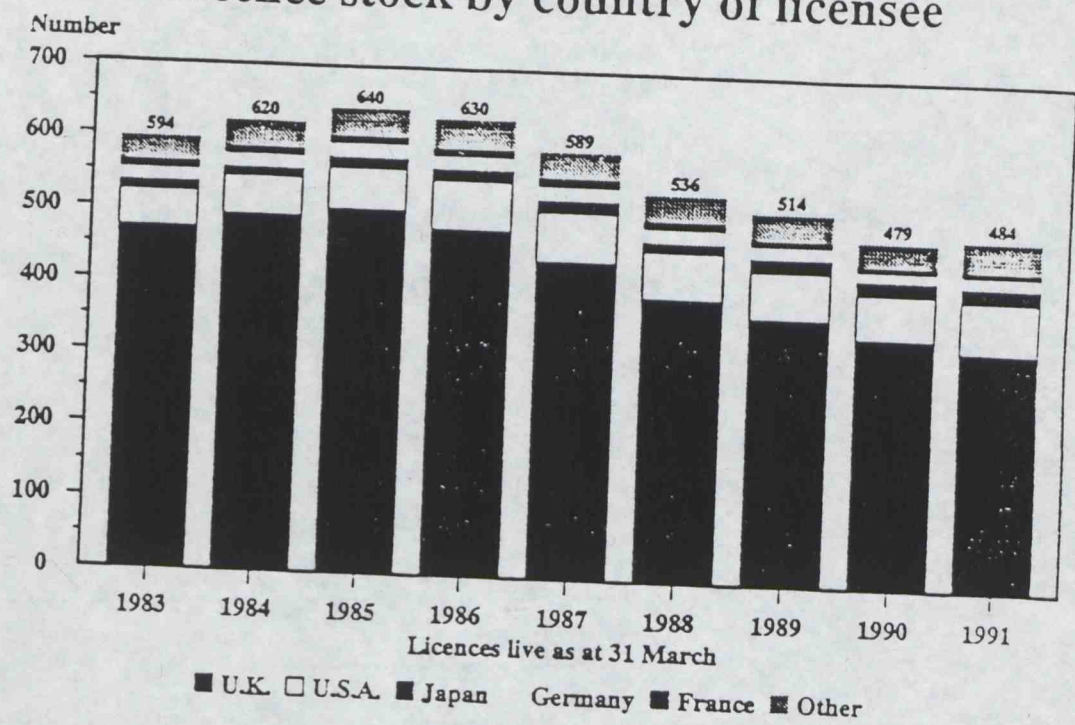
## Expiry dates of granted patents & registered designs held at 31 May 1991



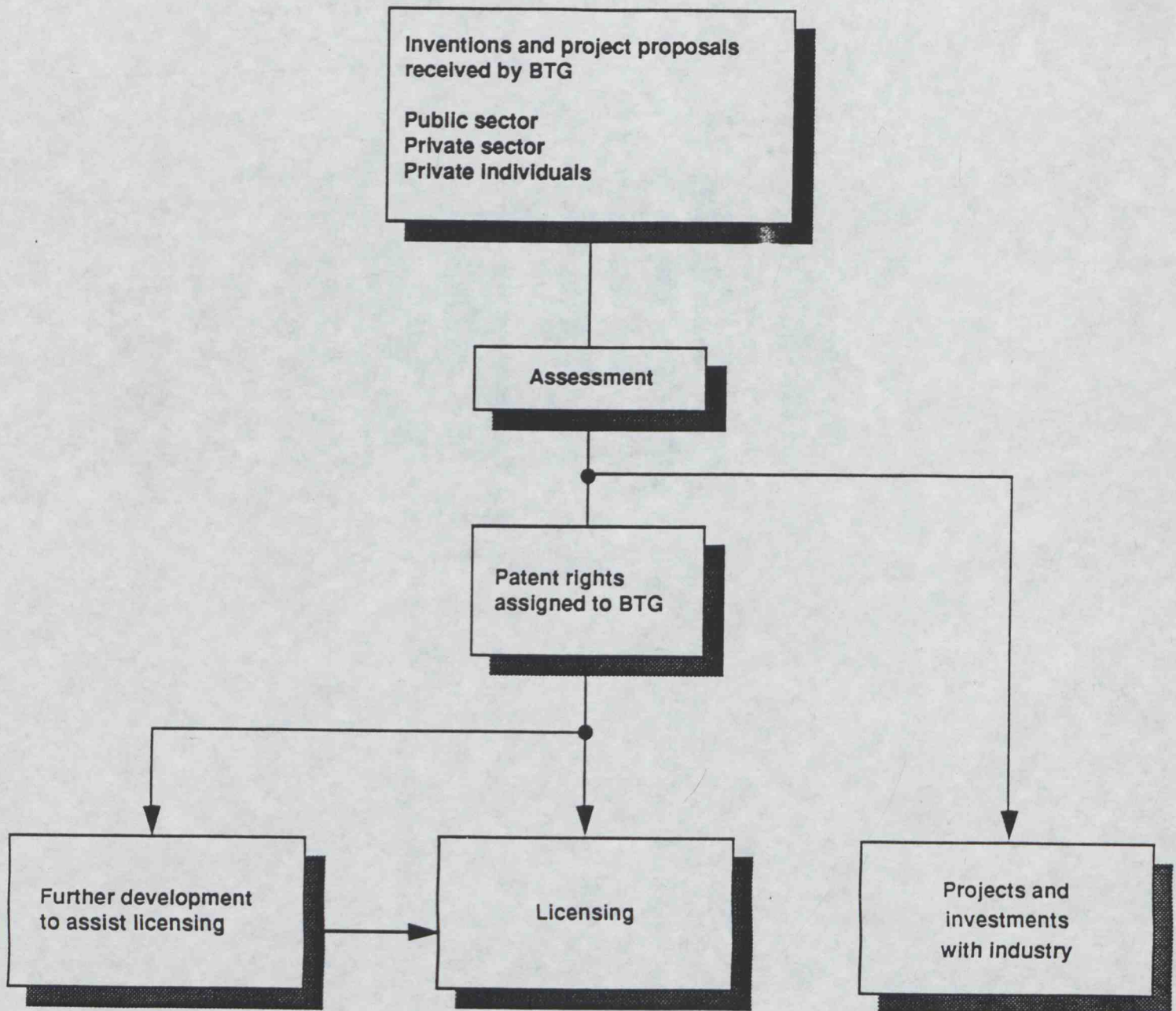
Note: The above excludes an additional registered design expiring in the year ending 31 May 2019



## Licence stock by country of licensee



## TECHNOLOGY TRANSFER





10 DOWNING STREET

*From the Principal Private Secretary*

11 May 1989

**BTG COMPENDIUM**

I enclose a copy of the promised foreword, signed by the Prime Minister, for BTG's Compendium. Could you ensure, before the rest of the booklet is sent off for printing that her message lines up with the final text.

I am copying this letter to Neil Thornton in Lord Young's office.

(ANDREW TURNBULL)

Ian Harvey, Esq.

mem



DAS

cc DTI

10 DOWNING STREET  
LONDON SW1A 2AA

THE PRIME MINISTER

The impact of science and technology on our daily lives is immense. Technological innovations are fundamental to economic growth, improved living standards and a better environment. But for this to happen it is essential to bring together scientific advances and the demands of the market place.

The British Technology Group (BTG) plays such a role, and has fostered and developed a number of major inventions arising from British research.

Amongst the many products BTG has developed over the years, three are outstanding. Cephalosporin antibiotics remain, almost forty years after their first invention, amongst the world's most widely used anti-infective agents and many many people owe their lives to them. The pyrethrin insecticides combine effectiveness against a range of pests with a benign effect on the environment. Magnetic Resonance Imaging technology is playing an increasing part in the early identification and consequent treatment of many medical conditions.

The development of such products illustrate how BTG has worked successfully with universities, Government research establishments and industry worldwide in the exploitation of innovations.

Amongst the many products BTG are now working on, we cannot know which might have such profound effects on our lives or on those of our children. But given its record, we can be sure that BTG will continue to play an important role.

I therefore welcome the initiative of the British Technology Group in providing these insights into the inventive process, and in illustrating the benefits which flow from it.

*Margaret Thatcher*

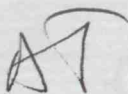
May 1989

PRIME MINISTER

BRITISH TECHNOLOGY GROUP

You agreed earlier to provide a foreword to the compendium BTG are producing on its role in the process of translating scientific discoveries into usable products. It has not been possible to include a Bill to privatise BTG in next year's legislative programme and so a document of this kind, with your endorsement, will be helpful in sustaining BTG's standing with the universities and research councils who provide the inventions and the companies who use them.

Please could you sign the attached?



ANDREW TURNBULL

10 May 1989

PM3AOQ

8 May 1989

12915



**BRITISH TECHNOLOGY GROUP**

101 Newington Causeway London SE1 6BU Tel 01 403 6666 Fax 01-403 7586 Telex 894397

Andrew -

✓ Many thanks for the draft - looks very good to us.  
A couple of minor comments only.

Yours

A handwritten signature in dark ink, appearing to be 'Ian', with a horizontal line underneath.

With compliments

From the Chief Executive Ian A Harvey



10 DOWNING STREET

LONDON SW1A 2AA

From the Private Secretary

DASANT

The impact of science and technology on our daily lives is immense. Technological innovations are fundamental to economic growth, improved living standards and a better environment. But for this to happen it is essential to bring together scientific advances and the demands of the market place.

(BTG)

The British Technology Group, plays such a role, and has fostered and developed a number of major inventions arising from British research.

Amongst the many products ~~the~~ BTG has developed over the years, three are outstanding. Cephalosporin antibiotics remain, almost forty years after their first invention, amongst the world's most widely used anti-infective agents and many many people owe their lives to them. The pyrethrin insecticides combine effectiveness against a range of pests with a benign effect on the environment. Magnetic Resonance Imaging technology is playing an increasing part in the early identification and consequent treatment of many medical conditions.

The development of such products illustrate how ~~the~~ BTG has worked successfully with ~~private inventors~~, universities, ~~and~~ Government research establishments, in the exploitation of innovations.

and industry worldwide

\* "private inventors" are ~~are~~ a minuscule part of our business. If it's politically helpful to put it in, do so -- but last not first!



Amongst the many products BTG are now working on, we cannot know which <sup>might</sup> ~~if any~~ will have such profound effects on our lives or on those of our children. But given <sup>is</sup> ~~the~~ record, we can be sure that BTG will continue to play an important role.

.. could ..  
.. might ..  
.. overlikely to ..  
? ↑

*the* British Technology Group

I therefore welcome the initiative of ~~the~~ BTG in providing these insights into the inventive process, and in illustrating the benefits which flow from it.

CF file



SW

10 DOWNING STREET  
LONDON SW1A 2AA

*From the Principal Private Secretary*

4 May 1989

Could you cast your eye over the draft foreword provided by DTI before I put it into the Prime Minister for signature.

(ANDREW TURNBULL)

Ian Harvey, Esq.

British Technology Group  
101 Newington Causeway  
SE1 6BU

Tel 403 6666

SW



SRWBZF

10 DOWNING STREET

LONDON SW1A 2AA

*From the Private Secretary*

The impact of science and technology on our daily lives is immense. Technological innovations are fundamental to economic growth, improved living standards and a better environment. But for this to happen it is essential to bring together scientific advances and the demands of the market place.

The British Technology Group plays such a role, and has fostered and developed a number of major inventions arising from British research.

Amongst the many products the BTG has developed over the years, three are outstanding. Cephalosporin antibiotics remain, almost forty years after their first invention, amongst the world's most widely used anti-infective agents and many many people owe their lives to them. The pyrethrin insecticides combine effectiveness against a range of pests with a benign effect on the environment. Magnetic Resonance Imaging technology is playing an increasing part in the early identification and consequent treatment of many medical conditions.

The development of such products illustrate how the BTG has worked successfully with private inventors, universities and Government research establishments in the exploitation of innovations.

Amongst the many products BTG are now working on, we cannot know which, if any, will have such profound effects on our lives or on those of our children. But given the record, we can be sure that BTG will continue to play an important role.

I therefore welcome the initiative of the BTG in providing these insights into the inventive process, and in illustrating the benefits which flow from it.

# dti

the department for Enterprise

The Rt. Hon. Lord Young of Graffham  
Secretary of State for Trade and Industry

Andrew Turnbull Esq  
Principal Private Secretary to  
the Prime Minister  
10 Downing Street  
LONDON  
SW1A 2AA

**Department of  
Trade and Industry**

1-19 Victoria Street  
London SW1H 0ET

Switchboard  
01-215 7877

Telex 8811074/5 DTHQ G  
Fax 01-222 2629

Direct line 215 5621  
Our ref PS4CEK  
Your ref  
Date 4 May 1989

*Dear Andrew,*

## BTG COMPENDIUM

We discussed the attachment to my letter of 2 May, which you suggested might usefully be fleshed out to play up the BTG's achievements.

- ... I attach a revised draft message for the Prime Minister to provide for the Compendium. As suggested in my earlier letter, you might want in sending the foreword to BTG to suggest that we should look at it once again when the precise make-up of the Compendium is known.

*Yours ever,*

*Neil Th*

NEIL THORNTON  
Principal Private Secretary

  
the  
Enterprise  
initiative

DRAFT FOREWORD BY THE PRIME MINISTER FOR THE BTG COMPENDIUM

The impact of science and technology on our daily lives is immense. Technological innovations are fundamental to economic growth, improved living standards and a better environment. *But for this to happen it is essential to bring together scientific advances and the demands of the market place.*

*plays such a role, and*

The British Technology Group has fostered and developed a number of major inventions arising from British research. ~~It plays a key role in bringing together scientific advances and the demands of the market place.~~

Amongst the many products the BTG has developed over the years, three are outstanding. Cephalosporin anti-biotics remain, almost forty years after their first invention, amongst the worlds most widely used anti-infective agents and many many people owe their lives to them. The pyrethrin insecticides combine effectiveness against a range of pests with a benign effect on the environment. Magnetic Resonance Imaging technology is playing an increasing part in the early identification and consequent treatment of many medical conditions.

The development of such products illustrate how the BTG has worked successfully with private inventors, universities and Government research establishments in the exploitation of innovations.

Amongst the many products BTG are now working on, <sup>we cannot</sup> ~~at this~~  
~~stage~~ <sup>know</sup> it is difficult to judge which, if any, will have  
such profound effects on our lives or on those of our  
children. But <sup>given its record, we can be sure</sup> ~~on the basis of past performance,~~ it seems  
likely that BTG activities will continue to <sup>play an</sup> ~~have a~~  
<sup>important role</sup> significant and positive influence.

I therefore welcome the initiative of the BTG in providing  
these insights into the inventive process, and in  
illustrating <sup>the</sup> ~~their consequential~~ benefits <sup>which flow from it.</sup>

104 V  
b u l d .



**dti**

the department for Enterprise

*cc: [unclear]*

*fil*

*I require a fuller version*

The Rt. Hon. Lord Young of Graffham  
Secretary of State for Trade and Industry

Andrew Turnbull Esq  
Principal Private Secretary  
to the Prime Minister  
10 Downing Street  
LONDON  
SW1A 2AA

**Department of  
Trade and Industry**

1-19 Victoria Street  
London SW1H 0ET

Switchboard  
01-215 7877

Telex 8811074/5 DTHQ G  
Fax 01-222 2629

Direct line 215 5621  
Our ref MM3AJK  
Your ref  
Date 2 May 1989

*Dear Andrew,*

**BTG COMPENDIUM**

In response to your letter of 22 March I attach a draft foreword by the Prime Minister for the proposed BTG Compendium. I am sorry for delay on doing so.

We understand the Compendium will describe some important historical inventions, and more recent BTG activities. The Compendium should be assembled by early June for probable publication in July. In sending BTG the draft foreword you might want to suggest that we should look at it once again when the precise make-up of the Compendium is known.

*Yours ever,*

*Neil RL*

NEIL THORNTON  
Principal Private Secretary

**the  
Enterprise  
initiative**



the department for Enterprise

DRAFT FOREWORD BY THE PRIME MINISTER FOR THE BTG  
COMPENDIUM

The impact of science and technology on our daily lives is immense. Technological innovations are fundamental to economic growth, improved living standards and a better environment.

The British Technology Group has fostered and developed a number of major inventions arising from British research. It plays a key role in bringing together scientific advances and the demands of the market place.

I therefore welcome the initiative of the British Technology Group in providing these insights into the inventive process, and in illustrating their consequential benefits.

02. V. 9  
111.9

Ian Harvey

20/4



FINE  
DA

① 23/5

10 DOWNING STREET

-- LONDON SW1A 2AA

From the Principal Private Secretary

22 March 1989

CF  
for chasny  
No longer GR

**BRITISH TECHNOLOGY GROUP COMPENDIUM**

Ian Harvey, the Chief Executive of BTG, has now written accepting the offer of a foreword by the Prime Minister for his Compendium. A copy of his letter is attached. Could a draft of this reach me by Thursday 20 April please.

I am copying this letter to John Fairclough (Cabinet Office).

(ANDREW TURNBULL)

Neil Thornton, Esq.,  
Department of Trade and Industry.

R2213

# BRITISH TECHNOLOGY GROUP

101 Newington Causeway London SE1 6BU Tel 01 403 6666 Fax 01-403 7586 Telex 894397



From the Chief Executive Ian Harvey

17 March 1989

Mr Andrew Turnbull  
Principle Private Secretary  
10 Downing Street  
London SW1A 2AA

Dear Andrew

## BRITISH TECHNOLOGY GROUP COMPENDIUM

Many thanks for your letter of the 12th March with the Prime Minister's agreement to contribute a message to the British Technology Group Compendium. We are delighted that she is able to indicate her support for the British Technology Group in our current thoroughly commercial and private sector direction. Would it be possible to have the foreword by end April?

I very much appreciate your assistance. We are now beginning to see major opportunities for further growth of B.T.G. internationally and I intend that B.T.G. should maintain its position as the major force in international technology transfer. You might be interested in the attached material and the intercorporate licence agreement with M J & J we announced yesterday.

Please let me know if we can provide any assistance in outline, ideas or drafting.

Yours sincerely

Ian Harvey

We intend to stay at the forefront of technology transfer intellectually as well as commercially. We are accepting ourselves also with Intellectual Property in the Uruguay Round of GATT, defining issues between US, Europe and Japan as well as the LDCs. Let us know in future if there is anything we could usefully contribute on a broader front.

Ian HARVEY



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28/3

10 DOWNING STREET

LONDON SW1A 2AA

*From the Principal Private Secretary*

12 March 1989

BRITISH TECHNOLOGY GROUP COMPENDIUM

The Prime Minister has agreed to contribute a message, in the shape of a foreword, for the British Technology Group Compendium. I attach a copy of the letter I have written to Ian Harvey seeking confirmation that he is content with this and asking him to suggest a deadline. I imagine he will agree to this. As soon as I have this I will commission from you a draft.

I am copying this letter to John Fairclough (Cabinet Office).

ANDREW TURNBULL

Neil Thornton, Esq.,  
Department of Trade and Industry

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cc: DTI  
CO

10 DOWNING STREET

LONDON SW1A 2AA

2 March 1989

*From the Principal Private Secretary*

BRITISH TECHNOLOGY GROUP COMPENDIUM

I have now consulted the Prime Minister about your invitation to contribute a short essay for the Compendium on a science and technology theme. She would prefer, however, to contribute a message, in the shape of a foreword, rather than an essay. In this way she will be able to indicate her support for the British Technology Group in its current role, rather than making a policy statement which the essay would require.

If this is acceptable to you please could you let me know by when you require a text.

ANDREW TURNBULL

Ian A. Harvey, Esq.

PRIME MINISTER

BRITISH TECHNOLOGY GROUP COMPENDIUM

Mr Ian Harvey, Chief Executive of the British Technology Group, has written to ask if you would contribute 'a short essay' to a compendium which BTG is preparing. This is a vehicle for BTG to promote itself with existing and potential commercial partners.

I have consulted Lord Young and John Fairclough. The latter was rather negative, but Lord Young was more encouraging.

You were, I believe, initially suspicious of BTG for two reasons:

- it was the linear successor to the NEB, taking over its residual shareholdings;
- it had an automatic right to patent inventions in the public sector.

Both of these artificial supports have been removed. BTG now makes its way in the world by identifying ideas in universities and research establishments, arranging patents and protecting them, and finding companies to use those ideas. By all accounts it is making a good job of this. There are plans to privatise BTG but pressure on the Legislative Programme has squeezed this out.

While John Fairclough may be right that if you have a major statement on science to make this would not be the ideal forum, his attitude to BTG is rooted in the past not the present. I think Lord Young is right that a short message, eg a one page foreword, would indicate your support for the new-style BTG and help sustain motivation while it waits its turn for privatisation. DTI would be happy to provide a draft.

Agree?

AT

Y  
to Mr.

ANDREW TURNBULL

10 March 1989



# dti

the department for Enterprise

The Rt. Hon. Lord Young of Graffham  
Secretary of State for Trade and Industry

Andrew Turnbull Esq  
Principal Private Secretary to  
the Prime Minister  
10 Downing Street  
LONDON  
SW1A 2AA

**Department of  
Trade and Industry**

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Fax 01-222 2629

*fax ahead  
received  
with PM 10/3/89*

Direct line  
Our ref  
Your ref  
Date

215 5422  
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9 March 1989

*Dear Andrew,*

#### BRITISH TECHNOLOGY GROUP COMPENDIUM

I am sorry for the delay in responding to your letter of 27 February inviting advice on the possibility of the Prime Minister contributing to the booklet proposed by the BTG. Unfortunately our copy of John Fairclough's response has only just reached us.

As John Fairclough has pointed out, the objective of the booklet proposed by BTG seems to be one which the Prime Minister would be able to support. While we well understand John Fairclough's doubts about a Prime Ministerial contribution, there are arguments which can be advanced on the other side. The stature of such a booklet could depend very much on the contributors, and one might, if necessary, make final confirmation of a Prime Ministerial message contingent on an adequately powerful mix for the booklet. As for the uncertainty that early privatisation of BTG can be seen as a positive rather than a negative reason for contribution.

Our understanding is that the legislation necessary to privatise BTG has not found a place in the 1989/90 programme. The postponement will be a severe disappointment to the BTG, including key senior staff like Mr Harvey. Losses in morale and in commercial momentum are very possible, but a positive gesture - like the proposed contribution from the Prime Minister - would undoubtedly help. And while BTG no longer

  
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initiative



the department for Enterprise

has (or should have) a preferential role, a Prime Ministerial message would not seem out of place while the organisation remains for the time being in the public sector.

For these reasons my Secretary of State would be somewhat more sympathetic to a Prime Ministerial message than the Chief Scientific Adviser. While he would not positively press for a contribution, he would see no reason to discourage the Prime Minister should she be minded to accept.

I am sending a copy of this letter to Mr Fairclough.

*Yours ever,*

*Neil Thornton*

NEIL THORNTON  
Private Secretary



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MR TURNBULL - No. 10

2 March 1989

BRITISH TECHNOLOGY GROUP COMPENDIUM

In your minute to me of 27 February you asked for advice as to whether the Prime Minister should agree to provide a "short essay" for a booklet on invention which the BTG are planning to publish around May.

2. Although the objective of this booklet is certainly something you could tell Ian Harvey the Prime Minister would support, I would advise against her providing a piece herself. I am not convinced that the stature of the publication is likely to merit a contribution from the Prime Minister. Furthermore this might look like an endorsement of the BTG's own role in relation to exploitation when, as you may recall, the Prime Minister announced in 1984 that the BTG was no longer to have a preferential role in this area and was to lose its prior rights to exploit publicly funded research. The uncertainty over the plans for the privatisation of BTG also presents a further potential awkwardness.

3. I am copying this minute to Neil Thornton in DTI.

JOHN W FAIRCLOUGH  
Chief Scientific Adviser



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1911

COMMUNICATIONS

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Ian HARVEY  
6/3



Added by phone

10 DOWNING STREET

LONDON SW1A 2AA

*From the Principal Private Secretary*

**MR. FAIRCLOUGH**  
Cabinet Office

**BRITISH TECHNOLOGY GROUP COMPENDIUM**

I have received the attached letter from Ian Harvey inviting the Prime Minister to contribute a "short essay" for BTG's booklet which is to be published around May. I would be grateful for your views on whether this is a platform the Prime Minister could use and, if so, what would be the particular message it would be helpful for her to get across.

I would be grateful for early advice so that we can get a decision from the Prime Minister on whether this is something she wishes to undertake and so that drafting can be put in hand.

I am copying this minute to Mr. Thornton (Department of Trade and Industry). *W*

ANDREW TURNBULL

27 February 1989

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# BRITISH TECHNOLOGY GROUP

101 Newington Causeway London SE1 6BU Tel 01 403 6666 Fax 01-403 7586 Telex 894397



From the Chief Executive Ian A Harvey

Mr Andrew Turnbull  
Prime Minister's  
Personal & Private Secretary  
10 Downing Street  
London SW1

22 February 1989

Dear Andrew

BTG is preparing to publish a short "Compendium" titled "Imagination & Intellect - The Power of Invention". This will be a creatively designed compendium of case histories and contributed essays about technological and scientific developments which have changed the world or improved the lot of mankind. It will be used, primarily, as a presentation from BTG to its existing and potential commercial partners. Our target recipients are Chairmen and Chief Executives of significant corporations worldwide. Our objective is to establish clearly the UK - and BTG in particular - in their perception as the commercial and intellectual leader in technology transfer worldwide.

Given the PM's interest in science and technology, and our target audience, we wondered whether she might like to use this as a platform for her views and perhaps contribute her thoughts in a short essay on the theme?

Yours sincerely,

PART 2 ends:-

SS/6N8CA7 to CH. EXCH. 24.2.84

PART 3 begins:-

1. HAUGST to AT. 22.2.89



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