



House of Commons
Defence Committee

The Defence Industrial Strategy

Seventh Report of Session 2005–06

*Report, together with formal minutes, oral and
written evidence*

*Ordered by The House of Commons
to be printed 25 April 2006*

HC 824

Published on 10 May 2006
by authority of the House of Commons
London: The Stationery Office Limited
£20.00

The Defence Committee

The Defence Committee is appointed by the House of Commons to examine the expenditure, administration, and policy of the Ministry of Defence and its associated public bodies.

Current membership

Rt Hon James Arbuthnot MP (*Conservative, North East Hampshire*) (Chairman)
Mr David S Borrow MP (*Labour, South Ribble*)
Mr Colin Breed MP (*Liberal Democrat, South East Cornwall*)
Mr David Crausby MP (*Labour, Bolton North East*)
Linda Gilroy MP (*Labour, Plymouth Sutton*)
Mr David Hamilton MP (*Labour, Midlothian*)
Mr Mike Hancock MP (*Liberal Democrat, Portsmouth South*)
Mr Dai Havard MP (*Labour, Merthyr Tydfil and Rhymney*)
Mr Adam Holloway MP (*Conservative, Gravesham*)
Mr Brian Jenkins MP (*Labour, Tamworth*)
Mr Kevan Jones MP (*Labour, Durham North*)
Robert Key MP (*Conservative, Salisbury*)
Mr Mark Lancaster MP (*Conservative, Milton Keynes North East*)
John Smith MP (*Labour, Vale of Glamorgan*)

The following Members were also Members of the Committee during the Parliament.

Derek Conway MP (*Conservative, Old Bexley and Sidcup*)
Mr Desmond Swayne MP (*Conservative, New Forest West*)

Powers

The committee is one of the departmental select committees, the powers of which are set out in House of Commons Standing Orders, principally in SO No 152. These are available on the Internet via www.parliament.uk.

Publications

The Reports and evidence of the Committee are published by The Stationery Office by Order of the House. All publications of the Committee (including press notices) are on the Internet at:

www.parliament.uk/defcom

Committee staff

The current staff of the Committee are Philippa Helme (Clerk), Richard Cooke (Second Clerk), Ian Rogers (Audit Adviser), Stephen Jones (Committee Specialist), Adrian Jenner (Inquiry Manager), Sue Monaghan (Committee Assistant), Sheryl Dinsdale (Secretary) and Stewart McIlvenna (Senior Office Clerk).

Contacts

All correspondence should be addressed to the Clerk of the Defence Committee, House of Commons, London SW1A 0AA. The telephone number for general enquiries is 020 7219 5745; the Committee's email address is defcom@parliament.uk. Media inquiries should be addressed to Jessica Bridges-Palmer on 020 7219 0724.

Contents

Report	<i>Page</i>
Summary	3
1 Introduction	5
Oral and written evidence	5
2 Production of the DIS and initial reaction to it	6
The need for a Defence Industrial Strategy	6
Timetable for producing the DIS	7
Consultation process	7
Initial reaction to the DIS	8
3 How the Defence Industry needs to change	12
Reshaping of industry	12
The UK as an attractive market	12
The key changes required	13
Impact on different sectors	14
Maritime sector	14
Fixed-wing aircraft sector	16
Complex weapons sector	17
4 How the MoD needs to change	19
Changes required of the MoD	19
Changes planned by the MoD	20
5 Research and technology	22
Overview	22
Funding of Defence Research and Technology	23
Centres of Excellence	25
6 Small and Medium-size Enterprises and the supply chain	27
Overview	27
SMEs and the supply chain	28
7 Competition and partnering arrangements	31
Overview	31
Competition	31
Partnering arrangements	32
8 Sovereign capability and international issues	35
Overview	35
Technology transfer	35
Munitions	36
International issues	38

9 Implementation of the DIS	40
Overview	40
Implementation timetable	40
Measuring success	41
Funding of the DIS	41
Conclusions and recommendations	43
Annex: List of Abbreviations	46
Formal minutes	47
List of witnesses	48
List of written evidence	49
Defence Committee Reports in this Parliament	50

Summary

The Defence Industrial Strategy (DIS) was published on 15 December 2005 with the aim of providing greater transparency to the UK's future defence requirements and, for the first time, setting out those industrial capabilities the UK needs to maintain appropriate sovereignty and operate equipment independently. The DIS was produced to a tight timetable and a wide consultation with industry was undertaken. The Minister for Defence Procurement and his team should be congratulated for this work.

The DIS has been well received by industry. It requires industry to reshape to adjust to the future requirements of the MoD. In the future there will be more focus on upgrading and maintaining platforms rather than designing and building new equipment. The reshaping of the different sectors of the defence industry will result in job increases in some areas and job decreases in others.

The MoD also needs to change to demonstrate that it is serious about the DIS. Work is in hand to identify improvements to the way in which the MoD procures equipment and it will be important for these improvements to be implemented quickly. The MoD should also provide more information to industry about its future requirements.

In several areas, such as the Maritime sector and Defence Research and Technology (R&T), further work is required and specific strategies need to be developed. Defence R&T has experienced a decline in funding which, if not addressed, will result in lower quality defence equipment in the future. We see R&T as a key investment for the future.

Small and Medium-size Enterprises (SMEs) are a vital part of the UK's Defence Industrial Base, but the MoD's knowledge of SMEs and their role in the supply chain has been weak. The MoD is seeking to become more "user friendly" to SMEs and to understand better the supply chain.

In some sectors, such as fixed-wing aircraft, the UK has only one company with the capacity and capability to deliver the MoD's requirements. Competitive procurement will, therefore, not be possible if the UK is to retain national capability.

The MoD plans to make more use of long-term partnering arrangements. There are risks that this will result in monopoly supply and there are considerable concerns about the access of other companies to sub-contract work. There will need to be rules in place to ensure that 'sub-primes' and SMEs can compete for sub-contracts. We will return to this matter.

The success of the DIS will depend upon how well it is implemented and whether the MoD is adequately funded by the Treasury to deliver it. The Minister for Defence Procurement is providing the impetus for implementing the DIS and this must be maintained. The Minister has provided us with a timetabled programme for implementation of the DIS. We plan to monitor closely its progress.

1 Introduction

1. The Government's Defence Industrial Strategy (DIS) was published on 15 December 2005.¹ It takes forward the Defence Industrial Policy of October 2002,² which our predecessors examined in their *Defence Procurement* reports of 2003³ and 2004.⁴

2. The Government's aims in relation to the DIS are summarised as follows:

Our Defence Industrial Strategy takes forward our Defence Industrial Policy, published in 2002, by providing greater transparency of our future defence requirements and, for the first time, setting out those industrial capabilities we need in the UK to ensure that we can continue to operate our equipment in the way we choose..... to maintain appropriate sovereignty and thereby protect our national security.... In doing so, it builds upon the Defence Industrial Policy, explains more clearly how procurement decisions are made, and to assist industry in planning for the future commits Government to greater transparency of our forward plans, noting that as in any business, these change over time as spending priorities shift or cost estimates mature.⁵

3. We announced our inquiry on the day that the DIS was published.⁶ Its purpose has been to examine the process for producing the DIS, the initial reaction of the defence industry and other interested parties, the likely impact on the defence industry, the changes required of the Ministry of Defence (MoD), and the plans for implementing the DIS. Given the importance of the DIS, we expect to inquire into further aspects in the future.

Oral and written evidence

4. We took evidence from defence companies, defence trade associations, defence academics, the MoD, and the Department for Trade and Industry (DTI). We received written submissions from a range of organisations including trade unions, the English Regional Development Agencies and the Department for Enterprise, Trade and Investment, Northern Ireland.⁷ We are grateful to all those who contributed to our inquiry, and to the specialist advisers who assisted us in our inquiry: Mr Paul Beaver, Rear Admiral Richard Cobbold, Professor David Kirkpatrick, Air Vice Marshal Professor Tony Mason and Brigadier Austin Thorp.

1 Cm 6697

2 Policy Paper 5: Defence Industrial Policy, Ministry of Defence, 14 October 2002

3 Defence Committee, Eighth Report of Session 2002–03, *Defence Procurement*, HC 694

4 Defence Committee, Sixth Report of Session 2003–04, *Defence Procurement*, HC 572-I

5 Cm 6697, Foreword

6 Defence Committee, News Release No.12, *Defence Committee Inquiry into the Defence Industrial Strategy*, 15 December 2005

7 Ev 66–124

2 Production of the DIS and initial reaction to it

The need for a Defence Industrial Strategy

5. In their *Defence Procurement* report 2004, our predecessors examined the progress in implementing the Defence Industrial Policy. The evidence given to our predecessors suggested that there were a number of areas where the Policy needed to be developed further or where further progress was needed in implementing the Policy. These included:

- the need to develop an Industrial Strategy;
- the need to implement the Policy through the procurement process;
- consolidation in the UK Defence Industry;
- issues relating to open markets and access to technology; and
- relations between the MoD and industry.⁸

6. Our predecessors drew the following conclusions:

We welcome the fact that MoD has recognised the importance of establishing an industrial strategy to sit alongside the Defence Industrial Policy, and that work is now in hand to take this forward. Such a strategy needs to provide industry with a clear picture of which industrial capabilities and technologies are considered to be of crucial strategic importance in the future. We recommend that MoD take forward this work as a matter of urgency.⁹

We consider it critically important that MoD develop clear criteria for deciding which sectors of the defence industry it is vital to retain in the future. Issues such as security of supply, in particular to meet urgent operational requirements, should not be underestimated in making such decisions. Much equipment being procured today will be in-service for the next 20–30 years or more and will need to be upgraded and maintained. The imperative of retaining the skill within the UK to undertake such work must be recognised. This applies across the range of equipment: from the highest level to the most basic of military requirements.¹⁰

7. In the future there is likely to be less work in terms of designing and manufacturing new military platforms and more of a focus on maintaining and upgrading military platforms on a through-life basis. The DIS acknowledges that there are challenges ahead as the complex, technologically challenging and high-value equipments being introduced will last for many years. It recognises that this will mean that there will be an increasing emphasis on an ability to support and upgrade these equipments through life, which will have

8 HC 572-I, para 107

9 *Ibid*, para 112

10 *Ibid*, para 115

implications for the level of technological capability and industrial capacity that industry needs to retain.¹¹

Timetable for producing the DIS

8. On 26 August 2005 the MoD announced that it had set up a team to deliver the DIS. Lord Drayson, Minister for Defence Procurement, said that the Secretary of State for Defence had asked him “to examine and set out publicly, in as much detail as possible, which domestic industrial capabilities are essential to our national security and competitiveness” and that the DIS would be delivered by Christmas 2005.¹² On 15 December 2005, the Secretary of State made a Statement to the House announcing the publication of the DIS and paid tribute to Lord Drayson for overseeing the production of “this substantial document”.¹³

9. Lord Drayson told us that the DIS was produced to such a tight timescale because industry needed to make decisions at the end of 2005 and early in 2006. Industry required a clear framework as a basis to make those decisions. The MoD also had some key procurement decisions, for example on the Future Carrier programme, which needed to be taken in the context of the DIS.¹⁴ **We welcome the publication of the Defence Industrial Strategy and congratulate the Minister for Defence Procurement and his team for delivering the Defence Industrial Strategy to a tight timetable.**

Consultation process

10. Given the tight timescale in which the DIS was delivered, we were concerned whether adequate consultation had taken place with the defence industry and other organisations, such as defence trade unions. From the evidence we received, the MoD appears to have worked closely with the Defence Industries Council (DIC) and the defence trade associations, such as the Society of British Aerospace Companies (SBAC) and the Defence Manufacturers Association (DMA). The DIC considered that the discussions which took place between the MoD and industry about the DIS “was as helpful a conversation as we have had in the last 15 years. It was conducted well, it was very open, the way that it was handled encouraged openness on both sides.... the outcome of the Defence Industrial Strategy reflects that”.¹⁵ Most of the larger defence companies who provided evidence to us also considered that the consultation during the production of the DIS had been full and open.

11. In relation to Small and Medium-size Enterprises (SMEs), we received mixed views about the level of consultation. The DIC considered that SMEs were involved in the debate largely through the trade associations and also with representation on the DIC.¹⁶ However,

11 Cm 6697, Foreword

12 MoD website, Latest News, *Lord Drayson sets out plans to deliver a clear Industrial Strategy for Defence*, Friday 26 August 2005

13 HC Deb, 15 December 2005, col 1462

14 Q 276

15 Q 250

16 Q 232

we also heard that some SMEs did not consider that they had been fully consulted and that their voice was not heard as much as it should have been.

12. The MoD trade unions, as representatives of the views of the MoD staff, considered that they “were only consulted belatedly during the development of the DIS” and that their concerns had not been taken fully on board.¹⁷

13. During the production of the Defence Industrial Strategy a wide consultation with industry took place, but we are concerned about the adequacy of the consultation with Small and Medium Enterprises and with the MoD trade unions. We look to the MoD to consult more fully with both Small and Medium Enterprises and the MoD trades unions as work on the Defence Industrial Strategy is taken forward.

Initial reaction to the DIS

14. From the evidence we received, the publication of the DIS has been broadly welcomed by the defence industry, in particular for the clarity it provides of the MoD’s future needs. Examples of the initial reaction by the defence industry to the publication of the DIS are shown at Table 1.

Table 1: Initial reaction of the Defence Industry to the DIS

Defence Trade Association / Defence Company	Initial reaction to the DIS
MBDA Missile Systems	“very much welcomes the announcement of the Government’s White paper on Defence Industrial Strategy, judging it as a very necessary and eagerly awaited addition to the 2002 Defence Industrial Policy White Paper”. ¹⁸
Defence Industries Council	“The DIC.... welcomes the Government’s decision to publish a DIS.... The DIC fully shares the Government’s aim to equip the UK’s armed forces with the best operating capability whilst achieving good value for taxpayers. It is also central to a successful DIS that the Ministry of Defence should specify its future priorities and the capabilities that must be retained within the UK with great clarity so that industry can plan with more confidence for the future”. ¹⁹
BAE Systems	“welcomes the publication of the Defence Industrial Strategy as a blueprint for the way in which the government and the defence industry should work together in the future to meet the needs of our Armed Forces, deliver value for money to the taxpayer and sustain the UK’s world-class defence industry”. ²⁰
Fleet Support Limited	“a welcome step forward and the broad thrust is supported”. ²¹

17 Ev 98

18 Ev 66

19 Ev 76

20 *Ibid*

21 Ev 77

QinetiQ	“supports the main conclusions of the Defence Industrial Strategy (DIS). We share the vision that future defence capability will need an agile industry, where defence capability is driven more by technological innovation in sub-systems rather than platforms.... However, there is a disparity in the treatment of the research supply base compared with the other sectors. Although the importance of research and innovation is mentioned throughout the document, the implications of the continual decline in research are not addressed”. ²²
Society of British Aerospace Companies Ltd	“welcomed the DIS when it was published on 15 December.... an industrial strategy was needed to ensure that the UK’s industrial base could be transformed to meet the rapidly evolving needs of the Armed Forces and to sustain the industry’s considerable contribution to the UK economy”. ²³
Defence Manufacturers Association	“very much welcomes the publication of the Defence Industrial Strategy (DIS)., Considerable credit is due to the Minister for Defence Procurement (MinDP), Lord Drayson, and all the officials involved for producing a clear, effective and timely analysis”. ²⁴
EADS UK Ltd	“welcomes the publication of the DIS and the detail it provides, which has the potential to assist industry with its business planning. We agree with the broad thrust of what is proposed, in particular the emphasis on through-life capability management and making a greater proportion of the MoD’s overall business available to industry”. ²⁵

15. In addition to the evidence received from the defence industry, we also received evidence from academics, trade unions, and other organisations such as the English Regional Development Agencies. Examples of the initial reaction of these individuals and organisations to the publication of the DIS are shown at Table 2.

22 Ev 78

23 Ev 80

24 Ev 91

25 Ev 100

Table 2: Initial reaction of others to the Defence Industry to the DIS

Other interested parties	Initial reaction to the DIS
Professor Trevor Taylor, Department of Defence Management and Security Analysis, Cranfield University	"The Defence Industrial Strategy paper is of enormous potential importance for UK defence and security over the long term. The emphasis should be placed on the word "potential".... On the one hand, the paper brings formal recognition of the importance of the defence industry for the UK's capability to conduct military operations.... On the other hand, the Ministry of Defence shapes industry only through procurement choices and, unless the DIS has an impact on this area, it will steadily pass into irrelevance". ²⁶
English Regional Development Agencies	"The DIS emphasises the need to balance the current capacity to build and support fixed wing aircraft, submarines and surface vessels with future demand for such platforms. This will inevitably have a particular impact on the North West aerospace industry and the marine regions across the whole UK". ²⁷
Prospect, Trade Union	"We are in favour of the Government having a coherent Defence Industrial Strategy (DIS) and we support the overall policy aims of the DIS. We have particular concern about the ability of the MoD to obtain security of supply, in particular for small arms ammunition and high explosive". ²⁸
Ministry of Defence Trade Unions	"While we are in favour of the government having a coherent Defence Industrial Strategy (DIS) and we support the overall aims of the DIS, we have particular concerns about the potential impact on MoD's in-house civilian capability". ²⁹
Professor Keith Hartley, Centre for Defence Economics, University of York	"The Defence Industrial Strategy White Paper is a welcome contribution to public knowledge and understanding of UK Defence Industrial Policy and its likely future developments. It is the first time a UK Government has made such a detailed statement outlining the main features of the UK defence industrial base.... the objectives of defence industrial policy and identifying the key defence industrial capabilities which it seeks to retain in the UK". ³⁰

16. **The initial reaction to the Defence Industrial Strategy has been generally very positive.** However, while the initial reaction of the defence industry, defence academics, trade unions, and other organisations has generally been positive about the publication of the DIS and the broad thrust of what is proposed, a number of areas were identified where further work was required. These included:

- Research and Technology (R&T);
- SMEs and the supply chain;
- security of supply;

26 Ev 89

27 Ev 94

28 Ev 97

29 Ev 98

30 Ev 102

- the procurement process.

Much of the evidence we received also emphasised the need for the DIS to be implemented fully if it was to deliver the expected benefits. We examine these issues later in our report.

17. The Minister for Defence Procurement acknowledged that further work was required in some areas. He told us that:

I think we need to recognise that the DIS focused on the areas which we regarded as being the most high-priority in terms of the issues which we were faced with, and therefore there was a difference in terms of the depth into which we went in the different sectors reflecting the relative market conditions and the issues which we faced.... we do see that there is further work which we need to do to build on what is in the Defence Industrial Strategy around areas such as research and technology.... in terms of areas related to small and medium-size enterprises and the relationship between the Ministry of Defence and SMEs.... we certainly feel that these are areas which we need to further build on quickly this year, and we are doing so.³¹

3 How the Defence Industry needs to change

Reshaping of industry

18. The DIS states that industry will have to reshape itself in order to improve productivity and to adjust to lower production levels once the current major equipment projects had been completed. Industry will also need to retain the specialist skills and systems engineering capabilities required to manage military capability on a through life basis; and will need to adjust to sustain the capabilities the UK needs once the current production peaks are passed.³²

19. We asked how industry would reshape in response to the DIS, and whether it was prepared to reshape. Sir John Rose, Chairman of the DIC, considered it impossible to predict how industry would reshape, but thought that industry would respond to its customer.³³ Dr Sally Howes, Secretary of the DIC, told us that “when you speak to companies further down the supply chain, the DIS is seen as a good opportunity for industry to transform and to prosper as long as it is able to invest”.³⁴ Lord Drayson considered the re-shaping to be a ten-year process to ensure alignment between the defence industry’s capabilities and the UK’s capabilities in terms of security and defence priorities.³⁵

The UK as an attractive market

20. The DIS considers that the “UK offers unique attractions to business” for those companies who are prepared to invest and undertake business here.³⁶ Mr Mike Turner, Chief Executive of BAE Systems, believed that industry and business will “go where the market is”.³⁷ BAE Systems could see, as a result of the DIS, the possibility of a sustainable profitable future for the business in the UK. Mr Turner considered that “there is a strong market in the UK which was not there previously”³⁸ and that the DIS had encouraged “BAE Systems to remain and to invest in the United Kingdom”.³⁹ Mr Turner acknowledged that his company had considered merging with one of the large US defence companies to gain access to the US market, but a merger with a US defence company was “far less likely now”.⁴⁰

32 Cm 6697, Foreword

33 Q 235

34 *Ibid*

35 Q 283

36 Cm 6697, Foreword

37 Q 235 [Mr Turner]

38 *Ibid*

39 Q 237

40 *Ibid*

21. In early April 2006, BAE Systems confirmed that it was in discussions to sell its 20 per cent stake in European aircraft maker Airbus. Mr Turner said that BAE Systems wished to focus on its core defence business which was growing rapidly in the US. He stated that “we believe that now is the time for us to divest our Airbus shareholding to allow us to concentrate on our core transatlantic defence and aerospace strategy”.⁴¹ The MoD is procuring 25 A400M transport aircraft as part of a collaborative programme involving seven European nations. Airbus Military Sociedad Limitada is the contractor for the aircraft.⁴²

22. We were concerned by reports that some defence companies were considering moving out of the defence sector and, if this were the case, whether the MoD would get the reshaping of the defence industry which it needed for the future. Lord Drayson did not think that companies would leave the defence market.⁴³

23. We welcome the clarity that the Defence Industrial Strategy has provided to industry about future defence requirements, which should help to make the UK an attractive market to defence companies. However, we note that BAE Systems is considering selling its stake in Airbus, which makes us uncertain of where it leaves their commitment to the UK. Given the possible impact on UK jobs, and the fact that the MoD is procuring A400M transport aircraft from Airbus’ military arm, we shall keep a close eye on this matter as it develops.

The key changes required

24. Some of the changes required by the DIS will be difficult. Lord Drayson acknowledged that “the pain comes from that change, but change is always painful”.⁴⁴ Perhaps the greatest change that industry will have to adjust to is putting less focus on the design and development of new platforms and more of a focus on the insertion of upgrades and new capabilities, and through-life maintenance of existing platforms.⁴⁵ The Minister acknowledged that “that is, for some companies, a change of culture in terms of their type of business and that is difficult for them to do”.⁴⁶ He considered that there was evidence that industry was responding to the DIS and he expected industry to “get on with it in 2006”.⁴⁷

25. Sir John Rose thought that the move to supporting and upgrading equipment might be very positive.⁴⁸ Mr Turner said it was a recognition of what the reality was and considered that it was a good thing to see the focus on through-life support and upgrades. He told us that “the fact that the primes in the UK can now see a long-term future in that regard is not only a benefit for the primes but for the route to market for the SMEs which is far clearer

41 BBC website, “BAE confirms possible Airbus sale”, 7 April 2006

42 National Audit Office, *Major Projects Report 2005*, HC 595-II, Session 2005–2006, page 1

43 Q 284

44 Q 283

45 Cm 6697, Foreword

46 Q 283

47 *Ibid*

48 Q241

and more specific than it has been in the past”.⁴⁹ **The defence industry has accepted that future work will focus on the insertion of upgrades and new capabilities and through-life maintenance of existing platforms, rather than new platforms.**

Impact on different sectors

26. The DIS provides an analysis of the various defence industrial sectors and cross-cutting capabilities. The sectors include: maritime; armoured fighting vehicles; fixed-wing aircraft; helicopters, general munitions and complex weapons.⁵⁰ We focused on three sectors where there were likely to be substantial changes and challenges: maritime; fixed-wing aircraft; and complex weapons.

27. Lord Drayson has acknowledged that there will be job increases in some sectors, and decreases in other sectors, but he said that the aim is to manage this in a “smart” way. In the naval shipbuilding and complex weapons sectors there would be a process of managed decline.⁵¹ **The Defence Industrial Strategy will lead to job increases and job decreases in different sectors of the defence industry. We look to the Government to assist, where appropriate, those sectors where job decreases are likely.**

Maritime sector

28. Section B2 of the DIS considers the maritime sector and the strategic capabilities which need to be retained onshore.⁵² It states that:

it is a high priority for the UK to retain the suite of capabilities required to design complex ships and submarines, from concept to point of build; and the complementary skills to manage the build, integration, assurance, test, acceptance, support and upgrade of maritime platforms through life.⁵³

29. In his Statement to the House on 15 December 2005, the Secretary of State for Defence said that the Government was investing in the biggest naval shipbuilding programme that the Royal Navy had seen for two generations. However, he considered that the industry was currently fragmented with different companies and facilities undertaking submarine building, surface ship building and support.⁵⁴ The current levels of work in naval shipbuilding would not last forever and in about ten years it would not be affordable to sustain excess industrial capacity in the longer term. Plans were needed to keep the required key skills onshore in the UK. For submarines, the Government was committed to maintaining the ability in the UK to design, manufacture and support through life all aspects of this capability. He said that the UK also needed to sustain the ability to design and integrate complex surface ships and to support and maintain them through life. The UK might look:

49 Q 241

50 Cm 6697, Section B, Review by Industrial Sector and Cross-cutting Capabilities, pp 57–127

51 The Times, *Minister makes technology battle his priority for 2006*, 9 February 2006.

52 Cm 6697, pp 68–77

53 Cm 6697, Executive Summary, para xvii

54 HC Deb, 15 December 2005, col 1463

to outsource some lower-end manufacturing offshore. That makes sense, not least in order to avoid the boom-and-bust cycle of sustaining or creating capacity for which there is no medium or long term demand.⁵⁵

30. We examined the shipbuilding strategy for the Future Carrier programme in our report on the *Future Carrier and Joint Combat Aircraft Programmes*, published in December 2005.⁵⁶ We concluded that the Future Carrier programme was vital to the future of the UK's military shipbuilding industry, but were concerned that delays to the programme were likely to put pressure on the UK naval shipbuilding capacity. We looked to MoD to identify ways to manage the potential peaks in demand for naval shipbuilding programmes over the next ten years or so. We expected the Maritime Industrial Strategy to set out how the peaks and troughs, seen in the UK naval shipbuilding industry in the past, would be managed in the future.⁵⁷

31. The Minister considered that the naval shipbuilding sector was one where jobs were likely to increase, but that it was important not to create an unsustainable level of employment.⁵⁸ Mr Chris Cundy, Commercial Director of the VT Group, thought that there would be an increase in employment, particularly at the blue collar level, over the next three years. There were “abnormal workloads” within the industry at the moment because of programmes such as the Future Carrier and the Type 45 destroyer.⁵⁹

32. The Minister thought that there were “many years” to plan for the future changes in naval shipbuilding, and that it was important “to make sure that we are getting real efficiency into the industry”.⁶⁰ Some shipyards were considered to be world-class, but others were not so efficient. He emphasised the need for best practice to be spread, particularly as the focus was now towards the high value-added end of the shipbuilding industry. 2006 was a very important year because there were some important milestones on some of the key shipbuilding projects, in particular the Future Carrier programme. The Carrier programme was to be one of the ways to encourage the required changes.⁶¹

33. There are signs that the restructuring may have started. There have been press reports suggesting that BAE Systems and the VT Group might be bidding for Babcock International; that BAE Systems might take Babcock's dockyard interests, including Rosyth naval dockyard where the Future Carriers are likely to be assembled, and the submarine maintenance and repair base at Faslane. It has also been reported that the VT Group might sell its shipbuilding business to BAE Systems and that it might take over Babcock's support services business. If such a deal went through, BAE Systems would be the dominant naval shipbuilder in the UK, adding the VT Group and Babcock naval businesses to its existing

55 HC Deb, 15 December 2005, col 1464

56 Defence Committee, Second Report of Session 2005–06, *Future Carrier and Joint Combat Aircraft Programmes*, HC 554

57 HC 554, paras 70, 72–73

58 Q 285

59 Q 25

60 Q 285

61 Q 287

yards on the Clyde and at Barrow-in-Furness.⁶² **We shall take a keen interest in any developments in the restructuring of the dockyards.**

34. The Minister wanted to see the “Maritime Industrial Strategies” implemented in 2006.⁶³ Mr Cundy told us the VT Group company have had extensive discussions with the MoD on the Maritime Industrial Strategy and considered that the maritime industry was “probably as far as advanced of any in terms of the strategy”.⁶⁴ He believed that “we need to size the industry for the long-term capacity needed for warships, and commercial ships if we can be competitive”.⁶⁵ **We look to the MoD to ensure that the Maritime Industrial Strategies are produced, and the strategies implemented, to the planned timetable.**

Fixed-wing aircraft sector

35. Section B4 of the DIS considers the fixed-wing sector, a sector which includes fast jets, air transport, air refuelling, maritime patrol, airborne surveillance, uninhabited aerial vehicles and aerospace sub-systems.⁶⁶ In his Statement to the House on 15 December 2005, the Secretary of State for Defence said that, for fixed-wing aircraft, the RAF was in the middle of a substantial re-equipment programme, which included the introduction of Typhoon. The Joint Strike Fighter was expected to enter service in the next decade. Both of these aircraft were expected to remain in service for at least thirty years, and the MoD’s current plans did not envisage the UK needing to design and build a future generation of “manned fast jet aircraft beyond the current projects”.⁶⁷

36. The Secretary of State said that the UK needed to retain the high-end aerospace engineering and design capability required to support, operate and upgrade Typhoon and the Joint Strike Fighter through life. As the focus shifted from designing and building new manned aircraft towards supporting them through life, industry would have to make that challenging transformation.⁶⁸

37. We asked the Chief Executive of BAE Systems how his company would retain designers and engineers in the future, given the changes outlined in the DIS in relation to fast-jet aircraft. Mr Turner said that:

there are many, many years of further development for Typhoon and work for our engineers and for our shop floor in the years ahead. Joint Strike Fighter has a long, long way to go.

He was “sure there will be delays” on the Joint Strike Fighter, but that his company would want to play a role in supporting and upgrading that aircraft and also have the same role in

62 The Times, *Rivals join race for Babcock*, 26 March 2006

63 Q 314

64 Q 25

65 *Ibid*

66 Cm 6697, pp 84–94 and para B4.1

67 HC Deb, 15 December 2005, col 1464

68 *Ibid*

relation to Typhoon, Hawk, and Nimrod aircraft. He considered that his company had a significant future to look forward to.⁶⁹

38. The Secretary of State told the House that this was an exciting time for the aerospace industry. He said that the MoD would be investing in:

a significant technology demonstration programme for uninhabited combat aerial vehicles [UCAVs]. That will help us to better understand the potential benefits of uninhabited aerial vehicles—sometimes referred to as unmanned aerial vehicles [UAVs].⁷⁰

Lord Drayson told us that in relation to UAVs, there had been some good examples of smart thinking in terms of research and that this was an area the MoD was building on.⁷¹ The DTI was funding a UAV project on the commercial side, but would be pleased to see “spillovers from that civil project into the defence side”.⁷² Mr Graeme Ferrero, Managing Director, Defence Technology, QinetiQ, said that the MoD’s funding of the experimental UAV programme was welcome as a way of keeping skills in place “during the gap in new fast jet design”.⁷³

39. However, we have also heard from industry that the UK is still not spending enough on UAVs, compared to other countries. The Royal Aeronautical Society told us that it was imperative that the DIS proposals for “UAV and UCAV technology demonstration are fully implemented” as an onshore UK capability would be essential to facilitate UK participation in international programmes.⁷⁴

40. In the fixed-wing sector, future work on Typhoon and Joint Strike Fighter will provide work for engineers for some time to come, and there will be an increasing focus on Unmanned Aerial Vehicles.

Complex weapons sector

41. Section B7 of the DIS considers the complex weapons sector.⁷⁵ Complex weapons are defined as “strategic and tactical weapons reliant upon guidance systems to achieve precision effects. Tactical complex weapons fall largely into five categories: Air-to-Air; Air Defence; Air to Surface; Anti-Ship / Submarine (including torpedoes); and Surface to Surface”.⁷⁶

42. The DIS states that complex weapons provide UK Armed Forces with battle-winning precision effects. The UK has made significant investment in the upgrade and development of complex weapons: the investment in 2006 will be just over £1 billion, but will reduce by

69 Q 242

70 HC Deb, 15 December 2005, col 1464

71 Q 305

72 Q305 [Mr Gibson]

73 Q 130

74 Ev 69, 123

75 Cm 6697, pp 100–105

76 Cm 6697, para B7.1

some forty per cent over the next five years following the delivery of Storm Shadow and Brimstone weapons. Apart from the Meteor programme, there is little significant planned design and development work beyond the next two years. The DIS acknowledges that this will present a substantial challenge to industry and MoD plans to work with the onshore industry to assess whether it is possible to achieve a sustainable industry that meets the UK's requirements. The DIS notes that there is potential for industrial rationalisation and consolidation.⁷⁷

43. In its submission to the Committee, MBDA Missile Systems considers that the challenge is to implement the Strategy in time to avoid seeing the UK's complex weapons system industrial capability going into decline. The complex weapons sector requires greater clarity compared with other industries.⁷⁸ Mr Guy Griffiths, Chief Executive Officer of MBDA, told us that the forty per cent reduction in investment in complex weapons systems was not a great surprise to the company given the degree of rearmament that had taken place within the UK Armed Forces, but:

nor is it palatable, and it does demand some really close work with the MoD to see how that level of funding reduction can be accommodated in a way that does not destroy important industrial capability.⁷⁹

The Minister told us that job decreases were likely in the area of complex weapons, but that the important skills could be used in areas where there was growing demand.⁸⁰

44. We note that substantial job decreases are likely to be seen in the complex weapons sector as the MoD's investment in such weapons is to be substantially reduced. We look to the MoD to work closely with this sector so that this important capability and the current skills are not lost.

77 Cm 6697, para xxxv and xxxvii

78 Ev 67

79 Q 19

80 Q 285

4 How the MoD needs to change

Changes required of the MoD

45. The DIS acknowledges that changes will be required by the MoD as well as by industry.⁸¹ At our oral evidence sessions and in the submissions we received, a number of areas were identified where the MoD needed to change to ensure the success of the DIS. The Chief Executive of BAE Systems, Mr Turner, told us the following changes were required:

- A speeding up of the acquisition process;
- More investment at the start of a programme to sufficiently de-risk it; and
- The establishment of more realistic in-service dates and budgets for programmes.⁸²

He also considered that for BAE Systems:

the biggest issue for us, though, is the cultural one, the relationship over many decades now between the DPA and industry. That is where there has to be the most radical change.⁸³

46. Table 3 sets out examples provided by industry of the areas in which the MoD needs to change to ensure the success of the DIS.

Table 3: Examples provided by industry of the areas where the MoD needs to change

Suggested changes required of the MoD
<p>“MoD has a number of organisations whose policies and practice will need to be adapted to achieve the kind of coherence that DIS requires, such as introducing a genuinely whole life approach to acquisition. The challenge of changing culture must not be underestimated”.⁸⁴</p> <p>“the procurement process has been slow, risky and expensive for industry.... at minimum, we are looking at probably quite a significant cultural change which may well require further organisational change. I think.... that this is the subject of a major review that the MoD itself is launching”.⁸⁵</p> <p>“one of the consequences of the Smart Procurement reforms a few years ago.... [MoD] did set up an organisation that was fairly “stove-piped” – separate teams, separate organisations – and the transverse processes across the Ministry for linking things together and taking a common view were not sufficiently strengthened in that”.⁸⁶</p> <p>“The Ministry of Defence thinks of itself as being communicative, open, and fair, but if you look into it from outside, it is difficult to read. They could do more in the future to be clearer about their future intentions, their priorities, their plans and we would all benefit immeasurably from that”.⁸⁷</p> <p>“The American system is more open.... [UK] Civil servants are generally very reluctant to talk about budgets which are not 100 per cent committed.... This leaves industry guessing.... I think it is</p>

81 Cm 6697, Foreword

82 Q 251

83 Q 274

reflected in the various graphs you see in the Defence Industrial Strategy, which show very broad-brush expenditure in each of the sectors, whereas in the US you would see a huge amount more detail than that. The MoD used to give more detail out only a few years ago, but it has actually, over the last couple of years, withdrawn the amount of information it has been passing to industry through the various open days and is now probably communicating slightly less than even five years ago".⁸⁸

Changes planned by the MoD

47. We asked what changes the MoD was planning to make. Lord Drayson said that there was a duty on the MoD to change, in order to demonstrate through its change that it was serious about the DIS. If he was running a defence company, he would be looking at how quickly MoD was getting on with the things it had promised to do. The Minister was very encouraged by what was happening in the MoD and told us that "I aim to surprise this Committee.... by the pace of change which we are able to achieve in the Ministry of Defence".⁸⁹ Lord Drayson had been described as "a man in a hurry". When we asked whether his officials in the MoD were in as much of a hurry as he was, he told us that "I think they are getting there".⁹⁰ **We agree with the Minister for Defence Procurement that the MoD needs to demonstrate through its own change that it is serious about the Defence Industrial Strategy and we look forward to being "surprised" by the pace of change that the MoD achieves.**

48. The MoD's new Permanent Under Secretary of State, Mr Bill Jeffrey, told us during our inquiry into the MoD Annual Report and Accounts 2004–05, that there was a readiness to acknowledge that the acquisition of large defence equipment projects had not been handled well in the past. He intended to pay a lot of attention to whether the Defence Procurement Agency (DPA) had the staff, the training and the skills it needed to implement the Smart Acquisition principles.⁹¹ He also told us that:

We are also up for serious and significant improvement in the way in which procurement is managed by the Department, but, as part of the Defence Industrial Strategy, there is a project which I instituted myself shortly after I arrived in which we will be looking hard at the way in which the procurement function operates, how it is structured, how the processes work, and looking at ways in which we can generally make it work better, and I am utterly committed to that".⁹²

49. The Minister also referred to this review of the acquisition process and said that the review team would be reporting by May 2006 on the changes which needed to be made. He

84 Ev 82

85 Q 151

86 Q 152

87 *Ibid*

88 Q 153

89 Q 289

90 Q 288

91 Defence Committee, Sixth Report of Session 2005–06, *Ministry of Defence Annual Report and Accounts 2004–05*, HC 822, Q 29

92 HC (2005–06) 822, Q 31

considered that, where the MoD did do things well, they were done to the “gold standard”, but that best practice needed to be spread and commercial skills within the MoD needed to be improved. It was acknowledged that the process for acquiring Urgent Operational Requirements (UORs) was done very well and that there was scope to take the best out of the UOR acquisition process and apply this to longer term projects.⁹³ In other areas, Pathfinder programmes had been introduced to allow the MoD and industry to work together to explore what through-life capability was.⁹⁴

50. We were concerned by the suggestion that the MoD was providing less information to industry than in the past, and that the level of information provided in the US to defence companies was much more detailed compared with the UK. Lord Drayson told us that the DIS recognised that there needed to be more transparency because industry did not have enough information about future requirements. However, he said that the MoD did not want to “make the mistake of providing such clarity over where we saw the really smart, young innovative companies that we will provide a shopping list of acquisitions for bigger companies”.⁹⁵ **We look to the MoD to build upon the DIS and provide more information to industry in the future.**

51. **We welcome the fact that the MoD is seeking to identify improvements to its acquisition arrangements, including ways to speed the process up, and we look to the MoD to implement quickly the improvements identified. We expect the MoD to ensure that best practice is promulgated and the commercial skills of its officials are improved, particularly the legal and contract compliance skills needed to ensure well-drawn legal and production agreements involved in the new long-term partnering approach.**

93 Q 289

94 Q 253

95 Q 290

5 Research and technology

Overview

52. Section A5 of the DIS considers defence research technology and innovation and Section B11 considers the technological priorities to enable defence capability and considers the “critical underpinning and cross cutting technologies that need to be sustained in the UK in support of sectoral strategies”.⁹⁶ The DIS acknowledges the importance of defence Research and Technology (R&T):

to support the industrial capabilities identified across the sectoral analysis there are a number of areas in which the UK must sustain existing technological strengths or where we should, resources permitting, consider developing our expertise. There are other technologies showing promise across a range of defence applications that may have either a large impact on specific defence capabilities or a more widespread impact across many aspects of defence. These are provisionally identified in the DIS, but we recognise we will need further work in 2006 to inform our research and technology priorities.⁹⁷

53. Sir John Chisholm, Executive Chairman of QinetiQ, told us that “we have counted that there are some 600 mentions in the DIS to the words ‘research, technology and innovation’”.⁹⁸

54. Table 4 provides examples from the evidence we received of the comments and concerns about defence R&T.

Table 4: Comments and concerns about defence research and technology

	Comments and concerns about defence research and technology
QinetiQ	<p>“there is a disparity in the treatment of the research supply base compared with other sectors. Although the importance of research and innovation is mentioned throughout the document, the implications of the continual decline in research are not addressed”.⁹⁹</p> <p>“The Committee should look carefully at how MoD intends to take forward DIS implementation to ensure the research supply base is treated strategically like the other market sectors addressed in the White Paper, and should seek to gain assurance that fragmentation will not cause existing, relevant defence centres of excellence to become non-viable”.¹⁰⁰</p>
Society of British Aerospace Companies	<p>“It was a key element of industry’s case for the DIS that there needed to be enough investment in Science and Technology to support the future needs of the Armed Forces. As Section C2.5 of the DIS shows, there is a good deal more work to be done before the UK has a full</p>

96 Cm 6697, pp 38–45, pp 122–124, paras B11.1

97 Cm 6697, para xxxv

98 Q 184

99 Ev 78

100 Ev 80

	<p>analysis of the resources needed to acquire the technology and to match it to future capability plans. Industry has always suspected that more resource is needed to sustain our Armed Forces".¹⁰¹</p> <p>"Arguably, the R&T aspects of the DIS are the least joined up with industry, which is surprising given the regular dialogue between Government and industry. Industry would like to see a more overt commitment from Government to nurture the UK's industrial capability to undertake science and technology and also its links with the universities, which can be a fruitful source of innovation".¹⁰²</p>
Defence Manufacturers Association	<p>"The DIS notes that R&T is "critical to the delivery of battle winning capability" and then goes on to make a powerful business case for R&T investment. It is disappointing, therefore, that there is then no commitment to increase defence research spending".¹⁰³</p>
EADS UK Ltd	<p>"the DIS is not definitive about the MoD's R&T strategy, with much of the detail to be fleshed out over the next 12 months".</p>

Funding of Defence Research and Technology

55. The DIS acknowledges that "well targeted investment in R&T is a critical enabler of our national defence capability".¹⁰⁴ The DIS notes that many nations with growing economic wealth are now investing heavily in R&T. It states that:

Although UK investment in [the total of defence and civil] R&T has risen in cash terms, it fell as a proportion of GDP from 2.3% of GDP in 1981 to 1.9% now. There exists a risk that in the coming decades the UK could fall behind both our key allies and emerging economies in our ability to support sophisticated and competitive technology based industries. We could become increasingly dependent on defence technology solutions generated by other countries, including those developed from civil applications.¹⁰⁵

56. A study sponsored by the MoD analysed eleven major defence capable nations and showed a highly significant correlation between equipment capability and R&T investment in the last 5–30 years.¹⁰⁶ The DIS states that the study showed that:

there is a simple 'you get what you pay for' relationship between R&T spend and equipment quality, with a sharp law of diminishing returns, and that R&T investment buys a time advantage over open market equipment.¹⁰⁷

The UK is currently in a relatively good position, reflecting high R&T expenditure in the past, but the gap with the US is growing.

101 Ev 82

102 Ev 83

103 Ev 92

104 Cm 6697, para A5.2

105 Cm 6697, para A5.7

106 Cm 6697, p 39, Figure A5(i)—Capability Advantage from R&D Investment

107 Cm 6697, para A5.8

57. The National Audit Office reported that the MoD's spending on research in 2001–02 had fallen by 30 per cent in real terms since 1994–95.¹⁰⁸ Sir John Chisholm argued that R&T expenditure should be increased and that, if it were not, the consequence would be lower quality equipment in the future.¹⁰⁹ He called for a 25 per cent increase in defence research funding:

We have done a calculation and it runs along the lines that if defence expenditure has reduced by 50% in real terms over this period of time and it was that defence expenditure which gave us the equipment today which we feel satisfied with, you might argue that you need to increase defence expenditure back to where it was. We could mitigate that a little by saying that surely we are more efficient now than we were 15 years ago, but an increase of the order of 25% is what we believe would be a sensible policy decision.¹¹⁰

58. We sought to examine further the impact of the reduced level of funding of defence R&T. Mr Ferrero said that as he looked at QinetiQ's laboratories today he could "see a constant reduction in government investment in these [key] technologies and, ultimately, a reduction in the level of innovation that is coming out of the labs".¹¹¹ Sir John Chisholm stated that the decline in research funding had resulted in less resources for the laboratories. Once funding fell below a critical level, QinetiQ had to stop doing some types of research.¹¹² Sir John told us that:

In recent years what we have seen is that the remaining funding has gone as a proportion more to shorter-term research which supports more urgent needs and therefore the larger cutbacks tend to fall upon the longer term, more generic research which is the area from which many of the more profound developments in technology eventually emerge.¹¹³

59. We found it worrying to hear that one of the areas where there had been reductions in research funding was sensor systems, which in the past had produced important innovations such as thermal imaging.¹¹⁴ It is also of concern that reductions in R&T funding have made it more difficult to recruit and retain high quality researchers.¹¹⁵

60. QinetiQ saw itself as providing an important link in the chain between MoD, the customer, and the supply base, which included SMEs and universities. The company recognised the importance of SMEs in relation to R&T and was developing SME partnerships and university partnerships to capture efficiently these niche capabilities.¹¹⁶ In

108 National Audit Office, *The Management of Defence Research and Technology*, HC 360, Session 2003–2004, Table 4, page 9

109 Q 185

110 Q 198

111 Q 136

112 Q 192

113 *Ibid*

114 Q 193

115 Q 197

116 Q 208

contrast, the Chairman of the DIC considered that very little R&T took place in SMEs, although he acknowledged that they did participate in some R&T programmes.¹¹⁷

61. We asked the Minister what further work, following the publication of the DIS, needed to be undertaken in relation to R&T and when this work would be completed. Lord Drayson emphasised that the UK was the second biggest spender on defence research, but recognised that the MoD could improve “the value” it got from the defence research undertaken. He also acknowledged that the MoD needed to improve the performance in bringing through the outputs of research to making a difference to defence capability.¹¹⁸ The MoD would publish a Technology Strategy in 2006 which would seek to address these issues, and would “look at the balance of where we are making our research spending”. The MoD would open up more of its research spending to competition.¹¹⁹

62. We asked the Minister about Sir John Chisholm’s proposal that funding on defence research should increase by 25 per cent. Lord Drayson said he wanted the MoD to make decisions based upon data and that “what we are going to be prioritising this year is more emphasis on excellence”.¹²⁰ He considered that before thought was given to how much money should be spent on defence research, it was important to make sure that the money was spent wisely. The MoD’s policy was to increase its defence research spending in line with inflation, but the MoD would “look at whether we have got that balance right”.¹²¹

63. We are concerned that the decline in defence research spending will impact upon the quality of future equipment for the armed forces. We look to the MoD to address the level of spending on defence research in its Technology Strategy to be published this year. It would be useful if the Technology Strategy could set out clearly the level of defence research spending by Government and industry over time.

64. We look to the MoD to make a strong case for increased funding of defence research during the discussions with HM Treasury on the Comprehensive Spending Review. We see this as a key investment for the future.

Centres of Excellence

65. QinetiQ’s submission identified a gap in the DIS which is the role played by Research and Technology Organisations (RTOs). In addition to QinetiQ’s businesses, the RTOs included: Roke Manor, ERA, AEA, PA Technology and Government organisations such as Dstl. QinetiQ’s submission pointed to a risk that fragmentation of the research supply base could result in defence research “Centres of Excellence” becoming non-viable.¹²²

66. Sir John Chisholm considered that it was important to encourage the Centres of Excellence rather than undermine them by spreading the available resources too thinly.¹²³

117 Q 272

118 Q 300

119 *Ibid*

120 Q 301

121 Q 302

122 Ev 79–80

123 Q 210

Lord Drayson acknowledged that the Centres of Excellence in military research worked well and was a model which had been used very successfully in the pharmaceutical industry. He told us that “Centres of Excellence are definitely working for us. It is an example of a new approach to the management of R&D which is giving benefits”.¹²⁴ **We expect the further work on Research and Technology to encourage and maintain the Centres of Excellence for defence-related research.**

6 Small and Medium-size Enterprises and the supply chain

Overview

67. The DIS states that “around 165,000 people are directly employed in defence manufacturing in the UK, with a further 135,000 people employed indirectly in supply chain activity”.¹²⁵ The role of Small and Medium-size Enterprises (SMEs) and the supply chain was identified as a key issue in many of the submissions which we received. Table 5 provides examples of the issues identified.

Table 5: Issues identified about SMEs and the supply chain

	Issues identified about SMEs and the supply chain
Society of British Aerospace Companies	“DIS will be welcomed less readily by companies in the supply chain removed from direct supply to MoD and by smaller companies who may have been inhibited from entry into the defence market.... Some will see DIS as concerned essentially with the relationship between MoD and the primes. There will be concern about the risk of more vertical integration in the supply chain. MoD could usefully revisit the supply chain Codes of Practice that it launched under Smart Acquisition to improve supply chain relationships, as the principles there set out remain valid”. ¹²⁶
Defence Manufacturers Association	“A key interest for the DMA.... Is how the opportunities for and benefits from supply chains, equipment suppliers and SMEs are to be maximised. Many of the companies involved have key technologies and innovation to offer. It is to everyone’s advantage that they, too, are treated as being integral to the successful implementation of the DIS”. ¹²⁷
English Regional Development Agencies	“Whilst the identities of the largest defence contractors are well known, there is more limited visibility of the long supply chain which is an under utilised source of innovative solutions to issues facing the MoD. The RDAs feel there is a need for a cross-sector supply chain analysis of the industry and would be receptive to exploring ways of participating in such work”. ¹²⁸
Professor Keith Hartley, Centre for Defence Economics, University of York	“Supply chains are recognised by the DIS, but MoD and DTI need much more data on the extent and complexity of such supply chains in the UK DIB [Defence Industrial Base]”. ¹²⁹

125 Cm 6697, para A4.6

126 Ev 82

127 Ev 92

128 Ev 95

129 Ev 104

Northern Defence Industries	"There must be more understanding of the world that is inhabited by the SME supply chain.... the primes need to be aware of what the SME community can do to help them continually achieve long term business success.... The agile – and therefore most capable – SMEs will have tired of waiting. More than just the innovation they are widely recognised as bringing to the party will no longer be available for defence purposes. They will have discovered new markets - and moved on". ¹³⁰
Farnborough Aerospace Consortium	"Whilst the DIS makes reference to improving collaboration between the MoD Primes and SMEs, it does not offer the structural changes to the contracting route necessary to ensure retention of a highly innovative and agile indigenous supply chain". ¹³¹

SMEs and the supply chain

68. There have been press reports that SMEs are becoming frustrated with dealing with UK-based prime contractors. One article reported that a Managing Director of an SME had said that "Bit by bit we are giving up and gravitating towards other sectors, like the oil industry" and concluded that "if the DIS is to create a UK industrial base.... it needs to draw the UK SME base into the process in a fundamental way as well".¹³²

69. The Chairman of DIC did not have concerns about SMEs gravitating to other sectors and argued that the DIS should help SMEs by providing greater transparency about the opportunities that are available.¹³³ In his view, the most important thing for SMEs was to have a successful domestic industry, as for many SMEs their route to market was through the primes, or the sub-primes, or the major integrators.¹³⁴

70. The Minister believed it was vitally important to improve the way in which the MoD and larger defence companies worked with SMEs. He told us that:

I think there is a dual responsibility, which is clearly set out in the DIS. There is a responsibility on Government, on the Ministry of Defence, to actively work to find ways to provide the clarity and transparency in an efficient way that small companies, who do not have the resources of larger companies, can digest and manage effectively, but there is an equal responsibility on the part of the larger companies, who are often their route to market, to provide that clarity too".¹³⁵

71. Larger companies were to be assessed by the MoD on the knowledge they had about their own supply chains.¹³⁶ The MoD was also seeking to make itself more "user-friendly" to SMEs: its website now allowed small companies to make contact if they considered that they had a service or product which might be of interest to the MOD.¹³⁷ Lord Drayson

130 Ev 107

131 Ev 116

132 Jane's Defence Weekly, 4 January 2006, p 11

133 Q 230

134 Q 234

135 Q 277

136 *Ibid*

137 *Ibid*

acknowledged that in many areas of defence capability there were some vitally important SMEs, but that the MoD needed to increase its visibility of these.¹³⁸

72. The Minister told us that the MoD was placing a considerable amount of its defence contracts with SMEs, and that the proportion of its contracts placed with such companies, exceeded “the proportion of contracts which the Government would like to see placed with small, medium-sized companies”.¹³⁹

73. A common concern relayed to us was that the MoD did not have sufficient knowledge of the defence supply chain. Professor Hartley told us that the DIS recognised the role of supply chains, but he considered that the MoD and the DTI knew very little about the complexity and extent of supply chains. He thought the knowledge was reasonably good at the first tier level, but that there was very little knowledge about the second and third level and “how important some of these suppliers might be towards providing so-called key defence industrial capabilities”.¹⁴⁰

74. There are indications that improvements are being made. The Secretary of the DIC considered that both industry and MoD had taken a greater interest in supply chain relationships and supply chain management in recent years, and that the DIS had given “tremendous clarity for supply chain improvement programmes”.¹⁴¹ But the MoD was only at “the start of a journey” in terms of understanding supply chains and how to manage them.¹⁴²

75. The DTI was working with Regional Development Agencies (RDAs) and with the devolved administrations to understand better the supply chains and to look at performance across the supply chain. It was acknowledged that some of the supply chains were very large and very complicated.¹⁴³ The English Regional Development Agencies told us that:

Whilst the identities of the largest defence contractors are well known, there is more limited visibility of the long supply chain which is an under utilised source of innovative solutions to issues facing the MoD. The RDAs feel there is a need for a cross-sector supply chain analysis of the industry and would be receptive to exploring ways of participating in such work.¹⁴⁴

76. We note that the MoD has sought to become more “user friendly” to Small and Medium-size Enterprises which are a vital part of the UK defence industry. We look to the MoD to improve its visibility of such companies.

77. We are concerned that the MoD is only at “the start of a journey” in terms of understanding supply chains and how to manage them. We note that the MoD is

138 Q 278

139 Q 279

140 Q 163

141 Q 232

142 Q 233

143 *Ibid*

144 Ev 95

working with the DTI, the Regional Development Agencies and the agencies of the devolved administrations to understand defence supply chains better. We expect this work to be progressed quickly and good practice to be identified and promulgated.

78. We consider issues relating to the opportunities for SMEs to compete for the work underlying long-term partnering arrangements at paragraph 94.

7 Competition and partnering arrangements

Overview

79. Section A7 of the DIS considers competition, alternative approaches to competition and presenting, measuring and delivering value for money in defence.¹⁴⁵ In his Statement to the House on 15 December 2005, the Secretary of State said that:

value for money remains the bedrock of our commercial policy. Competition will remain a major element of that, but it will not be used when other tools, such as partnering, would deliver a better outcome, or where it would impinge on our operational sovereignty. The defence industrial strategy does not signal a move in the direction of protectionism.¹⁴⁶

Competition

80. The DIS states that:

a sustainable and competitive UK defence industry remains essential to the delivery of military capability to the UK's Armed Forces. Open and fair competition is a fundamental component of our procurement policy to deliver affordable defence capability at better overall value for money.¹⁴⁷

Over the past four years some three-quarters of the MoD's contracts, by value, have been let competitively.¹⁴⁸

81. Lord Levene of Portsoken told us that when he had been Chief of Defence Procurement, between 1985 and 1991, there had been an "era of competition". The Major Projects Statement 1991 had reviewed 37 projects each in excess of £100 million, and had found that the cost of the projects were within one per cent of what the MoD had estimated and 28 had been expected to be completed on time.¹⁴⁹ He told us that "we did get value for money. We did get projects, almost without exception, delivered on time and on cost".¹⁵⁰

82. In contrast the Chief Executive of BAE Systems considered that competition had "been a disaster for the UK defence industrial base...if it had continued, you would have seen the end of prime systems capability in the UK".¹⁵¹ He considered that one of the key plus points to come out of the DIS was the recognition of partnership instead of competition.¹⁵²

145 Cm 6697, pp 48–51

146 HC Deb, 15 December 2005, col 1466

147 Cm 6697, para A7.1

148 Cm 6697, para A7.2

149 Q 84 and Q 86

150 Q 89

151 Q 259

152 Q 258

83. The Chairman of the DIC considered that there were areas where partnership was the right answer and other areas where competition was the right answer. He thought that, in order for a company to be successful, it needed products that were capable of being sold overseas against competition.¹⁵³

84. The Minister also emphasised that “if you have got a market which allows you to have a competition, then competition is the right tool”.¹⁵⁴ However, he did not consider that competition had been a disaster.¹⁵⁵ The DIS states that, owing to issues such as technological complexity, globalisation and industry consolidation, “priced based competition may not automatically result in the best opportunity for successful acquisition or maintain key sovereign capabilities”.¹⁵⁶

85. In a sector such as fast-jet aircraft, the UK only has one company with the capacity and capability to deliver the MoD’s requirements: competition in that environment is not achievable, or at least not compatible with maintaining national capability. We agree that competition is not the right answer for all procurement and that the MoD should move towards long-term partnering arrangements in a number of areas.

Partnering arrangements

86. The DIS identifies alternatives to competitive procurement, and states that there will be more use of partnering arrangements.¹⁵⁷ Areas in which the MoD was exploring long term partnering arrangements included the through-life support of most of its fixed-wing fleet¹⁵⁸ and its armoured fighting vehicles¹⁵⁹, with BAE Systems. The MoD was also considering such an arrangement with AgustaWestland in relation to supporting and upgrading its helicopter fleet.¹⁶⁰

87. During our inquiry into the MoD Annual Report and Accounts 2004-05, MoD’s Finance Director, Mr Trevor Woolley, told us that:

the advantages of having a long-term contract is that it gives a degree of certainty to the private sector partners as to what the requirement is and that the business will be there and, through that, we expect to be able to drive down the costs and provide efficiency.¹⁶¹

88. Some of the evidence we received raised concerns about BAE Systems being in the position of a monopoly supplier. Professor Hartley told us that he was concerned about the shift from competition towards partnering, which he thought might start to create

153 Q 259

154 Q 310

155 Q 311

156 Cm 6697, para A7.5

157 *Ibid*, para C1.15

158 *Ibid*, para xxiii

159 *Ibid*, par xxii

160 *Ibid*, paras xxxi-xxxii

161 HC (2005–06) 822, Q 17

domestic monopolies and guaranteed markets.¹⁶² He considered that the DIS confirmed BAE Systems' dominance in the UK defence market "with its domestic monopolies in air, land and sea systems" and suggested that consideration should be given to regulating the company in the same way that the UK regulated its privatised utilities.¹⁶³

89. We raised these concerns with the Chief Executive of BAE Systems. Mr Turner considered that his company had been in a position of a monopoly supplier on air systems for "decades", but said that this had been "very good, very healthy for the UK".¹⁶⁴ He also told us that BAE Systems considered that the company was regulated through the "profit formula."¹⁶⁵

90. The Minister considered that it was good for the UK to have a global defence company such as BAE Systems. He recognised the concerns expressed about BAE Systems being in a monopoly situation, but suggested that the "boot is on the other foot". He said that only five per cent of MoD defence contracts by value, per year, went to BAE Systems, while the MoD represented 28 per cent of their turnover. MoD was, therefore, a very important customer to BAE Systems.¹⁶⁶ While it may be the case that only a relatively small proportion of the MoD's overall defence contracts by value go to BAE Systems each year, the company is clearly of vital importance to MoD. It is involved in many of the largest defence equipment programmes: the Astute Class Submarine; the Joint Strike Fighter; Nimrod MRA 4 aircraft; T45 Destroyer; Typhoon; and the Future Carrier.

91. Lord Drayson accepted that the MoD was in "a mutual dependence with BAE in some very important areas for us and we need to manage that with the appropriate management tools to get value for money for the British taxpayer".¹⁶⁷ He recognised the need for "tough partnership" and BAE Systems delivering improved performance in return for longer term business with MoD.¹⁶⁸ When the MoD entered into such long-term contracting arrangements, payments to companies would be linked to improved performance.¹⁶⁹

92. Concerns have been raised about BAE Systems being in the position of a monopoly supplier in many areas. The company is likely to be the main contractor on a number of the long-term partnering arrangements that the MoD is considering. We look to MoD to demonstrate its awareness of these concerns and to build into long-term contracts incentives which encourage performance improvements.

93. The proposed partnering arrangements pose a potential threat to the 'sub-prime' companies and SMEs who will be dependent on the main contractor for access to sub-contract work. We heard concerns from some companies that they did not think they would get an opportunity to compete for the work underlying these long-term partnering

162 Q 160

163 Ev 104

164 Q 261

165 Q 262

166 Qq 308–309

167 Q 309

168 *Ibid*

169 Q 310

arrangements, as they thought that the main contractor would place work with its subsidiaries or with those companies it already had business arrangements with.

94. We recognise that some of the contracts for long-term partnering arrangements will be let on a non-competitive basis. But for work underlying these arrangements there must be real competition. This is a matter about which we have considerable concern. We look to the MoD to ensure that there are rules in place which give clarity and transparency to the route to market for 'sub-primes' and SMEs. Other companies must be assured of an opportunity to compete for the work underlying the long-term partnering arrangements. We will return to this subject again.

8 Sovereign capability and international issues

Overview

95. The DIS states that:

We must maintain the appropriate degree of sovereignty over industrial skills, capacities, capabilities and technology to ensure operational independence against the range of operations that we wish to be able to conduct.¹⁷⁰

In his Statement to the House on 15 December 2005, the Secretary of State said that the DIS:

communicates for the first time to industry.... those skills, technologies and industrial capabilities that are assessed as being required onshore in the UK in order to sustain the armed forces' ability to operate with an appropriate level of sovereignty.¹⁷¹

96. Lord Drayson told us that in producing the DIS, the MoD had analysed the defence market by sectors to identify the defence capabilities which were regarded as so strategically important to the UK's defence interests that "not having those capabilities on shore may lead to others having an impact on the operational freedom".¹⁷² As much future work will focus on maintaining and upgrading platforms, the MoD will need access to technical information and Intellectual Property Rights so it can maintain and upgrade platforms and ensure operational sovereignty. Lord Drayson acknowledged the importance of this.¹⁷³

Technology transfer

97. A recurring concern of this Committee and its predecessors has been to ensure that the UK gets all the information and technology transfer it requires to give it sovereign capability: that is, the ability to operate and upgrade its equipment without recourse to overseas supply. Most recently, we raised concerns about the Joint Strike Fighter (JSF) programme, concluding that:

We fully support MoD's position that the ability to maintain and upgrade the JSF independently is vital. We would consider it unacceptable for the UK to get substantially into the JSF programme and then find out that it was not going to get all the technology and information transfer it required to ensure 'sovereign capability'.¹⁷⁴

170 Cm 6697, para A1.21

171 HC Deb, 15 December 2005, col 1463

172 Q 291

173 *Ibid*

174 HC (2005–06) 554, para 107

98. The Chief Executive of BAE Systems also stressed the importance of obtaining technology in the UK on the JSF so that the company could play a role in supporting and upgrading JSF when it came into service.¹⁷⁵ Lord Drayson told us that the “battle over technology transfer” was “progressing reasonably well, but the test will be where we have got to at the end of this year, and the test will be the Joint Strike Fighter”.¹⁷⁶ We have recently held meetings with the Senate Committee on Armed Services and the Deputy US Ambassador and intend to pursue this matter with vigour during our visit to the US in May.

99. We consider it vital that the UK can maintain and upgrade equipment independently. We expect the MoD to obtain all the information and technology transfer it requires to do this. We will continue to monitor the progress on technology transfer in relation to the Joint Strike Fighter.

Munitions

100. The DIS states that in the general munitions sector:

BAE Systems has the majority of the existing business.... We have therefore adopted a partnership with BAE Systems and are considering ways in which we can rationalise the through-life management of munitions, without ruling out the prospect of global competition for future projects at this stage.¹⁷⁷

101. The DIS also refers to the importance of security of supply:

we need to ensure that we can support equipment, or produce expendables (e.g. munitions), in times of conflict (predicated on an assumption that we understand the dependencies within the supply chain, where in some cases we need to do further work with industry). High levels of onshore technology and capacity may often offer greater comfort in security of supply and the ability to undertake modifications in response to short-term operational demand.¹⁷⁸

102. On 14 December 2005, a petition was laid before the House from residents of Bridgwater and others requesting that the House of Commons call upon BAE Systems and the Ministry of Defence to save the former Royal Ordnance Factory (ROF) at Puriton, in Somerset, and sent to us for our scrutiny.¹⁷⁹ We sought comments on the petition from the MoD and from BAE Systems, which now owns the ROFs. The MoD’s observations briefly state its confidence in the company’s continued security of supply.¹⁸⁰ BAE Systems’ response regrets the closure of Puriton from the end of 2007, with the loss of some 130 jobs, but states that it was “no longer economically viable at a price that MoD would be prepared to pay for materials that can be sourced elsewhere”. It acknowledges that the UK will in future be dependent on supply from abroad, but states that:

175 Q 242

176 Q 299

177 Cm 6697, para xxxiv

178 *Ibid*, para A9.6

179 HC Deb, 14 December 2005, col 1407; Supplement to the Votes and Proceedings, 16 December 2005

180 Supplement to the Votes and Proceedings, 27 January 2006

the necessary materials can be sourced from a number of secure alternative suppliers in allied countries, fully meeting the requirements of appropriate sovereignty that were described in the MoD's Defence Industrial Strategy.

The materials will be processed in the UK, at Glascoed.¹⁸¹

103. The trade union Prospect submitted evidence to us in this inquiry expressing concern about the proposed closure of the Puriton ROF and its sister factory in Chorley. Prospect's memorandum outlines concerns about the ability of the MoD to obtain security of supply, in particular for small arms and ammunition and high explosive.¹⁸²

104. We sought further information from BAE Systems about its outsourcing policy. Their response explains that the decision on whether to qualify one or more sources of supply to ensure competition and improved security of supply would be taken on a case by case basis. Land Systems Munitions will manufacture strategic stockpiles to bridge the gap between in-house manufacture and availability of the new source of supply. For each of the products now made at Chorley and Bridgwater, BAE Systems' response sets out the potential overseas suppliers. For high explosive materials, for example, it states that a Request for Quotation has been placed with Holston Army Ammunition Plant, in the USA, and with Eurenco, a European Joint Venture between France and Scandinavia.¹⁸³

105. We sought assurance from the Chief Executive of BAE Systems that the two ROF sites would not be closed until such time as a secure alternative supply of those munitions had been sourced to the satisfaction of the MoD. Mr Turner told us "that is part of the process that we are going through now. Absolutely".¹⁸⁴

106. The Minister stressed that he had been looking at this issue closely because it was important that the UK "retains the ability, in terms of advance munitions like that, to be able to source what it needs when it needs it".¹⁸⁵ We pressed Lord Drayson on the security of supply, given that the closures would require BAE Systems to procure certain munitions from overseas. We sought assurance that the MoD was going to be sure that there was absolute certainty of security of supply before the two sites were closed.¹⁸⁶ The Minister told us that he was "absolutely sure" that the sites would not be closed until issues about security of supply had been resolved. He said that he wanted:

to be absolutely sure, in terms of security of supply of the elements coming in and.... absolutely sure about the robustness of the manufacturing process that we are moving to.¹⁸⁷

107. We welcome the assurances given by the MoD that the Royal Ordnance Factory sites at Bridgwater and Chorley would not be closed until it was "absolutely sure" a

181 Ev 120–121

182 Ev 97

183 Ev 122

184 Q 265

185 Q 292

186 Q 293

187 Q 294

secure alternative supply of the munitions existed. We consider that, in an area as vital as general munitions, the UK should never be in a position where it cannot guarantee security of supply.

International issues

108. Chapter A3 of the DIS outlines the main characteristics of the defence market at global and national UK levels. It considers the consolidation which has taken place in the US and Europe.¹⁸⁸ However, some of the evidence we received suggested that the international implications of the DIS—and particularly the European dimension—had not been sufficiently covered:

- The SBAC saw the need for more discussion of the international implications of the DIS and considered that there was “very little in the document on how international collaboration will be handled under the DIS”. It also sought clarification on how the Government saw the European Defence Agency (EDA) developing its policies and practice “on the European defence market, the supply chain and European defence R&T”.¹⁸⁹
- Professor Hartley considered that “various parts of the DIS refer to the EU defence markets, EDA and OCCAR [Organisation Conjoint de Coopération en matière d'Armement¹⁹⁰]. However, there was no vision of whether and how such an EU defence market might contribute to the future of the UK DIB”.¹⁹¹
- Professor Taylor considered that “reconciling the DIS with the aspirations of the European Defence Agency and the European Code of Conduct on a European defence market is not straightforward”.¹⁹²

109. We followed up these concerns, in particular, about the European Defence Agency. Mr Paul Everitt, Director of Communications, SBAC, considered that the EDA had a clear role in opening up the European defence market and also thought, that in terms of R&T, the EDA could have a role to build a better understanding across Europe of which countries are looking at which technologies and what they are trying to develop.¹⁹³ Mr John Howe, Vice Chairman of Thales UK, also considered that the EDA had a very useful potential role in energising international programmes to address gaps in defence capability, and if it succeeded in this objective, it would be “a big plus”. He thought that the international context was an important one and he hoped that further dialogue would be developed with the MoD.¹⁹⁴

188 Cm 6697, pages 25–33

189 Ev 83–84

190 OCCAR was established by Administrative Arrangement on 12 November 1996 by the Defence Ministers of France, Germany, Italy and the UK. Its aim is to provide more effective and efficient arrangements for the management of certain existing and future collaborative armament programmes.

191 Ev 104

192 Ev 91

193 Q 148

194 *Ibid*

110. The Minister considered that the EDA needed to show that it could add value and that in some ways it had begun to show that, but he thought that the Agency should start small and demonstrate success before it grew larger.¹⁹⁵ Feedback from the UK's international partners had been very positive about the DIS. Lord Drayson told us that “they have found it useful to have clarity, whether it is in the direction of the United States or the direction of Europe”. He considered that the DIS set out clearly to the UK's international partners the way in which the UK wanted to business.¹⁹⁶

111. We consider that international co-operation is vital and that the European Defence Agency is likely to have an important role in the future in many areas covered in the DIS.

195 Q 312

196 Q 313

9 Implementation of the DIS

Overview

112. The DIS states that the Strategy will not be delivered unless the whole of the defence acquisition community, including industry, are able to make the necessary shifts in behaviours, organisations and business processes.¹⁹⁷ It states that “our detailed implementation plan has specific initiatives to address the objectives of achieving:

- Primacy of through-life considerations;
- Coherence of defence spread across research, development, procurement and support;
- Successful management at the Departmental level”.¹⁹⁸

Section C2 of the DIS sets out dates for some of the key work which is being taken forward.¹⁹⁹

113. The evidence we received has generally welcomed the impetus which the Minister has given to producing the DIS and in taking it forward. Mr Graeme Ferrero, Managing Director, Defence Technology, QinetiQ, noted that the Minister had “gone effectively through the MoD like a whirlwind and he is driving this forward”.²⁰⁰ Mr Andy Stevens, Chief Operating Officer, Cobham plc told us that there was “a great head of steam” and thought that it would be a disaster if this were lost.²⁰¹ A common concern relayed to us was that the Strategy was only as good as its implementation.²⁰² But there was a general sense that implementation was being taken forward. The Secretary of DIC considered that all the actions suggested in the DIS were, in one way or another, being undertaken.²⁰³

Implementation timetable

114. We sought clarification on the timetable for implementing the DIS, as the submission from the SBAC said that the MoD Ministers had indicated that they saw the implementation of the DIS as a two year programme.²⁰⁴ The Minister told us that:

2006 is the year that we seriously implement it [the DIS] to be able to show results...that we really have made a difference...I am in a hurry to show in 2007 that this has made a real difference to our defence capability and the strength of our defence industry.²⁰⁵

197 Cm 6697, para xxxviii

198 *Ibid*, para ii

199 *Ibid*, pages 141–142

200 Q 157

201 *Ibid*

202 Q 250

203 Q 274

204 Ev 84

205 Q 289

115. **We welcome the impetus that the Minister for Defence Procurement is giving to the implementation of the Defence Industrial Strategy and his aim to make a difference to the UK's defence capability and strengthen the UK's defence industry.**

116. We sought further details on the timescales in which the various aspects of the DIS were to be implemented. At the evidence session on 28 February, Lord Drayson said that he had a two page checklist setting out the dates by which the various work to implement the DIS would be achieved. The Minister provided us with a copy and told us that he would “very happy to be held accountable” for the MoD achieving the target dates.²⁰⁶

117. The checklist set out the actions that are to be taken in the various areas, such as completing the Maritime and R&T strategies.²⁰⁷ The vast majority of the actions are to be completed in 2006. **We expect the MoD to meet the deadlines set for the additional work flowing from the Defence Industrial Strategy, in particular the Maritime Industrial Strategies, the Technology Strategy and the review of its acquisition arrangements.**

Measuring success

118. We were interested in understanding how the success of the DIS would be measured. Professor Hayward told us that “from a defence industrial perspective again I have a cop-out here, I just do not know how you would measure success”.²⁰⁸ The Minister said that the way in which the DIS should be judged was “in the quality of the decisions that we take and the difference we actually make to procurement”.²⁰⁹ Mr David Gould, Deputy Chief Executive of the Defence Procurement Agency, told us:

Our ultimate measure will be our success in providing equipment capability into the Armed Forces, If we see improvement in the way in which projects are planned, conducted, executed and the speed with which the capability is introduced into the system and then put on to the battlefield and used.... then that is the ultimate measure of success and every single project that we undertake is measured in great detail in those terms.²¹⁰

119. **Given the importance of the Defence Industrial Strategy, we plan to monitor closely the progress in implementing it and whether it delivers the expected benefits. We expect to inquire further into other aspects relating to the Defence Industrial Strategy.**

Funding of the DIS

120. Professor Hartley raised a concern as to whether money would be available to ensure that the DIS was implemented as he considered that the Strategy would involve some

206 Q 314

207 Ev 118–120

208 Q 183

209 Q 289

210 Q 307

cost.²¹¹ His concern about the funding for the Strategy, and where the money would come from, was also shared by Professor Hayward.²¹²

121. Restructuring the defence industry, and ensuring that research and skills are maintained despite reduced production, will cost money. Adequate funding will be vital for the success of the Defence Industrial Strategy. This will be a key issue for the MoD to negotiate with HM Treasury in the Comprehensive Spending Review.

211 Q 160

212 *Ibid*

Conclusions and recommendations

1. We welcome the publication of the Defence Industrial Strategy and congratulate the Minister for Defence Procurement and his team for delivering the Defence Industrial Strategy to a tight timetable. (Paragraph 9)
2. During the production of the Defence Industrial Strategy a wide consultation with industry took place, but we are concerned about the adequacy of the consultation with Small and Medium Enterprises and with the MoD trade unions. We look to the MoD to consult more fully with both Small and Medium Enterprises and the MoD trades unions as work on the Defence Industrial Strategy is taken forward. (Paragraph 13)
3. The initial reaction to the Defence Industrial Strategy has been generally very positive. (Paragraph 16)
4. We welcome the clarity that the Defence Industrial Strategy has provided to industry about future defence requirements, which should help to make the UK an attractive market to defence companies. However, we note that BAE Systems is considering selling its stake in Airbus, which makes us uncertain of where it leaves their commitment to the UK. Given the possible impact on UK jobs, and the fact that the MoD is procuring A400M transport aircraft from Airbus' military arm, we shall keep a close eye on this matter as it develops. (Paragraph 23)
5. The defence industry has accepted that future work will focus on the insertion of upgrades and new capabilities and through-life maintenance of existing platforms, rather than new platforms. (Paragraph 25)
6. The Defence Industrial Strategy will lead to job increases and job decreases in different sectors of the defence industry. We look to the Government to assist, where appropriate, those sectors where job decreases are likely. (Paragraph 27)
7. We shall take a keen interest in any developments in the restructuring of the dockyards. (Paragraph 33)
8. We look to the MoD to ensure that the Maritime Industrial Strategies are produced, and the strategies implemented, to the planned timetable. (Paragraph 34)
9. In the fixed-wing sector, future work on Typhoon and Joint Strike Fighter will provide work for engineers for some time to come, and there will be an increasing focus on Unmanned Aerial Vehicles. (Paragraph 40)
10. We note that substantial job decreases are likely to be seen in the complex weapons sector as the MoD's investment in such weapons is to be substantially reduced. We look to the MoD to work closely with this sector so that this important capability and the current skills are not lost. (Paragraph 44)
11. We agree with the Minister for Defence Procurement that the MoD needs to demonstrate through its own change that it is serious about the Defence Industrial

Strategy and we look forward to being “surprised” by the pace of change that the MoD achieves. (Paragraph 47)

12. We look to the MoD to build upon the DIS and provide more information to industry in the future. (Paragraph 50)
13. We welcome the fact that the MoD is seeking to identify improvements to its acquisition arrangements, including ways to speed the process up, and we look to the MoD to implement quickly the improvements identified. We expect the MoD to ensure that best practice is promulgated and the commercial skills of its officials are improved, particularly the legal and contract compliance skills needed to ensure well-drawn legal and production agreements involved in the new long-term partnering approach. (Paragraph 51)
14. We are concerned that the decline in defence research spending will impact upon the quality of future equipment for the armed forces. We look to the MoD to address the level of spending on defence research in its Technology Strategy to be published this year. It would be useful if the Technology Strategy could set out clearly the level of defence research spending by Government and industry over time. (Paragraph 63)
15. We look to the MoD to make a strong case for increased funding of defence research during the discussions with HM Treasury on the Comprehensive Spending Review. We see this as a key investment for the future. (Paragraph 64)
16. We expect the further work on Research and Technology to encourage and maintain the Centres of Excellence for defence-related research. (Paragraph 66)
17. We note that the MoD has sought to become more “user friendly” to Small and Medium-size Enterprises which are a vital part of the UK defence industry. We look to the MoD to improve its visibility of such companies. (Paragraph 76)
18. We are concerned that the MoD is only at “the start of a journey” in terms of understanding supply chains and how to manage them. We note that the MoD is working with the DTI, the Regional Development Agencies and the agencies of the devolved administrations to understand defence supply chains better. We expect this work to be progressed quickly and good practice to be identified and promulgated. (Paragraph 77)
19. In a sector such as fast-jet aircraft, the UK only has one company with the capacity and capability to deliver the MoD’s requirements: competition in that environment is not achievable, or at least not compatible with maintaining national capability. We agree that competition is not the right answer for all procurement and that the MoD should move towards long-term partnering arrangements in a number of areas. (Paragraph 85)
20. Concerns have been raised about BAE Systems being in the position of a monopoly supplier in many areas. The company is likely to be the main contractor on a number of the long-term partnering arrangements that the MoD is considering. We look to MoD to demonstrate its awareness of these concerns and to build into long-term contracts incentives which encourage performance improvements. (Paragraph 92)

21. We recognise that some of the contracts for long-term partnering arrangements will be let on a non-competitive basis. But for work underlying these arrangements there must be real competition. This is a matter about which we have considerable concern. We look to the MoD to ensure that there are rules in place which give clarity and transparency to the route to market for 'sub-primes' and SMEs. Other companies must be assured of an opportunity to compete for the work underlying the long-term partnering arrangements. We will return to this subject again. (Paragraph 94)
22. We consider it vital that the UK can maintain and upgrade equipment independently. We expect the MoD to obtain all the information and technology transfer it requires to do this. We will continue to monitor the progress on technology transfer in relation to the Joint Strike Fighter. (Paragraph 99)
23. We welcome the assurances given by the MoD that the Royal Ordnance Factory sites at Bridgwater and Chorley would not be closed until it was "absolutely sure" a secure alternative supply of the munitions existed. We consider that, in an area as vital as general munitions, the UK should never be in a position where it cannot guarantee security of supply. (Paragraph 107)
24. We consider that international co-operation is vital and that the European Defence Agency is likely to have an important role in the future in many areas covered in the DIS. (Paragraph 111)
25. We welcome the impetus that the Minister for Defence Procurement is giving to the implementation of the Defence Industrial Strategy and his aim to make a difference to the UK's defence capability and strengthen the UK's defence industry. (Paragraph 115)
26. We expect the MoD to meet the deadlines set for the additional work flowing from the Defence Industrial Strategy, in particular the Maritime Industrial Strategies, the Technology Strategy and the review of its acquisition arrangements. (Paragraph 117)
27. Given the importance of the Defence Industrial Strategy, we plan to monitor closely the progress in implementing it and whether it delivers the expected benefits. We expect to inquire further into other aspects relating to the Defence Industrial Strategy. (Paragraph 119)
28. Restructuring the defence industry, and ensuring that research and skills are maintained despite reduced production, will cost money. Adequate funding will be vital for the success of the Defence Industrial Strategy. This will be a key issue for the MoD to negotiate with HM Treasury in the Comprehensive Spending Review. (Paragraph 121)

Annex: List of Abbreviations

DIB	Defence Industrial Base
DIC	Defence Industries Council
DIS	Defence Industrial Strategy
DMA	Defence Manufacturers Association
DPA	Defence Procurement Agency
DTI	Department for Trade and Industry
EDA	European Defence Agency
EU	European Union
JSF	Joint Strike Fighter
Min DP	Minister for Defence Procurement
MoD	Ministry of Defence
RDAs	Regional Development Agencies
ROF	Royal Ordnance Factory
R&T	Research and Technology
RTOs	Research and Technology Organisations
SMEs	Small and Medium-size Enterprises
UAV	Unmanned Aerial Vehicle
UCAV	Uninhabited Combat Aerial Vehicle
UK	United Kingdom
US	United States of America

Formal minutes

Tuesday 25 April 2006

Members present:

Mr James Arbuthnot, in the Chair

Mr David S Borrow

Mr David Crausby

Linda Gilroy

Mr David Hamilton

Mr Mike Hancock

Mr Dai Havard

Mr Adam Holloway

Robert Key

Mr Mark Lancaster

John Smith

1. The Defence Industrial Strategy

The Committee considered this matter.

Draft Report (The Defence Industrial Strategy), proposed by the Chairman, brought up and read.

Ordered, That the Chairman's draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 121 read and agreed to.

Annexes [Summary and List of Abbreviations] agreed to.

Resolved, That the Report be the Seventh Report of the Committee to the House.

Several papers were ordered to be appended to the Minutes of Evidence.

Ordered, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.

Ordered, That the provisions of Standing Order No. 134 (select committee (reports)) be applied to the Report.

Ordered, That the Chairman do make the report to the House.

[Adjourned till Tuesday 2 May at Ten o'clock.]

List of witnesses

Tuesday 31 January 2006

Page

Mr Guy Griffiths, Chief Executive Officer, MBDA and DMA Council (Team Leader), **Mr Roger Medwell**, Managing Director, NP Aerospace, **Dr David Price**, CEO Chemring plc, and **Mr Chris Cundy**, Commercial Director, VT Group, Defence Manufacturers Association Ev 1

Lord Levene of Portsoken KBE Ev 14

Tuesday 7 February 2006

Mr Andy Stevens, Chief Operating Officer, Cobham Plc, **Mr John Howe**, Vice Chairman, Thales UK, **Mr Graeme Ferrero**, Managing Director, Defence Technology, QinetiQ, and **Mr Paul Everitt**, Director of Communications, Society of British Aerospace Companies Ev 20

Professor Keith Hartley, Professor of Economics and Director, Centre for Defence Economics, University of York, **Professor Keith Hayward**, Head of Research at the Royal Aeronautical Society, and **Professor Ron Matthews**, Chair in Defence Economics, Cranfield University Ev 31

Tuesday 28 February 2006

Sir John Chisholm, Executive Chairman, QinetiQ Ev 41

Sir John Rose, Chairman of the Defence Industries Council (also Chief Executive, Rolls Royce plc), **Dr Sally Howes**, Secretary of the Defence Industries Council (also Director General, Society of British Aerospace Companies), and **Mr Mike Turner CBE**, Chief Executive, BAE Systems Ev 46

Lord Drayson, Minister for Defence Procurement, **Mr David Gould CB**, Deputy Chief Executive, Defence Procurement Agency, and **Mr Mark Gibson CB**, Director General, Business Group, DTI Ev 55

List of written evidence

1	VT Group plc	Ev 66
2	MBDA Missile Systems	Ev 66
3	Royal Aeronautical Society	Ev 67
4	British American Security Information Council (BASIC)	Ev 70
5	Serco	Ev 75
6	BAE Systems	Ev 76
7	Fleet Support Limited	Ev 77
8	QinetiQ	Ev 77
9	Society of British Aerospace Companies Ltd	Ev 80
10	Professor David Kirkpatrick	Ev 84
11	Professor Trevor Taylor	Ev 89
12	Defence Manufacturers Association	Ev 91
13	English Regional Development Agencies	Ev 93
14	EDS Defence	Ev 95
15	Prospect	Ev 97
16	Ministry of Defence Trade Unions	Ev 98
17	Mr Tony Edwards	Ev 99
18	EADS UK Ltd	Ev 100
19	Professor Keith Hartley	Ev 102
20	Northern Defence Industries	Ev 105
21	Keep Our Future Afloat	Ev 108
22	Farnborough Aerospace Consortium	Ev 116
23	General Dynamics UK Ltd	Ev 117
24	Ministry of Defence	Ev 118
25	Angela Smith MP, Department for Enterprise, Trade and Investment (NI)	Ev 120
26	Andrew Davies, Managing Director, Land Systems, BAE Systems	Ev 120
27	Steve Rowbotham, Managing Director, Munitions, BAE Systems	Ev 121
28	Remote Airworks	Ev 123

Defence Committee Reports in this Parliament

Session 2005–06

First Report	Armed Forces Bill	HC 747 (<i>HC 1021</i>)
Second Report	Future Carrier and Joint Combat Aircraft Programmes	HC 554 (<i>HC 926</i>)
Third Report	Delivering Front Line Capability to the RAF	HC 557 (<i>HC 1000</i>)
Fourth Report	Costs of peace-keeping in Iraq and Afghanistan: Spring Supplementary Estimate 2005–06	HC 980
Fifth Report	The UK deployment to Afghanistan	HC 558
Sixth Report	Ministry of Defence Annual Report and Accounts 2004–05	HC 822

Government Responses to Defence Committee Reports are published as Special Reports from the Committee (or as Command Papers). They are listed above in brackets by the HC (or Cm) No. after the report they relate to.

Oral evidence

Taken before the Defence Committee

on Tuesday 31 January 2006

Members present:

Mr James Arbuthnot, in the Chair

Mr David Crausby
Linda Gilroy
Mr Mike Hancock
Mr Dai Havard
Mr Brian Jenkins

Mr Kevan Jones
Robert Key
John Smith
Mr Desmond Swayne

Witnesses: **Mr Guy Griffiths**, CEO, MBDA and DMA Council (Team Leader), **Mr Roger Medwell**, MD NP Aerospace, **Dr David Price**, CEO Chemring plc and **Mr Chris Cundy**, Commercial Director, VT Group, Defence Manufacturers' Association, gave evidence.

Q1 Chairman: Good morning. Thank you very much indeed for coming to give evidence about the Defence Industrial Strategy. We are starting with the Defence Manufacturers' Association and I wonder if you could begin by introducing yourselves and saying very, very briefly what you do. You are most welcome to the Committee.

Mr Griffiths: Thank you, Chairman. My name is Guy Griffiths and I am Chief Operating Officer of MBDA Missile Systems and also a Council member of the Defence Manufacturers' Association. DMA, as I am sure you will be aware, is a trade organisation with over 600 defence companies as members, spanning all sectors of the defence industry in the United Kingdom and indeed all tiers of the supply chain. We have chosen four representatives from the DMA today who we hope will provide you with a cross-section of views from various sectors and, as I say, from various tiers within the defence sector to give you perhaps slightly different perspectives on how the DIS has been received.

Dr Price: Dr David Price, I am the Chief Executive of Chemring Counter Measures, a public limited company in aerospace and defence, with a £300 million market cap. We are a world leader in expendable decoys and essentially operate in energetic material, both directly to the Armed Forces but also to prime contractors, so we operate in both tiers.

Mr Medwell: Roger Medwell, MD NP Aerospace in Coventry. We are specialists in the manufacture of composites and technical modellings for the NLAW programme, helmets for the British Army, body armour and also composite armoured vehicles such as the Armoured Land Rover (Project Snatch) in Iraq.

Mr Cundy: Chris Cundy, Commercial Director for VT Group, which is a plc with a turnover of over £800 million, both in the commercial warship building industry and in related support to a number of government agencies.

Q2 Chairman: Thank you very much. If we can begin with a few generalities. Work on the Defence Industrial Strategy started in August 2005 and the

Minister said that "we need something that pulls everything together rapidly". Did you agree with that and why was it necessary to do it all so urgently? Who would like to begin?

Mr Griffiths: If I may start with that, Chairman. I think, first of all, whilst the timescales that were set for the exercise were extremely ambitious, I would observe that industry nonetheless was very supportive of the expeditious way in which the Minister and his team approached it. Why is that the case? Well, I think in a number of sectors we do see as a matter of some imperative guidance in terms of the UK's acquisition plans as driving some key decisions in terms of industrial rationalisation, restructuring and investment, and certainly talking of some of the sectors—and maybe we will get into some specific sectors later if you wish—some of those decisions are quite urgent. I would also observe, I think, that in these exercises it is sometimes easy to let the best be the enemy of the good, and I think probably in the timescales that were allowed for the exercise we have been able to derive collectively quite a lot of useful input in a very short time. So I think on balance we support it. I think if there is one area where the DMA probably would observe that some quality has been sacrificed in the short timescales allowed for the exercise, it was in the degree of consultation that was afforded not to the big, prime contractors particularly because I think they were heavily engaged in the exercise, but perhaps some of the smaller and medium-sized companies did not feel necessarily they had had their voices heard to the extent that would have been wished if more time had been allowed.

Q3 Chairman: We will come on to the involvement and reaction of small and medium-sized companies during the course of the morning, but in general do you believe that industry was involved then in the drawing up of the DIS?

Mr Griffiths: I think, Chairman, I would go further than that and I would observe that the degree of engagement, notwithstanding what I have said about the small and medium-sized companies, was

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

unprecedented. If I speak by way of example as far as my own company was concerned, the Minister personally spent half a day with me and my team rehearsing the issues as they affected our particular sector and really was determined to understand what the technology issues were, what the capability issues were militarily, and I believe I was not alone in terms of that dialogue which was going on with other companies. If I look at the degree of engagement, I genuinely do think that over the course of the last six to eight months the degree of openness and transparency in both directions was unprecedented.

Q4 Chairman: Do you think that your views were reflected or does industry think that its views were reflected in the overall result?

Mr Griffiths: I think again it is difficult to generalise because from one sector to another there may be differences of emphasis there, but certainly I think in the context of the DIS document overall the overriding themes which emerged from it are ones which generally do reflect the views being expressed by industry during that consultation process.

Dr Price: Again it comes back to one of the main themes to which Guy has referred. I think the area where there is the main concern is when you are looking at second and third tier SMEs where the engagement was significantly less and obviously where there is quite a significant degree of capability and innovation for the technology going forward, where it is certainly much more unclear in terms of the degree with which it reflects industry's position.

Q5 Chairman: What was the cause of that? Why do second and third tier companies feel left out?

Dr Price: It is not so much left out but more to do with in the time available. It is quite difficult particularly since a lot of second and third tier companies, of course, have their primary relationship with prime contractors. And then when you are looking at a lot of the sector strategies, it is about the way in which the very large primes, whether it is Agusta Westland, MBDA obviously, or British Aerospace in the different sectors, implement their strategy going forward. This is quite an important point from the MoD point of view. A lot of their supply chain, where an industrial strategy would have to flow down in terms of the partnership, is not very well brought out and I suspect—and perhaps you would like to comment, Roger, as a small company—there was comparatively little engagement across what is a very large number of companies.

Mr Medwell: The review does not really go into how SMEs are going to be involved and what protection they have. Clearly we are going to be interfacing with known primes and we have been doing projects, as opposed to the DPA for instance, and the question for SMEs is will they be treated as fairly with the primes as we are with the MoD. It is obviously a concern because it is going to be quite a new relationship for us on a number of programmes.

Mr Cundy: I think I would corroborate what my colleagues have said, particularly in our sector which is the maritime sector. With the Maritime Industry Strategy there has been extensive consultation.

Q6 Chairman: We will come on to the small and medium enterprise issues in more detail in a few minutes. The Secretary of State said that the DIS communicates for the first time to industry and the City those skills, technologies and industrial capabilities that are assessed as being required onshore. Do you think the DIS does that?

Mr Griffiths: I think it does articulate sector-by-sector what is required. I think there may be one or two gaps which we would want to clarify as an industry during the implementation period going forward. I think, however, it is less clear (and maybe that is understandable given that we are moving into an implementation phase) as to the precise mechanics by which some of those key capabilities will be retained within the affordability limits that we know apply to this sector at the moment.

Q7 Chairman: What are those gaps?

Mr Griffiths: They may not be gaps in terms of complete sectors but I think when one actually looks at the composition of the nine or 10 sectors which are referenced in section B of the White Paper, there is no specific reference, as far as we can observe, to such things as guns, logistics vehicles and personal equipment for soldiers. One might expect that some of those perhaps would be encompassed within the generality of some of the sector headings within section B, but I think there is a strength of feeling—and again perhaps this is reflected amongst the SME community in particular—that there are some particular niche military capabilities which those companies judge they have particular expertise and strength to bring to bear which are not referenced within the document.¹ I think clarity is sought as to whether those are encompassed within the sector headings and recognised as particular capabilities.

Q8 Mr Hancock: Can I ask how you would envisage that they would be able to put that point of view across about those gaps in the various things that you have talked about and how those companies (who might not in any instance be seen as a prime contractor in any of this) would be able to influence that if they have not—to choose Mr Price's words—really played a part in the formation of the policy? How are they going to feel welcome in this new world?

Mr Medwell: I guess this has to be a top-down process. We have to as SMEs engage with the primes. They have to almost take the position with regard to the SMEs that the MoD are going to be bringing these programmes together, so clearly we know there will be a restructuring of our base depending who will be seen as partner companies.

¹ Note by Dr David Price: Two good examples are expendable decoys and personal body armour, both of which have played a key role in recent peacekeeping, but are not explicitly mentioned in the strategy document.

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

Q9 Mr Hancock: That could be very painful for a lot of small companies.

Mr Medwell: It could be painful.

Q10 Mr Hancock: You would have nowhere to go when you are being pushed into extinction.

Mr Medwell: We are interested in what safeguards are going to be put in place for the SMEs. One of my worries is that work could be put overseas without any control. Will there be offsets as there were on the NLAW programme, which I know you were directly involved on?

Q11 Mr Hancock: Do you not think there is a failure in the policy not to recognise that? When the Secretary of State suggested that some of the change is going to be painful, he goes on to say that no change could be even worse. For medium and small companies they are going to be under a real pressure, are they not, to cut costs because the threat of being able to go overseas by the prime contractor is always going to be there hovering over them. There is a failure in this policy to recognise the importance of these small companies to the British defence industry, is there not?

Mr Medwell: There is no detail with regard to the SMEs. It has not gone down to that level.

Q12 Mr Hancock: There is no mention of them really. There is no policy in here which gives them any real say at all. This is a charter for the big boys.

Dr Price: I think from our point of view one of the issues, looking forward to how the Defence Industrial Strategy is going to be implemented, is the prime contractors' relationship and the industrial strategy with its supply chain will become quite an important element because if the prime contractors do not essentially follow a common industrial strategy with that of the MoD you are going to have huge shadows essentially blocking the light of transparency and coherent strategy going forward.

Q13 Mr Hancock: How can you control that?

Dr Price: One of the ways you can do it is through a proper partnership approach. If you look at commercial industry, it goes down through the supply chain, and certainly I know from my previous experience on the maritime sector that a lot of effort has gone, prior to the industrial strategy, into trying to work up how partnerships would start to involve the second and third tier suppliers. That is not specifically identified as a process in the Defence Industrial Strategy.

Q14 Mr Hancock: But there is nothing in the policy which suggests that the prime contractor will have those responsibilities to make sure.

Dr Price: Not explicitly.

Q15 Mr Hancock: That the rest of the industry is in some way protected or engaged even; the choices are all down to them. Once the decision is made to give them the job it is then down to them to deliver in any way they see fit, so this policy does nothing except protect them?

Dr Price: It is clearly a risk.

Mr Griffiths: It is a risk and one of the observations in the written evidence submitted by the DMA² is that there needs to be some established appropriate safeguards by the MoD, to make sure that those industry champions, the prime contractors who have been identified in this document, are subjected to some measure of control to make sure there is no abuse of that privileged position they have been given.

Chairman: I am going to bring in Linda Gilroy and then we will come back to you.

Q16 Linda Gilroy: There was an article in *Jane's Defence Weekly* in early January which was looking at this issue and one managing director of a small and medium enterprise was quoted as saying: "Bit by bit we are giving up and gravitating towards other sectors, like the oil industry". So the safeguards you are saying which need to be there if we are going to protect or at least give a level playing field to employment through SMEs in this country are important. What sort of safeguards should we be urging should be considered? Do you have any views on that?

Mr Medwell: We have certainly got to ensure that the supply base in the United Kingdom is given a fair opportunity to bid for the work, and I think if the British taxpayer is paying for it then if price is equal and service is equal the contract should come to a UK company. We have done this on overseas bids. NLAW was a classic where Saab won the contract with 100% offset for the small SMEs, and that has been a fantastic success and supported the SMEs in this country. Whatever happens, I would like that sort of approach to be taken that was so successful with the NLAW programme.

Mr Cundy: I would just reiterate what my colleagues have said. As a tier one supplier on certain contracts we are a prime contractor in that respect. About half of a typical shipbuilding contract will be subcontracted and we obviously need to build those relationships to work with companies.

Q17 Linda Gilroy: Is there a programme of spreading good practice in that of which you are aware?

Mr Griffiths: There is a Code of Practice for dealing with supply chain relationships of the type that my colleagues have described, which was developed in collaboration between the MoD and UK industry and has now been adopted by the European Defence Agency for application across Europe. I think that Code of Practice does provide a useful framework. I am bound to say within the DMA we have from time to time tested the penetration of that Code of Practice through various tiers in the supply chain, and I have got to say the application of it beyond about tier two has proved to be fairly patchy. I think one of the things we would want to do as an industrial group with the MoD is look collectively at how we might enforce application of that Code of Practice more systematically.

² Note: See Ev 91

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

Q18 Mr Hancock: I think, Mr Medwell, you gave a very good example of where the system can work and that was the Saab contract. How could that be incorporated into a policy which says “here is an example of good practice where all of the work really did remain in the United Kingdom” and this is what your organisation would like to see to be the pattern for the future? Do you not think in this policy there was something missing there not to state those sorts of examples as being what the Government would want to see in the best interests of the nation to continue to be the norm rather than the unique example?

Mr Medwell: Just taking that as an example, they certainly made everyone aware in the industry in the UK of the opportunities. We then made ourselves acquainted and told them of our capability. We had our capability assessed by Saab and indeed Thales. We got onto the tender list and we were declared the prime for the mouldings element, so they did a “down select”. I think that is all we ask, that they do go out to British industry, the SMEs, and give them the opportunity to be aware of the programme and to qualify for the programme.

Q19 Mr Hancock: Can I just then ask on a point that the Secretary of State made when he suggested that there are things in this policy that industry would not want to hear. I am at a loss to find those in the document. Do any of you foresee anything in there that you are worried about which you thought the Secretary of State was unfair about or that the policy had actually uncovered some sort of mystery failure on your part that had not been addressed in the past? For him to say specifically this should be a “gritty and relevant document” and there will be things in here that the industry will not want to hear, have any of you been made nervous by the reading of this document, that things have been uncovered that you have been up to that had to stop?

Mr Griffiths: Your question implies some measure of surprise. I would not necessarily cite this example as being one that falls into this category. Certainly in my sector, the complex munitions sector, there is a statement in it which says that if one looks ahead over the course of the next five to 10 years, the level of planned expenditure in this sector shows a reduction of approximately 40% compared to what has preceded it in the last five to 10 years. I am bound to say when we observe the degree of rearmament that has gone on for the British Armed Forces over that period that is not a great surprise for us. Is it a source of some disappointment? Clearly it is; it is not a surprise but nor is it palatable and it does demand some really close work with the MoD to see how that level of funding reduction can be accommodated in a way that does not destroy important industrial capability. So that is one example.

Q20 Mr Jones: Could I just pick you up in terms of the supply chain. I agree that NLAW is a great example of how not just small defence companies got involved but some engineering companies who I know in my constituency who have never been involved in defence work before. I think the

important thing about the NLAW procurement was the fact that the people in the supply chain had to compete for it; they did not get stuck on a tender list to agree an offset. I know NDI played a key role in that. Do you not think there is a danger that if we do not stipulate that these supply chains have got to be looked at that the supply defence contract will go abroad for the work? I give a great example in the North East of the ALSLs from Swan Hunter’s, where rumour has it that 75% of the work on that supply chain has come from Holland. Unless we actually stipulate it clearly, do you think there is a danger that more Swan Hunters could happen where it looks great in the headlines in that we are providing a ship built in the North East but the parts of it where the value is, ie, all the bits and pieces that go in, are being procured offshore?

Mr Cundy: In terms of shipbuilding I think the strategy is pretty clear that over the next 10 years we have got good visibility in terms of programmes. The Type 45 and the Carrier programmes will need the whole of UK industry. However, within that we need to be competitive. Certainly from a VT point of view we are keen to compete on overseas and UK programmes. We need to be competitive within those programmes. All we would like to do is to be given a fair level playing field in that competition.

Dr Price: The policy is quite explicit with respect to the research and technology and identified quite clearly that the SMEs in the lower tiers are a source of innovation and ways have to be found of involving them early on in the process. I would say specifically on the point that you raised that sometimes it is quite difficult to decide what is the UK industrial interest when you have a UK prime with a supply chain that is foreign competing against a foreign prime with a UK supply chain. NLAW, I suspect, was a good example of that. Therefore it is always very difficult to take specific instances and make broad generalities, but I would have expected the Industrial Strategy to have more detail of how, outside of technology, the supply chain of SMEs might be better thought of in terms of a policy to maintain industrial practice.

Q21 Mr Jones: I agree with you but the issue is surely not wanting to go down the route of the American system where everything has got to be procured in the US. There is an issue here that we have opened up our markets most widely in the world, in this sector here, and if we are spending a huge sum of public money there should at least be some of that filtering down to the SME and small sector. For example, in the ALSL something like half a billion pounds has been spent already and rising, you would have expected some of that to come into the supply chain of the UK.

Dr Price: It is also true that if you look at very efficient supply chains, whether it is the automotive industry or civil aerospace, that one of the key things of long-term planning is about involving local SMEs in a partnership going forward, and therefore to some extent best practice would favour local SMEs

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

with strong technology that is developed over a period of time. So you would hope that following best practice that we would see the same thing.

Mr Jones: I do not think we need to hope; we need to see it written into the structure, that is the problem.

Chairman: John, were you going to ask about this point or were you going to go slightly to a different point?

John Smith: On the same subject, Chairman, it appears to me that not only is the strategy focused on the primes and not on the supply chains and the smaller companies but there are certain inherent dangers with some of those large primes. The one that comes to mind is BAE Systems who quite clearly now are equally split between the UK and North America in terms of its interests, and some systems, like land systems, are in fact driven by North America and not the UK market. Is there not an inherent danger there that they will not draw on the UK supply chain but will go elsewhere, and quite clearly that could be applied to other companies? So is this not only a document that favours big business, it could have been written by BAE Systems and they would have been quite happy with the outcome? You do not have to answer the last bit!

Q22 Chairman: I would be nice if you did.

Mr Griffiths: I think your question bears down on what we were touching on earlier and that is whilst industry champions like BAE and a number of the sector chapters have been identified as the leader or the partner of choice for the MoD, there is a concern amongst some of the SMEs and some of the not-so-small companies that their route to access the MoD's market now is purely channelled through those particular industry champions, and whilst there may be some logic to that it comes back to the observation we made earlier that there have to be policies and safeguards to make sure that that position is not abused and that a wider aspiration, for example to attract innovation from some of these other players in the industry who perhaps have real innovation to offer, is still leveraged. There have to be those safeguards.

Q23 Mr Havard: This question about the strategy saying things that maybe industry did not want to hear; is there something that you want to say to the Government that it might not want to hear in the sense that when the document was launched it had all the smiley faces on the inside cover, and the Secretary of State made the point at the time that the man from the Treasury was smiling, which is a novelty, and they were all on there, Trade and Industry, Treasury, it was all joined-up government, but in my discussions, admittedly not with the current Secretary of State but previously, the question about what is the responsibility of the MoD in order to promote awareness and capacity for SMEs to be involved in these sorts of processes and how does that fit with the responsibilities of the DTI was a question where if you are not very careful you get the answer from the MoD it is the DTI's responsibility and from DTI it is the MoD's

responsibility. It is somebody's responsibility; it is supposed to be a joined-up responsibility. So what does industry want from the respective government departments to make that trick happen?

Mr Griffiths: I think there are a number of points which arise from that. First of all, there is a question of affordability, I think, and perhaps this bears on Mr Hancock's comment earlier on that maybe there is not as much bad news in this document as was heralded when it was first unveiled. There is a question as we go through the aspirational statements that are made in each sector as to whether or not when one adds them all up in spending terms they represent an increase over and above the level of planned expenditure that has been advertised to us so far. So I think that question remains unanswered.

Q24 Mr Havard: Does the aggregate of a set of spasms equal a strategy?

Mr Griffiths: The second point is if one looks at the document it is stated to be an Industrial Strategy for defence, not for the wider government, and I think one of the questions we would ask is are we going to have one industrial strategy for defence and a second industrial strategy for the economy as a whole. I think looking at it from a corporate point of view, we need one.

Q25 Linda Gilroy: Continuing on that point, the DIS states that the current levels of work for naval shipbuilding will not last forever and with the Future Carrier and MARS there are some capacity issues which the Marine Industrial Strategy is going to tackle, so in about 10 years it would not be affordable to sustain the sort of capacity we need for that period. How is a company such as the VT Group, if I can ask Mr Cundy specifically, preparing for such a future and are we likely to see mergers of UK naval shipbuilding companies and on what sort of timescale and with what impact on jobs?

Mr Cundy: That is quite a wide-ranging question, but if we take the industrial group at the moment, we have had very extensive discussions with Government and the Ministry on the Maritime Industry Strategy. If we looked at the sectors within the report, the maritime industry is probably as far advanced as any in terms of the strategy there. Looking at the long-term capabilities we want to protect for the strategic interest, obviously the design and support of ships long term is a key ability that we need to retain within the industry. There is a particular challenge to both industry and the Ministry to produce the carriers within the next 10 years. There will be an increase in employment, certainly at a blue collar level, over the next three years as the carriers come in, but longer term that base—and I think the report highlights the Type 45 and the Carrier—are abnormal workloads within the industry. We need to size the industry for the long-term capacity needed for warships, and commercial ships if we can be competitive. From a VT point of view, we believe with our investment in Portsmouth we are as competitive as anyone in the export market on warship building for the smaller

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

warships. In terms of the strategy going forward we would see the UK being very competitive in the warship-building market and there will be lots of opportunities within the next 10 years for people outside of the core warship building yards, ourselves and BAE, to be involved.

Q26 Linda Gilroy: Are you saying you are looking to the export market to sustain something beyond that immediate period?

Mr Cundy: I think exports will enable us to retain capability particularly in the design area where there are peaks and troughs in terms of class of ships. As we go into support of ships there tends to be a lower design input. We need a long-term strategy for retaining that design, and export will be part of that strategy. That said, the export market tends to be for the smaller perhaps faster ships and that is a limited market which represents maybe only 10–20% of the total warship building in the UK.

Q27 Mr Hancock: If I can develop that a bit further. The Industrial Strategy makes it quite clear that plans will be needed from your organisations to ensure that the UK can keep the required key skills. Paul Lester wrote a very helpful letter to the Committee where he re-emphasised that point.³ I quote from his letter which says: “Under the arrangements outlined in the DIS, the MoD will not be able to retain in-house all the necessary skills to handle itself the procurement of offshore investors under the true life capability . . .” etc. He goes on to say that industry needs to have a greater role in that. Do you see that as being a prerequisite for a company like yours that it would only be able to hold those skills if they were given that sort of commitment?

Mr Cundy: I think that is true. In terms of the markets that we are looking at, design skills are obviously key to our business in terms of the export market and the UK market. In terms of design capability, we should retain those within the UK. There may be ships which could be built more efficiently offshore, but if we are looking at supporting those through life (which needs to be done in the UK) we need to keep the capability and the input up-front in terms of the design to manage that programme through life.

Q28 Mr Hancock: The policy itself, whilst recognising there will be a problem in retaining the skills, does not really offer any solution to the problem. It passes that back to you to say you tell us what the solution is. Do you think what you are going to say in response to that, which is not only a commitment to build but a through life commitment to maintain and look after the product, is the only way that industry can satisfy what government are requiring in the way of retaining of skills?

Mr Cundy: As a group we believe that is the most efficient way.

Q29 Mr Hancock: Would your colleagues share that view?

Mr Griffiths: With one exception—the export point—which we touched on earlier on. The industrial model for many of the indigenous UK businesses contrasts with what one sees with the indigenous US businesses. The US business model in the defence sector is one where because of the levels of US defence spend they can build and sustain a business entirely on domestic order intake which they secure from the government. In the UK, frankly, in a number of sectors that simply is not realistic as we look forward and we have to look to secure export business in order to sustain industrial capability in the UK. I think one area where we would have looked for stronger emphasis within the White Paper is on the actions that need to be taken jointly between MoD, industry and indeed wider government to support the export ability of British defence product.

Q30 Mr Hancock: Just one final point, do you think the current thinking in the Defence Procurement Agency supports that view?

Dr Price: Maritime, if we go back to it, is a good example. The German maritime industry has made a great deal of effort to ensure that it has very, very exportable designs as part of its overall process and, consequently, although there is a section on defence exports in the Industrial Strategy, the implication is of dependency. A good example I would give for my company, Chemring Countermeasures in Salisbury, is that it is 80% exports but the skill base is maintained for the UK essentially by our success in exporting, and I would say that there are a lot of small companies supporting the UK industry which have that same business model.

Q31 Chairman: So specifically in answer to Mr Hancock’s question?

Dr Price: No, I do not at the moment see the importance of exports to the maintenance of skill being within the DPA’s policies.

Mr Griffiths: I think it is a very difficult balance being struck here because on the one hand, arguably, there should be no compromise in terms of the quality of military capability that is being delivered industrially to arm our Servicemen and women. I do not think what we are saying here is that it should be traded in some way for exportability. Nonetheless, there are instances probably we could identify where specifications have been derived in a way that does not render a product readily exportable in the same way as perhaps one would see in some other countries.

Chairman: Are you going to change the subject slightly because Brian Jenkins would like to come in?

Mr Jenkins: I want to go back a little bit to where I was going to come in earlier on.

Chairman: We will come back to you. Kevan Jones?

Q32 Mr Jones: Can I ask particularly on shipbuilding, in the White Paper it states that surface ships and complex vessels will continue to be built in the UK, but the MoD might look to outsource some

³ Note: Not printed.

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

of the “lower-end manufacturing” offshore. What is your view of what this so-called lower-end manufacturing is?

Mr Cundy: I think in terms of lower-end manufacturing we need to go back to what needs to be done over the next six months to define what the long-term programmes are within the industry. Obviously with the Carrier and Type 45 there is work for most of the industry in the short term. It needs to be sized longer term for requirements beyond the year 2015, that sort of number. Within that you then have the MARS which is a particular programme which is what I would see as towards the lower end of the specification. Mike mentioned pooled data in terms of how we see that happening. What we see is those programmes being managed in the UK with design capability in the UK for through life support but with the high end engineering which militarises the vessels being done in the UK.

Q33 Mr Jones: How does that fit with the modern way for example, whether it is BAE Systems or anybody else, of building ships these days where you build them in sections but you do not just do the fabrication, you do all the work inside as well? If they are going to be built in Poland or a former East German yard, how do you ensure that all the expertise that goes inside is not also done abroad?

Mr Cundy: In terms of giving an example, we had a contract from the Minister of Defence to build two survey ships for the Royal Navy. Those were not built in our yard, they were built to a commercial design in Appledore (but that could have been overseas) but at the back end of the contract we were involved with the through life support after the contract was completed. What we did was the militarisation of those ships once they came back to Portsmouth.

Q34 Mr Jones: Yes, but is it not difficult to envisage, especially in some of the larger ships, that you are going to get a situation whereby you are going to build the hulls in Poland, float them across and fit them out because that is going against the way in modern shipyards you are building ships?

Mr Cundy: In your example of BAE Systems and ourselves with the Type 45 we are talking about very complex ships with a lot of outfitting and weapons within the hull structure itself, so within that programme we are doing 80–90% of the outfit in Portsmouth before they are moved to Glasgow. With a more commercial design, it is a tradeoff between how you build the ship in its entirety, which could be done overseas if that was the best case, or could be done in the UK, but the level of outfitting will determine whether you should build the whole ship in one yard or whether you should do it in modules.

Q35 Mr Jones: My concern about this is I do think on MARS we will need that work in UK yards to keep that skills base there. My fear is if you are going to take a simplistic view, which I think certain people in the MoD are going to do, that somehow it is easier and cheaper just to build these in Poland and this is

a cheap way of building a ship. It is very interesting the Germans are not going down that line. Other European yards are not doing that, other governments are not doing that; why should we?

Mr Cundy: I think it comes back to the previous point about sizing the industry over the next 10 years. What we do not want to do is necessarily increase the capacity within industry to cope with the Type 45 and the Carrier programme and other ships on top of that. I quite agree with you that we should be using this programme to make sure we size the industry over the longer term.

Q36 Mr Jones: Would you not agree though, Mr Cundy, that if it is done properly and planned out properly you could ensure there is a long-term future for existing capacity that is there in UK yards quite a long way into the future, rather than segmenting it and saying we are going to do this bit in terms of carriers etc, then at the same time pushing this stuff abroad? I accept there is an MoD thrust on this. If they start doing that I think there will be a bit of a reaction against it because what you are driving is feast and famine again, are you not?

Mr Cundy: No, I think what we are talking about in the Maritime Industry Strategy is a look over the next six months at the size for the industry, so it is—

Q37 Mr Jones: I will finish on this point. Is there not a danger that we have this huge feast over the next few years in terms of the Carrier and other things, and then we find that because we have put stuff abroad because it is cheaper or more efficient that we end up with the famine afterwards?

Mr Cundy: I think you then come back to capability and having the platforms when the Royal Navy need them and it is the timing of when that happens.

Q38 Mr Havard: I want to ask you two questions. They both follow on in this sense but one is about procurement and the other is about post-2015. It says it “might look to outsource lower-end manufacture”. There is a good old Civil Service “might” stuck in the middle of the sentence to give the minister a parachute if he needs it! What it does mean is what you have just been testing, is it not, what is lower-end manufacturing? It goes back to what my colleague was saying earlier on about you have a view about what you need to retain in terms of the through life process here. I was very interested in the memo that was sent by your Chief Executive who said in order to do all this you would have to manage on behalf of the MoD the procurement of ships and the hulls manufactured offshore. What is meant by the management of the procurement? Are you going to be defining in the management of the procurement what the lower-end activity is? What do you mean by manage the procurement because what happens to the DPA in this process? Are you going to take them over? Are they going to disappear? Are you going to drive this process or is the MoD going to drive that process? How do you see that statement practically working in these circumstances?

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

Mr Cundy: Again coming back to the example I gave on the survey ships, it was a good example where the MoD had a requirement, and they went out to competition to have a design which they wanted to procure. We could then procure that design through a supply chain and in relationship with some of the SMEs we were able to procure those ships. I think the MoD because of the complexity of some of the procurement programmes are not used to managing programmes overseas. We manage shipbuilding for example in Greece where we are managing the construction of ships overseas with a team of people on site, so we have overseers on site to manage that programme.

Mr Havard: So you could cut out the middleman in terms of the DPA, just abolish it?

Chairman: You said you had two questions.

Q39 Mr Havard: You mentioned this question about feast and famine and so on post-2015. We have had some information put to us I forget who by, but essentially the assertion is that so far as shipbuilding is concerned there is effectively in the strategy a quite clear message about the replacement of Trident or certainly the replacement of the submarines, because the strategy document almost explicitly says that in order to do some of the things that are necessary in retaining all these various skills and design capabilities and so on in shipbuilding, there will be a new generation of submarines post 2015, because if all you do is simply upgrade existing boats that will not be sufficient in order to fulfil some of the statements and requirements that are set out in the strategy. That is a set of assertions that has been made to us; what is your view of that?

Mr Cundy: I do not think I am qualified to comment on whether—

Q40 Mr Havard: It fits in with this feast and famine aspect and what happens post 2015.

Mr Cundy: I am not qualified to comment on the submarine side of life. I have to say on the warship building side of life we will need capacity and design capability beyond 2015 and that could include some of the submarine capabilities.

Q41 Chairman: Would any of the rest of you like to take on this submarine issue?

Mr Griffiths: I do not think any of us is qualified.

Chairman: Okay, we will find some other victim! Thank you very much. Moving back to the general impact of the Defence Industrial Strategy, Brian Jenkins?

Q42 Mr Jenkins: Morning, gentlemen. I know sometimes if you are listening to a Committee you might not get the right emphasis of the question because you are sitting there being nervous and wondering if we are going to trip you up. We are not here to trip you up in any way, shape or form. In fact, listening to some of my colleagues asking questions, I get lost on a question and I understand why you would. However, when Mrs Gilroy asked a question she asked quite simply: if you have got a prime contractor with a lot of sub-contractors how is best

practice moved across them? I think, Mr Griffiths, you gave an answer that the European Code of Practice is in place. That is not quite the same terminology or the same document, so when I was involved in a real job, part of my task would be to go out to small contractors and pass best practice between them. I know how difficult it is with regard to intellectual property rights where a firm does not want to lose its competitive edge by giving its secrets away. In that sort of question that Mrs Gilroy was asking you, as the prime contractor how would you ensure that best practice got shared within the pyramid of the group?

Mr Griffiths: I could illustrate it perhaps from the work that we are doing in my particular sector, which is the complex weapons sector, and again the relevant chapter of the White Paper does identify, apart from my own business, a number of other players in the industry whom MoD, from the analysis they have done, recognise as having particular niche capabilities, particular intellectual property, if you want to express it in those terms, which needs to be safeguarded. You are absolutely right there is a sensitivity amongst some of those players about being willing to share the benefit of some of that intellectual property either with us or with other of the players in the sector, but what we have sought to do really, with the encouragement of the MoD, is first of all to initiate bilateral discussions with each of those players to say, “Here on the basis of the White Paper is the best prognosis that is available on the levels of business which are available to this sector over the coming five to 10 years. Here is our industrial position in terms of what it means—”

Q43 Mr Jenkins: I am going to lose the will to live shortly. Yes, we see it as a problem. Yes, we have the technology and the strategy to deal with it, that is what I want to know, and if we have a strategy to deal with things like that, and the strategy we have got for the defence industry, if you can call it a strategy, says that industry will need to reshape itself. My simple question is: if industry needs to reshape itself, what is the future and what shape do you see? If we have got 305,000 people employed in the industry now and we will have for the next few years, let’s say 10–15 years down the track how many people do you envisage being employed in the industry? Where will they be in the country? Shipbuilding is okay; it is still going to be on the coast, we know that, but where will they be—southern England, northern England or wherever—and who is going to do the reshaping because no-one is going to throw themselves on the sword, so who is going to beat these things into shape? Are you going to do it, is the MoD going to do it, or is it left to the market-place?

Mr Griffiths: Certainly in terms of what we are trying to do in our sector—and I use that as an example—what we are seeking to do is to compare the analysis which we have from the key players within the sector, identify looking ahead where we have got duplication or overlap in terms of capabilities either in one company or another and to see between us—

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

and you are right these are not easy conversations— as to where that capability, where it is surplus can be eliminated or indeed, and there are instances in the document where there are envisaged future military requirements that perhaps we are not totally equipped to deliver today and maybe jointly we need to invest in particular technologies in order to provide that capability.

Q44 Mr Jenkins: With technology we have a moving feast here and we do not know what is going to happen in 10, 15 or 20 years' time, I understand that, the question is who is going to reshape the industry?
Mr Griffiths: I think the onus is on industry ultimately to do that.

Q45 Mr Jenkins: You are going to do that?
Mr Griffiths: But based on the best available information from MoD as to what its future military requirements and spending plans are.
Dr Price: There is probably a gap.

Q46 Mr Jenkins: It is not a gap.
Dr Price: I said it is a gap in the strategy. The third objective of the Defence Industrial Strategy is to identify how one should go forward and that is probably the weakest part of the defence strategy that when you look at the plan going forward which says how many people will be employed, I think it is probably missing altogether.

Q47 Mr Jenkins: It is not the weakest, it is just non-existent. It is so fundamental and basic that to call this a strategy, you just have to be searching for a better term. This is a wish-list, some off-the-wall idea of "we would like to move forward; how do we move forward?" They have come up with this prime contractor concept to carry the entire load. The prime contractor might carry the load in a specific area or task but not across the industry. You need to sit down as an industry and my difficulty is when you start talking about merging what we start looking at is monopoly. If we have only got one supplier, we are tied into it. How do we know when we get close to falling below that critical mass so that we cannot produce our own defence requirements, because nobody is going to tell us out there, are they, because you have not even got your act together yet as an industry to tell us what shape it is going to be? There are lots and lots of questions that should be basic, fundamental questions that are missing at the present time. Do you agree?

Mr Griffiths: I do not totally agree with that because I think one can envisage a scenario where it might be better to have one player indigenously within the sector who does himself have critical mass rather than three or four smaller players each of whom is below critical mass.

Q48 Mr Jenkins: That is what I am asking for that someone has come up with a plan that we can look at, evaluate as to how we get from the situation we are in now to the next wave where we say we will have an industry that will only comprise of 200,000 employees and do you see that future?

Mr Griffiths: I cannot see it in those quantified terms, but what I would say is for industry to assume the responsibility for sizing and reshaping the defence sector in the way I think is envisaged in the White Paper it is helpful and desirable that industry has the benefit of a greater level of transparency in terms of future military requirements, future spending plans than the White Paper envisages.

Q49 Mr Jenkins: Let's push this a little bit longer. Would you say if I were to sit down with a clean sheet of paper now to design a realistic strategy, what I should do is to look for a company that has extremely good management capabilities, that has good accountancy capabilities, that has a good track record but does not make anything, as my prime contractor as my prime "go and fetch" boy, and they then come to the manufacturers and they come to the people who may not be in the defence industry, who may be outside the defence industry as they knit the project together and they develop project experience and expertise that might be limited in an individual we have got now as a prime contractor? Do you see that as a way forward?

Mr Griffiths: From my experience, it is difficult to envisage a company having the requisite degree of system engineering skills and management skills of the type that you have just described without actually having the ability within that organisation also to understand some of the sub-system technologies that are intrinsic to it. So I do not particularly buy this idea that you can just have a pure system integrator as your prime contractor.

Q50 Linda Gilroy: I am interested to ask a final question of where small and medium enterprises fit into all of this. In particular, I come from Plymouth, the South West, where the supply chain is as big as it is anyway in Europe, never mind the rest of the country. I just wonder if any of you have any experience of the relationship between the small and medium enterprises, universities and knowledge partnerships, because it seems to me we were talking about how they might want to safeguard their innovation from being exploited without them having the benefit of it and knowledge partnerships are surely one way of dealing with that? Do the big primes have a role in relation to the universities in enabling them to facilitate that kind of support to small and medium enterprises?

Dr Price: Clearly from previous experience with Rolls-Royce, Rolls-Royce has led to some extent the formation of university technology centres essentially for partnership development over a longer term period, which to some extent I think the MoD has now picked up with its defence technology centres going forward, which is essentially to make use of the very best capabilities in universities in a partnership of targeting so that there is continuity and consistency of vision for where it should go and that also links in to some extent, in my experience, take Portsmouth for example there is quite a strong knowledge partnership that operates between

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

the smaller companies and the University of Southampton and some of the other universities in trying to promote greater understanding of where the benefits of new technology can be applied and perhaps, Chris, you would like to build on that.

Chairman: Thank you very much. Moving on to complex weapons, David Crausby?

Q51 Mr Crausby: My questions are directly specifically at Mr Griffiths because MBDA specialises in missile systems and, as you have already told the Committee, the Secretary of State has said to the House that there has been a significant investment over the last 10 years and investment in this area is now likely to reduce by 40% over the next five years. How will MBDA adjust to a reduction of this scale and, most importantly, how will it retain the specialist missile skills in the UK with this likely reduction?

Mr Griffiths: In part we had anticipated some of this because, as you observe quite rightly, over the course of the last 10 years we have seen what we always envisaged to be a peak in terms of the rearmament cycle, so to some extent we had manned up to service that particular peak on the basis of managing that peak by employing a number of particular skills on fixed-term contracts of employment, envisaging all the while that as that peak then declined, as those people's contracts became time-expired, they would be released. At the moment that is the phase that we are going through. Then in terms of sustaining the core skills and the permanent skills that we have within the business, what we have done (again in conjunction with other companies within our supply chain who, if you like, face exactly the same issue) is to propose to MoD a series of route maps for the migration of the current portfolio of weapons that they have in service. Today the UK MoD has 27 complex weapons either in service or under procurement, and one can envisage over the course of the next 10–20 years that through a policy of technology insertion (not massive new programmes but small investments in particular enhancements to those systems) one could both increase military capability at a relative modest expense but also, through introducing modularity, thin down and reduce the number of systems that need to be retained in service by making them more versatile to particular varieties of applications. The model we have presented in a substantial proposal that we had made to the MoD is a series of planned technology insertions/investments which by reducing the portfolio of weapons would then reduce the through life cost of maintaining the inventory of systems with the Armed Forces today because the programme of work is self-financing through the payback and the reduction of through life costs. We do believe that is a win/win because we believe in total we can reduce the operating costs of the complex weapons that are in service with the UK at the same time as freeing up from those savings funding in the technology insertion, which can contribute to retaining those core skills which you mention.

Q52 Mr Crausby: You present a memorandum to the Committee⁴ in which you state that the challenge now is of course to implement the Strategy in time to avoid seeing UK complex weapons industrial capability going into decline, and I think you have said time is short.

Mr Griffiths: Yes.

Q53 Mr Crausby: So who is responsible for meeting this challenge? What needs to be done and by when in order to avoid this decline?

Mr Griffiths: I made these proposals and I sent very detailed proposals to the MoD in the second half of last year. As far as I am concerned, the implementation phase in our sector over the course of the next six months is imperative, and in particular the answer I need over the course of the next six months—and it is that sort of time-frame—is whether or not the sort of route maps that were presented in that proposal are ones which attract the support of the MoD. If the answer to that is yes, then I think there are investment decisions that I can make within the company that would take the first steps towards developing the sort of technologies which progressively over the course of the next 10 or 15 years would need to be injected into that portfolio of weapons. In the absence of some clarity as to whether or not the MoD share that vision as to where we are headed then, frankly, as we move into the second half of this year, I have to take across the whole of my business, not just in the UK but France and Italy and Germany as well, decisions as to how I cut capacity. There will be choices to be made, as far as I am concerned, as to where those cuts fall as we seek perhaps to specialise particular capabilities in my sector in one country rather than in three or four. So by the second half of the year it becomes critical for me.

Mr Crausby: I look forward to that.

Q54 Mr Hancock: I think this is a very interesting issue you have raised which is over and above where we are going on our inquiry. It is whether or not this strategy recognises once again the sort of decisions that you have to make. It is the relationship between this strategy and the Defence Procurement Agency and yourselves, which this document really does not address. You once again have raised a real issue where this strategy does not take account of that. How can you possibly make those sorts of decisions if there is no clear strategy relating to where defence is going over the next 10 years built into this document?

Mr Griffiths: Well, that is the answer I need because the proposal that I referred to in response to Mr Crausby was one that we did not develop totally in isolation, it was one that we worked up in the second half of last year with a lot of input from the MoD team themselves but, frankly, we are at the point where we need decisions. I do recognise the model I have proposed—which is basically spend to save and reinvesting some of that saving into sustaining industrial capability—is one that really does

⁴ Note: See Ev 66

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

challenge the MoD's system because it is testing whether or not they are really willing in terms of putting their money where their mouth is to support this through life management approach that is referenced within the document.

Mr Hancock: I find that hard to comprehend because the document does not address that problem, I do not think; I think it fails miserably, sorry.

Q55 Robert Key: If I may follow on. This was what I would have been pressing a little later but since Mr Hancock has raised it, the Ministry of Defence on page 124 of this document, paragraph B11.22 gives a very precise list of technologies with emerging defence relevance and gives you a road map of where it wants you to go in relation to technology. Did you help create that list? Was this your input or is this something the Ministry of Defence is just thinking up by itself when it mentions smart materials and structures, micro electro-mechanical machines, supersonic and hypersonic technologies, wideband, high power electronics, all that list there in that paragraph? Is that your input that you were talking about?

Mr Griffiths: That is not my input. I think, in fairness to the Ministry of Defence, they prepared their view of which technologies were critical. They then went through a process of testing that through a series of sectoral workshops sector-by-sector with industry. I think probably the industry input calibrated their view but I would not say it was sourced from industry.

Q56 Chairman: We will come on very shortly to research and technology and we are building up to now. A quick question about platforms and the sort of insertion of new capability into existing platforms that you have just been talking about. If we are going towards platforms which have very, very long lives and it is the insertion of new technology that is going to be the key, what is the consequence going to be for retaining designers of platforms of new equipment if most of the work is going to be involved in supporting existing technology?

Mr Cundy: Just to give an example, Type 45, that is being designed for enhancement throughout its life. It is a ship which has, as I say, a long platform life.

Q57 Chairman: Yes, but once it is built what will happen to your designers of new systems, new equipment?

Mr Cundy: I think on Type 45 a key issue is not necessarily the designers but how the ship will be looked after through its life. It will be moved away from set piece refits and upgrades to more through life upgrades as it is operational to increase the operational capability. That means that both the designers and the support teams need to be involved throughout its life, both equipment and the supply chain.

Q58 Chairman: Will they not lose the skills to build new ships and build new aircraft if we are not buying any new ships or aircraft?

Mr Cundy: That comes down in the strategy in terms of submarines there needs to be a drum beat of how many years to design a new class of ships or to have a new surface fleet of some sort.

Q59 Chairman: If they do lose the skills what is the consequence for exports?

Dr Price: I was just going to look at it from the modularity of the design looking forward with technology insertion. Clearly, you are looking at a variety of different platforms but if you are doing a technology insertion, ie, an upgrade of a particular avionics, particularly if you look at modern aircraft and modern missile systems, the integration of that new technology, the new sub-system, which may well come from a second or third tier, still requires quite significant impact from the prime contractor in terms of the design capability because essentially you have to model how that new capability, that new technology is going to work with the rest of the system that is essentially your legacy. So a technology insertion, if the structure of the platform is designed properly to accept it, should ensure that a core skill base is retained for some time. Whether that is sufficient to be able to start again with a new design 50 years later, if you take the Carrier in-service length of life, is always a difficult question to answer.

Q60 Chairman: That was, though, the question I was asking.

Dr Price: I understand that. I think it is always very difficult with long life. Clearly one of the classic examples on a submarine is the nuclear steam raising plant where the technology gets gradually older and a requirement for insertion of new capability is required to maintain your fleet moving forward anyway, so I hope I have answered your question, Chairman.

Q61 Chairman: No, you have said it is very difficult to answer.

Dr Price: Yes, I think it is very difficult. To answer your specific question can you retain capability for a new design, because that is where difficulty comes, if you take JSF, as a good example, if you look at a replacement of JFS going forward, is it at all feasible for the UK to claim to be able to retain the design for doing that on its own 40 or 50 years from now?

Q62 Chairman: What is the answer to that?

Dr Price: I think the answer is probably no.

Chairman: I see, thank you very much. Moving on to research and technology, Robert Key.

Q63 Robert Key: Does this Defence Industrial Strategy provide you with sufficient coverage? Were you expecting it to say anything different?

Dr Price: With respect to R&T?

Q64 Robert Key: Yes.

Dr Price: It is a very interesting question specifically on R&T. I think there is and there has been a lot of

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

consultation with industry over a significant length of time on the research and technology strategies. There is always the problem that to maintain a broad width of capability the affordability criteria of how much money goes into R&T is always under threat. I think the Tower of Excellence and the defence university technology centres have generally been welcomed by industry in terms of giving clear focus of where MoD wants to put its investment. Probably our biggest concern is that it is almost separated from the sector technologies in terms of this industrial strategy. It is very difficult, I would argue, from our perspective, particularly from the smaller companies' perspective, to read the technology and research part and to link it to what is in the main sectors. So I think what it says is quite acceptable. I think where we find difficulty is understanding how it links into the sectors. Are my colleagues with me on that? Does that answer your question?

Q65 Robert Key: Yes. Given future defence programmes are going to be about supporting and upgrading existing equipment, what signal does that give you for your investment in research and technology?

Mr Griffiths: I do not think that necessarily tempers it because one can still see substantial opportunities in the area of technology insertion and the upgrade of programmes for new technology based on R&T investment to still have quite an interesting financial payback for us. What I would observe is that if one looks at the £300 million or so currently spent by the MoD on R&T, then I think the question (which bears on what you are saying) is whether or not there is adequate linkage between the areas for which that spend is being targeted and the future vision of actually needing to look at upgrading and inserting technology into existing platforms, rather than perhaps blue skies thinking aimed at completely new concepts of military capability. I think that linkage is missing.

Q66 Robert Key: In their evidence to us QinetiQ⁵ say that clearly the Government recognises that research and innovation is very important but they are silent on the level of government defence research. Do you think there should be more money spent on defence research by the Government as opposed to private companies?

Mr Griffiths: At the moment in statistical terms it represents about 1% of the combined EP and STP budgets. Intuitively, that feels low but there is some interesting analysis within the White Paper as to the payback in terms of military capability from different projected levels of R&T spend. I do not know if we are necessarily qualified to critique it here but that analysis does indicate that perhaps the level of spending they have today is at broadly an optimum level. There is certainly no indication in the White Paper that there is an aspiration to increase it substantially.

Q67 Robert Key: Do you think the government is funding the right things? The government can accept a risk which you might not be able to accept in terms of investment and research. Have the government got it right?

Mr Medwell: With the current problems we have in Iraq, we have not spent nearly enough on studying the issues there in respect of our personnel and what we could do to protect them. Things have skewed. We are still looking at Cold War investment as opposed to peace keeping investment. There are a lot of issues there and, had we known more about this, we could have redirected that money and probably have saved lives.

Q68 Robert Key: The Defence Industrial Strategy does say here that there is a need for further work in 2006 to inform our research and technology priorities. Are all four of you involved in that further work to inform research and technology priorities?

Mr Medwell: We have not yet participated but we have been invited to participate in a number of think tank sessions aimed at responding to that action during the course of the first half of this year.

Q69 Robert Key: Are any of you members of the UK Council for E-Business?

Mr Griffiths: The DMA has a number of companies that are members of it.

Q70 Robert Key: What about the Transatlantic Secure Collaboration Programme? Are you involved in that?

Mr Griffiths: Personally not.

Q71 Robert Key: We are told about all these splendid organisations. The Transatlantic Secure Collaboration programme is clearly very important, looking at the whole question of other people's secrets and technologies that you are going to be able to share critical bits of at critical times. Yet for example, in paragraph B12.18, the Strategy is talking about the development of a European Defence Agency, saying that EDA work may lead in due course to a longer term strategy to consolidate testing and evaluation capabilities across Europe. On the one hand, you are looking at Europe and developing more of Europe in that particular regard; on the other hand, we know the transatlantic work with the United States is of critical importance. How is the United States going to look at companies like you if you get too involved with European companies?

Mr Griffiths: You will probably have to ask them.

Dr Price: It is a difficult balance but the ITAL waiver provision remains a critical issue with respect to transatlantic technology.

Q72 Robert Key: That is interesting because I certainly have been convinced that the ITAR waiver is not as important as we thought it was. Am I wrong?

Dr Price: You still have the problem with early research activity for companies that are operating both sides, as obviously we do with 50% of our

⁵ Note: See Ev 77

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

business in the United States. It is very difficult with the TAA restrictions on the transfer of very early ideas which often start the innovative process going, where you have quite significant bureaucracy on one side of the pond to start the discussions. That can create a bifurcation of technology investigation which probably is to the detriment of the UK side of the technology balance.

Q73 Robert Key: In the end, the employees of our defence companies are going to be the people who deliver these strategies. Investment in people is therefore critical. Is the United Kingdom now capable of producing young people sufficiently educated in science and technology to fulfil our dreams for the future of defence in this country?

Mr Griffiths: There is no question that they are capable of doing it. There may be concerns as to whether, notwithstanding the pressures on the market here, we are producing them in sufficient quantity. In particular, it is a real theme for me within my own business when I look at the throughput of young people through the A level system, perhaps acquiring very high quality qualifications at that level in those sorts of subjects that you think would be applicable through the tertiary education system, to developing careers in this sector and how many people with those sorts of qualifications are then lost to the engineering community as a whole and perhaps take preference in banking, accountancy, the legal profession or whatever.

Dr Price: The attractiveness may be the most important thing rather than the skill.

Q74 Chairman: Dr Price, is it not your view that the prospect of getting any meaningful ITAR waiver is dead?

Dr Price: Yes. I am not waiting for one.

Q75 Chairman: It is not a crucial issue from your point of view?

Dr Price: Not in that sense, other than the fact that it makes quite a big difference in terms of your industrial strategy. That was the point I was making. It makes a difference to how an industrial strategy from a company point of view would unfold, compared to if it does not exist.

Q76 Chairman: Mr Griffiths, you said that you thought from the Defence Industrial Strategy the figure—I think you are referring to the graph on page 30 under A58⁶—for research and technology spending in the UK suggested that it was at an optimal level. That deals with 2001. Is it not right that there has been a long term decline in UK spending on research and technology?

Mr Griffiths: I cannot quantify it but I believe that is the case, yes.

Q77 Chairman: Does that not, even according to this graph, suggest that the future capability of British defence equipment in, say, 15 years' time will be seriously deficient?

Mr Griffiths: I think that is true.

Q78 Chairman: That does not sound optimal to me.

Mr Griffiths: I did not say it was optimal. I said there was an argument within the White Paper that suggested that the current level of expenditure shown on that graph is the additional payback from increasing the level because the shape of the graph was quite modest. If you see a reduction in the level of that spend, you would fall very rapidly down that graph.

Chairman: Finally, can we get on to the crucial issue of implementation?

Q79 Mr Jones: The foreword to the White Paper says that the strategy will not be delivered unless the whole of the defence acquisition community, including industry, is able to make the necessary shifts in behaviours, organisation and business processes. What happens next? This document is quite challenging to you in industry. Are there any signs that the same tough questioning and hard decisions will occur in terms of DPA who have not come out in the many years they have been in existence with great valour?

Mr Griffiths: If I deal with the second part of that first, it does present huge challenges for the wider MoD, not just the DPA. Where do those challenges exist? First of all, they are behavioural. We have talked about the fact that the bedrock of MoD procurement policy now, as described in this document, is on value for money for defence; whereas if you went back to the 2002 strategy statement competition was the bedrock. That does drive huge behavioural changes in terms of mindset within the MoD and industry. It raises questions as to how you are going to measure value for money for defence and those are not answered in the White Paper. There is this emphasis on through life management. I would observe frankly that if one is genuinely to take a through life approach to this it begs the question as to whether the organisational structure within the MoD, the DPA and the DLA is aligned to that.

Q80 Mr Jones: I agree with you on that but civil servants are not known for abolishing themselves, are they? It is a brave minister that puts something forward and that is thwarted in the MoD. Unless we have those changes this is not going to work, is it?

Mr Griffiths: I do not think it is, no. In fairness though, they have within the wider MoD initiated two quite important pieces of work during the first part of this year, one looking at organisational and structural issues led by a two star Tom MacLean and, secondly, a piece of work looking at the behavioural and cultural changes that need to be made, led by David Febrash. Those are due to report in the first half of this year and I think it will be important to observe what recommendations emerge from that and whether indeed they are

⁶ *Note by Witness:* He was referring to the graph on page 39, A5.8, not page 30, A58.

31 January 2006 Mr Guy Griffiths, Mr Roger Medwell, Dr David Price and Mr Chris Cundy

implemented. There are significant changes that have to be accepted by industry culturally as well so it is a two way street.

Q81 Mr Havard: What are the business processes that need to change?

Mr Griffiths: First of all, there is this value for money issue, the way in which bids and tenders are evaluated. In the days when competition was the bedrock of procurement policy, it was relatively straightforward. In an environment where we are looking intuitively at much wider considerations, including the industrial dimension, it is very much more complex. The thing that worries a number of industrialists is whether or not, when they are engaging in competition according to whatever new rules are defined, those rules are clear.

Q82 Mr Jones: There is not a way forward. One might send certain civil servants in Bristol running for the smelling salts but has not gone down this road, away from competition, pushed the procurement part of it back into industry? If we have

these partnership arrangements, some of this should be done to make it more cost effective in terms of trying to get that joined up thinking.

Mr Griffiths: There is a risk though that, if all one is doing through this Defence Industrial Strategy is removing from the top layer to the second layer, the blind application of competition, you are not achieving what I think is the underlying objective. Whilst you are right that the level at which in some sectors competition will be applied may occur now lower down the supply chain, we need to make sure nonetheless that we are not using competition in a way that is going to sacrifice important industrial capabilities which may reside somewhere lower down in the supply chain.

Q83 Mr Havard: Clarity does not necessarily give you transparency?

Mr Griffiths: No.

Chairman: Gentlemen, thank you very much indeed. We are collectively extremely grateful to you for taking the trouble to answer our questions and we hope it was not too traumatic.

Witness: Lord Levene of Portsoken KBE, a Member of the House of Lords, gave evidence.

Q84 Chairman: Good morning. Welcome. Thank you for coming to give evidence to us. The Committee tends not to allow opening statements but the Committee is going to think me completely pathetic because I am going to ask you to say a few words about the capacity in which you are giving evidence to us, if you would.

Lord Levene of Portsoken: As I think everybody will know, I was Chief of Defence Procurement for six years from 1985–91. This is the first time that I have given any evidence to your House on this subject since 1991. My main interests now are well outside of the defence industry. However, I am chairman of General Dynamics in the UK and I am also now the President of the DMA who have just given evidence to you but I have to say that “president” is entirely an honorific title. I am not speaking on behalf of either of those organisations. I was very grateful for the invitation to speak to this Committee and I thought you might be interested in hearing about how we got to where we are now, which I am either praised or blamed for being to some extent the author of the situation. What happened then; how did we get into that position, what we achieved and what we did not achieve and, if it would be of interest to the Committee, how I feel that impacts on the present day situation. I am not speaking on behalf of the industry in any way this morning.

Q85 Chairman: You are specifically not speaking as president of the DMA and you are specifically not speaking as Chairman of General Dynamics UK.

Lord Levene of Portsoken: Correct.

Q86 Chairman: Let us start with the blame. This is all your fault. What do you make of it?

Lord Levene of Portsoken: I understand that. I have read a number of items that have been written on this subject, in particular in evidence to your Committee a year or so ago from an expert who said that I was the author of the era of confrontation. It was also known as the era of competition. One needs to look at what was achieved. With your permission, I would like to quote from the Major Project statement of October 1991, which now seems quite a long time ago, but that was just after I concluded my term as Chief of Defence Procurement. I think Members of your Committee will recognise the terminologies used but perhaps may find the facts quoted quite surprising. The conclusion of that major project statement in 1991 read as follows: “The Department”—that is the Ministry of Defence—“has undertaken a review of a total of 37 projects each valued in excess of £100 million which have been started in the last five years. The cost of those projects to date was just under 1% less than the Department estimated when the orders were first placed. 28 of the 37 projects were expected to be completed on time. One was ahead of schedule. Of the rest, only three had delays that were expected to exceed one year. The delays would not result in additional costs falling on the Department.” Out of 37 projects, 29 were being delivered on time. Only two of them were more than a year ahead of schedule and none of the extra cost involved in those was falling on the Department or indeed on HMG. That was the result of six years of very hard work. At that time the Public Accounts Committee thought that was a good result. If you want to call that blame, I accept the full blame for it.

Q87 Mr Hancock: What was wrong with that foundation? If it was so good when you left in 1991, why did it go so horrendously wrong over the next

31 January 2006 Lord Levene of Portsoken KBE

10–12 years? If the foundation was so good, what caused the problems?

Lord Levene of Portsoken: Different people have different ideas. There were different ministers involved under two administrations. There were different people in industry. The environment in which the industry and the Ministry of Defence were working had changed. 1991 was effectively just about the end of the Cold War. Demand dropped off. There were significant mergers within the industry and competition was reduced, but there were those who believed that competition, which had achieved a result which everybody would like to see, was changed into and designated as confrontation. As a businessman, which is what I spent most of my time doing before I was in the Ministry of Defence, I do not regard competition as confrontation. I regard competition as essentially what business is about. You have buyers and you have sellers. If any of us goes to buy a house or a car, you do not walk in and say, “How much is it? Fine. Let me take out my cheque book and write you a cheque.” Yes, we did have confrontation but if you look at that as a result that is what you achieve. If you look at the major commercial organisations in this country today, they work on the basis of competition and everybody recognises that. For whatever reason, it was felt that was confrontational to the industry and people did not like being confronted and challenged. Towards the end of my period as the Chief of Defence Procurement, the then Chief Executive, who has now just retired as the chairman, of the largest defence company in the UK then—which is the same company essentially as the largest one today, who we had a lot of tussles with but who I think we ended up on perfectly good terms with—said to me, “Whatever else may have happened, the fact that you made us compete made us much more competitive. We won a lot more business overseas and it smartened up our business.” Quite how that has changed since then must be directed at the people who decided on the change. I would be the first to agree that many other circumstances have changed between then and now but I do not believe that the basic philosophy of business, which is that you have different interests between buyers and sellers, has changed. The notion which in a perfect world *Candide* would appreciate, where everything is in the best of all possible worlds and the buyers and sellers all live together in one happy environment and they are all working on the same side of the table, would be wonderful. That is not how business works. I do not think there was a conscious shift to say, “Let us abandon it all and do something completely different.” The world has changed. I know it is something which you and your colleagues on this Committee consider a lot. I leave it to you to decide which was the better result. If you then said to me, “Could you go back and do exactly the same thing all over again today?” I think it would be difficult and you would have to do it in a different way. It might help you to know that when I was first brought into that post—some of you may remember there was a lot of controversy about that at the time—I was given a very clear charter by the then

Prime Minister after whom this room is named and the then Defence Secretary. That charter said fundamentally, “Your job is, one, to buy the best possible equipment for British Armed Forces on the best possible terms and, two, if you can buy that equipment in the UK that is excellent but, if you cannot, so be it.” That was the basis on which we worked. I remember going to a meeting of the industry which I had just left, being on the other side of the table as it were, which was the source of the controversy at the time, and telling them that. They said, “You will never get away with it.” I do not think it is a question of getting away with it. That is what we did and it ended up as a good result.

Q88 Chairman: The result is, is it not, that much of British defence industry is now resident in the United States and that we do buy a huge amount of our equipment from the United States which will in the end result in our defence procurement being over a barrel to United States manufacturers and supplies?

Lord Levene of Portsoken: You said much of British industry now resides in the United States. It is true that British industry has a lot of interests in the USA. The British defence industry has to reside in this country. The scenario which you are portraying is no different from the position we were in then. Some of you may remember the infamous project which I walked into, the Nimrod AEW, where we were buying in the UK. We had got to the stage where we had written off £500 million. “We cannot stop now. We have written off £600 million. We cannot stop now. We have written off £700 million. We cannot stop now.” I then walked in and we had to decide that that project unfortunately was not going to work. We were forced to buy in the United States. It is a very difficult issue. You also have to weigh that against the political interests of closer ties with Europe. We did a lot of work on that. You may find it interesting that, as the Chief of Defence Procurement, I also had the title of the National Armaments Director. The National Armaments Director is an international title, recognised by all the NATO countries as being the individual responsible for defence procurement. We did a lot of work with our European colleagues to try and see to what extent we could collaborate in Europe, not in order to be at odds with the United States but to have a rather more even division as to where the work was done. I remember my French opposite number when I first started. We made quite a lot of progress. My French opposite number made a calculation. If you had a collaborative project, the cost of that project to the users was a function of the square root of the number of participants. If you had four participants, it would cost double. If you had nine, it would cost treble. We measured that and he was right. There are reasons why you might want to do that but it is a difficult issue. The more problems you have in a project, the more difficult it is to keep it on the road. I remember being responsible for signing the original contract for what was then known as the Eurofighter, now Typhoon, which you are all very familiar with. We tied up that contract

31 January 2006 Lord Levene of Portsoken KBE

very tightly in terms of price and conditions. I remember after I had left reading that the German Government were very wary about going ahead with that. There had been a change in government and a change in policy. They eventually, reluctantly, agreed to continue on the basis that you could have a value engineered version of it which would save a lot of money. I remember remarking to a number of people at the time that the result of that would be that it would cost us a lot more, which of course is precisely what happened. We have to look at what is available. We have to look at what technologies are available. We came to the conclusion even 15 or 17 years ago that if we were really to compete with the United States no one European country could do that on its own, simply because of the costs involved. European collaboration would help to make a balance and you would not be in the sort of position you describe, where we are dependent on one country. I would not like to use the phrase “holding us over a barrel” but once you are dependent on one supplier you do not have a great deal of choice.

Q89 Linda Gilroy: I am interested in what you are saying. What store would you set by the reliance that we are seeing in some of the things happening in procurement now on gain sharing and leaning to deliver much better value for money being able to counteract the sort of monopoly tendency that you have just described?

Lord Levene of Portsoken: We did get value for money. We did get projects, almost without exception, delivered on time and on cost. I recall very well when the terminology and the paper on smart procurement was produced, which was going to achieve a lot of this. I was asked at that time what I thought of smart procurement. I said I had not been able to understand what it was about. I had been asked to speak at a number of conferences on the subject and I found myself not qualified to do so because I did not really understand it.

Q90 Linda Gilroy: You did not really answer my question. We have been to look at front line capability recently. Our concerns there have tended to be in the other direction, in the short term certainly, although we appreciate the long term potential for monopoly to then kick in and perhaps make it much more difficult to get value for money. What we saw there was an enthusiasm for introducing the leaning process combined with game sharing, which a lot of emphasis was put on. I am really looking for your observations on what you think that can deliver.

Lord Levene of Portsoken: You will be familiar with the best being the enemy of the good. Of course we want to go into leading edge technology because it is exciting and it will produce a lot of new capability, provided that it works. I recall very well in about 1991 when all of a sudden it was like playing in some sort of contest. We finally had much more visibility of what the Russians had been doing on the other side, which we had not had beforehand. We even had the opportunity to talk to them which we would have been totally forbidden from doing beforehand.

They said, “Overall, you had more advanced, more sophisticated equipment than we did. We had far more of it and what we did have was older but we knew that it would work.” I do not think there is a perfect solution to that.

Q91 Linda Gilroy: That was a different era, the Cold War era. One of the things we have been hearing from the DMA this morning is some question marks raised as to whether this does make the necessary leap for us into the sort of threats that we are facing in the preparation of providing equipment for that. I would not want to go back into the experience of the Cold War era because I think that is different. Would you agree?

Lord Levene of Portsoken: Up to a point but it depends what you regard as the threat. The Ministry of Defence spends a lot of time looking at the threat. Is the threat today from highly sophisticated opposition or is it less sophisticated? If it is highly sophisticated, you clearly need state of the art, cutting edge equipment to deal with it.

Q92 Linda Gilroy: The Strategic Defence Review and the additional chapter have looked at that in some considerable detail and, to a large extent, this flows from that. However, given the sort of rationalisation that is expected to flow from the Defence Industrial Strategy, I take it from what you are saying that it may become more difficult to retain such competition as there is in procurement in the UK?

Lord Levene of Portsoken: Absolutely. The competition has reduced enormously, not through anybody’s fault but because the requirements reduced after the Cold War. The notion of what type of equipment we would need reduced. There has been more consolidation within the industry. You could say that you may well have only national champions in each country. Therefore, you either say, “I will give the work to my national champion because that is what I want to do to help the industry develop” or, “I would like to have a further choice” and then you have absolutely no option than to go outside of the country. The first place one looks, thus has it always been because of the volume and size of the industry, is in the United States. Can you work together with them or do you just have to go and buy it off the shelf? That is a function of when you start looking at it and what sort of volume you want compared with the sort of volume they are looking at. As the industry consolidates—and it still continues to do so—and as the power of the US industry gets larger—I have no difficulty with buying in the United States except as you very rightly point out you end up with only one supplier and we all know what happens in that situation—if we cannot justify the cost of developing new equipment in this country on our own, we either join with the United States or we join with another partner. Almost without exception, the other partner will be one or more of the European countries.

31 January 2006 Lord Levene of Portsoken KBE

Q93 John Smith: You said in your day that there was one major, prime company in this country and it still is today but there is a difference. You also said that we are to a great extent dependent on one country. To what extent are we now dependent on one company? It is estimated that over 50% of the defence budget measured by value was allocated to BAE Systems in the last year alone. This document is moving away from competition and towards what they call long term partnering. BAE Systems is developing a stranglehold on procurement because it is the main partner by far and away to any other companies out there, be they American or anybody else. To what extent do you share my concern that the government is in danger of conflating the interests of one private company with the interests of this country? What are your views, given your experience, of this notion of long term partnering, not with a monopoly supplier but with a sole monopoly supplier? In other words, there is nobody else you can turn to.

Lord Levene of Portsoken: If I may say so, you have effectively answered your own question. I would for various reasons not want to start making comments about one specific company. Perhaps I can talk more about the generality but I do not think there is an enormous difference. When I started we had something called a preferred source policy. For those who remember it, it is probably not a million miles away from what is specified in this document. I grew up in the defence industry. I spent 21 years in the defence industry before I went to the Ministry of Defence. The original company I worked for employed 12 people. I was not one of those who came originally from a large company. When I left and went to the Ministry, we had about 5,000 people but we were certainly not one of the giants. We were a medium sized company. If by virtue of the way in which the market has developed, the way in which the industry has consolidated, you are in that position then it becomes very difficult. You can compare it to the United States. Certainly they have more very large suppliers. If you get down to a situation of major equipment, the choice gets smaller and smaller. It is difficult to think of an area, except one that immediately springs to mind, armoured vehicles, where they are really consolidated. I do not think one should apportion blame in this. The difference between the luxury of the situation that existed for the procurement executive during the time I was there and today is that there was more demand. We did not have a bigger industry but we had many different owners of that industry and they did compete. One of the things I did deliberately with the full agreement of ministers at that time was to make people compete where they had been a sole source supplier before. We did it by encouraging others who were close enough to it to come in and try to compete. As the market has developed and as the industry has developed today, that is more and more difficult. That is not to say that the largest company or companies that we have have anything other than the best interests of the customer at heart but at the end of the day they also have a responsibility to the shareholders and their workforce. We only ever had,

and still today only have, one supplier of aircraft engines. That was an interesting situation because they had us in the same position. We could buy aircraft engines abroad, which we did occasionally. The ethos there was tempered by the fact that, at that time, the predominance of business in that company was in the commercial airline industry. We all read about the battles between Airbus and Boeing. You cannot find a more competitive industry than the civil aircraft industry. You had a company there built on fighting hard by competition. Although the military division was separate, nevertheless it was part of the same company. I think you are led inevitably into that position by the position we have today where there are so few major contractors. I remember when there used to be produced every year a report in the major project statement which would list all the major contractors. It used to be a badge of achievement if you got into that list and there were those who had over £500 million of business in the year and those who had over £100 million. There was quite a long list of substantial companies, many of them household names, most of which have now disappeared from the scene and have been consolidated into a very small number of companies.

Q94 Chairman: Including GEC of course?

Lord Levene of Portsoken: Especially.

Q95 Mr Hancock: I am very grateful that you have come to give evidence. I remember being here at the time when you were appointed. It was not only controversial in industry; it was very controversial in this place. It was the transition which you brought about in those six years which was interesting and the problems you found within the MoD that you were brought into unravel and turn around. I am interested to see what you think of this current policy document which the government has produced. Is it a step forward, in your opinion, or does it take you back to where you came in, because I suspect that there are implications in this report that take you back to your beginnings in the MoD and that some of the faults you had to sort out will re-emerge.

Lord Levene of Portsoken: I think most of them have already emerged. I do not think the policy takes us backwards. I think the policy document acknowledges what the present situation is today and endeavours to make the best of it. One thing that I have some fundamental difficulty with is the notion that partnering can be as effective as competition. You have to look at what your aim is. Is your aim to make the industry as competitive as possible because that is good for the economy and it may help in that respect; or do you go back to the original charter that I was given? This is very much a question for government and politicians: what is the real purpose of the defence equipment budget? It is obvious. It is to buy defence equipment. It also has another purpose running very closely behind it. I do not know what the figure is today but we always proudly claimed at that time that we were the largest single customer of British industry. It was a very powerful tool for government to direct work where it wanted

31 January 2006 Lord Levene of Portsoken KBE

it to go, either for political, economic or any other reasons. There is a fundamental clash here. It does not matter what colour government you are talking about. There is a fundamental clash which is very difficult to get away from. We faced the problem at the same time of value for money versus maintenance of jobs, keeping people happy, keeping the economy going. Which way do you jump? There were numerous occasions during the time I was there when one or other secretary of state would have to issue a direction to the Chief of Defence Procurement to proceed along a certain path which he did not regard as best value for money. The secretary of state at the time would acknowledge that and say, "Yes, but there are wider issues that come in that have persuaded us to take that decision." It has happened before and it has happened again. It is very easy to sit here and say that we are looking at the defence procurement budget. We want to get best value for money. What shall we do? If I asked you to put on your other hat as a constituency MP and say, "This is going to get best value for money but it means that all these people in my constituency are going to be out of a job" what are you then going to do? That is not a new phenomenon; it does happen.

Q96 Chairman: Is your conclusion that this document moves away from best value for money but towards the maintenance of a defence industrial estate as being the primary objective of defence procurement?

Lord Levene of Portsoken: The document tries as well as it can—and I think it has been very carefully put together—to steer a middle course and to achieve as much as it can in both directions. None of that has changed. It is a very difficult thing to do and I think it is a good attempt. We will never have a perfect solution.

Q97 Linda Gilroy: As a constituency MP not only with some large defence industry interests but also with a lot of constituents who serve in the armed services, my prime concern is to make sure that the armed services have equipment which is on time and on cost and value for money in the sense of having as much of it as possible, because if you overspend on one you do not have the money for the rest. Is the DIS too focused on the UK market to give us the quality of competition that we need to achieve that end and should we be thinking of defence acquisition on a European scale?

Lord Levene of Portsoken: Indeed we should. I spent half my life in that job trying to do that. You will know today that there is a publication which comes out very regularly called *The Defence Contracts Bulletin* which makes all the opportunities in the Ministry of Defence openly available to anybody who wants to bid. I originated that bulletin because no such document existed before. If you wanted to know if there was a contract up for bid, you needed to know the right people. I am not suggesting anything untoward but if you were not in the know there was nobody there to tell you. We tried very hard, with some success, to get all our European

partners to do the same thing. They did. I do not know how many of them still do. We had a difficulty. I think this government has achieved it as well as any and it is often voiced as a criticism in some areas but this country has always been more open to making its defence requirements open to the widest possible bidding base than virtually any other. We all know of areas where other countries through one means or another usually manage to end up with a domestic supplier. The government does all it possibly can to promote the notion that there is a wider market out there.

Q98 Mr Jenkins: I liked the analogy when you said that national champions for each country were doing the defence procurement. I remember this scenario before. We used to have flag carrying airlines and every state had to have an airline. The budget airlines took a lot of their market. I do not think it was mischance that it started in this country with the airlines. We want to make sure that we do not wrap ourselves into a flag carrying airline and stop the creation of the budget airlines in the defence industry. That is the problem we have at the moment because, as this strategy says, industry has to change and shift its behaviours, organisation and business processes. I think that is like asking a leopard to change its spots. It is very difficult. With your experience, do you think there is anyone out there to lead the restructuring and reorganising so that the defence industry comes around to this way of thinking? Secondly, do you think the MoD has the capability of changing its own operational approach in its own philosophy to work these partnerships through?

Lord Levene of Portsoken: If I may say so, that is a very good question. There are certainly people out there in the industry who could do this, if that is the intention of the Ministry of Defence to have these other very valid considerations taken into account. If I can give you an analogy in the area in which I spend most of my time in the financial services industry, we coined the buzzword in the financial services industry "Wimbledonisation". The City of London is now reckoned to be the leading international financial centre of the world. If you look at virtually all of the major institutions in the City of London, the vast majority of them are not British owned. They are not American owned either. They are international organisations. They have shareholders all over the world. We are tremendously successful in the City but nobody starts painting flags on the buildings, as you were talking about with the flag carriers. We are a long way from an ideal world. I remember speaking on the subject on many occasions, probably 10 or 12 years ago, saying, "What we need are transnational players." You would have an American company teamed with a British company, an American company teamed with a German company, a French company teamed with a British company and an American company. If you could do that, you could have sufficient market, if you look through the western alliance, with sufficient players in order to do that. The trouble is that everybody cheats. We

31 January 2006 Lord Levene of Portsoken KBE

tried to do this. I remember with one missile programme I said to my European colleagues—it was a NATO programme—“We too often set up these paper companies, the ABCDE Consortia and what happens then? The cost tends to go up. There is internal tension between the various partners in that business because they are all trying to pull in one direction. Why do we not have competition between major companies in each country? Whichever one wins we would task with subcontracting whatever proportion needed to go out to those countries.” They talked about it and said, “Yes, that is a very good idea.” We decided to do it and we succeeded on one programme which I thought was brilliant. We got the whole thing set up and one company, which was a British company, won the competition. What happened? One of the partners pulled out and the whole thing fell to pieces. It is not easy. If I were asked to do the same job now that I did in 1985, it is much more difficult. This is a pretty fair attempt to get there but without anything like the latitude we had at that time.

Q99 Chairman: May I suggest that the transnational companies that you were hoping could be set up were, at least from the point of view of this country’s perspective, made impossible by the merger of British Aerospace and GEC?

Lord Levene of Portsoken: I would prefer not to comment on that.

Q100 Robert Key: Do you think that this Defence Industry Strategy says enough about research and technology?

Lord Levene of Portsoken: It has made a good effort towards it. Some of the best new technology we have today outside of the defence industry is created by British companies. They put their own money at risk and do very well. We were looking at this very issue. As an aside, nobody has talked today about cost plus. When I arrived it was an obsession. We got rid of it and fortunately it has gone away but at that time it was a huge chunk of our business. The Ministry of Defence and the DPA have done very well to keep that horrible concept away from us. We used to

examine companies’ profits and what they were doing. I remember very shortly after I had arrived I was told that one of our regular suppliers would not give us any information on their profits. I said that was outrageous and hauled them in. I hauled them in and I said, “Everybody else has given this information. We are going to insist on it. Why do you not provide it?” He said, “Ask the people sitting round your table. Every product that you buy from us has been developed by us at our cost and our risk and we tell you the price that we will sell it at. You either buy it or you do not buy it. You have made no contribution whatsoever towards the cost and if it goes wrong it is our fault. You then buy things effectively off the shelf.” I looked round and said, “Is that true?” and they said, “Yes.” I said, “We have nothing to argue about.” One has to ask the question whether the industry should rely on the government to fund this development or should do it itself. The problem as between the defence industry and other industries is that there are not loads of customers out there. If you say you are going to purchase a missile system because it seems like a good idea, unless you have a customer you cannot pay for it. The Ministry of Defence has to say, “Our defence equipment budget is limited. How much of this are we going to contribute to research into new products or new technologies as opposed to buying hardware to keep the armed forces equipped with the best possible equipment that they need?” If you can buy that from something that has already been funded in the past, do you want to spend your money on that, which is sorely needed, at the expense of not funding the new equipment? That is a constant pressure. I do not think there is a right or wrong answer to that. The degree to which it is funded can and should vary over the period according to what the demands are.

Chairman: Unless there are any other questions, we should draw this to a close. The invitation to come to talk to this Committee for the first time for many years must have come as a surprise to you, but we are extremely grateful to you for giving us a fascinating and hugely well informed historical perspective and also an industrial perspective on some very difficult questions. Thank you very much.

Tuesday 7 February 2006

Members present:

Mr David S Borrow
Mr Colin Breed
Mr David Crausby
Linda Gilroy
Mr Dai Havard

Mr Adam Holloway
Mr Brian Jenkins
Mr Mark Lancaster
John Smith

In the absence of the Chairman Mr David Crausby was called to the Chair

Witnesses: **Mr Andy Stevens**, Chief Operating Officer, Cobham Plc, **Mr John Howe**, Vice Chairman, Thales UK, **Mr Graeme Ferrero**, Managing Director, Defence Technology, QinetiQ, and **Mr Paul Everitt**, Director of Communications, Society of British Aerospace Companies, gave evidence.

Q101 Mr Crausby: Good morning, and thank you very much for coming. You are very welcome. We are very grateful for the evidence that you give. Could we begin by asking you to briefly introduce yourselves?

Mr Everitt: My name is Paul Everitt, I am the Director of Communications at the Society of British Aerospace Companies.

Mr Stevens: Good morning. My name is Andy Stevens. I am the Chief Operating Officer for Cobham Plc.

Mr Howe: Good morning. I am John Howe, Vice Chairman of Thales UK.

Mr Ferrero: I am Graeme Ferrero, Managing Director for Defence Technology at QinetiQ.

Q102 Mr Crausby: Thank you. The Society of British Aerospace Companies welcomed the *Defence Industrial Strategy* and, in particular, the fact that it was jointly agreed by the Ministry of Defence, the DTI and the Treasury. Is this a view that is shared by all your member companies?

Mr Everitt: Yes, I think there was broad recognition, or broad agreement and a welcoming for the Strategy I think in three particular areas that people were keen to have seen. Firstly, that there was some future visibility on the capabilities that the MoD and the Government wanted to retain here in the UK, the fact that long-term value for money was established as the bedrock of the future procurement policy and an indication that there was going to be a more flexible approach to procurement away from sole reliance on competition, and, perhaps most importantly, recognition that government had an important impact on the business environment and, indeed, that both government and MoD were keen to see a successful and profitable defence industry here in the UK. For those reasons, there was a broad welcome across that membership. We would also recognise, which I think we have outlined in our evidence, that the publication of DIS was very much the beginning of a much longer-term process and there were a clear number of areas where there were causes for concern or where industry was expecting to see a lot more from MoD over the course of the coming weeks and months.

Q103 Mr Crausby: Are there any other comments from the panel?

Mr Howe: No; Thales would support that summary.

Q104 Mr Crausby: Are there any parts of the *Defence Industrial Strategy* that are not welcome to you and perhaps give you the opportunity to criticise?

Mr Howe: One area which is designated for further work, and that further work will be important, is technology. There is quite a lot said in the report about technology and its importance. There is not much very much specific indication of how those technologies are going to be nurtured and maintained in the future, and so we see that as an important strand which will be developed in the further work.

Mr Stevens: The SBAC is very content with what has been achieved so far, and particularly the attitude of the MoD has been every encouraging. Obviously the more difficult parts of the process lie ahead, and we will have to have a more direct impact on how we see that as we move forward.

Q105 Mr Crausby: In your memorandum you say that the small aircraft sector is not mentioned in the *Defence Industrial Strategy*. How important is this sector to the capability requirement of the UK Armed Forces? Are there any other sectors within the Strategy that are neglected?

Mr Ferrero: The small aircraft sector is important because it is an area of increasingly important technology in the context of unmanned vehicles, and certainly that is an area in which the United Kingdom needs to beef up its capability.

Q106 Mr Crausby: It was a complaint that came from them, was it not, to you? Have there been any complaints from any other sectors that they have not been involved?

Mr Everitt: Clearly, there were some limitations in the process that was organised, but, broadly speaking, I think the MoD tried to engage people, we as a trade body tried to ensure that as many participants amongst our own membership were involved in process and there has not been a concern around not having an opportunity. Clearly, the way in which announcements or decisions in certain sectors have come out or have been indicated on a

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

company by company basis would not necessarily make everybody happy, but I think, broadly speaking, the industry view was, given the long period of time that industry had lobbied, if you like, for a development of defence industrial policy, the Strategy, when it was published, addressed most of the concerns and most of the issues. As John mentioned, the question now is how much progress we will make in the areas which were left slightly more open. Obviously we want to see greater engagement and the delivery of the greater openness promised or figured in the Strategy. Similarly, I think we recognise that the Strategy implies quite a transformation in the approach and the relationship between industry and government, and a cultural change of that kind is not necessarily delivered without a very significant and sustained effort on all parts. Similarly, the whole question of the importance of smaller companies in the supply chain was figured very much in the Strategy. The whole question of promoting innovation, promoting better relationships, promoting opportunities for those companies was also figured in the Strategy. The issue for us now is how that is taken forward and delivered. John mentioned the question of science and technology, but I think there are a couple of other areas. One was the question of skills—developing and maintaining the skills to meet the future challenges—and the question of international relationships and where the MoD saw the future in terms of its relationships and collaborations with other countries.

Mr Crausby: I want to turn now to the impact on the DIS.

Q107 Mr Jenkins: Good morning, gentlemen. When I read the Strategy I had a very serious difficulty, because I am used to a strategy laying down how I am going to get from A to B with all the risks associated, but this Strategy says things like “Industry will need to reshape itself”. You and I know that trying to reshape industry is like trying to herd cows. Adam Smith said that the guiding hand of capitalism made industry go along quite smoothly. Now we are left with the awful suspicion that the Government might be able to pick winners. I do not believe that for a moment. How is this industry going to reshape itself? Who is going to fall on its sword? Who is going to take the lead on this issue? The next step is one of the most difficult steps, so who is going to be responsible for its implementation?

Mr Everitt: I think in terms of the Strategy, clearly that lies with MoD and with government. I think from an industry perspective, there are opportunities for companies to invest in a number of different areas. The defence sector, like many sectors, is becoming more international, obviously within constraints, and that provides opportunities for companies to invest in different countries and to make different decisions. I think what industry has always asked for from government is a greater level of certainty on what it is going to do and the priorities that it has.

Q108 Mr Jenkins: The Strategy says industry is going to reshape itself. I have got a different scenario. I want to know that when the industry is reshaping itself the good companies are not going to say, “We have had enough of this”, and divert into non-defence work so that we get left with the bad ones who have got no where else to go, so they stick with it and we get second best. The Strategy says we have this sovereignty issue to look after. It is going to be made here. The skill is going to be developed here and maintained here. I want to know who is going to do it. It is a simple question. You are going to reshape it yourselves. Who is going to do it?

Mr Howe: From an industrial point of view we would certainly not want government itself to take the lead in designing the new industrial structure. That is for industry to do. Where government can help, and it has now begun that process in this report but it has some way further to go, is to be much clearer about what its priorities are in the future, what its requirements are and what its plans are, and then industry will adapt itself to those realities. Government can help by being as open as possible about what its future priorities and intentions are and industry will find a way of restructuring to meet that new situation.

Q109 Mr Jenkins: That is a chicken and egg situation. If we knew what we wanted, we would not need industry or research and development. What we need is a flexible approach. We need the best companies, we need the most innovative companies and we need to develop that skill that is going to be there in 10 years’ time or 15 years’ time. We cannot pick winners. Our track record shows that. Only you can pick the winners. Only you can reshape it. Do you have sufficient information to reshape it and is this Strategy the way forward?

Q110 Mr Borrow: To follow on from that, particularly given the way in which Mr Howe has just responded to my colleague, do you think that the approach of the UK in this area is preferable to the approach that would be carried out, for example, in France they have a slightly more hands-on approach in government in terms of developing its defence industrial strategy than in the UK?

Mr Howe: If I can very broadly characterise (and this is a slightly personal way of putting it) the difference between Britain and France, Britain has pursued a more open market policy in its procurement and, although there is a lot of emphasis in this report on partnership, there is still emphasis on competition, and I think that has been healthy for Britain. On the other hand, probably the French have given a higher priority to forward thinking, on research and technology and long-term investment in those fields. So there are offsetting features of that kind. I would certainly not encourage the Government in the UK to be more, as it were, *dirigiste* in the way it structures industry. I think that would be a mistake.

Q111 Mr Jenkins: I am still not clear—and I do not know if I am a bit slow this morning—that you have got any idea of the way forward. I am not sure you know, if you are a prime contractor, how you are going to deal with small, innovative firms and how this is going to finish up. Do you think that my impression is correct, that you do have maybe a more market-orientated philosophy of, “We will get there if the price is right, folks. If the price is not right we will not get there”, and do you think it is about to fall down?

Mr Everitt: I certainly think, as we have said, there is a lot more to be done, but that it is very difficult. Industry will look at the opportunities, and the clearer government makes those opportunities the more enthusiasm and investment will flow into the UK sector. We feel, certainly with the attitude that has been exhibited during the first phase of development of DIS, that there is a good opportunity that we are going to get the information that industry needs to make the right kind of investment decisions, and that is a positive thing.

Q112 Mr Jenkins: Maybe you should be sitting on this side!

Mr Stevens: I think there are some excellent defence companies within the UK, and I think this report starts to move us forward in terms of giving that level of transparency. I believe that the companies are already reshaping and will continue to do that, and with this level of transparency they will have a better idea of what the true market opportunities are as we move forward and what level of funding, if it is available, will come and when.

Q113 Mr Jenkins: So the market will reshape it?

Mr Stevens: Absolutely.

Mr Howe: I agree with that way of putting it. One thing the report does is to give a much clearer indication than we have ever had before of what are the crucial areas of capability that the Ministry of Defence will require for the future and which it wants to nurture in this country. That process of openness is not complete, it will continue, but there are some very useful indicators there to industry of where we should be putting our priorities.

Mr Everitt: I believe that the report does not really address the question of the critical technologies which the UK needs to retain for sovereignty purposes. Much of the report is focused on the partnership between industry and government from the point of view of on-going support of the equipment in service, but the critical issues of sovereignty are much more difficult. There is a very substantial shopping list in the report of technologies which it identifies as being important, but the industrial strategy for delivering those technologies seems to me to be somewhat unrealistic.

Q114 John Smith: On this question of restructuring, DIS is clearly a shift away from the Defence Industrial Policy, with much greater emphasis on competition to more emphasis on long-term partnering. One would expect industry to

restructure, when government states its intentions, what the future capability is, what sort of defence industry it wants in the future, because the market will ensure that, but if the Government is moving to a long-term and very often negotiated and non-competitive partnership, it is not clear at all that industry will be able to reshape because it will not be exposed to commercial pressures, especially the large players such as BAe Systems. I just wonder if you think that presents a problem. The French will regulate—they own their companies; they will direct—the Americans will use the internal competitive market, but we perhaps do not have a parallel.

Mr Howe: I think that the report presents a sort of hybrid picture in that respect. There are sectors identified in the report where the market will decide—C4-ISTAR is the prominent example, where there is not, as it were, a prescriptive partnership approach—and companies like the one I work for welcome that, because we see a route to market for us in that situation. The report also does emphasise the importance, not only of platform manufacturing but of systems engineering, systems integration as a key skill area, capability area, for the future. Again, I think that is an important clue for industry. What we have to do is to work with the Ministry of Defence in the coming period to define how systems companies, which are not themselves platform manufacturers, can find a route to market for themselves in those sectors. FRES is a good example.

Q115 Linda Gilroy: Turning to a specific sector, the naval systems and the section in the report on that, could I ask Mr Howe: we understand that there is work underway on the Maritime Industrial Strategy that has been kick-started again following the publication of DIS. When will we see that strategy produced and what do you think will be in that that we cannot perhaps see in DIS at the moment which will show us what is happening in that particular sector?

Mr Howe: One of our concerns, frankly, which we have expressed to the Ministry of Defence in the dialogue we have had with them, is that in the maritime sector this must not be seen only as a debate with the platform manufacturers, with the ship builders. There are other companies with very considerable systems capability relevant to the naval area which need to be part of that debate. I think we must have had some success in that discussion because we have now been invited to join the discussions with the Ministry of Defence on their maritime strategy. We are just starting now, so it would be premature of me to comment on the process, but we feel we have now been admitted to the circle of companies who have been consulted. Previously there was much more emphasis on the platform companies, and, of course, we are not a ship builder in the United Kingdom. I will not speculate on what might come out of the work, except that—again, I suppose this is a Thales point—I would hope that the outcome will give a

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

role in maritime contracting to companies which are systems companies and systems integrators but not themselves ship builders.

Q116 Linda Gilroy: Can I follow up a bit on that? The RAND Report suggested that, if we are to meet the programme of the future carrier and MARS and the very substantial ship-building programme and the systems that go along with it, there will be certain shortages. Are there particular parts of the Maritime Industrial Strategy and the capacity to deliver the systems side of it that you think need particular attention?

Mr Howe: We are not a ship-builder, but I think that the RAND Report was concerned at least partly, as it were, with matching the capability of the ship building side of the naval sector to future demand, with a rise over the next few years and then a decline thereafter. I guess that is one of the issues that the Strategy is going to have to address: how to match the future demand from the customer with the capability of the industry. I do not see huge problems in that regard in relation to the sort of electronic and systems integration work that we do.

Q117 Linda Gilroy: The DIS states that it will not be affordable to sustain excess industrial capacity in the ship-building industry in the long-term. I believe that your company is involved in the future carrier programme. What sort of ways will the programme help drive the changes that are required to the UK naval ship-building industry?

Mr Howe: I think the main point to make is that the aircraft carrier Alliance is a kind of prototype partnership. It is not a conventional prime contract. It is a partnership between the Ministry of Defence and a group of companies bound together in a partnering arrangement. I am very sanguine about the prospect of that working well. If it does work well, that will be a very useful prototype of a partnering relationship which is going to be more widespread in the future.

Q118 Linda Gilroy: One of the things that some of us have a bit of difficulty getting our head around is that it is like partnership and competition, it is like trying to have your cake and eat it, and, although I fairly well understand the concept of co-operating to compete, I wonder if you could help us put a finger on where the cause of your sanguinity comes from and what you have most concern about in that particular area?

Mr Howe: I think the cause of sanguineness is the experience over the last three years. The carrier programme has often been in the headlines, but in practical terms, at the level at which the detailed work has been done, there has been a very good relationship between the companies involved and good work has been taken forward. I think we have learnt something about partnering behaviour from that experience. That sounds slightly optimistic, but I believe it to be true.

Q119 Linda Gilroy: As far as the way ahead is concerned, there must be some substantial changes that you foresee needing to take place in the relationship between the MoD and industry to ensure that we see the benefits of that rather than getting mired in the bureaucracy of it?

Mr Howe: Yes. I think the secret of a successful partnership is to align the behaviours and the motivations of the members in a regime of incentives and arrangements for distributing risk. It is a matter of behaviour which defines whether a partnership is successful or not.

Mr Ferrero: I should add that partnership in the industrial sense is not unusual. Lots of companies have suppliers which are effectively partners. Many companies outsource their IT into an IT outsourcing partner, as, indeed we do, and so the concept of having a partnership is generally regarded in industry as a very efficient process.

Mr Crausby: At this point I think we should allow John Smith to develop partnering arrangements.

Q120 John Smith: That is true, of course, but private companies operate within a very rigorous commercial environment. The worry is that a partnership between the public sector and private companies, unless there is some form of regulation or transparency, is open to becoming a disincentive in the long term. When the *Defence Industrial Policy* was published, *Jane's Defence Weekly* portrayed it as a slap on the wrist for the larger companies, one company in particular, but larger defence contractors who were advocating less competition and more long-term partnering arrangements, whereas the *Defence Industrial Policy*, as well as identifying strategic capabilities—a very valuable and successful part of this strategy—was advocating greater competition within the defence industry and, in particular, within the supply chain and the avoidance of monopoly. When the *Defence Industrial Strategy* was published the share value of some of our major players, in particular BAe Systems, shot up. There must be a reason for this within this Strategy. There is a movement to these long-term partnering arrangements, and I think some of us are very concerned about how, in the long run, this is going to be managed and what the effect will be on the industry. For example, what do you think the effect will be on those companies that are unsuccessful in bids, where there are bids, for these long-term arrangements? What about smaller companies within the supply chain, if this work is going to go to a fewer number of large companies? For example (and I have used this before), BAe Systems, it is estimated, last year alone, were awarded over 50% of the larger government contracts without competition. They are now dominating support for land systems, support for fast jets and, of course, they play a crucial role in sea support, but what do you think the effect of this partnering will be on the supply chain in small companies?

Mr Ferrero: A couple of points here. First of all, we have to look at the UK industry in the context of its absolute size and our ability to maintain the diverse

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

supply base. We are in the UK, frankly, a fraction of the size of the US, and yet we fight alongside the US in a number of different theatres and we maintain a very substantial domestic capacity to do that, but we are effectively at the point at which we are going to have to accept that certain aspects of competition are very expensive, that keeping two major suppliers going for absolutely everything from fast jets through to large capital ships is impossible, that in doing so we are reflecting the policies of other European states of about the same size as us. It would be nice to be as large as the Americans and be able to have two or even three of everything, but, frankly, it is not within our capacity to do so. We do have to consider that point rationally and come to the view that we will end up with some companies which are specialists in certain areas. In every open economy it is possible that companies will buy up other successful companies and effectively amalgamate them into a large group. It has happened in France through Thales, it has happened here in terms of British Aerospace, it has happened in Germany through Siemens, so it is not an unusual process.

Q121 John Smith: But in France it is regulated by the state, by either state ownership of companies or golden shares or through the armaments industry?

Mr Ferrero: But in the UK we have golden shares as well.

Q122 John Smith: I think in some companies.

Mr Howe: Adding to what Graeme has said, I think I would characterise the report this way. It announces the creation of partnership arrangements, predominantly in platform sectors, where a declining workload for the future is predicted. Very few new platform programmes is the picture the report paints. In other sectors there is less emphasis on partnerships and much more emphasis on competition, which is why, from the point of view of my company, I am reasonably sanguine about the outcome of the Strategy. It does not prescribe, as it were, non-competitive partnerships across the piece; it prescribes them as a means of coping with the situation when there are simply not enough platform programmes to sustain competition in the future.

Mr Everitt: I was going to add that it assumes that the previous approach of a much greater focus on competition has been successful. One of the reasons why industry has been very keen to see this produced is a view that we are losing capabilities because of the way in which competitions have been run, because there are winners and there are losers. I think the other is (and we have touched upon it there) the way in which government and MoD is seeing how it is going to be managing its forces into the future, which is about the long-term maintenance and upgrading of capability rather than building new platforms, and in that kind of scenario you need a slightly different approach to the one we have perhaps been operating in the previous period.

Q123 Mr Havard: I want to go back to the Maritime Industrial Strategy. I know you are not heavily involved in this, but it is an interesting question that has been posed to us by others. If you look at the current industrial strategy, particularly in this area, it really only gives you a view up to 2015 and yet the Strategy is meant to look beyond that in terms of ship building so that we have got a rough idea of where we are going in terms of the volume of ship building, if I can express it in that way, until that point. Beyond that, we have not got a clear idea. The proposition that is put to us is that the Strategy consecutively shows us that there will be free boats and it gives us indications about where we are going with Trident. That is all surmise, but the question is, if it is a strategic view, it is meant to be a process, it seems to me, rather than something that ends in 2015. Is the Maritime Industrial Strategy going to help to tackle this area, which seems to be deficient in terms of long-term fault? Is that what I understand it to be doing?

Mr Ferrero: I think the Strategy at least distinguishes between highly complex warships and simple warships and says that, for sovereignty and other reasons, we need to have a long-term capability to build highly complex warships and for simple vessels we can look to the international market, and I think that is a major step forward. It is a simple realisation of the fact that if we are going to invest we need to invest in those things that preserve sovereignty.

Mr Crausby: I am going to move on to small and medium sized enterprises.

Q124 Mr Lancaster: I am going to go back to this, because it is an issue that we have touched on in several questions, but I sense, perhaps unfairly, that we are skirting round it slightly. Mr Everitt, you represent, is it, 2,600 companies?

Mr Everitt: The SBAC and its regional partners, yes.

Q125 Mr Lancaster: Of which the vast majority will be small and medium enterprises?

Mr Everitt: Yes.

Q126 Mr Lancaster: Are you confident that the *Defence Industry Strategy* takes sufficient account of the small and medium enterprises and the specific capabilities that they provide?

Mr Everitt: I think what the Strategy unquestionably does is recognise that the capabilities that the Government is looking to retain exist at all levels within the supply chain and that there is an intention signalled in developing the strategies and protecting capabilities moving forward, that is to locate those capabilities wherever they are in the supply chain and support them, and so to that extent I think there are some fine words and fine intentions. As I said at the beginning, I think it would be right to say that those small companies are uneasy and uncertain as to how that process is going to take place. I would also, I guess, to balance that, stress that the larger companies have indicated, not just since the publication of the Strategy but I think over a period of time, a recognition that they

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

have a responsibility as well in order to maintain their own position to build relationships with those smaller companies and have a stronger and more productive relationship with them.

Q127 Mr Lancaster: What else would you like to see to add to these small companies? Obviously there is a concern. I think there is a report in *Jane's* back in January where some small companies are now saying that they are going to go into other fields. What impact would that have if they were to go and do that?

Mr Everitt: It will depend on exactly where they are in the supply chain and the capabilities that they have, but what we are encouraging at this particular point in time is to try and expose those smaller companies to a greater level of understanding of what it is that the MoD is trying to set out in its strategy, and to that extent we have, in the development of the Strategy, organised a number of specific events for smaller companies and we are doing similar now, after publication, to give people exposure and understanding and to give the MoD an opportunity to speak directly to those companies, and, where they have, they have been stressing their recognition and valuing of smaller companies. I think as we move forward a lot will depend on the attitude and the role of the larger companies, clearly in partnership arrangements but also in competition. They are the people who will be the funnel through which the work will pass down into the supply chains, and to that extent, again, slightly later in the year, at the beginning of March, we have a major event with SMEs to tackle and address how that process can work much better. I do not think we have a simple answer to your question, but I think there is a great deal of awareness that SMES are important and have an important role to play and there is a relationship that has to be built.

Q128 Mr Lancaster: Mr Howe, as a representative of a large company, what is your view?

Mr Howe: As I said earlier, we see the report giving a special position to BAe as a platform manufacturer but not one that significantly impedes our route to market in the areas where we operate. We are not, of course, an SME, we are a large company, but we are a company which is capable of operating at the prime contract level. We have had quite a lot of success in competing for large prime contracts in the last two or three years and we see no reason why that success should not continue, frankly.

Mr Stevens: A good point has been made regarding restructuring and reshaping. I would echo Paul's comments that the SBAC itself, over the last three or four years, has reshaped and restructured very much, in my opinion, to get the views of the SMEs. I am sure it is not perfect but it has significantly improved, and so I am far more confident that the views of those SMEs on issues like this are being more appropriately addressed and listened to.

Mr Lancaster: I accept that, but I think there is a genuine concern, and from what some of the smaller companies are saying there is clearly a great deal of unease, and it is an area that does need to be addressed. I take your points on board.

Q129 Mr Breed: We have received lots of bits of evidence, as you probably know. We have received a very interesting paper from the Royal Aeronautical Society. At the end of that paper they say this: "The DIS must deliver on its commitment to maintain core skills and protect the critical design and development capabilities embodied in the individuals and teams that, in the final analysis, comprise the heart of the UK defence industrial base, which will continue to provide the basis for future world-class UK-sourced defence equipment." How will your companies retain those designers of new equipment, given that most of the work is going to be focused on supporting existing equipment?

Mr Ferrero: Can I start by saying that the existing military equipment never really stands still, it is always being upgraded and developed, and the future we are looking at is as much a future of technology insertion into existing platforms as it is in the design of new platforms. Some of the equipment that we see in the Armed Forces may well be there for a very long time. It is possible that the Chinook helicopters, for example, by the time they go out of service will have been in the fleet for 60 years from the initial design, and so, with the improved metals and other composites and other forms of structural engineering, we are finding that the platforms themselves will last a very long time. It is through this upgrade process, this constant improvement process, that many of the skills of the industry will be sustained.

Mr Stevens: That is a very good point. There is no doubt about it, there are some excellent skills and capabilities in the workforce and technology companies in the UK, and where those new platforms are not necessarily there in the UK they will gravitate to other platforms in other countries, but, as Graeme has said, there are still great aspects of sustainability and upgrades that I believe those skills can be applied to and stretched.

Q130 Mr Breed: Essentially we should not be worried about retaining the designer skills which the Royal Aeronautical Society say is the heart of the UK defence-based industry, and we should not be concerned about that?

Mr Stevens: I would not say we should not be worried; I think we should be concerned and we need to make sure there are appropriate plans in place. Equally, to sustain those, we need to put greater emphasis to the youth coming through as well. I think that is a big issue for the UK, and for us all, as to how we move forward.

Mr Ferrero: We absolutely welcome the move at the MoD to fund the experimental UAV programme, for example, as a way of keeping skills in place during the gap in new fast jet design, and we believe that this type of investment is not only essential for maintaining capability but is very sound in terms of

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

the economics of ensuring that demonstrators and the risks are explored before the MoD launches again into a major programme. We would welcome other demonstrators and concept validation exercises in other areas.

Q131 Mr Breed: Progressive or continuous MoD investment in new R&D is going to be an important part of the retention of the skills that we are seeking to ensure are retained?

Mr Howe: I think I acknowledged myself earlier on that the report does not go very far yet in indicating how those technologies are to be developed and sustained. There is more work to be done on that. There is a lot about the importance of technology and there is rather little in the report about exactly how it is going to be nurtured in the future.

Mr Stevens: The philosophy of demonstrators being very selective is a very innovative strategic answer to the dilemma that we are facing.

Q132 Mr Breed: Mr Stevens, you mentioned exports, I think, in a previous answer. If companies are likely to be developing new platforms and systems, how is that going to affect possible exports?

Mr Stevens: I think it comes back to what markets are available. Not every market around the world is available to us, but the UK aerospace companies, where they have a capability and there is a market, are pursuing that and that obviously helps with sustaining that capability for domestic use as well.

Mr Everitt: The UK defence industry is a very successful exporter. Its basis is in the skills and expertise that it has. In supplying our Armed Forces with the technology and the capability they need, I think that the UK Armed Forces are looking for certain capabilities, and if we can deliver it here in the UK, then we are going to be well placed to deliver it elsewhere, so I do not see that as a major problem.

Q133 Mr Breed: You are happy about the challenges of the new environment in terms of defence procurement internationally. What has been the past market? It may not be the market for the next 25–50 years?

Mr Everitt: Again, if we are looking at the capabilities issue, if the UK is going down a particular route which is upgrading platforms and inserting technology, then that is likely to be an approach that is going to be adopted more widely and the kinds of more open architecture type systems that are signalled in the DIS are going to be appropriate in other places as well.

Q134 Mr Borrow: Following on from the comments that we have been making in the last few minutes, I was interested in the submissions between the SBAC and QinetiQ in terms of the overall level of UK funding of research and technology, which I think has been, from an industry perspective, a long-term issue of concern, and the suggestion that that should be increased substantially. To what extent do you think it should be increased, and how should the

split between government and industry be carried out in terms of that increased funding, if that was the decision that happened eventually?

Mr Ferrero: First of all, can I draw your attention to the graph in section A5.8 which shows the relationship between research and development expenditure and the military capability for different nations. That piece of work, which was sponsored by the MoD, to which QinetiQ contributed, really started from the point of trying to see whether other nations were more efficient than we were in turning money into capability; and what it showed ultimately in the study was not what anyone expected, which was that actually all nations are pretty much the same in their efficiency of turning money into capability. The more you spend the more you get. It is as simple as that. Secondly (and that was the other interesting bit of evidence), it showed that being close to the United States did not affect your ability to deliver technology to the troops, that countries which were not politically close to the United States were not particularly disfavoured by comparison to the countries that were. In essence, the work shows that ultimately the ability for the Armed Forces to have capable equipment depends on how much money you spend. Secondly, it also showed that the money spent in the long-term that money spent 10, 15 years out was as effective as the money spent in the short-term in the last five years of development. Everyone in industry knows that if you get your foundations right, you save a lot of money in the development of the product because you have got the basic the technology de-risked. If you put that alongside the reduction in R&T expenditure which was noted in the NAO report of two years ago from around about 700 million to around about 400 million today, we have to look very seriously at what the long-term consequences will be on the UK Armed Forces.

Mr Stevens: I share entirely that view.

Q135 Mr Borrow: One of the interesting aspects of the *Defence Industrial Strategy* is if it gives more certainty to industry in terms of future programmes, then there could be an argument that, if more investment is going into research and technology, part of that increase in investment should not simply come from central government but should come from industry itself on the basis that industry itself has got more certainty in terms of the future. Would you agree with that?

Mr Ferrero: That is true, but in our submission we have pointed out that there are essentially two different timescales for R&T investment, and we have made the point that the short-term R&T investment should be done in conjunction with industry to ensure that there is a clear pull through into military capability and products, but long-term R&T investment, which really falls outside the planning cycle of an average Plc, there is a real government responsibility for ensuring that long-term issues apply. If you sit, as we do, in the technology sector and you are looking for investors to take the technology forward, it is very clear to us in QinetiQ that you can find investors that will

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

support programmes which might come to the market in three, four or even possibly five years, but it is very difficult for either the venture capital industry or, indeed, the average Plc to invest in programmes that are going to take 15 or 20 years to come to maturity. We believe very strongly that government has an important role in that phase.

Mr Howe: Also I think it is relevant, as the report warns us, that there are not going to be many new programmes in the foreseeable future. With a decline in new programmes, how is capability going to be protected and developed? By investment in research and technology, in which, I would say, the Government does have to be a major participant.

Q136 Mr Borrow: I think in the QinetiQ submission they mention their concern around the strengthening preservation of centres of excellence. Do you want to expand a bit on that?

Mr Ferrero: We in QinetiQ, as you know, have had an involvement over the last 50 years in technology. I think in the beginning of the report there is a list of key technologies in which the MoD says, very proudly, it has delivered value to the Armed Forces; and of all those technologies in that list, I believe that at least three-quarters of them have come out of QinetiQ labs. As I look at the labs today I see a constant reduction in government investment in these technologies and, ultimately, a reduction in the level of innovation that is coming out of the labs. I do not see a scenario today in which the liquid crystal displays of the Trobinama(?) of yesteryear will actually emerge as new products. One must remember that when we looked at the question of liquid crystal displays, now 25 years ago, the initial reaction of the Army was that they were quite unnecessary and added no value to the military scenario. In long-term military research, it is not easy to spot winners, it is not easy to see the immediate pull-through of disruptive technologies into the battlefield, and yet it is those disruptive technologies which have contributed to Britain's world position in terms of military technology.

Q137 Mr Borrow: The key follow up from DIS that needs to take place this year is discussion around the research and technology priorities for the future. I would be interested to what extent industry is involved in that. Given the investment capital is limited, are you making sure that that is spent in the right areas and links to the long-term defence needs of the nation? It is going to be crucial. To what extent do you feel that is happening and that industry is involved in that process?

Mr Everitt: I think that that process has begun through the NDIC R&T sub-group, which obviously we are closely involved with, so the process has begun. Graeme, you might be slightly closer to that.

Mr Ferrero: Yes, the real problem is that, in order to maintain our position in this area, the shopping list of technologies in the DIS is effectively unaffordable, and so there are some really important decisions that need to be made and the process for doing that is not clear. I think the good news is that the issue has been

identified. The next piece of work to be done, and it is being done jointly with industry through the NDICRT group, is to make progress on that, but ultimately I think it comes back down to the fact that the real cost of doing that and the value of it needs to be agreed.

Q138 Mr Borrow: Would I be right, as a lay person, in assuming that because most of the platforms we are talking about now have got very long life-spans, therefore the opening requirement for the insertion of new technology—the key parts of any research and technology programme—needs to tie in with future upgrades and improvements in the platforms that we have already got or they are a rolling in chain in the next few years and ought to be part of the framework in which decisions are made in terms of which areas you will be putting investment into R&T?

Mr Stevens: Once the capabilities are identified as to what is required for the future, which platforms will they be delivered on and what technology you need to insert and when and where will that come from, whether it will come from industry, joint participation, or elsewhere, is the crucial point. As my colleagues have said, we are still concerned and there is a lot more work still to be done on that because without that answer and clarity and transparency being given to everyone then we will not be able to move forward in the way that we desire.

Mr Ferrero: I think there has been in the MoD in the last five years a concept that somehow or other ultimately we can buy technology from the world market, that in reality we are so close to the Americans politically that they will always sell us anything that we really need. I think that the MoD has now come to realise, through recent experience, that that is not actually true. Even to their closest ally, the Americans, are very restrictive on the way they transfer technology, and systems we have purchased from the Americans in the recent past have turned out to be the “export version” rather than the real version they are prepared to give to the Marines or the Army or the Air Force. That reality will have to guide everything that we do in terms of technology investment in the UK.

Q139 Mr Jenkins: Mr Ferrero, could I take you back to one point. I was not quite clear when you said that this survey being conducted across the world, in effect, showed that most countries are the same and the more money you spend the more capability you get. I know how we compare with the Chinese and I know how we compare with America, but I am concerned with how we compare with Europe. You are not saying, are you, that as regards value for money the German and the French get exactly the same as the British and it is irrespective of which way the market place is shaped because the more money you spend the more capability you have? Where do we fit in the value for money, because we have had this very much wanted market approach for many years now?

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

Mr Ferrero: I think that is illustrated in figure A5(i) in the report, in paragraph 5.8, which gives a curve showing where countries stand in terms of expenditure and military capability, and what this particular curve shows is that, as you spend more and more and as you get to a more and more sophisticated Armed Forces, so that curve levels off. The reality is that if you are in a fairly unsophisticated position and the chart shows China's position estimated at 2001 by spending a small amount of money you can increase your capability quite quickly. As you get towards the USA, you have to spend more and more money to get a small increment in capability. In this chart capability is expressed in years of advantage. What they are really saying is that in 2001 the USA is approximately 16 years ahead of China. It is an expression of military capability in terms of years of advance rather than any other measure, but it turns out to be probably the most easily conceived idea that, somehow or other, the Americans are six years ahead of us, somehow or other, we are 10 years ahead of the Chinese.

Mr Jenkins: But on value for money, British procurement is still quite good?

Mr Ferrero: What this work showed is that, in terms of value for money, the UK was absolutely on that curve alongside every other nation and there were no significant outliers. The original idea was to find a nation which was doing so much better than us; we could just copy what they are doing and be more efficient. Interestingly, it turns out that the French, the UK and the Americans all do things differently but ultimately they all lie on that curve.

Q140 Mr Jenkins: So there is no advantage with the British model of having an open market and exporting thousands of jobs overseas than the French model, which is the most closed market employing their own people to build their own capability. You are saying we get no advantage out of this equation?

Mr Everitt: I think Graeme is referring to investment in R&T and capability. I think the value for money judgment that you are referring to is not specific to R&T investment.

Mr Ferrero: Absolutely. This is just about military capability. We are not talking here about spin-offs into other economic benefits to the nation or anything like that, we are just focusing at the moment on the main purpose of the MoD, which is to provide kit to the troops to be able to fight the battle. That is the issue which we show is directly related to how much is spent.

Q141 Mr Havard: I wanted to be clear. You say in your evidence that the Strategy is internally contradictory in emphasising the importance of technology and innovation, and yet saying nothing about the level of research funding. You then say it fails to offer a strategy for sustaining centres of excellence. Then we have got this further work being done to work out the priorities. Is that going to give

the answer to the first two things? If we work out the priorities and we work that out right, are they going to solve those other problems that you say exist?

Mr Ferrero: It is essential.

Q142 Mr Havard: Is it going to do the trick or is there something else required to do the trick as well?

Mr Howe: You need priorities. You also need resources. A statement of priorities itself is not going to do the trick unless the resources are put in.

Q143 Mr Havard: So more government spending?

Mr Howe: We are talking about research and technology here, not about defence spending as a whole. It is my belief that, if technologies are going to be developed for the future and the capabilities of the industry preserved, there is going to have to be a greater investment than there has been recently in research and technology.

Q144 Mr Havard: Does that mean more money at the universities, basic research, basic science? It means, presumably, money into all of these different aspects. Once you have got the priorities sorted out, you then decide where to put the money in order to deliver the priorities, do you?

Mr Howe: Yes.

Q145 Mr Havard: And some of the extra money is going to be government money?

Mr Howe: I would say so, yes. I would not care to say how much. Simply enumerating priorities is not sufficient to do the trick. It has to be matched by some kind of investment in resource.

Q146 Mr Borrow: Finally on this area of research and technology, in the SBAC submission mention was made of research and technology investment in a wider area of security, particularly counter-terrorism and homeland security. I think Mr Everitt is the right person to expand slightly on that?

Mr Everitt: We may go slightly wider as well. Clearly, the whole of the future capabilities, however we define them, are going to relate to the amount of investment you can get into the research and technology. We are seeing in the dispensed sphere already the broader concept of homeland security being raised whilst responsibilities are clearly spread over a number of government departments, but some of the technologies that could be developed—systems, controls, monitoring, sensor technologies, and those kinds of things—have broader applications than solely in the defence sector, and clearly it makes sense to try and maximise the hit that you get by pooling the available resources and focusing them into the specific areas that will deliver the capabilities that we are requiring into the future. We would also see that crossing over into the civil aerospace side. Particularly, there are a number of areas relating to UAVs, which clearly have a very significant military requirement, but there are also civil dimensions there as well, and there are pots of money within government that are available to fund R&T, and it is perhaps just a question of a greater

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

degree of co-ordination and collaboration across government to maximise the level of investment in those specific areas.

Q147 Linda Gilroy: The SBAC memorandum says that there is little in the DIS about how international collaboration will be handled and argues for more discussions on that. Can you expand on that, Mr Everitt?

Mr Everitt: Yes. I think we would say within the time frame that they allowed, maybe it was perhaps reasonable that not all issues were dealt with, but, clearly, from the UK's perspective, the international dimension of its defence relationships is incredibly important. We have in Europe now the creation of the European Defence Agency. It is looking at a variety of areas, including the broader European defence market and competition within it. It is looking at the role of supply chains and the role of SMEs within it and the whole question of defence research and technology. Clearly, there is an institution and a European dimension which is looking at some space, similar aspects to that which are highlighted in the *Defence Industrial Strategy*, and clearly a statement from government about its relationship to this body and how it is going to move forward would be very helpful. More broadly, I do not know how explicit it is in the document, but there was a clear recognition in the way in which DIS was developed, which was that we were going to identify those technologies that we in the UK wanted to retain for our own sovereignty but also there was a recognition that we were going to retain certain technologies because that gave us a powerful lever in international collaborations—obviously, from an industry perspective, having a better understanding of which technologies and which international collaborations would create more understanding and a better basis on which we can invest—and, I guess, the third key area we have slightly touched upon, which is the relationship generally with the US and, in particular, the technology transfer issues which have been consistent over a long period of time but certainly have been an issue for industry in a number of areas.

Q148 Linda Gilroy: In relation to the European Defence Agency, how would industry like to see it developing that sort of approach?

Mr Everitt: In broad terms, the focus that the EDA has on opening up the European market and establishing a clearer understanding of what the rules of competition are across Europe for various defence procurement activities is a very welcome thing and something that we are particularly supportive of. We see the role of EDA in terms of some of its research and technology aspects as almost a clearing house and an understanding, building a better understanding across Europe of which countries are looking at which technologies and what they are trying to develop rather than trying to create a European defence R&T strategy.

Mr Howe: May I just add one point to that. The European Defence Agency does have a very useful potential role in energising international

programmes to address gaps in defence capability, and, if it succeeds in that objective, that will be a big plus. I was just going to add two points to the earlier part of what Paul said. If the objective of the *Defence Industrial Strategy* is to produce a strategy for sustaining the important parts of the UK defence industrial base, then surely international programmes have a part in that and we would like to be able, with the Ministry of Defence, to develop that line of thought because we think you cannot look at an industrial strategy for sustaining your capability solely in terms of national measures. The second point is that if one of the worries behind the report is a worry about being over-reliant on unreliable foreign sources of technology—the sovereignty point—then surely one ought to be looking at the international context to see what kind of international co-operation within Europe or elsewhere best gives one reassurance. I think the international context is an important one and we hope to develop a dialogue about that with the Ministry of Defence.

Q149 Linda Gilroy: Do you see the DIS as being a vehicle which will allow you to take that further forward?

Mr Howe: Yes. It was a very considerable report covering a lot of ground. I think it just happened that there was not time or space to place much emphasis on the international context. I do not think it is a context to which the MoD are blind at all.

Mr Everitt: I also think to a certain extent it is looking towards the MoD to be engaged with the EDA and other international government to explain what its approach is, to explain what DIS is about, because clearly, like everybody else, their impressions will be gained, not necessarily directly from the MoD but perhaps it would be far better for the MoD to be the one explaining to everybody what their approach is and what it means rather than them just relying on other people's interpretations.

Q150 Linda Gilroy: I do not know, Mr Ferrero, if there are any R&T dimensions to what we have just been talking about that you think are important to the export of international relations?

Mr Ferrero: Very much so. It is the extent to which we were able to demonstrate parity of technology at the early stages which allowed the dialogues to open up to create the joint programmes at the later stage. I believe it is really important for us to have an international strategy towards R&T which not only embraces Europe but also embraces our relationship with the United States.

Mr Stevens: I agree.

Q151 Mr Havard: Moving on to how the Strategy is deployed. In some of the evidence there have been assertion like, "It may not be achieved without further organisational change within the Ministry of Defence." I would invite you to say a little bit more about what that means. How do you see the Ministry of Defence needing to change? Show me the new drawing of how the Ministry of Defence should look?

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

Mr Everitt: I am sure everybody would like to be able to produce that. The perspective that we bring is that the procurement process has been slow, risky and expensive for industry. DIS sets out the desire to have a more flexible and agile approach to deliver the sorts of things that the Army want to see, and I think the general view is that being flexible and agile is perhaps not what the MoD traditionally has been good at. Therefore, at minimum, we are looking at probably quite a significant cultural change which may well require further organisational change. I think we are aware that that is the subject of a major review that the MoD itself is launching, and it may be best to await its conclusions before speculating.

Q152 Mr Havard: I wish we had a fly-half with a side-step like that! Go on.

Mr Howe: As you know, I worked in the MoD for 30 years, so I think it is an absolutely perfect organisation, but now I have left it and look into it from outside, I think there are three specific points. One is, as Paul said, frankly, its procurement processes, its decision-taking processes, are extremely lengthy and uncertain, and that puts companies to risk, expense and uncertainty, and so anything that they can do to accelerate their processes would be better, and I think they recognise that. Secondly, and it is one of the consequences of the Smart Procurement reforms of a few years ago, and I was involved in that so I am partly to blame, we did set up an organisation that was fairly “stove-piped”—separate project teams, separate organisations—and the transverse processes across the Ministry for linking things together and taking a common view were not sufficiently strengthened in that. I hope that that is attended to. I think the third point is one of openness, which we touched on earlier. The Ministry of Defence thinks of itself as being communicative, open and fair, but if you look into it from outside, it is difficult to read. They could do more in the future to be clearer about their future intentions, their priorities, their plans and we would all benefit immeasurably from that. Those are my starters for three.

Q153 Mr Havard: One of the decisions that is made is whether or not the MoD should use similar methods to the US DoD, which apparently, it is asserted, would give more of this openness and transparency. How is that going to work? My impression of a lot of the American forces is it may be open but whether or not it is healthier in terms of this pull-barrow politics is another matter. What does all that mean?

Mr Ferrero: That is true. The American system is more open, because obviously the way in which they report to Congress is different from the way in which the UK budget is managed. Each individual line in the programme is very visible through the budgeting process in which Congress gets involved. We have to accept the fact that we are operating a different system here which is a lot more opaque. Civil servants are generally very reluctant to talk about budgets which are not 100% committed because, in reality, often equipment budgets are not 100%

committed to until they have gone through the final approval process. There is a reluctance to be on the record just in case the numbers change. This leaves industry guessing, given hints and indications of where the MoD’s thinking is. I think it is reflected in the various graphs you see in the *Defence Industrial Strategy*, which show very broad-brush expenditure in each of the sectors, whereas in the US you would see a huge amount more detail than that. The MoD used to give more detail out only a few years ago, but it has actually, over the last couple of years, withdrawn the amount of information it has been passing to industry through the various open days and is now probably communicating slightly less than it was even five years ago.

Q154 Mr Havard: We talked about the Ministry of Defence, but I would like your view of what changes there ought to be in the other government organisations as well. There is the DPA, for example, which, I suppose, comes within the Ministry of Defence to some degree or other, and there is also the question of the DTI. Do you see organisational changes of a similar nature being required elsewhere and what are they?

Mr Everitt: I think the comments that were addressed were broadly based, so they covered both its approach to the MoD and the—

Q155 Mr Havard: When you say “the MoD”, you mean all of these things?

Mr Everitt: Yes.

Q156 Linda Gilroy: May I focus on that a bit more sharply in the last question that we ask as to what you see happening next. Is it clear who is responsible for implementing the various aspects of DIS? How will it be monitored and, indeed, how will industry measure its success?

Mr Everitt: I think we are aware there is a great deal of activity at the moment. There are a variety of areas, as we have already mentioned, looking at various aspects, both on the commercial aspects of the MoD and its organisation as well as the various sectoral strategies, R&T and others. There is quite a world going on. It is quite difficult from an industry perspective to know exactly where all of those things are, which groups have been established, what they are going to be particularly looking at and what their reporting timetable might be. We are aware that things are going on.

Q157 Linda Gilroy: I think you suggested in your memorandum there may be a two-year programme?

Mr Everitt: That seems to be what the MoD is indicating. It is looking to make quite significant progress during the course of this year and to see things begin to stabilise during the course of 2007, but, as I say, at this particular moment in time I think various companies and we as SBAC are aware of a lot of activity but maybe, in terms of monitoring how that is moving forward, it is quite difficult at the moment and I think that is an issue to be addressed.

7 February 2006 Mr Andy Stevens, Mr John Howe, Mr Graeme Ferrero and Mr Paul Everitt

Mr Stevens: To pick up on that, culturally in recent years there have been many significant changes, both in industry and in the broader MoD, and I would applaud that. I think there is a very fertile environment currently as a result of producing this report—a great head of steam. I think it would be disastrous if that head of steam was lost, and so out of this needs to come appropriate action that is monitored and driven through because industry and the greater MoD is very much pulled together as a result of this and we should build on that.

Mr Ferrero: Industry generally has welcomed the intervention of Lord Drayson as the new Procurement Minister, whose background in industry, particularly on the entrepreneurial side of industry, is absolutely clear. He has gone effectively through the MoD like a whirlwind and he is driving this forward. We have a lot of confidence in the attitude he is taking and the energy he is putting into achieving a very sensible time scale for getting these results.

Mr Stevens: Yes, I agree with that.

Q158 Linda Gilroy: Mr Howe, do you have similar expectations?

Mr Howe: I do very much agree with that point. The MoD have been as consultative as possible in this exercise, and if I look back to my time at the Ministry of Defence we were far less communicative in those days; there is now a much more open relationship with industry and the National Defence Industry Council, which meets the MoD and the DTI at the top level, is probably the main vehicle through which this dialogue will be taken forward.

Mr Crausby: It is now beyond 11.45 and I ought to keep to time because we have another evidence session. Can I say thank you very much for the evidence that you have given today; we could certainly spend longer on it because we have got a great deal out of this morning's session. We are very grateful for the evidence that you gave and I am sorry that you did not have a bit more time. Thank you very much.

Witnesses: Professor Keith Hartley, Professor of Economics and Director, Centre for Defence Economics, University of York, Professor Keith Hayward, Head of Research at the Royal Aeronautical Society and Professor Ron Matthews, Chair in Defence Economics, Cranfield University, gave evidence.

Q159 Mr Crausby: Good morning and welcome to this second session this morning of the Defence Select Committee. Could I firstly ask you to briefly introduce yourselves?

Professor Hartley: Age before beauty, I think, in this case. Keith Hartley, I am a defence economist, I am Director of the Centre for Defence Economics at the University of York.

Professor Hayward: I am Keith Hayward, defence and aerospace analyst, currently Head of Research at the Royal Aeronautical Society, but I should say for the record that today I am commenting of my own volition.

Professor Matthews: Ron Matthews, I am at the UK Defence Academy with Cranfield University. I am the academic leader of the Masters in Defence Administration programme.

Q160 Mr Crausby: Thanks for that. Could I begin the questioning by asking each of you to tell us briefly your overall views on the *Defence Industrial Strategy*, in particular whether it delivers what you expected it to and, if not, in what areas it falls short of your expectations?

Professor Hartley: Briefly, Chairman, I have got three concerns about the policy. I am concerned about the shift from competition towards partnering, which effectively starts to create domestic monopolies which have protected and guaranteed markets. My worry about monopoly traditionally is that it is associated with higher prices, it is associated with inefficiencies, monopoly profits and a poor record in innovation. That is one worry I have got. My second worry is about the reference in the White Paper to wider factors which will be considered “where relevant”, according to the White Paper. We do need from the MoD much

greater clarity about these wider factors: what are they? How important are they? When will they be considered? What is the economic logic of including some of these? If we are concerned with employment, defence exports and so on, are they the proper concern of the defence ministries or, more properly, the concern of the DTI? I am also worried that these wider factors might well give ministers opportunities for intervening to distort procurement decisions and choices on a case by case basis. I would much prefer—and I think this is what the Strategy is trying to do—outlining some very general principles rather than distorting resource allocation by ad hoc interventions. My third and final point is about the cost of the policy. Being an economist, policies are not cheap, they are not free; this policy will involve some costs and it does raise questions about MoD's willingness to pay. How much extra is it willing to pay to keep these capabilities in being, an extra five, 10, 20% or what, bearing in mind that the willingness to pay comes from a limited defence budget. That is all I can say at this moment, thanks.

Professor Hayward: Thank you, Chairman. In general I thought the *Defence Industrial Strategy* was certainly better than I had expected and certainly better than I had feared in terms of the quality of its analysis; it certainly painted a reasonably accurate description of the predicament and problems faced by a medium range state and a medium range defence industrial base facing a very dynamic and uncertain environment. On the other hand I share some of the concerns that Professor Hartley has, particularly about the problems of maintaining these capabilities in the absence of specific programmes and projects. There is a lot of reference throughout the *Defence Industrial Strategy* to the creation of what I would describe as virtual

design teams or virtual project teams that would in some sense create a hinge or a bridge between one generation of programmes and another set of requirements. These are not going to be cheap; clearly, they are cheaper than building a specific programme and certainly if you do not go down the route of building a physical demonstrator for some of these technologies—and in many cases you do not have to go down that very expensive route—nevertheless to do this across a range of technological capabilities will require a commitment of resources extending over a fairly long period of time. I certainly share Professor Hartley's concern where will the money be available, particularly if at some future date, as we generally expect, there will be a very severe challenge to public expenditure. There are also, in a sense, some open-ended issues that are still to be resolved. There is talk about retaining these capabilities, but exactly how it is going to be done is going to be left for future analysis. There are certainly clear problems faced in precision weapons systems for example; the document refers to how important they are but there seems to be a very vague, "we are not quite sure what we are going to do over the next two or three years to keep a UK-located capability in being". Certainly, the strong inference is that we might have to rely upon external sources which, almost inevitably, will be the United States. That is my third and final issue here: the reliance on external sources without adequate changes in the nature of that technology transfer that we have tried to obtain with the Americans continuously for six or seven years. We have found already that working with the United States, though in some respects less troublesome than working with our European allies, has difficulties at the core end of technology issues. One of the great benefits of working with the Europeans has always been that we have had an egalitarian approach to technology transfer but, clearly, working with the Europeans brings its own difficulties in getting programmes started and keeping them under control to cost and time. Working with the Americans, without guarantees of technology transfer, will lead us increasingly into dependence on that technology, and given the fact that much of the UK defence industrial base is now embedded in the US defence market, affords temptations for those companies to export our technology and keep it in the United States, maximising benefit to shareholders and, certainly in terms of repatriating profits, very, very convenient but not necessarily guaranteeing UK onshore technology or technological autonomy.

Professor Matthews: Chairman, I find this an impressive document. Whilst there are some weaknesses associated with the Strategy, I think it is an important step forward from the former 2002 *Defence Industrial Policy*. Firstly, it recognises that there are revealed costs of competition, and I do not mean that just in terms of the acquisition, the competitive costs of working up bids from the standpoint of the defence contractors, and also the scrutiny costs in terms of Ministry of Defence time and effort, I mean it in terms of the inverse

relationship between the objective of value for money and within that cost reduction, and the progressive erosion of the sovereign UK defence industrial base. There are some serious policy issues with that and I think the strategy is important for providing greater direction and also a framework in which to identify and perhaps protect the critical technologies and strategic industries of the United Kingdom; it is also a recognition of the broader economy. At the UK Defence Academy Joint Doctrine and Concept Centre we are currently working on a revision of the British defence doctrine, and there the concept of comprehensive frameworks is being examined. Defence is one element of the comprehensive framework, but there is a recognition also of the importance of the defence industry and the broader economy. I think the acknowledgement of the DIS in terms of IPR and the importance of sustainability of the UK defence industrial base are well put. I have perhaps two or three concerns which may be identified as weaknesses. First of all, there is only a cursory examination of the importance of the UK industrial participation policy, but that policy has an important role to play in providing skilled jobs capacity in the UK industrial base which has not been highlighted sufficiently, nor have the weaknesses or the potential weaknesses of that particular policy. I am very happy to come back on that one if required. There is also an important area that needs to be explored which is the dual use technology area; whilst it has been highlighted in the DIS I do not think enough has been emphasised in terms of the important joined-up Government policy approaches between the key stakeholders and, principally, the Department of Trade and Industry and the Ministry of Defence in establishing an integrated technology and industrial policy across the UK. Thirdly, I have concerns over R&D, defence R&D. Whilst the report talks about the 2014 aim of raising civil R&D to 2.5% as a percentage of national income, it says really nothing about defence R&D. Without, it seems to me, a recognition of the importance of perhaps raising defence R&D I cannot see easily how we are going to increase our IPR and establish a more intellectual property basis in the UK defence sector.

Mr Crausby: Thank you for that. Brian Jenkins.

Q161 Mr Jenkins: The thing that worries me is that the document states that industry will need to reshape itself, and it is like asking individual companies to throw themselves on their swords and go out of business. If we take exports as a given set amount and the industrial base going up and down with British procurement, there are difficulties—we know that—and this is what we are trying to overcome, but do we have enough information within this Strategy to allow industry out there to reshape itself in the next decade?

Professor Hayward: If I can come on to that, there is a fortunate window of opportunity here in the sense that the past commitments and past procurements are now, in a sense, bearing fruit and given a fair wind, particularly with a programme like the JSF,

7 February 2006 Professor Keith Hartley, Professor Keith Hayward and Professor Ron Matthews

UK defence industrial “manufacturing” is going to have pretty well full order books for at least a generation. While in a sense a relatively small share of a programme like the JSF on the face of it does not look as good as a third share of the Tornado, the units that are going to be produced will fill factories in the North West and elsewhere in this country for several years, and the same should be said about the naval shipbuilding programme and other elements, so in that sense we have a breathing space here to effect the kind of changes in structure and indeed in industrial culture that the DIS is actually quite articulate over. That being said, there are always uncertainties and always the possibility of things coming with what the Americans call left field to create industrial crises in individual sectors. Undoubtedly, more work will have to be done on trying to picture or at least give an indication of the kind of future shape for UK defence industrial activities.

Q162 Mr Jenkins: Looking at one sector, say the shipbuilding sector, where we have the carriers in the programme, where we have got the destroyers in the programme, but we have got a definite cut-off date when they are both completed, we see nothing in front of that. Apart from that area, which part of the industry do you think is going to face the major restructuring?

Professor Hayward: It is going to be quite comprehensive. Again, the DIS argues to refocus a business approach to support and lifecycle, and in that sense you are dealing here with some very different kinds of commercial opportunity and probably very different kinds of defence industrial players. In a sense, once you get into maintenance there will clearly be bits and pieces that will have to be produced to keep an aircraft or other piece of kit operational but, broadly speaking, you are into service delivery, and it is turning the UK defence industrial base from primarily a manufacturing activity to service delivery that is going to be one of the biggest challenges that the industry will face.

Q163 Mr Jenkins: I understand that one of the things which we are now looking at is that although we have platforms that will last a long time, it is not the platforms that are important, it is what is carried on the platform—it is the software, the new equipment—and these are not going to be maintained for 20 years, they are going to be replaced within the 20 years as the platform moves on, and so we have a new developing industry. My concern is that innovative and very small and medium size companies which now may be at the cutting edge of that type of technology are not going to be allowed to compete and get their nose in the frame because the prime contractor will look at making sure they are in a firm base, set in soil, and they will continue to use their providers of these services rather than go out into the wider world. The danger, therefore, of losing small and medium enterprises in the defence family will be greater unless we take some positive action to stop it happening.

Professor Hartley: You have raised a lot of questions, let me try to answer some of them. Certainly, your worry about losing small to medium sized firms is important, and the Strategy does recognise the role of supply chains but I think both MoD and DGI would be the first to admit they know very, very little about the sheer complexity and extent of supply chains. They are probably reasonably good at the first tier level; they can make a stab at that and a guess at it—but not as good as perhaps they should be—but they know very little about the range of suppliers at the second and third level and how important some of these suppliers might be towards providing so-called key defence industrial capabilities. If I could quickly answer some of your earlier questions: reshaping—all sectors are going to have to reshape and all are at risk, air, land and sea systems, the Strategy makes that very clear, and in some cases quite drastic cuts in business—fixed wing aircraft, possibly helicopters in the medium term. In the case of maritime, for the first time ever there is a commitment to buy some of our warships from overseas—that is the only sector which traditionally has been protected, air systems and land systems we have always been willing to buy from abroad. That is quite a radical change. We have two problems in terms of reshaping. The Strategy says we are not going to micro-manage industry and reshaping and then, almost in the next breath, it has views about reorganising into a single entity the submarine industry, some take as a model perhaps the KIA (?) alliance as a way in which industry might go forward, and expressing a view as a major customer it will really have views about what is going to emerge in terms of industrial restructuring. I tend to think that there are things that Governments are good at doing, and the MoD is good in this document at laying out its future demand requirements, but I do not think they are very good at judging what might be the appropriate industrial structure. I recollect almost 20 years ago a whole Cabinet falling into disarray about the future of a helicopter company; we are talking here about really big issues, not just one company, so I do actually have concerns where Governments actively intervene in determining what they regard as the ideal industrial structure. If they have such views I would like to see them specified with far more detail than here.

Q164 Linda Gilroy: On the supply chain, are you aware of any good practice or even best practice of identifying and managing the complexity that you describe? That is a question to anybody.

Professor Hayward: You just reminded me of an old persona. It is difficult because there is a huge hinterland of defence industrial activity. The United States, in its much more extensive and much more elaborate analysis of defence industrial requirements, looking out to 2020, has had a crack at identifying companies—relatively low down in the supply chain—that possess specific technologies, but even that has not really identified the complexity of the food chain that actually builds the large, complex systems that inhabit today’s defence world.

It is proving extremely difficult, I remember doing this exercise for my old employer, the SBAC, trying to trace supply chains in companies, and it was extremely difficult because even some of the companies did not know in detail who supplied them in any systematic or comprehensive manner.

Professor Hartley: Some companies do not even know that they are a key part of the UK defence industrial capability. Ball bearing manufacturers might not know whether their ball bearings are going into main battle tanks, earth-moving equipment or heavy lorries.

Professor Matthews: Could I just pick up on some of the comments that Keith was making earlier in regard to the supply chain? I had the pleasure of working with Keith seven or eight years ago on a DTI-funded project, looking at the contribution of the armoured personnel carrier Warrior supply chain to the broader economy. It was great fun and very illuminating, because what we discovered was that very quickly as you moved from the prime down into the supply chain, maybe sometimes at the third tier level, you are into entirely civil producers. If you move into the fourth or fifth level you have manufacturers of what will ultimately be defence systems who do not even know that ultimately their output will become a defence product. What we found really of some concern was that the MoD at that time—I am not sure whether it has improved—had completely no visibility much below the second sub-prime, and it meant that in terms of encouraging competition, for instance, you had the opposite impact where the cost pressures and the risk were being pushed down from the prime to the suppliers in the supply chain; they were having to engage in R&D which they feared would be nugatory if they did not win the contract, and if they did not win the contract, which would be important for them but costly, what we were finding was they were prepared to exit the supply chain and move almost entirely into the civil sector where they also had a customer base. The other point that we found was that these suppliers are highly skilled and innovative, much more innovative in many respects than the primes that simply integrate the systems together, but they were in a precarious position because they were facing severe competitive pressure for supply to contracts like the Challenger 2 main battle tank—and indeed the Warrior—from American sub-contractors that had the scale to beat them on price, and their problem was they had no exposure to MoD support or policy.

Professor Hayward: If I may make one final point on this, it will get worse in the sense that the kind of new technologies required for network-centric warfare, all the autonomous systems that both air, land and sea may be developing, and indeed promised in the *Defence Industrial Strategy*, will require a technology base and a supplier base which actually is even more extended and perhaps attenuated than it currently is. Indeed, one of the great challenges—and the DIS states it but does not give us a clue as to how they are going to achieve it—is actually to try and capture this new supply base, this new technology base, to integrate them more clearly into

the weapons and the systems of the future. If you do not really know where you are now, trying to do it for the future with novel technology is really compounding the felony.

Q165 Linda Gilroy: just to return to my question, can you identify any practice—never mind good practice or best practice—where either prime contractors or main contractors, main suppliers, have got good quality links with their supply chain?

Professor Hayward: That is a slightly different question, if I might say so. When it comes to doing the business there has been sufficient development in what we collectively know as lean manufacturing and supply chain management for companies like BAE Systems—Rolls Royce particularly, driven by their commercial experience—to actually generate and deliver very efficiently a team of suppliers. If that answers the question, there is plenty of good practice at industrial level.

Q166 Linda Gilroy: Does that not help us to understand what needs to be done in the more strategic context?

Professor Hayward: It helps you to manage existing programmes, it does not necessarily give you a guide to what you need for the future.

Mr Crausby: We need to make some progress; Dai Havard on defence acquisition.

Q167 Mr Havard: It is about acquisition but it is really in a sense about organisation. I notice from your CVs that you have previously advised both this Committee, some of you, and also the DTI about various things in the future, so I really just want to raise the questions that I raised a little earlier on about organisational capacity, within the MoD first of all, in order to do the job that is set out in here. Given that the MoD has traditionally not been well-known for its agility, transparency and visibility, all these things, what do they need to do to change to help make this work?

Professor Hartley: I am not an expert on organisation, but what I would do is go back to basic principles. As I mentioned in the introductions, I do have concerns about how far the MoD ought to get involved in these wider economic industrial factors—concern with jobs, technology, exports and so on. It seems to me that some of these are more properly the concern of other Government departments like the DTI and the DTI does have a defence and aerospace division which is suppose to be concerned with these sorts of links between defence decisions and the wider impact on the UK economy.

Professor Hayward: I am not so sanguine about the DTI's competence to be able to pursue these issues and to understand particularly what is going on in the defence industrial base because it has lost an awful lot of capability over the years to do this kind of analytical work. The Americans of course have a whole department in the Pentagon addressing industrial policy questions, and it too requires the industrial policy group—it is usually about a dozen or so officials, with funding to bring in consultants

7 February 2006 Professor Keith Hartley, Professor Keith Hayward and Professor Ron Matthews

where necessary—to present an annual report to Congress on the state and status of the US defence industrial base, and they have also put a lot of money into doing a five-part study of the future requirements for the US defence industrial base into 2020. If the MoD is going to be serious, therefore, about long term management and delivering a Defence Industrial Strategy, it will require a significant commitment of official resources to the monitoring and continual production of studies like this. To treat this as a one-off—we have done this and we can go home now—I think would be a totally reprehensible and sad affair.

Q168 Mr Havard: Do you have any observations, Professor Matthews?

Professor Matthews: That is a difficult question for a defence economist, but organisational structures, in my experience, have improved dramatically over the last decade. At the Defence Academy there is substantial investment taking place into leadership programmes, there is an emphasis on change programmes, proliferation of change programmes, and also a recognition of the importance of cultural change as well. My understanding is that these investments are beginning to work through, to some extent improving the efficiency of the acquisition process.

Q169 Mr Havard: One of the things that is interesting to us is that some of our Committee went to visit the DPA the other day, because of course they are central to this as well. There is always the suggestion that one of the things it has never been good at, perhaps never been allowed to be good at, is project management, and things like the de-risking of the contracts means that they do not necessarily have, for example, contractual language when you are trying to set up these different relationships. So there are skills in how you do acquisition that maybe are not embedded in the processes of either the Ministry of Defence, the DPA its agency or, indeed, within the DTI, and your comment that they cannot even give visibility to the supply chain. I am interested in how those things are joined up and you talk about the USDA, but as I understand it the French take a particularly US sort of approach in the sense that they have something that looks at where the French are in relation to the world as opposed to a broader base. Have you got any observations about the way in which the stovepipe problem that was talked about can be dissipated?

Professor Hayward: It is a whole area in and of itself, the problems of what you might call procurement and project management, and I think again the United States for all its other faults—and it can be said that some of their procurement programmes have gone horribly wrong over the years—has certainly a greater commitment to training and professionalisation of their project managers. Indeed, there is an acquisitions university that the Defence Department runs to train both its civilian and its military procurement officers. I have heard hints that this is indeed where the DPA is going next, to try to improve the professional ability of its staff

and its IPTs to run programmes, but there is clearly something more fundamental here about the nature of procurement. Whilst you still have programmes that stretch out 10 years or even longer, it is very difficult to actually instil the kind of commercial disciplines that large manufacturing companies have in managing their projects.

Professor Hartley: You talked about the relationship between MoD and DTI, I would actually like to focus on the need for a change of culture within MoD and the Defence Procurement Agency. Look at what they are now committed to doing—historically, for the past 25 years they have been committed to competition policy; they are good at it and they actually appraise competition policy, they are now identifying some of its problems. What I find disappointing in the Strategy document is that there is no similar critical analysis of partnering, because suddenly the DPA are now going to have to move from a culture of competition to one of partnering, to an increased use of non-competitive contracting, to an increased use of the profit formula for non-competitive contracts, and to a greater use of target cost incentive fee contracts which, at the moment, are only a small part of the total value of procurement. That is going to in fact be quite a major change in DPA culture; it is going to have to be negotiated with specialist firms who, quite frankly, know their production possibilities far better, with all due respect, than MoD. BAe will be good at safeguarding their own interest, they will know how they can perform and MoD are going to have to cope with that sort of very powerful, very influential, highly informed producer firm.

Mr Crausby: I am going to bring Colin Breed in, probably appropriately at this time, on planning arrangements.

Q170 Mr Breed: That goes to the heart of what many of your concerns and our concerns are on the basis of the distinct possibility of a monopoly supplier. If that was to happen in any way, or even a partial monopoly, how is the Government going to ensure that it does get value for money? You could say it is through some sort of contractual, legalistic arrangement, but you and I know that you can always get round those. How do you actually get value for money when you have only got really one supplier?

Professor Hartley: There are two or three possibilities, but whether they will be used or not is dubious in relation to what the Strategy is all about. One possibility, the ultimate sanction, is that you threaten to buy from abroad, but that of course will then destroy the very trust which is essential to the partnering arrangement. Another possibility—and I am not saying it is a perfect one, there are no perfect solutions given the way we are setting up the problem—might be to treat some of your large, specialist defence contractors the way we treat the privatised utilities and regard them as regulated firms, and see whether there might be lessons from regulating the BTs of this world that could be applied to the large firms in the defence industry.

Q171 Mr Breed: We have been trying to get a regulator of supermarkets for a long time so I do not think that is very likely.

Professor Hartley: We do not need one, you have got competition there. That is interesting—the role of the regulatory agents in this country has always been eventually to move towards competition and to put themselves out of business.

Q172 Mr Breed: It is more to do with complex monopolies and the strange thing is that that actual phrase could well be part of what the defence industry is moving into. They are complex monopolies where they are inter-dependent upon each other and they have become, collectively, a monopoly arrangement, which means that some people of course are not going to be in the party, are they? What about those particular companies which, quite frankly, are not going to be getting the bulk of this work? How is the *Defence Industrial Strategy* going to treat them? Hard luck, is it?

Professor Matthews: That is part of the rationalisation process talked about in the DIS, but if I might just comment again on Keith's condemnation of the manner in which the MoD is inexperienced at dealing with monopolies, I think it is fair to say that in the ordinance sector there has been a framework partnering agreement in place for about seven years now. My understanding is that it has worked reasonably well, save for the fact that the ordinance company was worried four or five years in about the longevity of the arrangement—it was finding it difficult to continue with investment because of the uncertainty that the contract would continue into the future. There is a basis, therefore, for thinking that the MoD knows something about managing monopoly situations, and in the final analysis if we buy into the DIS and we recognise it is important to have indigenous defence industrial capability, I think that there will be a cost and the cost will be a loss of competitiveness in the marketplace.

Professor Hartley: Could I just follow that with a comment? It is interesting, because in the *Defence Industrial Strategy* at page 99, paragraph B6.34, Ron referred correctly to the framework partnering agreement and yet this is the one point where the Strategy says "The Framework Partnering Agreement does not adequately incentivise BAE Systems to reduce its cost base . . .", so there is a long-standing agreement where it has already admitted publicly here, so what price the other ones, that there are problems in incentivising BAE.

Q173 John Smith: I wonder if Professor Hartley could just expand a little bit on the notion of treating BAE Systems like a privatised utility. Clearly, they are going to absolutely dominate the future market, and it is not a question, I believe, of being able to go overseas in some instances because the capability simply will not exist for supporting certainly some of the air systems. I just wonder if you could expand on how this would work, and give an opinion on the suggestion that has been put forward that there may be a role for the National Audit Office to oversee on

a more day to day basis some of these long term partnering arrangements. Do you think that is a good idea or just another tier of bureaucracy?

Professor Hartley: It sounds a useful idea. The obvious body to take a role in this affair of course is the Competition Commission which is specifically concerned with monopolies, mergers and competition, so it might well be that the proper route might be not so much the National Audit Office but, as I say, the Competition Commission. In terms of what you might do by looking at the experience from privatised utilities and regulating those, what I have not done is converted the RPI minus X rule into an equivalent one for the defence sector, but we do know in the regulated utilities sector that they do actually try to base profit rewards and try to regulate profits in relation to calculating the costs of capital. That is an area that I do not think the Review Board for Government Contracts has gone much into; it has looked at it and then moved sharply away to what is the current arrangement of rewarding profits on the basis of cost of production and capital employed. There is an area there that I think both the Competition Commission and the Audit Office ought to have a look at, which is the extent to which the profit formula on non-competitive contracts first of all provides efficiency incentives and whether or not the rewards are too generous, given that these are rewards for firms that are domestic monopolies in highly protected markets with guaranteed work.

Mr Crausby: I am going to move on now to appropriate sovereignty. Mark Lancaster.

Q174 Mr Lancaster: Thank you, Chairman. Professors, all three of you indirectly in your opening remarks referred to this, but only Professor Hartley and Professor Taylor—who cannot be with us—referred to it directly in their submissions. Professor Hartley, could I just start, please, by getting you to define what you think is meant by the term? It is not meant to be a test, but it is a very woolly expression, is it not?

Professor Hartley: It is, and it always will be, but what I do actually have to acknowledge is that in the Strategy they do try to define it a bit more clearly. They talk about independence, security of supply and re-supply, but what of course they do not say and the point I would make is how much are we willing to pay for this? What is our willingness to pay, does it involve an extra five or 10% or what? Throughout most of the document they very nicely try to focus on defence criteria, and then suddenly they move into these wider factors and you are not quite certain what the relative balance will be between the wider factors and these defence criteria, and the weight to be attached to these wider factors is not really specified. They do attempt to assess, as far as you can see in any published document, what are called key industrial capabilities, however vague that notion might still be, and why we need them.

Professor Matthews: I am very comfortable with the concept of appropriate sovereignty. In an ideal world, market forces would operate, I guess, and the

7 February 2006 Professor Keith Hartley, Professor Keith Hayward and Professor Ron Matthews

notion would not be relevant, but we operate in a world where second-best approaches can sometimes be appropriate. It seems to me that the competitive model that we have employed over the last two decades has worked well for us, but at the margins what has now been perhaps belatedly discovered is that we are the only player in the game, and whilst we are opening up trade, increasing competition and allowing foreign defence industrial players to access our market, the worry is that other countries have not followed suit. The code of competition procurement in Europe, pushed forward by the EDA, is a voluntary code; France talks about the notion of economic patriotism for the civil sector and competitive autonomy for defence, and in France the Government has identified some 11 strategic industries which will be protected. The same applies in Germany where it is moving to protect its defence industrial base, so I think it is almost inevitable that we will have to reconsider our position and start to think in terms of sustainability by what is, in effect, some degree of protection.

Professor Hayward: I have scratched my head about appropriate sovereignty and I even asked a DTI minister at a public function what was meant by it, and again there was not exactly a crystal clear response. What we had clearly was an unsatisfactory state of affairs prior to this concept, in the sense that in the old days only six technologies were regarded as essential for UK eyes only—three of those were nuclear and the rest were crypto. Now at least we are trying to move into a broader range of core capabilities and core technologies, but of course everybody in the defence industry has a good idea which technologies are clear, core and critical and it is usually the ones that they are producing or ones that they will depend upon for their future business. In that sense, the concept of appropriate sovereignty, I suggest, may well be deliberately ambiguous in order that the MoD retains a degree of manoeuvrability in defining in the future what its core capabilities and its onshore capabilities must be. To some extent it may be protecting itself against pressure and respecting the loudest voice from the defence industrial sector.

Q175 Mr Lancaster: Picking up from that then, if it is ambiguous, Professor Hartley, you said that whilst the MoD has made some effort to define, it fell short of actually giving a price for appropriate sovereignty.

Professor Hartley: Yes.

Q176 Mr Lancaster: Could I be quite cheeky then and perhaps press you to think what the price should be and give some examples?

Professor Hartley: In terms of examples it might well be that you take as a benchmark, as a starting point, the common external tariff used by the European Community as an indicator of the degree of protection for industry in general. Then, of course, Article 296 allows you to do whatever you want, you can pay whatever price you like under that article, so I would begin to question Article 296 at the European level—and I think it is being questioned.

Ultimately, the key test will be how much the MoD is willing to sacrifice from elsewhere in its defence budget, because it is a limited budget and if it pays more for protecting its UK defence industrial base the cost of that comes from the UK defence budget. My own view is that I would start by taking the common external tariff as a rough indicator of the degree of protection to offer to the UK defence industry.

Mr Lancaster: Thank you.

Q177 Linda Gilroy: On research and technology QinetiQ's memorandum tells us that the DIS fails to address the implications; the Royal Aeronautical Society's memorandum says that "MoD has recently begun to address some years of relative neglect", and you specifically mentioned, Professor Matthews, in your opening remarks that this was an area that you felt was unclear in DIS. Clearly your answer is there, does it mean the coverage that DIS gives to research and technology issues is inadequate; if so, what specific issues should we have expected and is there a strong case for increasing Government money that goes into research and development?

Professor Matthews: Yes. My background at the Academy is not so much R&T but I do work with colleagues at the research acquisition organisation who come and give lectures to my students. Whereas in other countries—Japan for instance—there is a targeted aim of raising defence-related research and development as a percentage of the defence budget to 5%, we have no such policy aims in this country as far as I am aware. If you look at the trajectory of defence R&T it is flat, if not declining, over the long term and this is compounded—and I am coming back to another point I made initially—by the nature of our technology transfer relationship with the United States in particular. It seems to me of grave concern that whilst we are somewhat ambivalent about the importance of defence R&T, we emphasise off-the-shelf purchases through primarily acquisition of major weapons platforms from the United States, and then through the industrial participation policy we expect 100% work placement and technology transfer on the back of those purchases to come into the UK's defence industrial base to compensate the defence industrial base for those purchases. Whilst that seems to be working and the targeted offsets or IP are being achieved, my concern is that with the flatness of our indigenous defence R&T which provides the basis for creating national IPR, what we are doing is becoming a sub-contractor to the United States where we have no evidence at this moment in time that the nature of that technology transfer is sustaining the high-tech areas of our defence industrial base.

Professor Hayward: I would fully concur with that because we have to face a future where our defence industrial commitment will be collaborative. In a sense, historically, our turning point was in the 1960s when we began to get into these European collaborative ventures and there is no going back, the UK is now in an international, globalised

7 February 2006 Professor Keith Hartley, Professor Keith Hayward and Professor Ron Matthews

defence industrial environment. It is qualified by the existence of the barriers that both Professors Matthews and Hartley referred to—in that sense we do not see BAE Systems or any other company like that behaving like a defence aerospace Ford in the sense of being able to move its resources, both physical and conceptual, across frontiers, investing wherever it sees fit on the basis of competitive and comparative advantage, I just do not think that world will ever emerge. However, what we have had in the UK is a considerably advanced technology base, as often as not born from a mix of some international technology demonstration activity, some national commitments to basic R&T but, more importantly, to play as an egalitarian partner and an equal partner in the large raft of international collaborative programmes that we have undertaken, usually with our European neighbours. Now as we move into the next generation of weapons technologies we are, in a sense, facing a difficulty. In the memorandum from the Royal Aeronautical Society that you referred to we did note that things had improved in co-ordinating some of the resources that the UK was making available for R&T, but we are still concerned, and most observers of the UK defence industrial base would reflect the same concern, that we are not spending in absolute terms enough on research and technology acquisition. If we are going down the route of programmes where the technology transfer barriers are particularly fierce, where we are not playing an egalitarian, equal role in development with perhaps our American partners, we will have the risk, in the absence of an effective UK commitment to technology acquisition, of a tendency to atrophy our onshore capabilities.

Professor Hartley: Chairman, my apologies, I did not answer properly Mr Lancaster's question. He asked me a direct question, how much extra would I be willing to pay, and I think as a guideline an extra five or 10%; I would be very critical above 10%.

Mr Crausby: Brian Jenkins, and then we will come on to core skills.

Q178 Mr Jenkins: It is on core skills actually, I am going to try and develop this argument because I have been listening very carefully about research and design, and I have similar concerns. The Royal Aeronautical Society memorandum emphasises that "the DIS must deliver on its commitment to maintain core skills and to protect the critical design and development capabilities embodied in the individuals and teams . . ." How is this achievable in this modern world? Are we going to ring-fence them?

Professor Hayward: I must admit it is inevitably easier to write or say than it is to do, but I think there is a commitment in the DIS (so-called) to establish these virtual design teams, that you will keep the capability together. What is not clear, as you point out, is exactly how it is going to be done. I seize upon those particular programmes that the DIS seems to be promising, and I make no bones about it, the primary focus that we have adopted of course is the Unmanned Aerial Vehicle, the UAV technologies, which do represent not only a key potential platform, not just for aerial systems but increasingly

also land and sea too, an area of core technology which will be a major issue and a major requirement over the next 10 or 20 years. The real issue will be keeping the capabilities to design and develop a complete UAV system in the UK—not necessarily to the point of deploying one, not necessarily to the point of paying huge amounts of money to develop a deliverable, deployable system, but we will have to invest in the concept technologies, also bringing into this not just the prime contractor but the suppliers for the systems, for the mission packages and all the rest of it, which will be required to give us a leverage in future collaborative programmes. That is the only way I suspect we can in the end maintain these core skills and capabilities; the trouble is that everybody in the defence sector is clamouring for that kind of position, and I think there are choices to be made about where we do in the end focus our resources.

Professor Hartley: Oh yes, they are all going to be clamouring.

Mr Crausby: Thank you, Brian. On the question of international co-operation, John Smith.

Q179 John Smith: Thank you, Mr Chairman. Do you think the *Defence Industrial Strategy* is focused enough on the international implications of this document?

Professor Matthews: It is anticipated that around 40% of future defence procurement will be through international arms collaboration, so it is an important area and the DIS highlights the importance of, in particular, the European procurement institutions in this regard. We have a good track record in our collaborative programmes—I am sure that Keith Hartley will talk about the cost premium involved in those—however, if you look at the Eurofighter, that would not have been produced without the collaborative effort. Maybe you can argue we should not be purchasing it at the moment because this is an area that has changed, but the important attribute of that particular European collaborative venture is the fact that almost in its entirety the systems are European, there is very, very little American technology in that weapons system. My doubt about certain developments and procurement agencies in Europe over recent times is that whilst they are much lauded, there is very little research to establish whether, for instance, OCCAR actually works; there are some serious change initiatives that have been introduced there in terms of work share where that will be shared out over several programmes' lifetimes across different participating countries, but there is very little evidence at this point to establish whether it is working effectively.

Professor Hayward: I would reinforce that point wholeheartedly. Like both Professor Hartley and Professor Matthews I have been looking at the state of the European defence marketplace for the best part of 20 or 30 years. Where we are now is where we perhaps should have been at least 20 years ago; the current developments are all very satisfying but they are far too little and perhaps too late and, as a consequence, if you look at what is emerging in Europe as a set of procurement opportunities or

7 February 2006 Professor Keith Hartley, Professor Keith Hayward and Professor Ron Matthews

even a set of technological opportunities, they are relatively few and far between. A large part of the UK defence industrial base has already made its judgment quite clear, by acquiring US-based assets; virtually every one of the major players in the UK-owned defence industrial base is now a significant actor in the US defence market. They huff and puff about the technology transfer problems, but that has not stopped them continuing to invest in the US market, buying up subsidiaries, buying into core technologies, getting themselves well-placed in what is still the biggest single integrated defence market in the world. That, to my mind, is where the money has gone. You could say it is the old joke follow the money; in this case it is follow the investment patterns, partly because of course the European structure is still unable to accept free movement of capital in its defence marketplace. I do not think British companies would necessarily have chosen to put all of their eggs in the American basket, I think there was plenty of interest in getting into the French or the German industrial base, but they are simply prevented from doing so by either implicit or explicit political barriers.

Professor Hartley: Two points, Chairman. In relation to collaborative programmes, their efficiency can be improved but the model in terms of a successful collaborative programme has got to be Airbus—and there are probably very good reasons as to why Airbus and perhaps MBDA might have been successful. Secondly, in terms of Europe, what was lacking in the Strategy, which we might then see in Strategy versions 2, 3 and 4—because I think this will be evolving, this will not be the only document—is a vision of how the UK sees itself in a future European single market for defence equipment. It is hinted at, but we do not directly address it. The capacities we are talking about and the need to retain them could be quite radically different if we view this as a European single market for defence equipment rather than taking a national perspective.

Professor Hayward: If I could just add, UK defence industrial players could actually do very well in that context—

Professor Hartley: I think they could, yes.

Professor Hayward: Because over the years they actually have sharpened their act.

Q180 John Smith: You do not see this strategy as a shift towards UK protectionism in any way, thus having any implications for our access to international markets?

Professor Matthews: There is a contradiction with DIS and the Autumn Policy that has been published by the EDA on the European Code—one is opening up, the other is beginning to increase protection—but as I have indicated earlier I think it is the appropriate way forward as most other countries are doing this. Also, when you look at the explanation in the DIS about appropriate sovereignty we need to have a policy that supports and encourages selectively high technology, high value added defence industrial capabilities, because if we continue to allow the erosion of those capabilities through increasingly purchasing off-the-shelf from

principally the Americans, then we will find ourselves in the position in the future that we lack the technology levers and we lack the capacity and defence industrial capability to play a dominant part and exert an influence in collaborative programmes, we will have nothing to put on the table.

Professor Hayward: This is entirely my own impression here but I think there is a hint in the *Defence Industrial Strategy* from the MoD's perspective that they did fear the mobility of defence capital, that in a sense a large chunk of the biggest players in the UK defence industrial business had options that were not available to the likes of EADS or to Dassault in France, and thanks to this now 10 years' worth of investment in the United States defence market, they could make a move to put their major effort in the US defence market. In that sense it may not be protectionism, it may have been a degree of building security of supply by at least locking some of this asset onshore so that it is not tempted to take all of its major activities to the United States.

Q181 Linda Gilroy: Following through from the impact that trends and the DIS might have on investment abroad and on future UK export markets, what about inward investment? How do you see those trends and DIS impacting on it?

Professor Hayward: Historically, again, it has been the other side of the coin, the UK defence industrial base has been extraordinarily open to inward investment, and again if you look at the proportion of the UK defence industrial base, how much of it is owned by Americans or by continental Europeans, there is no other major defence industrial economy quite like it. In that sense, one of the successes of the last 10 or 15 years has been encouraging this liberality. Cynics might say, in a way, this was the price to be paid for a shift towards buying American kit—we had to attract the investment in to ensure that there was technology in the UK, that UK jobs were still protected to a degree by foreign investment. There are limits and, again, if you have partnerships that in a sense have now frozen out some of the major players, or can potentially freeze out the major players, they may look twice at future investment. It would seem again from recent developments, however, that there have been enough new players coming in from the United States, particularly in the areas of what I call network-centric related technologies, to suggest that this is again one of our stronger cards.

Professor Matthews: May I just offer a few comments on that because it is an important question and I guess I am a cynic. We live in an era now of essentially defence globalisation—capital moves, resources move, production moves from one country to another, quite often in search of lower production costs—in terms of outsourcing and a global supply chain, and we are looking for more efficiency as well, but there is a concern which has not been properly addressed, and that is that it is okay globalisation impacting on the commercial sector when you are dealing with refrigerators and TVs, but when you focus on defence, defence is

different. Quite often when you need defence equipment, when you go to war, if you are dependent on overseas suppliers that material is not made available. Whilst we are in the European economy—and I am sure that we have benefited from that in terms of investment and job creation—defence multinationals, like commercial multinationals, are footloose in search of profit, and it is possible to conceive in the future, when major programmes start to decline in importance in the UK, because we have become increasingly dependent on foreign defence multinational companies located here, if the circumstances are not appropriate for them to make money, they will move on, and then the danger is of a hollowing out process where nothing is left in certain strategic areas.

Q182 Linda Gilroy: Especially if that undermines the skills and creates uncertainty.

Professor Matthews: And a lack of sovereign supply, yes, correct.

Professor Hartley: Two comments very quickly, if I could, on those answers which I agree with. I think there is a problem with partnering, which is how are we going to encourage free entry? If we want innovation, we want new firms to come into the market, how are we going to do this with partnering? I am not quite certain how this document is really going to handle that. Secondly, there is a mirror image in the document: it talks about appropriate sovereignty, support for the UK defence industrial base, but what it has not done is a proper, fair and adequate analysis of the implications of the UK importing foreign equipment. It is not just in terms of dependence and independence of supply and security of supply, it might well be that if we lose a complete defence industrial capability the Americans might well say you can have Apache helicopters but by the way they will not have Longbow—in other words, we will lose the ability to buy the latest, state-of-the-art equipment from the Americans if we were simply a pure importer without any substantial defence industrial base to offer bargaining power in that market.

Mr Crausby: One final question from Dai Havard.

Q183 Mr Havard: Thank you very much for that. Given all the things that you have said, how do you see that all of this is going to be measured and evaluated, both overall and in terms of sectors? It seems to me from what you say today that given that it was largely written by a production manager, it really deals with process. It probably deals with an immediate problem of legacy difficulties and overspend and so on, so it is part of something, it is not the end of something, and one of you said it is a series of documents. How are you going to evaluate its success in relation to its first steps and how do you think we can evaluate where the situation is?

Professor Hartley: Basically there is a cop-out on that: ask MoD. MoD and this Government like to talk about—quite correctly—performance indicators; can we have some in this document? They

are remarkably not present in this document, but I can offer some. One which is very difficult and not even the National Audit Office really addresses it is how well does the equipment perform in battle? Heaven forbid that we are going to have battles, but nonetheless that seems to me to be the primary consideration, how well does our kit perform and has it performed in Iraq, say—there is good experience there in terms of bad performance—otherwise you are driven to using the standard performance indicator which the National Audit Office use and MoD use in terms of smart acquisition, performance against cost, time and quality. You might even want to use defence export performance, competitiveness in world markets, but that is perhaps less of a concern to MoD and to the Armed Forces who want good, battle-winning equipment of high quality, state-of-the-art stuff that would guarantee that we do not lose our sons and daughters the next time we go to battle.

Professor Hayward: That is an incontrovertible response and it has traditionally been the MoD's answer to special pleading from domestic suppliers: we must buy the best equipment available in order that our Armed Services will not find themselves fatally embarrassed on the battlefield. From a defence industrial perspective again I have a cop-out here, I just do not know how you would measure success. You could say that measuring success would be looking back in 10 years time when we still have a significant—and do not ask me how to define significant—element of high value, high technology base defence industrial capability located onshore in the United Kingdom. Again, do not ask me which bits—I have prejudices and my current employers would suggest and my own experience would suggest we still need aerial systems of some description, but leaving that special pleading aside the only way we are going to judge this is over time and that is the biggest cop-out of all because in the long run, of course, we are all disappearing.

Professor Matthews: I will finish as I started, if I may. The DIS is an impressive document, it was put together very quickly in maybe six months and my sense of this in terms of comparative benchmarks and performance indicators is that they will be worked up over time. I concur with Keith Hartley in the sense that what we have experienced in the last two Gulf conflicts—when I say we I mean the UK Armed Forces—is the lack of availability of key weapons systems; it was ordinance in the first Gulf conflict and it was rocket-propelled grenades in the second, and we were dependent on overseas suppliers that at the time refused to supply. In terms of availability, I think that sovereignty will come through when we go to conflict, and that is what we would hope, but I am sure the MoD will work up sensible comparative benchmarks and performance indicators in the fullness of time.

Mr Crausby: Thank you very much indeed for that contribution. It has been an interesting and informative session today and we very much appreciate the time that you have given us this morning, so thank you.

Tuesday 28 February 2006

Members present:

Mr James Arbuthnot, in the Chair

Mr David S Borrow
Mr David Crausby
Mr Mike Hancock

Mr Dai Havard
Robert Key
John Smith

Witness: Sir John Chisholm, Executive Chairman, QinetiQ, gave evidence.

Q184 Chairman: Good morning and welcome to everybody on this inquiry into the Defence Industrial Strategy, particularly John Chisholm from QinetiQ. Sir John, perhaps I could begin by thanking you for coming to give evidence about the Defence Industrial Strategy. I wonder if I could open up our inquiry this morning by thanking you particularly for your memorandum on the Defence Industrial Strategy¹ and read out a couple of bits of that. It says in your memorandum, “The Committee should consider this apparent internal contradiction in a document that speaks so strongly to the importance of technology and innovation on almost every page, yet is silent on the level of defence research funding.” I am not trying to put words in your mouth, but I think you are pleased with the recognition of the importance of research and all that that implies within the Defence Industrial Strategy. Do I detect a degree of disappointment with what is actually said about it in the White Paper?

Sir John Chisholm: Good morning, Chairman. Yes, I think you have seized the substance of our evidence. The first point is that we are pleased with the overall thrust of the Defence Industrial Strategy. I think Lord Drayson has done an excellent job in a short period of time to grab a hold of the whole issue of procurement in the United Kingdom and to devise the main themes of a strategy as to how to improve procurement and also improve the industrial base which underpins procurement. We have counted that there are some 600 mentions in the DIS to the words “research, technology and innovation” and that underpins what you have already said, that clearly research and technology appear to us to be well represented as key to a Defence Industrial Strategy. Having said that, there is not a carry through in this version of the DIS as to what the consequences might be in terms of the provision for research and technology in the future.

Q185 Chairman: What do you think it should have said about that?

Sir John Chisholm: We would argue that the logic of the DIS is that research and technology expenditure should be increased to something closer to what it used to be. The paper says that research and technology is important in creating the quality of equipment that the Armed Forces eventually buy; that is clearly implied in the work that underpins the DIS. If that is the case, the equipment that we are

buying today reflects the amount that was put in to research and technology in years gone by. If the amount that is now being spent on research and technology is less than what was spent 15 years ago then the implication is that eventually we will suffer from a lower quality of defence equipment than we currently buy. If we actually want the same quality of equipment as we now have then the logical conclusion would be that we should increase the amount currently being spent on research and technology.

Q186 Chairman: On page 39 it says, “A recent MoD sponsored study analysing 11 major defence capable nations has uncovered a highly significant correlation between equipment capability and R&T investment in the last five to 30 years.”

Sir John Chisholm: Indeed so.

Q187 Chairman: So more should have been said, you would suggest, in the Defence Industrial Strategy about the way that that R&T was going to be encouraged.

Sir John Chisholm: I do not think I am able to say that more should have been said. I would say that more can be said on that subject.

Q188 Chairman: On page 142 of the Defence Industrial Strategy the words appear “specifically, we will review the alignment of our research programme with MoD needs, conduct further work better to understand the underpinning technologies, update our defence technology strategy, develop a better understanding of the innovation process . . .” In other words, there is a lot of work still to be done.

Sir John Chisholm: That is how I understand it. As I understand it, this paper says that this is an area which is incomplete in the DIS and more work is now going to be done in order to fill out that gap.

Q189 Chairman: The way you put it suggests that QinetiQ is not involved in this work or has not been asked to be involved in this work. Is that right?

Sir John Chisholm: The work that needs to be done is obviously Government work and QinetiQ, as the other contractors, will eagerly participate in any way they can in helping the government proceed with its strategy.

Q190 Chairman: Have you been asked to be involved in that work yet?

Sir John Chisholm: There is every indication that we will be involved in that work, yes.

¹ Note: See Ev 77

28 February 2006 Sir John Chisholm

Q191 Chairman: What do you think you would be likely to do in relation to that work? What would you like to do in relation to that work?

Sir John Chisholm: We can certainly assist, as we have been doing in the past, in helping the Ministry of Defence decide what the areas of significant priority are. It is, however, for the Ministry of Defence to decide exactly how much money it is appropriate to spend on research and technology. The evidence that we can provide would say that the increased expenditure in research and technology will lead to the quality of equipment which the Armed Forces require in future years.

Q192 Mr Crausby: You argue that there is a strong case for increasing funding for defence research and that was effectively the line that Mr Ferrero took on 7 February when he said, "As I look at the labs today I see a constant reduction in government investment in these technologies and, ultimately, a reduction in the level of innovation that is coming out of the labs." In your memorandum you say that the Defence Industrial Strategy fails to address the implications of the decade long decline in research funding. What are the implications, and what is likely to be the long-term consequences of this obvious reduction in UK defence research investment?

Sir John Chisholm: The obvious consequence of a decline in research expenditure is less resources being available in the labs. Eventually they fall below a critical level and you simply have to stop doing that research. In recent years what we have seen is that the remaining funding has gone as a proportion more to shorter-term research which supports more urgent needs and therefore the larger cutbacks tend to fall upon the longer term, more generic research which is the area from which many of the more profound developments in technology eventually emerge.

Q193 Mr Crausby: I know it is difficult to predict the future without doing the research. Have you got any concrete examples as to how you see that that will put us behind?

Sir John Chisholm: The area which generates new sensor systems, for instance, is an area of technology which in the past has produced important innovations, such as thermal imaging. That is an area where there has been a consistent cutback in the research funds. The consequence of that is one has less resources to investigate very promising future developments. If you do not investigate those you then do not get the breakthroughs and you do not get the equipments which eventually come from that.

Q194 Robert Key: I am very concerned about this level of research spending. As you point out in your memorandum to the Committee, in the Defence Industrial Strategy the government talks about the real terms decline but it does not make any mention of how much defence expenditure should rise by. You assume it will be a drop in real terms though an

increase in cash spending but the government does not even say that. Were you very surprised it said nothing about the level of research spending?

Sir John Chisholm: We would certainly argue for an increase in research spending if the objective is at least to ensure the same quality of equipment as we are getting right now in the Armed Forces.

Q195 Robert Key: What do you think is the main driver of research spending by universities? Is it blue skies research, their reputation internationally or are they waiting for signals from government in particular areas that the government would like to see research done in?

Sir John Chisholm: If your question is what is driving university research spending, that is driven largely by the research councils and their process. Their process is heavily driven by the academic quality of research. The research assessment exercise in universities is what drives it. That is driven by citation indices in publication in journals. That is an entirely different mechanism to the mechanism which we are talking about here where the objective of defence research expenditure is superior equipment in the hands of soldiers, sailors and airmen.

Q196 Robert Key: Do you consider yourselves to be in competition with that university-based research?

Sir John Chisholm: Certainly not. It is our role to draw upon the university-based research and make it useful to soldiers, sailors and airmen.

Q197 Robert Key: Is it getting more difficult to recruit and retain the sort of researchers you want?

Sir John Chisholm: It is always difficult to recruit and retain researchers if you do not have the funding to support them. Our business is to win research contracts and conduct them for the Ministry of Defence primarily. If the money is not there for those research contracts we cannot obviously employ the staff.

Q198 Robert Key: Have you given thought to how much money the government should be spending on defence research?

Sir John Chisholm: We have done a calculation and it runs along the lines that if defence expenditure has reduced by 50% in real terms over this period of time and it was that defence expenditure which gave us the equipment today which we feel satisfied with, you might argue that you need to increase defence expenditure back to where it was. We could mitigate that a little by saying that surely we are more efficient now than we were 15 years ago, but an increase of the order of 25% is what we believe would be a sensible policy decision.

Q199 Chairman: Is that an increase of 25% in relation to defence as a whole or in relation to research, technology and innovation?

Sir John Chisholm: Research.

28 February 2006 Sir John Chisholm

Q200 Mr Havard: What you seem to be saying to me is that within the Defence Industrial Strategy there is going to be another strategy looking at research and technology. That work seems to be not very far forward yet. Do you see that then driving your number or are you going to go in with this bid of increasing by 25% as part of your strategy negotiations for research and technology? It seems to me scientists always argue that the research is better depending on how much money they get. I am not sure that is always true. I understand there is a need for research and technology to be properly funded. Which way round is that going to work? Is it the case that you will go in with a handful of cards saying we want an increase of 25% when the reality of the situation is that what should really happen is that that research and technology sub-strategy within the Defence Industrial Strategy should drive the real decision about what is required? Is that the desire that you think is coming from the Ministry?

Sir John Chisholm: I would certainly accept that the level of research expenditure should be driven by the strategy. So the work that you referred to, which is referred to in the DIS, on the analysis of a research and technology sub-sector, the output of that, I would argue, would appropriately be an increase in research expenditure.

Q201 Mr Hancock: I would be interested if you could explain to the Committee what you think your company's role is in the future bearing in mind what you have said and the past history of the organisation and where it is today.

Sir John Chisholm: The core business of QinetiQ remains the business of technology and innovation in the UK and in the area of defence and security. So we have three main businesses: one is defence and security technology for the UK; secondly, the commercialisation of those technologies into adjacent commercial markets, principally in the UK, and, thirdly, the development of our business in the US based upon those same technologies.

Q202 Mr Hancock: Do you not think you have some responsibility now to invest in the research and development and then sell what you have discovered to the MoD? Smart procurement really demands that the MoD does not pay as much on research and development. Surely it demands that organisations like you have to take the risk on the research and development in the hope that you can then sell a much better product to the Armed Forces for the use of the personnel involved.

Sir John Chisholm: Research the world over has the characteristic that that which is near to market can be invested in by companies and that is the sensible decision for companies to make. Far from market research, it is much more difficult to see who will get the particular benefit of that research and therefore throughout the world, far from market research as funded by governments, because it is only governments who can take the rational view that benefit will accrue somewhere—

Q203 Mr Hancock: But this policy states they are going to be less inclined to do that. That is why it is not specific about the values put against it. That is why there is no increase, is it not? This philosophy says the risks should be carried more by organisations like yours in the future who say come to us and we will buy if it is good enough and you can convince us.

Sir John Chisholm: Companies do invest and indeed we invest when we can see a return in the kind of timescale that our own investors are interested in. Where you cannot see a near-term return then that is not a wise investment for a company to make, though it is an entirely wise investment for a country because the country will see the return from that in due course.

Q204 Mr Hancock: One of the arguments for your organisation ending up where it is today, when we had these debates in this Committee some years ago, was that you saw the reality that there would be less and less investment in research coming from government and your organisation, in order to stay as a leader in the field, would have to be able to go out and explore the commercial world more effectively than you had been able to do in the past. You still now want to appear to be saying we will not do too much unless the government is going to front load it. I cannot see how you can have it both ways. You argued the case very effectively for your own organisation at that time that you needed this freedom to go off and do other things. It obviously annoys your colleagues sitting behind because they are pulling faces at what I am saying to you.

Sir John Chisholm: I think the figures I gave you do answer that point. What I said a while ago was that research funding has declined by 50%. I did not go on to argue that it should be restored by 50% because I said there had been improvements made. One of the improvements made is the freedoms you gave to what were the government labs to go out and modernise themselves and conduct other business. Part of the consequence of that is that we can do more for less than we used to. So there is an absolute gain that the nation has got through the strategy it has adopted.

Q205 Mr Hancock: What do you see as the different roles between an organisation like yours in the future in research and development and what the government would be funding in research specifically targeted towards defence?

Sir John Chisholm: We are a contractor to the government.

Q206 Mr Hancock: What else do you see your company doing in the future which is going to mean your ability to continue to be at the forefront of defence research still being available if you are not going to get the same level of funding from government?

Sir John Chisholm: The point I was making is that we are more efficient than we were before. One of the reasons why we can do more for less for the government is that we are engaged in winning

business for our labs not only from the UK Government but also particularly from the United States Government and also from winning business in the commercial sector for that same technology. The funding mix for our laboratories is now more broadly based than it was before and that is a net gain to the UK defence vote because it is getting the benefit of the other funding coming in from other directions and the stimulation of the research work within the labs from that other funding.

Q207 Mr Hancock: How much is your organisation currently spending in funding research and development in small- and medium-size enterprises which are in this field? What proportion of your expenditure on research yourselves are you spending in the outside world?

Sir John Chisholm: I do not have the immediate figure at the top of my head. We spend a considerable amount of the monies that we get from our customers into our supply chain in order to help us do our work. Typically we will farm out a considerable amount of the work that we get into SMEs and into universities in order to capture the best product that is coming from that and in order to assemble that back to what is in the best interests of our customers.

Q208 Mr Hancock: Do you see that in the future as being an increasing trend? On Robert Key's earlier point, would it be a policy that you would adopt that maybe in the future you do not want to employ all these people and it would be far better for you simply to be the prime server and you will subcontract the research and development elsewhere?

Sir John Chisholm: We certainly see ourselves as forming an important link in the chain between our customers, who want a complete service, who want a complete programme of research or development completed, and a supply base which includes SMEs and universities, all of whom have got a particular niche to offer. So we see ourselves as playing a very important role in that gap between niche suppliers, the universities and SMEs, and our customers who want a complete research solution or technology solution provided to themselves. That is why we are developing university partnerships and SME partnerships which will enable the efficient capturing of those niche capabilities.

Q209 John Smith: In your memorandum² you identify a specific failure in the DIS and that is that there is no sustainable policy for developing Centres of Excellence for military related research. Could you expand on that a bit, and could you suggest how you would see these Centres of Excellence developing?

Sir John Chisholm: Let me pick you up on the word failure for the moment.

Q210 John Smith: Your word!

Sir John Chisholm: I think the DIS says that it is not designed as a completely finished document, there are ongoing pieces of work and it says that one of the ongoing pieces of work is in the science and technology field and therefore I would have expected what we are now going to talk about to be covered as part of that ongoing piece of work. What we pointed to is that in covering that ongoing piece of work we would expect the logic which has applied in other areas of the DIS to be equally valid, that within the United Kingdom we need to be thoughtful about the Centres of Excellence that we want to have for the nation. Mr Key mentioned previously the civil research programme run by the Office of Science and Technology where the policy is very much to focus on Centres of Excellence in the UK. I would have expected the same logic to apply in relation to defence science and technology, ie that you would want to encourage the Centres of Excellence and maintain those Centres of Excellence rather than undermining them by spreading the available resources too thinly.

Q211 John Smith: Do you think there is an inherent problem with trying to get government to invest in pure research within commercial organisations as opposed to public bodies, for example our universities? Are you saying you want to see Centres of Excellence develop in existing public research bodies, higher education or whatever, or are you saying that government should be investing more in pure research or blue skies research within commercial organisations like yourselves?

Sir John Chisholm: Yes. I do not think there is any inherent excellence which exists in public bodies or private bodies. Excellence depends upon people and people are where they are. They can be just as easily employed in the private sector as they can be employed in the public sector. I am certainly not saying, as you imply, that Centres of Excellence only exist in the public sector.

Q212 John Smith: Do you not think there is bound to be reluctance on the part of government to invest in such open-ended research with commercial bodies? You said earlier that not only is less being invested and it is not covered adequately in the document but that it is smaller scale and more detailed programmes that are actually being undertaken and some of the bigger work is going to be ignored. I just wondered whether there is not an inherent reluctance on the part of governments to undertake such research with commercial organisations. Is there a case for creating a defence evaluation agency to undertake such work?

Sir John Chisholm: There is a government agency called the Defence Science and Technology Laboratory. If you look at other nations, for instance the United States, it has no difficulty at all applying government contracts to really excellent organisations in the private sector and the United States does quite well from that.

² Note: See Ev 77

28 February 2006 Sir John Chisholm

Q213 Chairman: Could I put to you a concern that I felt about the flotation relating to the United States, which was that the United States would feel reluctant to share, with what it might regard as a commercial company in the United Kingdom, secrets that would otherwise have been quite happily shared with an arm of government. What would your response be to that?

Sir John Chisholm: Whether that is true or not, that was dealt with when QinetiQ was formed out of the Defence Evaluation Research Agency (DERA) and at that stage the specific government-to-government research collaboration activity was placed in DSTL. Since then there has been a very good symmetry between the US and the UK in that on both sides of that research collaboration there are government officials, DSTL on the UK side, the US to government labs on the US side, and the actual research work on both sides has been predominantly done in industry. That is true on the US side and it is now true also on the UK side.

Q214 Chairman: How much work is done with the United States by QinetiQ at the moment?

Sir John Chisholm: In total it accounts on an ongoing basis for about a third of our business.

Q215 Chairman: How does that contrast with the work that was done before the flotation?

Sir John Chisholm: Nothing happened at the flotation. Before the vesting of QinetiQ and before the introduction of private capital the amount of work done in the United States by QinetiQ was very small.

Q216 Chairman: Have my fears about the cut off of American work been realised?

Sir John Chisholm: We do far more work, for instance, with the American agency, DARPA, now than we did when we were DERA.

Q217 Chairman: That is what I was trying to get at.

Sir John Chisholm: In terms of what QinetiQ does for the United States, it is far more now than it was when we were DERA.

Q218 Chairman: So the direct answer to my question about whether my fears have been realised is no, is it not?

Sir John Chisholm: Correct.

Q219 Mr Hancock: Is that work that you are doing for the American market done in the United States or in the UK?

Sir John Chisholm: We do it both in the UK and in the US.

Q220 Mr Hancock: You said 30% of your effort is now directed to the American market. What proportion of that 30% is carried out here in the UK?

Sir John Chisholm: The majority of the volume of work is done in the US, but the research part of the work is done predominantly in the UK.

Q221 Chairman: You drew a contrast earlier when you were talking to John Smith about the approach of the Defence Industrial Strategy to the manufacturing sectors and that to research, technology and innovation. Could you describe that contrast?

Sir John Chisholm: In allocating government funds in the civil research sector, which are predominantly allocated by the OST, their policies have become strongly focussed upon placing the work in the country's strongest research centres; that is a clear policy. There is not such a policy yet, for the reasons that we have described, in the UK because the Defence Industrial Strategy has not yet got to that stage. What we are articulating in our evidence is that we would have expected a policy of that sort to emerge both because it is consistent with what the government's policy is on the civil side and also because it is consistent with the rest of the DIS. When the DIS comes to consider other sectors the DIS says that in order to preserve sovereignty and the ability of the UK to provide the Armed Forces with the best products it should focus upon the areas of real capability in the country.

Q222 Mr Havard: Are you familiar with this concept, which I am only just grappling with, that Lord Drayson came out with about technology trees? It seems to me that the technology he seems to be describing starts fundamentally at the university level and then the laboratories will feed into it and then the SMEs, up to the prime who will deliver the product. That is the production process, turning a concept into a process. The research part of that is implicit in it. Are you familiar with this concept?

Sir John Chisholm: I am familiar with the concept.

Q223 Mr Havard: Is that something that is going to drive this research and technology sub-strategy?

Sir John Chisholm: It relates to the answer I gave to Mr Hancock earlier on, that in order to get from niches of technology into something which is useful to soldiers, sailors and airmen at the end of the day you need an integrating process and this is the tree that you referred to. We play a role in that tree in bringing together technologies from the niches at the bottom end, some of which we do rely on our laboratories for but many we source from other people and we bring that together into technologies which we ourselves insert further up the tree into the equipment suppliers who often then insert that into the prime contractors and the systems of systems integrators. So there is exactly that tree where we play a role which is near the bottom but not at the bottom because below us are the niche providers in the SMEs and in the universities.

Q224 Mr Havard: So that is going to generate in part the whole question about the placing of the funding and the processes that go with the whole process then. Is that what I am going to see out of a strategy that comes from research and technology?

Sir John Chisholm: I assume that that will inform the strategy.

28 February 2006 Sir John Chisholm

Q225 Mr Hancock: This question is about the relationship between your US customers and the British side of the organisation. We are constantly told about the problems of technology exchanges and the restrictions that the Americans put on it. Are the same restrictions being put on you with regard to British-based technology and the way you can share that with the Americans?

Sir John Chisholm: We have to seek export licences.

Q226 Mr Hancock: Is that easier for you to get for the UK than it is for you to get from the US to bring it to the UK?

Sir John Chisholm: I would just make a general comment. My perception is that it is an easier process to go from the UK to the US than from the US to the UK, absolutely.

Q227 Mr Hancock: Is that going to cause you problems as more of your market is in the United States?

Sir John Chisholm: We have a huge capability in the UK and nowhere as strong a capability in the US. So our strategy is very much focused on serving our UK customers and also serving US customers from the UK. That is good for the UK. Our predominant technology flow is in the direction from the UK to the US. That is an issue for us because it sometimes limits our access to the US and it limits what we can do in the US.

Q228 Chairman: Sir John, thank you very much indeed. Is there anything you would like to add to what you have said or do you think that in your memorandum and what you have been able to say today you have covered the ground?

Sir John Chisholm: You have been very generous with the time you have allocated to me, Chairman. I am very happy.

Chairman: Thank you very much indeed for your evidence.

Witnesses: **Sir John Rose**, Chairman of the Defence Industries Council (also Chief Executive, Rolls Royce plc), **Dr Sally Howes**, Secretary of the Defence Industries Council (also Director General, Society of British Aerospace Companies), and **Mr Mike Turner CBE**, Chief Executive, BAE Systems, gave evidence.

Q229 Chairman: Welcome to all three of you. We are very grateful to you for coming to give evidence about the Defence Industrial Strategy. I wonder if I could start off by saying that in your memorandum you welcome the DIS but you state that "It will be important for the MoD to provide further clarification on what the report means for the whole of the defence industry..." Sir John, welcome. Would you like to give us an idea of what you would like to see by way of further clarification?

Sir John Rose: I think that will happen over time. The point is that this is a strategy document and the key of any strategy is that it needs to be implemented, and we will need to be very engaged with MoD, as industry and through the trade associations who are partners with industry, to ensure that the steps are taken and the changes are made both within the customer and within the supply base to ensure that we achieve the objectives that have been pretty clearly set out in the Defence Industrial Strategy.

Q230 Chairman: What about the fears that have been expressed by some people that some small and medium scale defence companies might gravitate to other sectors, such as the oil sector, do you have any views about that?

Sir John Rose: In some ways I think the DIS should help rather than hinder the SMEs. The whole objective of the DIS is to create greater transparency about the opportunities that are available to companies in their dealings with the defence customer. As you know, if you are going to try and make decisions about where you invest your money then having some clarity about where you will get your returns is pretty important and therefore this is

a good first step in improving the transparency both for the larger companies that interact with the MoD and for the smaller companies.

Q231 Chairman: You said in some ways the DIS should help SMEs. Do you think there are ways in which the DIS would not help SMEs or would hinder them?

Sir John Rose: I do not think there are any ways in which it would hinder the SMEs at all. The big step forward is in transparency.

Q232 Chairman: Do you think there is sufficient coverage within the DIS of SMEs?

Sir John Rose: I think there is. We have got to be clearer about the role of the strategy and the customer. The SMEs are part of a supply chain. Some of them will be direct suppliers to the defence customer and some of them will be suppliers to the prime. In both cases it is helpful for them to know the likely direction of investment either in the primes who are their customers or in the MoD who is the direct customer. The SMEs were involved in the debate that took place around the creation of the DIS largely through the trade associations, of which they are members, but also with representation on the DIC, so they got a good voice in the conversation. It was equally the case that the primes talked to their supply base to try and make sure that they understood the direction that this debate was taking, but my colleagues may have views to add to that.

Dr Howes: I think there has been a tremendous amount of activity working with supply chains in the industry over the last few years. Some of that is industrially driven and some of it has been very driven by MoD itself as it has taken a greater interest in supply chain relationships and supply chain

28 February 2006 Sir John Rose, Dr Sally Howes and Mr Mike Turner CBE

management. I would agree with Sir John that the direction that the DIS has given as to where the market is going, how the customer wants to be, how it wants to buy, gives tremendous clarity for those supply chain improvement programmes.

Q233 Chairman: Do you think the MoD and the DTI do understand the supply chain and the best way to manage them?

Dr Howes: For the MoD it is the start of a journey. I think there has been a lot of honesty that there is not a tremendous visibility right down to the bottom. I am not sure there could be because some of the supply chains are very large and they are very complicated. That is just the world of defence business as we see it today. So I do not think MoD could expect to have complete visibility of that, but I think that it is moving in the right direction in terms of working with industry to try and understand those relationships. The DTI, in extending that into the regions with colleagues in the RDAs and with the devolved administrations as well, it has tried to get a focus through things like the Manufacturing Forum, the Aerospace Innovation and Growth Team and the Electronics Innovation and Growth Team. A lot of that work has gone on the effectiveness of the supply chain. So no longer is the DTI looking at companies as isolated pillars but it is trying to look at performance across the supply chain. I think we are all moving and growing in the same direction. What the DIS now gives us is the customer end to really stimulate the right kind of supply chain improvements for the future.

Q234 Chairman: So the Defence Industrial Strategy is the start of the journey for the MoD and the defence industrial policy was not?

Dr Howes: Following the publication of the defence industrial policy the MoD did begin this focus on supply chain management and supply chain relationships, but I think the DIS will give it the focus that it needs. I think for me, in the document itself, on page 28, there is a diagram in there that actually describes where the MoD has been in its procurement and what its vision is. I actually think that this is a very helpful diagram for us all and particularly for industry because this shows the extent of the change. If you imagine the implications of that in the supply chain, yes, it is the start of the journey because there is clearly a lot to be done.

Sir John Rose: I think the biggest contribution to the SMEs is the recognition that having a successful domestic industry is a key objective. For the SMEs having a successful domestic industry is crucial. SMEs have a relatively short reach. Many of them tend to be taken to market through the primes or the sub-primes or the major integrators and that reach tends to be national and not international because by definition they are small- and medium-size enterprises, they cannot afford necessarily to enter other markets and it is difficult to do so and expensive to do so and takes a lot of time. So the best thing for the SMEs is a successful industry domestically.

Q235 Mr Borrow: The Defence Industrial Strategy is important in the sense that it sets a framework within which industry can operate, but the assumption behind the strategy is that industry itself will need to reorganise and reshape itself to meet that framework. Could you say a little bit about how you see that reshaping taking place and in which sectors there will be mergers and which sectors will be most involved in that reshaping?

Sir John Rose: I think we all have views on that. I think it is impossible to predict. I think industry as a whole responds to its customer. We do that in the commercial sectors and we do that in the defence sector. We will respond as an industry to changes that take place in the MoD as a consequence of the implication of the DIS. Clearly there will need to be changes in the MoD in terms of the way that they operate with industry. I could not possibly predict what will happen in terms of the central consolidations in particular. All I would say is that the nature of industry has been that over time the supply chain has become more consolidated because at the top of the supply chain there is a drive for simplicity. Let us take as an example Rolls Royce. If we developed an engine in the late Eighties we would have had 250 or more suppliers; our latest engine has 71. They are bigger and within that there have been some system integrators who have taken on more responsibility and they need to be bigger because they take on more risk, they have to take on the investment requirements, the R&D requirements and so on. I think the industry will simply respond to the demands of the customer in the way it structures itself because that is what industry does.

Dr Howes: It is probably worth just saying that on the whole when you speak to companies further down the supply chain the DIS is seen as a good opportunity for industry to transform and to prosper as long as it is able to invest and I think that will be the challenge over the next year as the sector strategies begin to develop. Many of them have milestones this year to do with setting up partnering agreements and deciding the future. As those begin to mature I think we can then judge what sort of reshaping there will be in industry.

Mr Turner: I believe industry and businesses will go where the market is. BAE Systems is a global defence company. That is why you have seen us expand in the United States, which is clearly the most important market for defence research, technology and procurement. You have seen us expand in other parts of the world like Australia and Sweden and South Africa and indeed we are now investing in Saudi Arabia in line with the government requirements of the King and the Crown Prince there to see investment in skills and employment at the highest level in Saudi Arabia, and clearly there is a market in those countries. The good news for the UK now is that at long last we have a DIS in the UK and my board and my shareholders at long last can see the possibility of a sustainable profitable future for the business in the UK and that we can, as we do in other parts of the world, supply the highest level of capability to the Armed Forces. That is what we are about, the highest level of capability wherever we

28 February 2006 Sir John Rose, Dr Sally Howes and Mr Mike Turner CBE

operate in the world to those Armed Forces in America, Sweden, South Africa, Saudi Arabia and in the UK but also making a return to our shareholders. Industry goes where the market is and now that we have a DIS I think there is a strong market in the UK which was not there previously.

Q236 Mr Borrow: Specifically on BAE Systems, you may not be able to divulge very much at the moment, but is the Defence Industrial Strategy affecting the way in which your company plans for the future and reconfigures itself and reshapes itself within the UK?

Mr Turner: Absolutely. The basic shape of BAE Systems has evolved over the last few years. You have seen us grow in the United States because it is the most important market, you have seen us reduce our investment in businesses in Europe because we believe that there is a real question mark about the future of defence in Europe compared to other parts of the world, and you have seen us investing in Saudi Arabia. Now that we have this strategy in the UK I think there is real potential for the UK defence industrial base which we did not see before.

Q237 Mr Borrow: There has been quite a bit of talk in the press in the last year or two of a merger or some collaboration between BAE Systems and another major company in the United States. Would you say that the Defence Industrial Strategy affected those issues or is that still a live issue?

Mr Turner: I think what the Defence Industrial Strategy has done is encourage BAE Systems to remain and to invest in the United Kingdom. The talk in the press some years ago about a merger was all part of a recognition by the board that we needed access to US technology. The UK no longer invests sufficiently in R&T, as I think has already been said, and therefore we needed access as a global defence company to the world's most important market. Clearly with the weakness of my company a few years ago one way of accessing the United States would have been by a merger with one of the big players in the United States. I think that is far less likely now. We are a much stronger company now and we have managed to grow organically and by acquisitions in the United States. We are now an \$8.5 billion turnover company in the United States. We have access, therefore, to other technologies, to the market and therefore a merger strategically is no longer necessary for BAE Systems.

Q238 Chairman: And you say it is far less likely.

Mr Turner: It is not necessary for us now to execute our strategy by a merger, but it does take two to tango and at the moment I can assure you there is nobody talking to us. We will keep looking for organic growth in the United States and acquisitions in the US. The budget going forward in Congress for 2007 is \$73 billion on R&T, it is huge and it is very difficult to see how the UK and Europe can match that. If the UK Armed Forces are going to have the very best capabilities that they must have to peace keep and peace make then the UK has got to have access to the very best and that is what we intend to do.

Q239 Chairman: When I asked you whether it was far less likely, as you had previously said, you said it was less necessary but you will still be looking. Can I press you on what you previously said? Is it far less likely?

Mr Turner: It is far less likely, yes, but not impossible.

Chairman: I was not asking for a commitment written in blood.

Q240 Mr Hancock: Sir John, can I take you back to your opening exchange with the Chairman when you said that one of the benefits to small- and medium-size enterprises would be transparency. I was not quite sure I understood where the advantage would be in that.

Sir John Rose: I think it is the simple business model. I think there is an assumption that the defence business has been quite easy. I think it has always been a very difficult business because it is quite difficult to predict demand. It is difficult to predict what is required, when it is required and how much will be required. In the commercial sector you have the ability to judge demand, you have population growth or travel, the requirement for electricity or whatever it happens to be, GDP growth. If you are going to make investment decisions, you want to do them with a sensible view forward of when you are going to get a return. John Chisholm made some clear points about the time to market and the time value of money. If you make an investment and you are significantly delayed in getting a return on that investment it is a very bad thing for you and therefore transparency, visibility and being able to make sensible informed judgments about where you are likely to get a return is absolutely necessary for a company that has to satisfy shareholders, whether it is private companies or publicly floated companies.

Q241 Mr Hancock: Would there not be a degree of nervousness then for some companies reading this strategy, where it states quite clearly that new platforms are to have long service lives, to learn that future defence business will be supporting and upgrading them? That, by its very nature, would make it very difficult for some companies to retain design and research capabilities that might have been there if that was not the case. Most work in the future will be on updating what is already on a platform rather than bringing new platforms into place. Does that not cause some difficulties for industry itself?

Sir John Rose: Oddly enough, I think it may be very positive, the recognition that that is going to be what is happening and that mid-life upgrades and so on, spiral development, is the way that we are going to work and that continuous technology and insertion and improvement is the way forward. The truth is that platform lives have always been very long. The B-52 is likely to be based on existing commitments and 80-year old aircraft when it goes out of service or it may even be 100-year old aircraft. It will have had technology insertions along the way, but when it started people did not think like that. If we go into the process believing that that is what will happen we

28 February 2006 Sir John Rose, Dr Sally Howes and Mr Mike Turner CBE

will be prepared to take product to market faster in its initial stages and then recognise that in time, as technologies become available, we can upgrade and improve the platform, which is what we have done, but it is a recognition today, right from the start, that that is the way we are going to conduct business.

Mr Turner: It is a recognition of what the reality is. There has been far too much attention paid by MoD in the past to the initial side of procurement. When you look at the expenditure through life, it can be up to four times on support and upgrades of weapons systems. The fact that the MoD is outsourcing more to industry because it can be done cheaper and more effectively is a real opportunity for the supply chain to play a much more significant role. I think it is good to see the focus on through life support and upgrades. The fact that the primes in the UK can now see a long-term future in that regard is not only a benefit for the primes but for the route to market for the SMEs which is far clearer and more specific than it has been in the past. I think it is a very good thing.

Q242 Mr Hancock: The strategy also states that the MoD themselves do not envisage needing to design and build a future generation of manned fast jet aircraft beyond Typhoon and JSF. If JSF was to fail and not be delivered, would we be in a position to marinise our own version of Typhoon? If we were to go down that line, in view of the French interest in them buying one of the carriers, would we be interested in doing a joint venture with the French on that version? Is it something that industry has the capability to deliver or would want to deliver? If we do not have any capability or need for a fast jet aircraft in the future, how does the company see their future in that regard?

Mr Turner: Of course, we are talking about a long time into the future. We have a lot of work to do on fully developing Typhoon. As you know, it was initially designed for both air-to-air and air-to-surface capabilities. So far all we are doing is optimising the air-to-air and, in due course, we will proceed to optimise the air-to-surface. There are many, many years of further development for Typhoon and work for our engineers and for our shop floor in the years ahead. Joint Strike Fighter has a long, long way to go. It is a very complex programme. It is an excellent programme that we, BAE Systems, and, indeed, Rolls Royce are involved in. There will be a lot of work for many years to come. It is important, as you know, that we obtain the technology in the UK from Joint Strike Fighter so we can play that role in supporting and upgrading the fighter when it eventually comes into service. I am sure there will be delays on JSF—these weapons systems are incredibly complex—and when it comes we do want to play a role in supporting and upgrading it, but with Typhoon, with Hawks, with Nimrods, with JSF and with exports we have a very significant future that we can look forward to.

Q243 Mr Hancock: The Minister, in answer to a question yesterday in the House, said that they had contingencies from A to Z on the understanding that

if JSF did not materialise they had a whole series, and he actually went through the alphabet but did not tell us what they were. I am interested to know whether or not it is possible for you to foresee a situation where Typhoon could easily be adapted. The time is not that long. In eight years we will have one carrier in the water. There is no certainty that we will have the plane to follow for that.

Mr Turner: I am not sure when we will have the carriers in the water. That is still to be determined.

Q244 Mr Hancock: The Government gave evidence here saying that they were sticking to their programme, which suggests that by 2014 there should be one of them floating in Portsmouth harbour?

Mr Turner: We are leading the programme and we do not know when we will be able to give an in-service date or, indeed, a budgetary cost for the programme.

Q245 Mr Hancock: Maybe we should have asked you, not the Minister.

Mr Turner: That is where we are, and hopefully in the next 18 months we will have a better view of the in-service date and the budgetary cost for the carriers. Indeed, it is possible to navalise Typhoon. It is not what we would recommend, because if Joint Strike Fighter proceeds, and we believe it will, I think, in terms of capability for the Armed Forces of the UK, it is the right aircraft, but, indeed, as Lord Drayson has made clear, there needs to be a fall-back in case something goes wrong. Therefore, we would suggest there should be an investigation into navalising Typhoon as very much a fall-back solution. We do not see any other fall-back solution.

Q246 Mr Hancock: Is that going on?

Mr Turner: No.

Q247 Mr Hancock: You have not been asked to do that?

Mr Turner: No.

Q248 Mr Hancock: You are not doing any work on your own bat on that?

Mr Turner: We have done some work on our own. We know that it is possible. What we need to do is to do some more funded work to look at what would be involved in navalising Typhoon, what the programme length would be and how much it would cost.

Q249 Chairman: But it is not just in case anything should go wrong that there needs to be a fall-back, surely. If there is no fall-back, then it makes it more likely that it will be harder to get technology transferred from the United States, does it not?

Mr Turner: That is my view.

Q250 Mr Havard: I would like to ask you not about changes in industry but changes in the MoD. The Minister has said in the past that they would need to change also in order to accommodate the new strategy. What is your view at the moment of what

 28 February 2006 Sir John Rose, Dr Sally Howes and Mr Mike Turner CBE

the MoD is doing in terms of change? Are these changes taking place or do you see a static organisation? What is your view of the changes that are taking place in the MoD to accommodate the Strategy?

Sir John Rose: I think it is too early, candidly. The Strategy was only published in December. There is evidence of change already, but you have to remember that you have got an organisation that has spent a long time operating in a different way and, therefore, inevitably, it will take some time before the sorts of changes that are implied by the *Defence Industrial Strategy* really manifest themselves, but there is no doubt that the conversation that took place between industry and the Ministry of Defence around the DIS was as helpful a conversation as we have had in the last 15 years. It was conducted well, it was very open, the way that it was handled encouraged openness on both sides and I think the outcome of the *Defence Industrial Strategy* reflects that. Clearly, the Strategy is only as good as the implementation.

Q251 Mr Havard: Perhaps we can come to that a bit later on. The other thing, interestingly, that you said, Minister, earlier on was that perhaps in the past the emphasis has been on acquisition and the changes are going to have to be related to through-life processes and upgrades. The question has been raised in the past that it has been too slow and too expensive in terms of the MoD's response for industry and that the MoD's procurement processes and decision-making processes need to be in some way revised. What is your view of that? We have taken some evidence about the DPA and all the rest of it. There is both the procurement decision-maker and the actual process that delivers it. What is your view of changes there?

Mr Turner: It takes a long time. I think the big companies like BAE Systems can afford to continue with studies and with quotations and negotiations, but for smaller companies—I was on the Board of Babcock's until last year—it is very expensive continuing to run these competitions and delays happen. Yes, we would like to see the acquisition process speeded up, but I think fundamental to this is the investment that needs to take place at the beginning of a programme's life. In the past we have not as a nation invested sufficiently in derisking programmes and establishing the realistic in-service dates and budgets for these programmes, and that needs to take effect. We have shot ourselves in the foot as a nation by going out there and saying, "It will be in service then. It will cost so much", but we have not done sufficient work. These are highly complex weapons systems, as I have mentioned, and we need the early study works, indeed, to see if the programme is viable or not. We have not done that in the past. I think with the DIS we are moving in the right way. There is a recognition that we will be shooting ourselves in the foot as a country and undermining the defence industrial base by making it look as if we do not give value for money when in fact we do. If you look at the value for money that the UK defence industrial base gives compared to

anybody else in the world in terms of cost and programmes and sophistication of capability, it is second to none, and we need to stop doing what we did in the past.

Q252 Mr Havard: The Defence Industrial Council is, presumably, a body that some of these discussions will come back to in some fashion. The Integrated Project Team, the whole question about project management processes, has been at the heart of this whole discussion about the flexibility and fleetness of foot, or otherwise, of the DPA and other processes. What discussion is going on in the Defence Industrial Council in relation to that?

Sir John Rose: That is a very broad question. The DIC is really about policy and strategic issues. It is not a programme management body. It is there to deal with the overview, as it were. There is a breakdown structure that goes below that and that will report into the DIC.

Q253 Mr Havard: It presumably informs the work of the MoD itself and the DPA, and so on, in how it should make its change?

Sir John Rose: Yes, it does. You will remember, we meet a couple of times a year at the NDIC and those meetings are now scheduled in, we hope, for the next 18 months or so. We meet as a DIC reasonably regularly and we take input from the team leaders who are interfacing with the MoD in the specific areas that we have agreed that they should, but, ultimately, we are there to suggest strategy, to inform policy and to monitor progress. Sally, you are the Secretariat, why do you not add to that.

Dr Howes: There are a couple of specific things that are now under way within the MoD, particularly looking at acquisition change. Tom McKane is leading a review looking at what change is needed to implement the DIS. It is a small team within MoD, which is appropriate, but industry is involved in that; so people are contributing their thoughts about the acquisition process and their experiences into that. That is on a short time-scale—it is going to be reporting at the end of May. Certainly the outcome of that kind of work is the sort of thing that the DIC would be very pleased to look at and to provide comments on, but I think there is also something much more practical and tangible that is going on which, again, was defined in the DIS. Two Pathfinder programmes were defined. These are activities where MoD and industry will work together to explore what through-life capability management is and the implications of that on the MoD side and on the industry side as well. Some of the joint industry MoD groups that Sir John was describing were, if you like, the source of defining these ideas during the last year. It was picked up in the DIS, it is being taken forward now and we think these will be very valuable experiences to push through. They are not project-by-project, they are collections of projects, which is also very helpful. It is trying to find what the new acquisition processes should be.

28 February 2006 Sir John Rose, Dr Sally Howes and Mr Mike Turner CBE

Q254 Mr Havard: So this is giving a real description of this diagram on page 29³?

Dr Howes: That is exactly right, yes.

Q255 Mr Hancock: Can I go back to the point about derisking. I think there is an issue there and I think the two carriers and the way that is being done possibly is the start. Just to give an example, the Astute submarine programme is a billion pounds over budget and four years late. I cannot imagine that the derisking on that would have been anything but very expensive. Who pays for the derisking?

Mr Turner: The derisking on Astute that GEC received was zero. They were encouraged to enter into a competition to design, develop and supply three nuclear attack submarines with no prior knowledge of any of that, and I think that it is completely wrong for the defence industrial base of the UK. They clearly, as a company, had a strategy to go into a prime systems capability. At the time it was the only way that MoD was prepared to do business. What we are now seeing, and what I think is well recognised, is that it is the wrong way of going about this business. Indeed, Smart Acquisition many years ago recognised that the need for investment upfront—derisking—paid for by the customer: because it is the customer that has to take that risk until such point in time as the risk is understandable by industry and then industry can take the risk on.

Q256 Mr Hancock: But I am interested to know who fixes the price for the derisking?

Mr Turner: There is no price for derisking.

Q257 Mr Hancock: I think you said the customer pays, but the Government cannot just say, “Tell us what it is going to cost for you to take all the risk out of this”?

Mr Turner: No, there are milestones. In a design and development contract you have milestones for the programme and, as those milestones are achieved, you then move on to the next milestone. These complex high-tech programmes have to be milestone driven, and, yes, it is not an open-ended budget, but what MoD now do is allow a certain amount of money to get to the next milestone and, if sufficient risk reduction has occurred, you move to the next milestone. When you get to a sufficient point that you fully understand the programme and have derisked it to an acceptable level, then industry can step in and take the risk, but not until then.

Chairman: Can we move on to partnering arrangements.

Q258 John Smith: My questions are directed to Mr Turner. In a number of areas now the MoD is moving towards long-term partnering agreements. Your company is becoming, in a number of cases, the sole supplier of these long-term contracts. Two years ago you told the Public Accounts Committee (and you referred to it earlier), “There are far more attractive markets in the United States if the MoD’s

terms of trade do not change.” Have those terms of trade now changed, do you think, to your company’s satisfaction and, if so, in what ways?

Mr Turner: I think what has happened over recent years is that the terms of trade have changed in the way I have described with the customer (MoD) taking that initial risk recognising that it has to take that additional risk in the complex design and development phase and then industry taking on the risk when it is understood. For BAE Systems, I think the change in the terms of trade and the DIS actually having a strategy for the defence industrial base for this country is very, very significant. Whilst the US remains a more attractive market in terms of the attitude towards profit and in terms of wanting industry to make a 15% return on defence contracts, where it is about 8% in this country, therefore if you were starting from scratch you would not be investing in the UK, but we are in the UK and we now believe that, with those profit rates only at 8% compared to 15% in the US, there is sufficient attraction in sustaining the capabilities in the UK now because of the DIS and because of the more acceptable terms of trade. In fact there are a significant number of key plus points to come out of the DIS: the recognition of partnership instead of competition, partnership that recognises the real issue is value for money not just competition to find the lowest initial cost and then real problems downstream; it recognises partnership, it recognises the importance of systems engineering and integration at the highest level in air, land and sea—and that is where BAE Systems plays a role. The UK is now becoming a far more attractive market. Even though there are lower profit rates, as I said, we can see a sustainable business in the UK forum for our company.

Q259 John Smith: I think most people agree that the Strategy is welcome in terms of identifying future market opportunities and in what direction Government is going in the future in terms of its defence thinking, but one of our witnesses in an earlier session suggested that the shift away from competition towards partnering is not necessarily in the interests of your company or other defence companies in this country in the longer term because you will not be exposed to such competitive pressures in the UK domestic market. Is that a concern?

Mr Turner: No, I think competition has been a disaster for the UK defence industrial base. I think, frankly, if it had continued, you would have seen the end of prime systems capability in the UK, in UK, Companies. We are not in the fortunate position of the United States. They have a number of primes. They have Boeing, Lockheed, Northrop, Raytheon, GD, and, indeed, now, BAE Systems North America. All we have in the UK, overwhelmingly, is BAE Systems in air, land and sea and, in fact, now we can see a sustainable way forward with a strategy for the first time ever in this country, championed by John Reid and Lord Drayson, and thank goodness for that. If competition had continued, allowing foreign companies to play the UK tactically, I think

³ *Note by Witness:* The page number is, in fact 28 and not page 29.

it would have been a disaster in the long term, and you would have seen the exit of prime systems capability in the UK with overseas companies offering lower-tier technology to UK companies but then the through-life support and upgrade would not be possible, it would be dependent on foreign entities.

Sir John Rose: May I just add to what Mike has to say, which is that it is not only partnership. I think it is really important that we remember that the DIS is very clear that there are areas where partnership is the right answer and there are areas where competition is the right answer. None of us, as suppliers to the MoD, can make sense of a business that is simply about supplying, in a partnership arrangement, to the MoD. In order to be successful we have to have a product that is capable of being sold overseas against competition. There is plenty of competition around, with no shortage of competitive pressures in all the markets which we try and serve, including the US, and, like Mike for Rolls Royce, the US is our biggest defence customer, and it has been that way since the early nineties, so we have had plenty of exposure to competition. The danger was that the sort of competition that was being exercised here meant that you were competing against a marginal cost supplier, in effect, and that does not make any sense if you are trying to retain a sensible industrial base. That does not mean that you have to retain all capabilities, it does not mean that partnership is the only answer, but it is one of the answers, and that is what the DIS says.

Q260 Chairman: Mr Turner, when you said that competition has been disastrous for the defence industry, would you repeat it as baldly as that or were you referring to competition from overseas?

Mr Turner: I think that the competition policy of MoD allowed overseas companies to see an opportunity in this market to wipe out the prime systems capability of the UK indigenous defence base. BAE Systems, British Aerospace, did not need a competition policy to say it needed to be competitive globally. Look at how many Hawks we have sold overseas, how successful we have been as a business in exporting. I believe we are the number one manufacturing exporter from the UK. We only export because we are competitive. We are competitive in world terms.

Q261 John Smith: Again, we have received a number of statements from witnesses expressing deep concern about the future development of BAE Systems being in a position of the sole monopoly supplier taking on board the views, in terms of international competition, of a global market. A number of very strong comments have been made in terms of BAE Systems possibly developing a strangle-hold on British defence procurement policy and that this document, the *Defence Industrial Strategy*—and this is contained in written submissions to this Committee—conflates the interests of a single British company with the interests of this country. What power does a British Government have to retain your company in this

domestic market if you choose to go elsewhere? It will have no power at all—not at the moment, but this is a possible future scenario—because it has no other supplier whatsoever to turn to within the UK domestic market. What are your views on that?

Mr Turner: BAE Systems (British Aerospace) for decades has had a monopoly on air systems, but it has been very good, very healthy for the UK. It has provided the best aircraft in the world in training and in fighters, and not only for the UK but for the world air forces, and it has provided a very healthy income to the United Kingdom. It has been good for British Aerospace in the past, but it has also been good for the UK. We have now a very significant position also in land and naval, and I hope that we can go on in land and naval, as we have done for the past decade, to be a success for BAE Systems in the UK. It has been very good news. You are right, the Government has no real way of stopping BAE Systems leaving these shores, but I can tell you that with the DIS, backed by John Reid and Lord Drayson, it is now becoming an attractive place to do business, which it was not. It was a very unattractive place to do business in the nineties and the early part of this decade, and it is now changing, and that is good. It is good for BAE Systems and it is good for the UK.

Q262 John Smith: One final question. One of our witnesses, Professor Hartley, suggested that if this monopoly situation were to develop extensively within the British defence market, there might be a case for regulating your company as a utility. Do you have a view on that?

Mr Turner: We are regulated by, in 1968, the Ferranti affair, with outrageous profits. Then there was the Laing Report that said that we needed a profit formula based on the cost of production and capital employed. That is what we have got. We very much have a regulated profit. I am afraid it is set at 8% for my company, compared to 15% in the US, but at 8%, with sensible terms of trade and the DIS, we can see a return on capital for our shareholders. We could not see that before. We are regulated.

Q263 Mr Borrow: Can I come on to the specific area munitions. Under the DIS, BAE Systems have a dominant role in supplying munitions to MoD. Obviously there is an issue at the moment around the possible closure of Bridgwater and Chorley ROF sites. The closure of those sites would lead the MoD to be dependent upon foreign suppliers for certain munitions because they would no longer be produced by BAE Systems within the UK. I want to ask Mr Turner the extent to which that is a problem for the MoD. The DIS in many ways is seen as a document which strengthens and supports the defence industries in the UK, but at the same time we are seeing, or potentially seeing, the closure of capacity and dependence on overseas suppliers for key parts of military equipment or, in this case, munitions?

Mr Turner: In fact, we are being consistent with the DIS, because it is quite clear that the MoD cannot afford to invest in R&T and procure everything from

28 February 2006 Sir John Rose, Dr Sally Howes and Mr Mike Turner CBE

the UK defence industrial base. In the case of Chorley and Bridgwater, indeed, we are closing those sites because it is not economic for BAE Systems and the UK to keep those sites open, but where we are investing is in insensitive munitions. The raw materials (the explosives), when they are supplied (hopefully from a reliable source), and, indeed, security of supply will be an issue when we go to new suppliers for those raw materials. Indeed, the investment we are making in mixing those explosives into insensitive munitions, it is a world-beating technology that BAE Systems has and it is what we supply to the UK Armed Forces. That is where the DIS is focused, and rightly so, at the top end of technology, insensitive munitions. We cannot afford in this country to keep the supply of raw materials at an economic level. We cannot afford it.

Q264 Mr Borrow: Would you agree that there is legitimate concern on behalf of the UK taxpayer and the UK military that closure of these two facilities could take place before we have actually nailed down and secured long-term supplies of alternative munitions?

Mr Turner: We would not do that. There is no way that we would finish off manufacturing the raw materials that we currently do without being fairly sure that we had a secure supply for those materials for the UK Armed Forces.

Q265 Mr Borrow: Are you in a position to give an undertaking to the Committee this morning that Chorley and Bridgwater will not close until such time as a secure alternative supply of those munitions has been sourced to the satisfaction of the MoD?

Mr Turner: That is part of the process that we are going through now. Absolutely.

Q266 Mr Hancock: Why is it that the product that we manufacture currently is not good enough for you to export to keep the business going in the UK?

Mr Turner: We do not demand sufficient of it in the UK, so we are below critical mass.

Q267 Mr Hancock: There is not an export market for it?

Mr Turner: No. We cannot be competitive at that level of technology, the raw material level.

Q268 Mr Hancock: Why is that? What is the problem there?

Mr Turner: Because other countries can do it cheaper and more efficiently in that area than we can. We invest in BAE Systems in the higher technology.

Q269 Mr Hancock: Is it because of lack of investment in the past in these plants?

Mr Turner: We have to be selective where we invest our R&T, and we have selected to invest our money at the very top end of technology in systems engineering and systems integration. I think it would be wrong to invest in the bottom end of technology. That is not the future for this country.

Chairman: We are moving on to research and technology.

Q270 Robert Key: Mr Turner, I wonder if you can tell us roughly how much your company does spend on R&T.

Mr Turner: We spend about £100 million of our own money on R&T in the UK and about £100 million of our own money in the United States on R&T.

Q271 Robert Key: Sir John, I wonder if you can tell us roughly how much Rolls Royce spends on R&T?

Sir John Rose: We spend gross over £600 million every year, net about £250 million, of our own money. About 20% of our total R&D spend is on research and technology acquisition, i.e. the raw materials of product development. About half of that is spent overseas and half in the UK. We used to spend 100% in the UK.

Q272 Robert Key: Those are very impressive figures, and I would have expected nothing less from world class companies, but it is not that amazing compared to the British Government spend of about £250 million a year on R&T? This worries me very much indeed: because right through the *Defence Industrial Strategy*, on almost every page, there is reference to the importance of investment in R&T. It says nothing about increasing the Ministry of Defence budget on R&T. It says that we have now dropped to 1.9% of our GDP spend on R&T, it laments the fact that countries like China and India are going to be increasing massively their R&T but we are not. Were you as surprised as I was that the Government made no mention of any increase in R&T spend?

Mr Turner: I am afraid it is all part of that disastrous policy that I talked about. We had Peter Levene, in the late eighties, come in and say that we are going to have a competition and we are going to buy more off-the-shelf and, as a result of that, we have stopped investing in this country in defence R&T. This country has had an absolutely tremendous return from the investment in defence R&T, but I am afraid it is not a priority for this country any more. There is a very different attitude in this country to defence and security than I see in the United States, and that is why it is \$73 billion in the United States next year and a very low figure in the UK.

Sir John Rose: I think you have got to read the DIS in conjunction with the work of the AEIGT, which did have, at the end of it, a recommendation that was endorsed by the MoD, the Treasury and the DTI for an increase in spending. We have not seen that come through yet, though there is some evidence that there is some increase. In our case we have seen something like a 75% decline in real terms over the last 15 years in MoD investment in R&T. It is part of the point that Mike Turner made earlier about derisking. Historically the MoD invested in R&T that was specific to the defence needs and in demonstrator programmes, which were the mechanism for derisking. We would like to see a return to that because it is very important for the customer and for industry to prove technologies before their insertion, and demonstrator programmes are the key

mechanism for doing that. They have proven to be successful in the past, they were key to the success of Typhoon, as an example, but those were demonstrator programmes that were funded in the eighties initially. There is a recognition within the DIS that there needs to be an increase in the amount of R&T spending and that there needs to be a hierarchy that involves the universities, that involves industry and involves the industry partners and involves the MoD. I would just make one slight correction. The tree that you talked about does not have universities, then SMES, then primes. Very little R&T takes place in SMEs. They participate in some R&T programmes, but it tends to be driven by the larger companies, and the universities are a key part of that.

Q273 Robert Key: The DIS talks too about the importance of looking towards Europe in relations both industrially but also in terms of research. There is quite a lot of duplication in research and technology, is there not, across Europe? Would it be practical for this country to take a lead perhaps in rationalising that, preventing some of this waste in the same way that you suggested there has been a lot of waste in the previous models of defence procurement in the past? Am I right, first of all, in your experience, that there is duplication across Europe?

Mr Turner: There is duplication. You have seen that with Rafale, Typhoon and Gripen. I think the fundamental problem, though, that Europe has got is that it is just not spending enough on R&T generally. There is duplication, yes, but when you compare Europe with the appetite for spending on R&T in the United States, the great concern that we have for our Armed Forces is how are they going to get the capability to be able to peace-make and peace-keep alongside the United States? That is why we have stressed that when we do acquire from the United States, as we will have to in certain areas because we clearly cannot afford everything in this country any more, we need to get the highest level of technology transferred across to the UK to sustain the capability for the support and upgrade through life. Yes, there is a case for trying to get Europe to get the act together, but who is going to move first? Everybody wants the technology in their country, everybody wants the highest level of technology jobs in their country and there is a very limited amount of resource available anyway for doing it. I am not optimistic about that.

Q274 Mr Crausby: Sir John, the Defence Industries Council tells us that it is keen to work constructively with the MoD to ensure an effective implementation of the *Defence Industrial Strategy*. How involved is the DIC with the implementation of the DIS and are you satisfied? Is it clear to industry who is responsible for implementing the various aspects of the DIS and in what timescale? The SBAC suggests that ministers are looking to a two-year period for

the implementation. Do you agree with that? How will industry in the long-term measure the success of the *Defence Industrial Strategy*?

Sir John Rose: I think we would all like to input to that answer. I would start by saying that I think Sally Howes has covered a lot of the answer in her earlier comments. We have got the first of our post DIS/NDIC meetings tomorrow. We will have regular meetings with the MoD, and tomorrow very much on the agenda we will be trying to work out exactly how we do monitor the progress, but clearly the big items are going to be do we see change in the effectiveness of the programmes that are delivered, do we see changes in the way that MoD procure and are structured and do we see changes in the way that industry interfaces with the MoD? There are going to be a lot of sub-mechanisms, as Sally mentioned earlier, where we look at different components both through the DIC mechanisms but also in terms of the individual company's interface with the MoD.

Dr Howes: I think all of the actions that were suggested in the DIS are being undertaken one way or another. We are satisfied that the bases are being covered. It is very clear that this is going to require some strong leadership to keep all of this together during the period. As Sir John mentioned, the NDIC is scheduled to meet four times rather than two, which is normal, this year, and we have an agreed timetable for check-points and for looking at the progress of the implementation itself. I think it is early days, but we see activity under each of the headings.

Mr Turner: I can tell you what is happening in BAE Systems on implementation. On air, land and sea, clearly where they were specifically clear in the DIS on the future importance of the highest level of systems engineering and integration in the UK, we have a very senior lead within the company on air, land and sea in discussions with somebody in MoD, appointed by MoD, to agree the partnering arrangements, milestones, in taking the DIS forward. We were fortunate on the land side that Lord Drayson and I, on the day of the announcement of the DIS, signed the milestones for taking land systems support and upgrade forward, and we are now working together on the air side and on the naval side to put similar partnering arrangements in place, to set milestones in place, to prove that we can deliver, as we say we can, against certain milestones. The biggest issue for us, though, is the cultural one, the relationship over many decades now between the DPA and industry. That is where there has got to be the most radical change. We have proved, in partnership with the DLO, that there are great savings to be made on support and upgrades by working in partnership to improve the availability of Nimrod Mk IIs, of Harriers, of Tornados, at reduced cost to the taxpayer, and we believe that, by working in partnership and working in a similar way with the DPA, we can deliver savings to the taxpayer on the initial equipment, but I think that is a big challenge.

Chairman: That is very helpful evidence. Thank you all very much indeed for coming this morning.

Witnesses: **Lord Drayson**, a Member of the House of Lords, Minister for Defence Procurement, **Mr David Gould CB**, Deputy Chief Executive, Defence Procurement Agency, and **Mr Mark Gibson CB**, Director General, Business Group, DTI, gave evidence.

Q275 Chairman: Minister, gentlemen, welcome to the Committee to talk about the *Defence Industrial Strategy*. The *Defence Industrial Strategy* was originally expected on 20 December, and I think you produced it four days earlier. Minister, I ruined your career, I suspect, by praising you in the House of Commons and saying that it was the first procurement project that I had heard of that actually came in early, yet it was produced at quite a lick. Given that, do you feel that there were any areas which, perhaps because of the quick time scale, were insufficiently covered within the *Defence Industrial Strategy*? I ought to say in context that it has been generally well received, but, having put that in context, are there any areas which were not as well covered as you would have liked them to have been?

Lord Drayson: Thank you, Chairman. Before answering your question, may I just say that it is with deep regret that I confirm the death of two British soldiers killed by terrorist bombs as they carried out their duties in Iraq this morning. Our thoughts and our deepest sympathies are, of course, with the families concerned.

Q276 Chairman: I am sorry. I was not aware of that. Thank you for mentioning it.

Lord Drayson: Chairman, I appreciate the comments which you have made about the DIS, and you are absolutely right that we set about delivering the DIS to a very tight timescale. The reason why we did that was because we had had clear feedback from industry that they were going to be making decisions towards the end of the year, into the early part of this year, where there really did need to be a clear framework as a good basis to take those decisions. We also knew that we had some important decisions to take on some of our key procurement projects, for example, like Carrier, which were far better taken in the context of the DIS. Therefore, it was important that we delivered it by Christmas. In terms of which areas do I feel were not sufficiently covered, I think we need to recognise that the DIS focused on the areas which we regarded as being the most high-priority in terms of the issues which we were faced with, and therefore there was a difference in terms of the depth into which we went in the different sectors reflecting the relative market conditions and the issues which we faced. Answering your question directly, we do see that there is further work which we need to do to build on what is in the *Defence Industrial Strategy* around areas such as research and technology—I am happy to go into the detail of what we are doing on that—in terms of areas related to small and medium-sized enterprises and the relationship between the Ministry of Defence and SMEs. These are areas which are covered within the DIS, but we certainly feel that they are areas which we need to further build on quickly this year, and we are doing so.

Q277 Mr Havard: Can I pick up the whole area of SMEs. It seems that the Strategy is an overview strategy in a sense. Within it there are other

strategies presaged, like the *Marine Industrial Strategy*, and so on. One of the things that interested us was which sort of sectors were involved or not involved. What you are saying is some are more heavily involved than others, but this question of how small and medium enterprises were involved is of particular importance. It has been suggested to us, for example, that some of the small to medium enterprises might look to gravitate to other sectors because they find it too difficult participate in the long term in the defence industry. What is your view of how SMEs are going to be given proper visibility and avoid that problem?

Lord Drayson: I believe that it is vitally important that we do everything that we can to improve the way in which we work with SMEs. I have 20 years' experience of growing and building technology companies from start-up and beyond, and I know how challenging it can be. In this particular industry, because for my SMEs their route to market is through the larger companies, the primes, I think there is a dual responsibility, which is clearly set out in the DIS. There is a responsibility on Government, on the Ministry of Defence, to actively work to find ways to provide the clarity and transparency in an efficient way that small companies, who do not have the resources of larger companies, can digest and manage effectively, but there is an equal responsibility on the part of the larger companies, who are often their route to market, to provide that clarity too. The way in which we are actively doing that is to switch our focus from a specific focus around projects and about companies in terms of looking at the supply chain, and so one of the ways practically we are going to improve this is by assessing the larger companies on the basis of how good they are at having real knowledge of their own supply chains, how good they are at being able to explain to us the technology trees that they have in certain capabilities such that we can see the relative effectiveness of the larger companies in having a real understanding of which SMEs are vital to the production of the defence capability. Also within the Ministry of Defence—it is not published within the DIS, but a lot of underpinning work was done on the DIS in terms of fully understanding these supply chains—we have gone into a lot of detail in the individual sectors and asked ourselves the question: where are the really important areas of skills and knowledge, which companies are they located in and do we have proper visibility of the health of those companies and how they fit into the bigger picture? That is something which we have done in a considerable amount of detail and that is something which we are going to continue to build on. We also need to make the MoD easier for SMEs to deal with, and we have done that by issuing on our website a sort of “who's who” such that small companies can easily look up, if they think they have a service or a product which may be of interest to the MoD, who they need to contact. It is the first time we have done that. That

 28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

is another example of how we are trying to make ourselves more user-friendly to the SME community.

Q278 Mr Havard: It was suggested to us this morning that part of the difficulty that SMEs who would like to participate in these areas, and do (and some people do not understand that they do currently actually), is that they have national reach, they do not have international reach. There is a responsibility to involve them from that point of view. They cannot really get involved in an international defence market because they do not have the resources to do it.

Lord Drayson: I have spent some considerable time looking at this, and I have been quite impressed when I have gone to see small companies. There are some excellent British small companies who successfully compete internationally in specialist markets—they are really good at it—and we need to make sure that we give them every support that we can. I think we have a very effective organisation in derisking which is pretty much unique within the international market, but when you look at these supply chains it is very clear that in many areas of defence capability there are some vitally important small and medium-size enterprises, and we need to make sure that we have got a clear focus on this, and I think we need to improve the visibility. One of the interesting things for me, coming from the pharmaceutical industry into this job and looking at the *Defence Industrial Strategy*, was some of the feed-back which we got from the stock market analysts about the defence industry and the lack of clear visibility in the mind of investors of how smaller, innovative, high-growth defence companies grow into larger ones because of the nature of the complexity of the systems, and so forth. I think we need to do more to help the industry have that visibility.

Q279 Mr Havard: The accusation, if you like, that has been made by people who have given evidence to us is that the problem is that you have visibility to some degree of the first level of the supply chain but you are not so good at understanding the second, third levels. If your declaration is that these people are going to help them deliver the key industrial capabilities, you need to get underneath the first level and down to the second and third level. As I understand it, you have made speeches elsewhere and you talk about a commercial services group being established, you talk about work with the trade associations, and so on. Are these part of the mechanisms you are describing to do this work and how is this work going on, apart from what you have already described?

Lord Drayson: I have a personal commitment to make it happen. I have some experience in helping people at the other end in terms of running these sorts of companies. I know some of the challenges from my own personal experience, and what I am driving in the Department is a real emphasis on looking at the way in which we do business, coming up with specific actions to make it easier—I have

mentioned some already. We also need to recognise what the Department is already doing. If you look at government policy in terms of the proportion of contracts which the Government would like to see placed with small, medium-sized companies, the MoD spends way more than that, so we are already spending a considerable amount of our defence contract with the small, medium enterprises. We have got a range of initiatives in place. The DIS sets out how to do this, if you like, for 2006 and all the things that we are doing, and it is my job, in terms of being accountable for the implementation of the DIS, to see that these things happen. What I am looking for is that next year (2007) we are starting to see evidence that it is making a difference. I am actively spending amounts of time talking to that community, getting that feed-back to make sure it is making a difference.

Q280 Mr Havard: You have said that you are “assessing” companies in terms of how they actually manage this process themselves, the larger companies, the primes, and so on. As I understand it, you have made statements about the joint management of SMEs by the MoD and the primes. I am not quite sure what that means. All of that is all very well, but the MoD presumably, which you have responsibility for, is changing its practices and taking a particular view. How is that being done in concert with the Department of Trade and Industry?

Lord Drayson: It is very important that this is joined up government, and the DIS sets a good basis for this. This was a joined up process, and we have taken on board a lot of the input which we have had from the DTI on the way in which this is done. It is important for me to stress that it is not about managing companies. It is not our job to manage companies, but it is our job to make sure that we properly understand and manage the complexity of the supply chains. The challenge within defence is many of these systems which deliver the military capability are very complex and involve many different companies coming together effectively. The way in which we do that jointly with the large companies is both the MoD and the larger primes having clarity on, for example, the technology tree. If you take a particular capability and you look at what is the tree of support for that technology going right down into the research, sometimes into the universities themselves, you have clarity over that and the way in which we judge a large company is on how well does that company really understand this and does it actively manage it. If not, this is where we need to work together to encourage that to be done better.

Mr Gibson: To add to that from a DTI perspective, we have a small aerospace marine defence team of about 25 people, with about five people working on defence, but we do have a formal relationship management with the 15 largest aerospace and defence companies. We have quarterly meetings with them and we have reinforced the messages in agreed Government documents like the *Defence Industrial Strategy*. We also work pretty closely with the regional development agencies, who have clear

28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

sector leads now to the south-west RDA, and we expect them to have a good relationship with the supply chain and to work with them to try and improve productivity, and there are regular meetings between the DTI's aerospace and defence team and the RDA contacts who lead in this sector. We are trying to reinforce the messages all the time, both in the primes and through the RDAs, with the supply chain.

Chairman: So the sector lead for defence is in the south-west.

Q281 Mr Havard: For England.

Mr Gibson: For England.

Q282 Chairman: BAE Systems is based all round the country but its centre seems to be in Warton, which is not in the south-west. How does that work?

Mr Gibson: The north-west RDA does take a really close interest in the aerospace industry. The Chairman of the north-west RDA is Bryan Gray, who is on the Aerospace Leadership Council. He has been involved in the whole aerospace strategy for the last three or four years and he takes a particular interest in aerospace issues; so he is closely involved and talks to BAE regularly in the north-west.

Q283 Mr Crausby: The *Defence Industrial Strategy* states that industry will need to reshape itself, and you, quite rightly, are demanding a substantial change in a number of sectors. Is industry willing to reshape itself into the shape that you require, how painful will this be in terms of jobs and over what timescale do you envisage that reshape?

Lord Drayson: This is a ten-year process. The point of the *Defence Industrial Strategy* is to set out clarity to industry about those areas in which we expect to have an increasing requirement, those where we expect a decreasing requirement to take place and to give industry that clarity to enable them to plan ahead. This is not about changes happening tomorrow, next month, this year. It is about changes which need to take place over a period of time to get alignment between the defence industry's capabilities and our capabilities in terms of our security and defence priorities. The pain comes from that change, but change is always painful. One of the big changes which we are asking in some sectors is for industry to put less of a focus on the design and development of new platforms and more of a focus on the insertion of upgrades and new capabilities and through-life maintenance of existing platforms. That is, for some companies, a change of culture in terms of their type of business and that is difficult for them to do. It is for industry, though, to step up and do it. It is not, we believe, the role of government to manage this process. The role of government is to set out, as we had in the DIS, what it is we need, what our priorities are, where we regard it as essential to our defence interest to have a capability in the United Kingdom and then to expect industry to respond to that. The pressure on industry to do so, I think, will come both from the fact that this clearly sets out where the key growing markets are, and you would expect management to therefore reflect that.

We need to work with industry to facilitate this process and to manage it as well as possible, and I am saying to industry, pretty bluntly, this needs to start now. The evidence that industry is responding to it, I think, is beginning to be there. I have been encouraged by what I am seeing just in the first few months after the publication of the *Defence Industrial Strategy*. In some sectors we are asking for companies to come together into structures to address inefficiency. It is patchy, as you would expect. There are some companies who are looking to see whether or not this is really going to happen and then really getting involved in it. There are some companies who seem to really get it and are getting on with it now. Our job within the Ministry of Defence, and my job in particular, is to encourage them that the *Defence Industrial Strategy* is a plan for action, it is not just a policy document and that we do expect industry to respond and get on with it in 2006.

Q284 Mr Crausby: Is there a danger that some companies will focus on a non-defence future, the companies that want to do that, and that the reshape will become a different shape to the one that you really want? How do we protect ourselves against that risk?

Lord Drayson: We have set it out very clearly. We have said that the number one priority, as set out in the *Defence Industrial Strategy*, is putting the defence needs first. That is something which has been a real achievement of the DIS, giving industry the clarity of how our defence capabilities are going to be linked to the defence needs going forward, and we have said very clearly that we have come to the conclusion that having a healthy defence industry in this country is strategically important to our defence interest. Therefore what we are indicating is not a decline in the demand for defence products, we are indicating where the shifting priorities are as the world is changing. That gives great opportunity to industry. In fact, the way I would put it to industry is that, given the nature of the clarity which the UK has now given, given the nature of the tempo of operations which our Armed Forces undertake, if industry responds to the DIS, it is going to lead to it producing products and services for which there will be a clear world market. Some of the responses we have had from some of the international pilots which we have to the clarity of the DIS back that up. I do not think we need to be worried about companies exiting the defence market and looking towards the civilian market, and I think the way in which we have seen commentary about the DIS in the press and analysis suggests that that is correct.

Q285 Mr Hancock: Could I take you a little further down that road. You said in an article fairly recently that there will be job increases in some sectors but inevitably there will be job reductions, but you were not specific about which sectors you were talking about. In an area like mine—I represent Portsmouth which is heavily dependent on defence industries—

28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

that would send nervous shivers down people's spines. Would you care to clarify that a bit more today?

Lord Drayson: Yes, I will give you two examples, one of each. In terms of where we think that there are going to be job decreases, it is going to be in areas such as the complex weapons area whereby we can see the decreasing need for a certain type of weapon, and so we are working with that industrial sector, who have very important skills, which are not just relevant to complex weapons, and looking to encourage them to be using those skills in areas where we have a growing demand. I must say, from the maturity in the response in that particular sector, that is a sector where we have seen industry responding very well and I am optimistic that it is going to be possible for us to manage that process effectively. Nonetheless, we are going to see a decrease in requirement in that sector. To give you an example, a sector where we see an increase is in shipbuilding, the maritime sector. There the challenge is that we need to ensure that the way we manage the increase which is built upon the very strong shipbuilding warship orders which we have over the coming years does not create an unsustainable level of employment which is then going to go into a bust situation after boom. We have got many years to plan this well. Therefore, when you are in a situation like this where we can see increasing orders, increasing demand, we need to be intelligent about using that period to make sure that we are getting real efficiency into the industry and that we do not create an unsustainable level. Do you want to add anything to that?

Mr Gould: One point I want to add is that the nature of the defence industry is changing over time quite dramatically. There is a bit in the DIS that talks about the amount of defence activity that is open to the private sector. If you go back 30 years, it is really just the manufacture of defence goods, then you get into the services and now increasingly you find the private sector involved. For example, in military communications right from here in the UK up to day-to-day operations in Iraq the private sector is involved; so there is an expanding scope of work available to the private sector in defence which will enable us to build up. A lot of the companies involved in that, of course, will be involved both in defence and in civil because the technologies in communications and elsewhere are very similar and feeding off each other.

Q286 Mr Hancock: Can I ask Mr Gibson the role of the DTI in managing the change in those various sectors and where you fit into the matrix of change that is going to take place?

Mr Gibson: We fit in in the same way that we fit in for other sectors of British industry. Where there are large industrial closures—MG Rover is an example—we expect the RDAs to look closest to the ground to work with the local arms of other government departments—Jobcentre Plus, Learning and Skills Councils—to pull together

packages which help the workers who very unfortunately lose their jobs to gain opportunities elsewhere.

Q287 Mr Hancock: Could I come back to you, Minister. You rightly raise the issue about the shipbuilding capacity, and the horizon looks very bright for the Type 45s and the carriers there, but, as you rightly say, we have to plan for what happens after that. With the way in which the ships are being designed now there is little chance of much of a follow-on to increase the number of surface ships the Navy will require. How do you envisage the MoD working with industry to prepare for that downturn that will come post 2014 or whatever the date is?

Lord Drayson: We have analysed the ship-building industry in this country and we can see that we have got companies and yards which are absolutely world-class—there is no doubt about it—and are able to go toe-to-toe against international competition and win. There are other areas where they are not as efficient as they need to be. When you look at the overall industry, it is clear that too much of the industry is represented by the MoD as a customer. What we want to see is that, by the changes which we encourage in the way in which we work with industry over the next 10 years, we help the industry to become more internationally competitive, we see the spread of best practice throughout the industry, such that industry is able to win more orders from other customers apart from the MoD. What we have seen in the DIS is a focus towards a high value-added end of the ship-building industry. That is the area which we believe we can really compete in, the area of complex systems integration. I have visited yards and seen, for example, the Astute submarine build and you see the complexity of that vessel—it is more complex than the space shuttle and a lot more modern and it is British built—so there is no doubt that our industry can do this, but we need to get best practice throughout the industry and I think that then will provide us with a sustainable industry into the future, and that is what we are aiming to achieve. I think we have the time to do it. The key is the implementation of the *Defence Industrial Strategy* and the *Maritime Industrial Strategy* particularly through this year. 2006 is a very important year, because there are some important milestones on some of the projects which we are working on, not least of all Carrier. Carrier is going to be one of the ways in which we are going to help to encourage and drive this process, and I am very focused on making sure it really does happen, but I think the opportunity is there.

Q288 Chairman: Minister, I understand that when you were talking to the Defence Manufacturers Association last week you said, in effect, that you were “a man in a hurry”. I hope that Mr Gould will keep his ears shut when I ask this question. Do you find that your officials are in as much of a hurry as you are?

Lord Drayson: I think they are getting there, Chairman, yes.

28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

Q289 Chairman: You have also said that you recognise that the Ministry of Defence has got to change. In what respects do you think that the Ministry of Defence has got to change and how do you think those changes will be put into effect?

Lord Drayson: I think that the industry has to change and the MoD has to change—that is the point—but I think there is a duty on the MoD to demonstrate through its change that it is serious about the *Defence Industrial Strategy* being real. If I was in industry running one of the defence companies, I would be looking carefully to see how quickly the MoD is getting on with the things that it has promised to do. The way in which that is happening in the Department I am actually seriously encouraged by, and I aim to surprise this Committee, if you like, in the future by the pace of change which we are able to achieve in the Ministry of Defence. Why do I say that? Firstly, the way in which the MoD responded to the challenge of getting the *Defence Industrial Strategy* published in the timescale, the way in which it went about that, and the team of people that were responsible for it, I believe, did an absolutely outstanding job and I saw real excellence in the Civil Service which I think industry then responded to. We have set out a “to-do list” of changes and we have set timescales. The Permanent Secretary has put a small targeted team of people to look at the whole acquisition process, based upon what we have set out as principles in the DIS, and to report back by May on the changes which we need to make, building on the improvements that have been made to date. Things like Smart Acquisition, the series of improvements in procurement which have been achieved by this Department have been good, in my view. It is about building on that and going further. In June, Chairman, we should be seeing the outcome of that as one example. The impression I get within the Department is that it is the recognition of the changing environment, and it is the changing environment that we face, in terms of the threat of globalisation and increasing complexity of technology, which requires MoD to improve. Your Committee and other committees have said that when the MoD does things well it is a real gold standard. We need to make sure that that practice is spread more evenly, and there are some very clear things which we need to do to achieve that in terms of increasing things like commercial skills within the Department. The whole emphasis on tough commercial partnerships in the DIS requires the Department to have the people with the know-how to manage those types of relationships. We need to ensure that that happens. The way in which the Department tends to be very good at the urgent operational requirement, tight procurement process, very good indeed, but less good at some of the longer term projects means that we need to come up with processes which take the best out of the UOR process and apply them more effectively to the longer term projects. There is a whole list of things—a to-do list—which is set out in the DIS. The impression I get is that the Department is really up for this change. Both industry and the MoD

recognise that we have an opportunity here to make a step-change in performance. The DIS has given us a good framework and an action plan to do that, and what I am seeing is that the Department is responding. The way in which I think we should be judged is in the quality of the decisions that we take and the difference we actually make to procurement. What I have said both to the Department and to industry is that 2005 is the year we came up with the Strategy, 2006 is the year that we seriously implement it to be able to show results both to your Committee, Chairman, and to others who scrutinise us, that we really have made a difference. When I say I am a man in a hurry, I am in a hurry to show in 2007 that this has made a real difference to our defence capability and the strength of our defence industry.

Q290 Chairman: You may have read that some witnesses in front of us have said that there was more information provided to the defence industry in the United States when the United States took some of its procurement decisions. The Ministry of Defence used to be more forthcoming in relation to its future intentions, its priorities and its plans. Do you think that that is a fair accusation? Is the Ministry of Defence planning to be more forthcoming in relation to its priorities and its plans?

Lord Drayson: Yes, it is. The DIS sets out explicitly a recognition that there needed to be more transparency because industry did not have enough clarity to be able to make the investment decisions which were going to drive the improvements which we needed to see. Without going into the historic reasons, I think it also reflects that the relationship between the MoD and industry was not as effective as it needs to be, and I think that the DIS has made a positive difference to that, and that is something which we need to build upon. We also need to be mindful that some of the things which the United States has done in terms of the release of information has had some negative consequences, and we were very mindful to learn from that. For example, I was very concerned to make sure that in going into the gritty detail which I promised in the *Defence Industrial Strategy* we did not make the mistake of providing such clarity over where we saw the really smart, young, innovative companies that we will provide a shopping list of acquisitions for bigger companies. We need to be careful. We do need to push the transparency issue consistent with our security interests, but also being intelligent about the global market place which we operate in and making sure that we do this in a way which helps companies provide solutions to our needs without actually making life more difficult for them.

Chairman: We are moving on to the issue of sovereignty.

Q291 Robert Key: Minister, I found one of the more intriguing chapters in your *Defence Industrial Strategy* B1 on Systems Engineering and I would like to ask you a little bit about appropriate sovereignty. Obviously, if we are going to retain sovereignty over a proportion of our production and

 28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

systems, it is going to come at a price. Has the Government thought how much? What price? Whether it is a 5% premium, a 10% premium, a 20% premium. Can you give us a little more of your thinking on what you mean by appropriate sovereignty?

Lord Drayson: Yes. We did a thorough analysis of the defence market by sectors and we looked at it from the perspective of, in a particular sector were there defence capabilities which we regarded as being so strategically important to our defence interest and where we were concerned that not having those capabilities on shore may lead to others having an impact on the operational freedom so that we had to have that done here in the United Kingdom, and so we set that out. We have also said very clearly that we do have and want to have one of the most open defence markets in the world. Therefore, we are not concerned about where the shareholders owning these companies live, but we are concerned in certain areas where the intellectual property resides, where the design authority is held. What we have found, and this is why a section on systems engineering is so important, is that as defence equipment is moving in a direction where the actual platform, such as an aircraft or an armoured fighting vehicle, may be in service for a considerable length of time, decades in some cases, the subsystems—communications, sensors and so forth—which really deliver the advance military capability have a much shorter life cycle and therefore need to be upgraded much more frequently. We need to have the capability in this country to do that, which is why systems engineering skills are important in this country, it is why we need to have clarity when we go into a project—FRES is going to be an important example—that we know where the intellectual property is held and that we manage intellectual property linked to the delivery of freedom of operational capability. To answer to your question about price, we then rely on the market to operate on a basis whereby the competition within that—as I say, that balance of openness and encouragement of people to bring those resources and skills into the United Kingdom to deliver us the requirement at best value for money. I think the important thing, which I have not touched upon this morning, is that we have shifted our emphasis in the *Defence Industrial Strategy* to make value for money the bedrock of the whole thing away from a particular technique, such as competition, to saying that competition is one of the many tools which we will use and that is a recognition of the realities of the different markets and environments we have in the different sectors. For example, take the C4-ISTAR type sector—very healthy, lots of innovation, does not give you much intervention—and take another sector with much less competition, which does have a key strategic defence capability for us, we need to be much more clear about how much we manage that.

Q292 Robert Key: How does that relate to investment decisions of private companies? We have just heard from BAE Systems on explosives

production, for example, that they do not believe they should be investing in low technology, and so they are not very interested in the Royal Ordnance factories at Bridgewater and Chorley, it seems. They do not mind if you cannot acquire ammunition from the United Kingdom. Are you happy with that? Does it fit in with your analysis?

Lord Drayson: I have looked at all of that very closely because it is very important that the UK retains the ability, in terms of advance munitions like that, to be able to source what it needs when it needs it, and I am satisfied that the changes which are being made, which are about coming up with a more efficient supply chain for the supply of these munitions by British Aerospace, does satisfy our needs. The key thing there is to be very clear in a manufacturing process, whether it is munitions or anything else, of where the really clever bit is and making sure that we have visibility of that clever bit, that we know where the skills are to do that, and, where those skills are important to our defence capability, such as they are in this particular case, that they are done in the United Kingdom. Do you want to add anything to that?

Mr Gould: Yes, several things. Certainly on the general munitions subject, it is difficult to distinguish between the raw materials, which have always been bought in. Even when things were being manufactured in Bridgewater and Chorley raw materials were being brought in from outside, quite a lot of the supply chain came from overseas. As I understand it, if you have got a secure supply chain of raw materials, so long as you can assemble and manufacture the munitions and have the capability to do that, then you are in control of your own destiny. That is the important point. I would just like to pick up on one point. Is there a premium for keeping things in the UK? I am not sure that there always is or has to be. I was thinking in particular of combat management systems in war ships and submarines. I cannot mention individual companies, but some of the companies who work for us doing that are very competitive internationally, and so, although we are keeping some of those skills in the UK, and need to (this is very important), the fact that they are competitive internationally tells me that maybe there is not a premium for that. Very often, if it is managed well, there does not have to be a premium, but we do need to work very closely with the companies to make sure that is the case.

Chairman: I will come back to you on that issue in just a second. David Borrow, is there anything you want to ask in relation to Bridgewater and Chorley or has the subject been covered?

Q293 Mr Borrow: I wanted to perhaps seek some more reassurance. I am aware that the closure of Bridgewater and Chorley will lead BAE Systems to purchase certain munitions from overseas, and they are currently looking at a number of companies. I have seen details of some of the companies overseas that they are looking to buy from. There is an argument around jobs, but there is a bigger issue around security of supply. Obviously, before we end UK production of some of those munitions and rely

28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

on overseas suppliers, the MoD will need to be absolutely certain that there is security of supply and that it is not possible for another government, at a time when we are involved in military operations, to stop us getting access to the munitions we need. I recognise that it is an issue around whereabouts in the technology tree we should be putting investment, but, irrespective of that, and that may be an issue for BAE Systems, as far as UK Plc and as far as UK Military are concerned we need to be certain that we can get access to the munitions that we need should we find ourselves in a situation of military conflict in any part of the world. At the moment those contracts have not been signed by BAE Systems, and I just want some assurance that the MoD are going to be absolutely sure that there is absolute certainty of security of supply before we allow those facilities at Bridgewater and Chorley to disappear.

Lord Drayson: That is absolutely central to our thinking. You are absolutely right. The DIS sets out this point about defence needs coming first. We are very mindful of this point, and that is what is guiding our thinking. We are not able to go into the detail of this process, but you need to recognise that there is a generational technology change taking place in these types of munitions which is going to require us to go to the next generation of process anyway. This is the opportunity to look at this process and to look at how we can make it more efficient but also making sure that we have got, as you say, absolute control over security of supply for the United Kingdom. The way in which this is being brought together, looking at the shift to manufacturing of certain elements in Glascoed, is consistent with the objective of making sure that we have maintained this capability.

Q294 Chairman: Can I double check something there. When Mike Turner was before us previously and he was asked about the closure of factories at Bridgewater and Chorley, the phrase he used was that they would want to be “fairly sure”, but you would accept the phrase that has just been used by David Borrow, “absolutely sure” that we would have security of supply, would you?

Lord Drayson: Yes, absolutely sure, and absolutely sure not just in terms of the security of supply of the elements, as David has said. Often it is about the cleverness of the process. What I think we need to be absolutely sure about is what we do to the raw materials and how we bring these things together and what is done here. I want to be absolutely sure, in terms of security of supply of the elements coming in and I also want to be absolutely sure about the robustness of the manufacturing process that we are moving to, and I have spent quite a lot of time checking that.

Q295 Mr Hancock: How can you prevent that? How can you be absolutely sure if, as we were told by the boss of the operation, they are determined to close these plants? I am interested to know how you can insist upon this and be assured that you are going to get what you have asked for?

Lord Drayson: We are the customer.

Q296 Mr Hancock: Whilst the customer is always right, the customer does not always get what they want. We have been in that situation as a nation where we were dependent on certain elements of our weapons which were not delivered, which we were restricted from using, and our soldiers were seriously disadvantaged by it.

Lord Drayson: That is absolutely right.

Q297 Mr Hancock: I am interested to know how we can be absolutely sure of that now.

Lord Drayson: We are learning the lessons of the past, and it is very important for us as a nation to recognise that to get the defence capabilities we need in many cases we have to enter into international collaborations, because the nature of technology these days means you have to do that, but we also need to be mindful of the point, which you rightly raise, of avoiding getting into a position where in the future we are unable to use the defence equipment in the way in which we wish to use it because of restrictions which are being placed upon us, which is why we are thinking very intelligently, as set out in the DIS, differentiating between the different types of equipment and capability and making sure that we are taking decisions to deliver that defence capability. This is an example where we have got both a shift towards a different manufacturing process in a different location and a shift in terms of procurement of certain elements in that and we need to manage that very carefully indeed. There is no easy answer to this. The way in which you do it is by being very intelligent as a customer, being robust in terms of what you expect your suppliers to do and making sure that you have got these assurances in place and you check that they are in place as you go forward.

Q298 Mr Borrow: I can accept the situation that, if we were dealing with a small UK manufacturer of munitions who had decided that it was not economic to continue to produce those munitions, there is not a lot that the MoD can do, but in this situation we are talking about a special arrangement and agreement between the MoD and BAE Systems to supply the bulk of munitions. That is part of the *Defence Industrial Strategy*. They are in a sense the preferred customer. Therefore, if there are parts of that package of munitions which they currently produce which as a company they decide it is not economic to produce in the future, there is a strong obligation on them to satisfy the customer that they can still supply those munitions, with an absolute guarantee of supply, even if they as a company are not doing all the manufacturing. As I understand it, that is the key element of the DIS in relation to explosives and munitions, the fact that BAE are central to that role. Should they as a company decide not to do certain things, they have still got the obligation to deliver those munitions and explosives and guarantee absolutely that they will be supplied as and when required by our military personnel.

28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

Mr Gould: We have had a partnering arrangement with Royal Ordnance for several years now in response to the very incident that Mr Hancock referred to earlier with the artillery ammunition. That has worked, on the whole, pretty well for us. Clearly, I could infer that it has not worked quite so well for the company in some areas, but you are absolutely right: in seeking to have a negotiation with a company that will continue that sort of long term arrangement, they must, as part of that deal, satisfy us that the supply chain they are putting in place does all the things that we require it to do. They must do it differently from the way it has been done in the past but they must satisfy us or we do not do the deal, we do something different. I am optimistic.

Mr Hancock: You might be interested to know in the letter that BAE Systems sent us today⁴ one of the companies that they put forward as one of the five is in the very country that caused us all the problems last time.

Q299 Robert Key: Hardly a day goes by without somebody talking, either in the Houses of Parliament or in the media, about the two-way street in defence procurement, particularly with the United States of America. I was delighted to see an interview with you at the time in February in which you said that the battle over technology transfer was your top priority for this year. How is it going, Minister?

Lord Drayson: I would say it is progressing reasonably well, but the test will be where we have got to at the end of this year, and the test will be the Joint Strike Fighter. We are working very hard indeed, I am working very hard indeed, on this issue because it is central to our defence needs, and I know that the Secretary of State is also working very hard, and throughout government. JSF is a project where we recognise the real benefits which the United Kingdom is gaining through working with the United States on this aircraft. However, we are also clear, as set out in our *Defence Industrial Strategy*, that being able to exercise the operational freedoms which we need over time with this aircraft is affected by technology transfer. Therefore, the reason it is my top priority is because we know that we need, by the end of this year, to have got clarity over certain elements of technology transfer which need to happen (and I need to stress) on a government to government basis to enable this to happen satisfactorily. I am optimistic that we can solve that. It is not a naive optimism, it is based upon the progress which I think we are seeing, but we are working very hard on it. I also think it indicates a general shift which is taking place within the defence industry, and which you have alluded to a bit already in your earlier question, which is the growing strategic importance of intellectual property to defence capability. Therefore, what I am looking to see happen, alongside the emphasis which we are placing on research and technology, is strategic management of intellectual property in procurement decisions up front in terms of clarity of the design authority, relationships with

international partners and technology transfer, and that is something which we are actively working on this year, but I am expecting, frankly, for this to be resolved satisfactorily for us by the end of this year.

Q300 Chairman: Research and technology. The *Defence Industrial Strategy* accepts that more work needs to be done on this. What more work will be done and when will it be done by?

Lord Drayson: It will be done by the end of this year. The specific work which we are doing is to recognise that already the UK spends a lot of money (£2.3 billion a year) on defence research—we are the second biggest spender on defence research—but we recognise that we can improve the performance of the value which we get from the defence research which we undertake and we will be publishing this year our *Technology Strategy*, which, as set out in the DIS, builds upon the work which we have already done. That is being led by Roy Anderson, the CSA within the MoD, and I think the important thing with research is for us to recognise the real linkage between delivery of defence capability and the research. We need to improve the performance in bringing through the outputs of research to making a difference to defence capability. In terms of my experience in managing research within industry, the key thing is that you are really intelligent about the investments that you make and you make sure that the innovation process is sufficiently fast moving and entrepreneurial such that it does get through to make a real difference to the front-line, to the defence capability, and we think there are some improvements which we can make on that. We are going to be publishing our *Technology Strategy* this year to address these issues and to look at the balance of where we are making our research spending. We are also opening up more research spending to competition as a way of encouraging that process.

Q301 Chairman: All the witnesses we have had this morning and earlier have talked about a decline in defence research and technology. John Chisholm this morning talked about a 50% reduction and on page 39 of your *Defence Industrial Strategy* you talk about the highly significant correlation between equipment capability and R&T investment. What should the Government be spending in research and technology?

Lord Drayson: I like us to make decisions based upon data, and this study which you allude to on page 39 was funded by the Ministry of Defence, carried out for us, to really get a handle on how does research spend have an impact on defence capability, and it is now clear for us. What we have said in the DIS is that what we are going to be prioritising this year is more emphasis on excellence. What I learnt in terms of managing research is being very clear where you do research which is really world-class.

Q302 Chairman: Can I bring you back to the decline that we have had. Do you think we should have a higher level of spending on defence and research?

⁴ Note: See Ev 121–122

28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

Lord Drayson: That is one of the things which we are going to be addressing this year, and so I think we need to see the result of the Technology Strategy that come out of it. What we see is that there is a real correlation between how much we spend and the defence capability which we get. I think there is an important correlation also in terms of the effectiveness of what it is we spend. My belief is, first, you fix your effectiveness. Before you start thinking about whether you are going to spend more money, you make sure that the money you are spending you are spending wisely, and that is something we are focused on as our number one priority. Secondly, we need to look at the balance of the defence budget in terms of investment on research and investment on equipment acquisition, and we need to ask ourselves the question of whether we have got that right. Our current policy is that we will be increasing our defence research spending in line with inflation. Up to now it has broadly been kept at the same level. We have increased that by saying that we are going to increase it in line with inflation. We need to look at whether we have got that balance right. This year the emphasis is on making sure that the way in which we spend the current research pounds is as effective as we can make it, and that is the priority that the CSA has.

Q303 Mr Hancock: You talked about effectiveness. It was suggested earlier that maybe one way of making the R&T spend perhaps go further or be more effective is to integrate it into some form of reinvention of demonstrator projects as part of the derisking activity of overall projects. Is that part of the thinking?

Lord Drayson: Yes, that is part of it, making sure that we use opportunities to build prototypes and we learn from doing that. In certain areas the pace of change of technology and research is very directly correlated to the military capability which we need right now. There is in some areas a real urgency. We are looking at areas to speed up this process. Some really innovative things have happened in the way in which we have restructured the defence research. The split of the Defence science and technology laboratories with QinetiQ was a response to the increasing importance of civilian research technologies into Defence. That has really worked well. We have now got a world-class business in QinetiQ. We have still got the DST labs doing the work which we need to do on the most secret projects, but we are focused within the MoD on making sure that there are not areas for us to go further in getting more bang out of the money we spend on research today.

Mr Gould: I wanted to say that the correlation as shown in the diagram is quite interesting because it flattens out quite dramatically at the top. It is not a problem for us at the moment but it does indicate that effectiveness really does matter in research, because you can spend a lot on research and actually not get very much benefit at a later stage. There are quite a few demonstrator programmes that do still go on in the research programme related to specific projects that are coming through in the future.

Q304 John Smith: What about the development of centres of excellence in military research and technology. Is there any early thinking on that?

Lord Drayson: They definitely work. That is a model which has been used very successfully in the pharmaceutical industry. Centres of excellence are definitely working for us. It is an example of a new approach to the management of R&D which is giving benefits, but we cannot stop there. There is more that we can do to improve the effectiveness of our research and the speed at which it is brought through to deliver military capability. That is the focus that we have got.

Q305 Mr Hancock: I am interested in the concept, which you emphasised quite a lot when you were last giving evidence, of proper risk analysis going on and how that is going to be funded. I sense that we will be spending a lot more on that to get it right and not so much on the research and development, because we are not developing new technology so much because you are not going to be putting the money up front into it. We heard from John Chisholm today that he expects you to be the main funders of that research. I was hoping he would say that the commercial world would be inclined to invest more in the research side, but he declined that and felt it was still the role of the MoD. Does it not lead you then to look for off-the-shelf solutions from outside the UK rather than to spend a lot of money on the risk evaluation of a product and a lot of money on research and development; so you simply buy a tried and tested product that might not have the full capability but is as near as you can get to what you want?

Lord Drayson: If the product which we want is available off the shelf, then we must use it. I think that is the lowest risk way of delivering the capability that we need. We need to recognise that increasingly there is much more interplay between defence research and civilian research than there ever was 10, 15 years ago, and we need to be more intelligent about exploiting that for our benefit. An example of us doing that in the DIS was our announcement about the UAV's project. There is an example, I think, where there is an absolute overlap. There are going to be real opportunities for unmanned vehicles in the civilian area and definitely for us in the military area. We have given clarity to industry of what our defence capabilities are, and we want to encourage people to come into that, see that as a commercial opportunity, so that young engineers, businessmen looking at start-ups say, "Right, there is a real potential market opportunity here meeting the defence needs." It is about us then encouraging the way in which that is done, and I have seen really good examples of entrepreneurial, smart thinking in terms of research, particularly in response to the UAVs, and so I think this is an area which we are building on quite effectively.

Mr Gibson: We are actually increasing our funding of civil aerospace R&D. There was a report by the Aerospace Innovation Growth Team in June 2003 which asked us to increase the level of funding to

 28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

£75 million a year⁵, and we are largely achieving that and we are doing it in a lot of innovative ways. The Minister mentioned UAVs. We are funding a UAV project on a commercial side, the DTI is putting in about £5 million a year and the Regional Development Agencies are putting in about £11 million a year, matched in both cases by industry. We would be delighted if there were spillovers from that civil project into the defence side. To the extent that we are increasing our government funding on the civil side and that there are spillovers to defence, we see as entirely positive.

Q306 Mr Hancock: I was just going to ask a question on the performance measures you were going to implement to judge how you were successful or otherwise on the DIS in both organisations?

Lord Drayson: From the MoD's point of view.

Q307 Mr Hancock: I know what you said you wanted to achieve, Minister, but I would be interested to see if the MoD had set themselves some targets for a change in their mentality?

Mr Gould: Our ultimate measure will be our success in providing equipment capability into the Armed Forces. If we see improvement in the way in which projects are planned, conducted, executed and the speed with which the capability is introduced into the system and then put on to the battlefield and used, or hopefully not used, but used in a deterrent sense by the Armed Forces, then that is the ultimate measure of success and every single project that we undertake is measured in great detail in those terms.

Chairman: Moving on to partnering arrangements.

Q308 Mr Borrow: Fairly briefly, because we have touched on the issue about partnering arrangements earlier. One of the issues that has been raised with us, and we have had evidence in previous hearing about it, is a suggestion that because BAE Systems, in particular, have such a dominant role in the partnership arrangements under the DIS there is a risk that they could become a monopoly supplier. Would that be in the long-term interests of the MoD or are there dangers in that in terms of getting value for money in view of the lack of competition in that area? I understand the dilemma, but can you explore that a little bit?

Lord Drayson: I think, first of all, that it is excellent that we have in BAE a global player within the defence industry, one that really can go toe to toe against the best in the world and win. That is very importantly positive for the UK defence interest. Secondly, I think we need to look at the data. The reality is that 5% of the MoD's defence contracts per year go to BAE. That is the fact.

Q309 John Smith: Is that by value?

Lord Drayson: Yes, by value. Direct defence contracts to BAE from the MoD, if you look at the last two years, 5%. If you look at BAE's customers, the MoD represents 28% of their turnover. I recognise people's concern about this, but I would say the boot is on the other foot a bit. We are a very important customer to BAE, but we need to recognise that in a number of important areas for us BAE is the design authority—if you look at the number of our armoured vehicles, for example—and, therefore, what the DIS does is face up to the reality, which is that we are in a mutual dependence with BAE in some very important areas for us and we need to manage that with the appropriate management tools to get value for money for the British taxpayer. It is about tough partnership. It is about BAE delivering improved performance in return for longer term business with us. I think that the way in which we are moving with BAE is very positive for the British interest and the defence taxpayer value for money point of view.

Q310 John Smith: But how, Minister, do you incentivise a sole monopoly supplier to maintain best practice and continue to be efficient if there is no alternative capability in the long-term? How do you do it?

Lord Drayson: Firstly, you only enter into those types of arrangements if those are the realities of the market you are operating in. If you have got a market which allows you to have a competition, then competition is the right tool. In certain circumstances where you do have *de facto* a monopoly supplier, you need to manage it to respond to that. The way in which you do that is to enter into longer term contracts where the payments to the company are linked to improvements in performance. What you do is make a direct correlation between their profit and their improved performance over time through a sustained relationship and you make the metrics of the relationship really clear. You build the contract around that. What you have to have within the MoD are people with the skills to be able to write and manage those types of long-term relationships. I know from my own personal experience industry is used to these types of relationship. For example, many companies partner their IT systems because they recognise they are not the world's experts in IT, and they enter into a recognition of long-term relationships with companies to do that. For the MoD to make a success, we need to get really competent and professional, actually excellent, in the way in which we manage these types of long-term partnerships. An important pilot for us, if you like, the first one we are doing, is with Augusta Westland on certain types of helicopter. That is another example of where we have this *de facto* relationship on a whole fleet of helicopters which we are already using. It is very important for us to manage that long-term relationship with Augusta Westland on the maintenance and sustainment of that fleet.

⁵ *Note by Witness:* The figure is, in fact, £70 million, not £75 million.

28 February 2006 Lord Drayson, Mr David Gould CB and Mr Mark Gibson CB

Q311 John Smith: A leading defence industrialist earlier today told us that he thought competition had been a disaster for the UK defence industry. Do you share that view?

Lord Drayson: No, I do not think it has been a disaster. The way I look upon it is that the defence industry is not homogenous. The different sectors within the defence industry exhibit very different market characteristics. Therefore the MoD needs to be sophisticated. It needs to use competition, where competition is the right tool, to get the best value for money for the taxpayer and, where competition is not the right tool (and we have seen some instances where it has been used in a way which has not produced a good outcome), that we do not use it. For example, on Carrier, because we need a number of different companies coming together to build these enormous carriers we needed to form an alliance, and we need to make sure that the way in which that alliance is formed fits the realities of the market. I do not think it has been a disaster but I think we have got more intelligent at picking up the right tool for the job and using it in the particular circumstances of the particular project in the particular sector.

Q312 Robert Key: How does the Government see the European Defence Agency developing?

Lord Drayson: It should learn to walk before it runs. It needs to show that it can really add value. We think that there are some ways in which it is beginning to show that, but our view is that it should start small, have some successes and then grow.

Q313 Robert Key: Are there other implications for the wider international defence industry here that you can have? We have been told by some of our witnesses, for example, that they feel not enough attention has been given to the international dimension of the *Defence Industrial Strategy*?

Lord Drayson: The feedback that I have had from our international partners has been very positive about that. They have found it useful to have clarity, whether it is in the direction of the United States or the direction of Europe. One positive example of the EDA is the way in which the code of conduct has been established for other nations, which is aiming to encourage other nations to be as open as we are in some of their defence procurements. We have set out principles pretty clearly in the DIS as to the way in which we want to do business with our international partners—clarity and sovereignty, and so forth. We think that is a positive start.

Q314 Mr Havard: We did have some questions, one of which is a bit mischievous, about how you might get more money from the Treasury, but if you can spend the money you have got more effectively that is a good start. I was interested in what you have

said about how you are going to deal with these things. Quite clearly the Strategy as we have it is the overview. There are clearly a number of strategies within different working groups and different things that you have spoken about already. You have talked about the technology review coming towards the end of the year. I think you have talked about some work being done about process that might report in June. I cannot remember whether you have set a date for the Maritime Industrial Strategy, and so on. Can you give us an idea, because you have been described by some as having gone through the model like a whirlwind so far—that is what has been said about you. What is the pace at which we are going to see these sector analyses and programmes so that we can have an idea of what is coming when and how we can also judge what we need to do in terms of how we can continue to scrutinise the process?

Lord Drayson: I have two sides of A4, Mr Havard, which is my check-list of the to-do list of things which we had promised within the DIS would be achieved, and I am very happy to be held accountable for us achieving those. We have identified within the Ministry of Defence specific people with accountability for delivering them to me. I have set out a ministerial direction to the MoD that decisions must be taken consistent with the DIS, and if we are looking at taking a decision which is not consistent with the DIS, I want to know about it. I think that we have set out our target dates—we mention May—for having clarity about the changes that we need to make in terms of our acquisition processes, we have set about a technology strategy which we are doing this year, I want to see the maritime industrial strategies implemented in 2006. It is very important for some of the big projects which we have got. We have got a clear to-do list which I am monitoring very closely indeed.

Chairman: Two sides of A4. We like that.

Q315 Mr Havard: Is it possible we could have visibility of this?⁶

Lord Drayson: You are very welcome to have both sides.

Q316 Mr Havard: It is quite clear you have got a momentum, and the tempo is important in terms of war fighting and in terms of rugby and so I am looking to learn lessons for other purposes!

Lord Drayson: I would be happy, Chairman, to share the list.

Chairman: Thank you very much. That would be extremely helpful. You have come in before one o'clock, which is another significant achievement. Thank you very much indeed, to all three of you, for your evidence and to the Committee for your questions.

⁶ Note: See Ev 118–120

Written evidence

Memorandum from VT Group plc

VT is an internationally recognised, leading provider of government services to customers worldwide, with over 12,000 employees and a turnover that is now approaching £1 billion. VT operates in the support services and shipbuilding sectors and is a long-standing supplier to the MoD.

Whilst VT has contracts to support all three of the UK's armed services, the focus of this note is the maritime elements of the DIS. As the DIS makes clear, VT is one of two main companies (the other being BAE Systems) with the skills necessary to design, manufacture and integrate complex warships.

VT is currently working with BAE Systems to deliver the Type 45 destroyer programme, is a full member of the CVF alliance with specific responsibility for delivering one of the "super blocks" and is providing the flotilla of River Class Offshore Patrol vessels for the Royal Navy.

The DIS signals an important policy change; in the past the MoD has specified that all warship hulls should be built onshore. In future the MoD has decided that, provided key capabilities are maintained, not all activities must be exercised onshore for every project, with the strategic need for onshore execution judged on a case by case basis and the proviso that offshore delivery should not challenge the viability of the UK's key capabilities.

VT recognises that the industry does need to restructure. We support the strategy that the design, manufacture and support of complex warships should remain onshore and we welcome the MoD's intention to work with industry to identify the core workload necessary to sustain the key industrial facilities, and design and manufacturing capabilities.

VT is the UK's most successful exporter of warships, and whilst exports can make an important contribution, they are not on their own sufficient to sustain the capabilities required. Moreover, our position as current suppliers to the Royal Navy is itself a critical component of export success.

The devil will, of course, be in the detail in determining the core workload for retaining key capabilities, and we look forward to working constructively with the MoD and the rest of the industry to achieve an agreed position within the next six months.

The vision underpinning the DIS is for through-life capability management, with industry responsible for a ship's full life-cycle. In this context, one of the key issues is how ships or hulls that are manufactured offshore will be procured and project managed. Our view is that it will be essential for onshore UK companies such as BAES and VT—with the full range of warship-building and support skills—to manage on behalf of the MoD the procurement of ships and hulls manufactured offshore. Only by following this route will a seamless cycle of design, build and through-life support be achieved, with responsibility vested in those best placed to manage it.

Under the arrangements outlined in the DIS, the MoD will not be able to retain in-house all the necessary skills to handle itself the procurement of offshore vessels. Under through-life capability management, industry will assume a larger role than hitherto. It is therefore important that the UK companies responsible for the design of such vessels or for modifying (for RN purposes) "off the shelf" designs of ships manufactured offshore, are involved in their procurement. This is essential if these companies are to be responsible for managing the risks inherent in the long-term support and maintenance of the vessels, with the need to modify and upgrade in service.

13 January 2006

Memorandum from MBDA Missile Systems

1. MBDA Missile Systems very much welcomes the announcement of the Government's White Paper on Defence Industrial Strategy, judging it as a very necessary and eagerly awaited addition to the 2002 Defence Industrial Policy White Paper. The Company also welcomes the recognition given to the importance of the UK Defence Industry and the way in which its key strategic technologies and capabilities contribute to the widely acknowledged effectiveness of UK armed forces in operations around the world. Indeed, we have congratulated the Minister for Defence Procurement and his team on producing, so speedily, such a comprehensive piece of work that will hopefully prove a watershed in UK Defence Acquisition.

2. MBDA, in conjunction with the MoD, put considerable effort into producing a substantive proposal to help inform the drafting process for the White Paper. We therefore welcome it as a positive step on the road towards establishing a sustainable UK Complex Weapons industrial capability, providing affordable military capability to the UK Armed Forces for the future. We are particularly pleased that the importance of the sector and the need to retain appropriate sovereignty over its vital contribution to the military capability chain has been recognised.

3. However, the challenge now of course is to implement the Strategy in time to avoid seeing UK Complex Weapons industrial capability going into decline and, as the paper acknowledges, time is short. The way ahead for this sector requires greater clarity when compared to other sectors. No industrial leader has been identified, nor an MoD champion. The White Paper proposes the establishment of a joint MoD and UK multi-disciplinary industrial team (ref B7.51) that will, in turn, establish an effective working strategy. However, there are neither details of this forum nor, most importantly, of the authority it will be given to drive through the changes required, not only across industry but also within the MoD. Such authority is essential for successful implementation of DIS in this sector.

4. From the industrial perspective, we believe that there is a clear leadership role for MBDA, which has 68% of “on-contract funding” for above-water complex weapons. In anticipation therefore of being asked to take such a lead, we had already started, ahead of the publication of the paper, the process of engaging some of the other identified industrial players in the sector. Our position as a quadri-national European company also puts us in a unique position to work with the UK’s European partners, whilst we would welcome the opportunity to similarly engage non-European/non-UK players.

5. As potential leaders of an industrial team working together with the MoD, we would look forward to open dialogue and to agreeing the route maps in both the Research and Development and Capability domains which we believe will be required if we are jointly to achieve the required affordable military capability with improved through-life support. To that end, tempering of competition in certain circumstances is most welcome and we would also look to agree mechanisms with MoD, and other appropriate Government Departments, to demonstrate long-term value for money.

6. We also judge that it would be significantly beneficial to the successful implementation of the Defence Industrial Strategy for a degree of cross-sectoral information exchange that allows the sharing of best practice. We believe that industry and MoD need to work together to devise a mechanism for such an exchange, giving full consideration to commercial and IPR sensitivities.

7. Within this process we recognise the fundamental requirement for industry to also play its part in meeting the challenges, both in terms of re-structuring and of behaviour. Clearly, we would look to take these issues forward with our industrial colleagues, but in the meantime we have already started a substantive pan-European MBDA cultural change and realignment programme which is intended to better prepare ourselves to engage in the open dialogue and other new ways of working which the paper sets out.

8. In summary, there is no doubt that the Defence Industrial Strategy White Paper presents a timely and unique opportunity for the UK to enable a sustainable and affordable Complex Weapons industrial capability. Within MBDA, we certainly recognise this and we intend fully to play our part in the ongoing processes, both by re-shaping our business model to meet the new paradigms, and, particularly, in the early establishment and leadership of a joint team. Much will depend on the latter and particularly the authority it is given to take action. It will certainly need to have made very positive progress within six months if vital engineering industrial capability is not to go into irreversible decline, and with it, UK sovereignty over Precision Effects, such a vital element of the military capability chain. We don’t see that as being in the national long-term interest.

9. Finally, MBDA would be happy to attend the Committee in order to provide oral evidence, should that be required. If that were to be the case we would field Guy Griffiths, MBDA’s Chief Operating Officer (Operations).

January 2006

Memorandum from the Royal Aeronautical Society

INTRODUCTION

1. The Royal Aeronautical Society is primarily concerned with the aerospace and associated systems and technologies, but the Society also has a number of general points to make concerning the overall picture presented by the DIS particularly in the areas of technological acquisition, technological transfer in collaborative programmes, market access and the ownership and control of key defence industrial assets.

OVERVIEW

2. The DIS presents a sound appreciation of the long term trends in defence industrial affairs. The defence environment is changing and at a faster rate than at perhaps any time since the end of the Second World War. UK industry from top to bottom cannot expect to remain unaffected by these changes. Over the last two decades, the UK has fully embraced interdependence in many critical areas of defence procurement with the aerospace sector leading the way through successive generations of international collaboration. The UK defence aerospace sector is irrevocably linked to a global network of design, development and production.

This has entailed a loss of autonomous capability to produce complete aerospace systems, but collaboration and other international links have allowed the maintenance of an overall capability that would otherwise have been unsustainable based on the UK market alone.

3. The shift from platform to network centric warfare long predicted is now an established fact of life. Equally, moving the focus of procurement from delivering a simple “end product” to a fully supported product life cycle will imply a radical change in business models and how the UK can extract the best return economically and industrially from its investment in defence. The UK should have no illusions that this will have a profound impact on much of the supply chain whose role in supporting and upgrading equipment may be limited, or where the size of individual companies precludes the necessary investment to adapt to the new business model.

4. However, it is vital that the MoD fully recognises the skills, competences and technologies embodied in the UK defence industrial supply chain. There are many references to the importance of the UK supplier base in the DIS, but there must be more than just lip service to this issue. While the changing nature of aerospace and defence technology and methods of production will imply some shrinkage in the UK supplier base, the MoD must be sensitive to the increased dependence on external sources and the risk of loss of autonomy over export sales this may imply.

MARKET ACCESS

5. The Society recognises that the UK is unusual if not unique in its degree of openness both to overseas competition and to inward investment in the domestic defence industrial base. UK defence companies have also acquired an unparalleled position inside the US market. While noting the possibility that the latter may be at the expense of investment in the UK as well as expressing concern at the problems of technology transfer entailed in working with US partners, HMG appears to have made little progress in shifting US practice to the benefit of the UK customer or UK industry. The UK has undoubtedly benefited from inward investment, affording access to resources and technology that would otherwise have been acquired expensively from domestic resources. But if the UK has benefited from overseas investments financially, and UK companies are unable to repatriate new technology for incorporation into new products developed on shore, there could be serious consequences for the long term health of the UK defence industrial base. Equally, as the lure for inward investment is the buoyancy of the UK defence market and the relative size of its R&D investment, there is a danger that this investment will be vulnerable to any future contraction in defence budgets. While ownership is no longer as important in the defence sector as it once was, lack of national control over key capabilities increases our vulnerability to external events and decisions made by foreign governments and companies.

6. This would be less of an issue if there had been sufficient progress to open both European markets and to improve the terms of technology trade with the US. It also remains the case that European governments still constrain investment in their national defence industries. The Society accepts that recent moves to limit national protectionism in the EU defence market—notably through the establishment of the European Procurement Agency—should improve matters. But this is still too little, if not too late to match the relative openness of the UK defence market and to create a more balanced and competitive international environment for UK defence companies.

SYSTEMS ENGINEERING

7. Systems Engineering is rightly afforded prominence in the DIS. This capability is at the top of the defence industrial value chain. UK industry has a wide and deep set of capabilities across a wide-range of defence applications. On shore systems engineering and integration affords vital access points for high value UK-based equipment suppliers and will be essential in facilitating UK-based up-grading and support. The Society is concerned that there is a distinct threat to UK-based systems engineering capability in complex weapons.

FIXED WING

8. Looking beyond the current generation of fixed wing aircraft, there is a major threat to the UK’s design and manufacturing capabilities. There will be considerable business in upgrade and support work which in some areas will be of a very high quality, but this will be no substitute for developing a sophisticated fixed wing platform. There will be a contraction of the present UK-based supply chain and a threat to UK equipment suppliers whose technological competence has historically been honed by access to a major programme where the UK has had critical influence over design and systems integration.

9. The JSF, although the UK has an important role in this US-led programme, will not offer the same range and depth of work as the Typhoon, particularly for small, metal based suppliers. It is unlikely that the US will ultimately allow the level of technological transfer that is the norm for European collaboration. HMG must continue to press the US government hard on this issue, but we are of the opinion that there is

no realistic alternative to the JSF to meet future UK requirements and to satisfy vital industrial interests. Given our standing in the project, it is vital that any European Final Assembly and Check Out (FACO) facility is located in the UK.

10. It is also imperative that the DIS proposals for UAV and UCAV technology demonstration are fully implemented. Even this commitment will not protect a large number of existing UK suppliers, but it will be essential to ensure the future of critical elements of the UK mission systems sector and especially for UAV propulsion technologies which are likely to have important civil applications. An on shore UK capability will be essential to facilitate UK participation in international programmes at an appropriately high level. UAVs or autonomous systems generally will grow in capability and play an increasing role in military operations. However, to make the best use of their undoubted strengths, the UK must invest wisely in systems that are fully compatible across all service applications, to investigate all-weather concepts and to anticipate the huge increase in band-width requirements for control and operation.

11. Overall, the Society recognises that the UK fixed wing sector faces a particularly challenging future and in all probability some degree of contraction. Given the healthy demand for the current generation of equipment, there is time to plan and to invest in the future and to manage the transition to a new industrial structure. But there is little room for slippage in the 2007 target for implementation.

HELICOPTERS

12. The Society fully endorses the Strategic Partnership concept elaborated in the DIS. This will go a long way towards protecting the UK's strength in airframe, propulsion and mission systems. UK industry will have to justify this position though proper regard for efficiency and sound management.

COMPLEX WEAPONS

13. The Society is concerned about the future of the UK-based guided weapons sector given the DIS statement about little new design and development work beyond 2008. The DIS rightly observes that complex weapons possess "battle winning" capabilities. They are also a critical element in enhancing the overall capability of platforms throughout their lifetime. The DIS is looking to retain on shore capabilities in this sector largely through conceptual studies in synthetic environments or through a limited use of technology demonstration. While there may be some short term protection afforded to UK-based suppliers, the implication is that the MoD will be prepared to accept a greater future dependence on external sources of supply. The work of the proposed MoD-industry working group to consider the future of UK weapons design, development and manufacturing must be expedited as soon as possible.

C4ISTAR

14. This is by definition a complex system of systems in which the aerospace element strictly defined is limited to the provision of aircraft and satellite platforms. There is no need automatically to buy these from a UK supplier unless there is a specific technological value in integrating platform with equipment and sub systems. The DIS rightly recognises this in relation to satellites where the UK has a strong niche capability. The Society hopes that resources will be allocated to the sector to maintain this capability in the absence of defined programmes.

MISSION SYSTEMS

15. The Society fully endorses the DIS view about the importance generally of mission systems to the contemporary and future defence industrial base and the UK's undoubted strengths in this area. However, it is imperative that the sector receives adequate investment and support for its technology base.

DEFENCE RESEARCH TECHNOLOGY AND INNOVATION AND TECHNOLOGY PRIORITIES

16. It has become part of the conventional wisdom that without an adequate technology base, UK-located defence capabilities will decline and its industry fall behind in a globalising defence market. It is equally obvious that in a period of transition from platform to network centric technologies that the UK should invest even more in the defence technology base and to integrate the opportunities afforded by commercial technology streams. The DIS has followed several recent initiatives to improve the planning and delivery of defence technology acquisition. The Society has been especially gratified by the progress made to improve the coordination of R&D exemplified by the development of a National Aerospace Technology Strategy. Such developments if followed through will bring real benefits to the UK defence industrial base. However, these sentiments will come to naught without adequate funding. The MoD has recently begun to address some years of relative neglect in this respect. Failure to maintain commitments in this area would nullify all of the good work entailed in setting out a comprehensive defence industrial strategy.

17. Equally, early investment in technology increases the confidence in predicting the cost and performance of new programmes to the overall benefit of the procurement process. Reducing the length of time expended in developing new equipment also depends upon a steady introduction of new technology through a process of incremental development drawing from a continual stream of defence specific as well as civil technological innovation. This is explored at some length in the DIS and echoes similar findings based on US experience and analysis. Again, the test of good intentions will be in changing practices and fully applying the lessons of past procurement. Most important, the customer will have to resist the dual temptations of demanding too much at the outset of a new programme and of interfering in the process of development to capture the latest example of new technology.

18. The Society remains concerned about the new technology processes that have had to be invented following the creation and privatisation of QinetiQ. The UK is still unique amongst the major defence industrial nations in planning to operate in this way. We are not persuaded that the new situation will fully enable the MoD to function as an intelligent customer. We also remain to be convinced that a commercially driven research entity will necessarily provide a secure basis for UK located defence industrial activity. Much depends on how things will actually operate once the full privatisation of QinetiQ is completed and from this point there is no going back. The DIS depends heavily on successful technology programmes the uncertainty surrounding future UK Technology acquisition and the future role of the “national” research agency poses a major risk.

FINAL OBSERVATIONS

19. The DIS is the latest in a line of reports and studies since 1997 directed at procurement reform. Much of this has been presented as “work in progress” but the lack of real progress on implementing key aspects of policy has often been disappointing. In many respects, the DIS is another “work in progress” document. With so much of this affecting the aerospace sector, the Society awaits the conclusion of the next stage before making a final judgement on the outcome. However, time is now of the essence and the MoD must resolve the outstanding issues as soon as possible.

20. The DIS, if fully implemented, should provide a stable framework for company planning as well as reinforcing the value of partnership between customer and suppliers. There is much still to be done, however, and there are several areas still to be resolved in the short term if a number of key capabilities are to be retained in the UK. The most demanding aspect of the DIS will be maintaining capability in the absence of specific programmes. Whether through a comprehensive programme of technology demonstration or some other “virtual” approach to the problem this will require adequate levels of funding sustained over long periods of time. It will also be essential to include supplier companies to a considerable depth or face the danger of hollowing out the UK defence industrial base.

21. The DIS points to a new business model demanding radical changes on the part of the supplier. The Society would note that this should also entail equally radical changes on the part of the customer. In the first instance this should entail adopting clearer and more consistent approaches to full life support contracting as well implementing the recommendations of the critical evaluation of procurement practices which the MoD and the National Audit Office are jointly conducting.

22. In conclusion, the Royal Aeronautical Society recognise that the aerospace industry is subject to rapid and often disruptive change and that the UK has had to compromise much of its independence to maintain much of its overall defence-aerospace competence. The DIS has much to commend in its promotion of a skilled defence industrial workforce in a UK-based defence industry that will continue to offer a challenging career for the future aerospace professional. However, the DIS must deliver on its commitment to maintain core skills and to protect the critical design and development capabilities embodied in the individuals and teams that in the final analysis comprise the heart of the UK defence industrial base and which will continue to provide the basis for future world-class UK sourced defence equipment.

18 January 2006

Memorandum from British American Security Information Council (BASIC)

1. INTRODUCTION

1.1 The defence industrial strategy is a lost opportunity of historic proportions. Rather than address a broader global security context that reflects on the inter-related political, social and environmental issues essential to the development of a peaceful world in the 21st Century, and the role that the UK’s manufacturing and technology base could play within it; the Ministry of Defence, in an orgy of self congratulation, follows an all-too predictable path. Defining security in exclusively military terms, it celebrates an industrial strategy that, despite the end of the Cold War, continues the drive for ever-more sophisticated and expensive military platforms.

1.2 As a result, the UK will be committed, for the next generation, to high levels of military research, development and procurement, and an aggressive arms export policy—a pocket-superpower so tied to US military strategy that it is incapable of making a rational analysis of its own security needs.

2. THE POST-WAR YEARS

2.1 After empire and through the long period of relative economic decline during the post-war years, the UK continued to “punch above its weight” militarily.¹ Successive governments attempted to compensate for the loss of great-power status with the maintenance of a broad defence capability and a domestic military-industrial base that could provide the armed forces with the full range of advanced equipment. As a result, the UK traditionally spent a higher proportion of its GDP on the military compared to other medium-sized industrial economies. And, of course, it was a Labour government that took the decision to develop an atomic weapons programme as the ultimate symbol of the UK’s desire for a continued place at the world’s top table, the UN Security Council; even though that decision tied us into a dependent relationship with the United States for its nuclear missile technologies, in turn having broader impacts on our freedom of action.

2.2 This obsession with military capabilities was not universally welcomed. In 1951, during the first Atlee administration, when military spending was increased and charges for some health care provision were introduced, senior ministers resigned in protest, including Harold Wilson, the future prime minister. Reservations were also expressed about the burden of military expenditure and the diversion of scarce industrial and technological resources from areas of civil R&D and production that were essential to the export drive and post-war reconstruction, especially when faced with emerging competition from West Germany and Japan.²

2.3 Indeed, it was the first Wilson government, in the mid 1960s that attempted to utilise the full technological potential of the government’s military research establishments by setting up the Ministry of Technology as an umbrella organisation. Its remit was to focus on civil applications of government-led R&D in areas seen as essential for the future of the UK in the international markets of engineering, aerospace and the emerging electronics sector. The “white heat of technology” subsequently floundered as a result of the general economic difficulties faced by the administration, but it still remains a significant example of how central government attempted to shift the unbalanced, strategic direction of key industries away from military towards civil production.³

2.4 The dilemma of maintaining high military expenditure, within a framework of limited public resources, would face successive governments as periodic strategic reviews resulted in the gradual reduction to overseas commitments and some cuts to the size of the armed forces. Various efficiency reforms were also pursued, most notably, the government-led restructuring and rationalisation of the military-industrial base to take advantage of economies of scale through larger contractors, eg, the merging of six engine companies into Rolls Royce.⁴ Nationalisation brought further consolidation in the 1970s through the creation of British Aerospace, as the leading airframe manufacture, and British Shipbuilders, responsible for both surface vessels and submarines. Internal efficiency reforms to the MoD were also pursued with the merging of the service based procurement organisations into one Procurement Executive.⁵

2.5 But the trend towards increasing sophistication and expense for each new generation of military equipment continued; not helped by a series of scandals over major programmes like the Nimrod Early Warning Aircraft, that were tendered on a cost-plus basis and experienced massive cost escalations and severe delays.⁶ It was increasingly argued that UK arms manufactures had a protected position of guaranteed contracts and with little incentive to control costs, as the MoD would effectively underwrite major programmes if they ran into development or production difficulties.

3. THE LEVENE REFORMS AND THE INTERNATIONALISATION OF MILITARY INDUSTRIES

3.1 During the 1980s, the Thatcher government initiated a period of radical reforms in military-industrial policy, as part of its general approach that stressed the efficiency benefits it claimed would be generated through market forces. Firstly, it privatised major defence industries including British Aerospace, British Shipbuilding and the Royal Ordnance factories. Perhaps more significantly, the government placed heavy significance on competition, through what became known as the Levene Reforms, after the Chief of Defence Procurement, Sir Peter Levene.

3.2 Instead of cost-plus contracts, major programmes would be tendered on a competitive basis wherever possible, including the use of overseas suppliers against previously favoured domestic ones, and with fixed prices that put the burden of risk and cost overruns on the contractor rather than the Ministry of Defence.

3.3 These reforms are generally considered to have been successful in generating a more commercial culture, with savings of 10% cited in the procurement of major equipment, a significant level. But the evidence for such claims is flimsy. Many of the major projects that were tendered competitively during the late 1980s to mid 1990s were subject to delays and cost overruns, and it is not clear how these extra costs were apportioned between the MoD and the companies, since contracts were renegotiated on a confidential basis.

3.4 In many cases, savings were made simply through the reduction in quantities ordered and delays to in-service dates, which could be attributed to the end of the Cold War and the general reduction in the numbers of equipment deployed. There were also clear examples of where decisions had been taken to award contracts to UK companies for industrial and technological reasons since to do otherwise might risk the loss of what were considered to be vital assets, and despite clear cost advantages from overseas suppliers.⁷

3.5 Another complicating factor that would become more significant through this period was the increasing internationalisation of the military-industrial sector as leading companies attempted to consolidate in global markets. A variety of arrangements developed involving takeovers, alliances, and joint-production agreements between UK companies and both American and European manufacturers, partly building on older collaborative arrangements, but which saw the creation of much larger international corporations with both military and civil interests. In the UK, the most obvious and significant outcome was the emergence of BAE Systems—formerly British Aerospace, as a global military-industrial giant (if still smaller than the major American corporations like Lockheed), taking over GEC-Marconi in 1999 but also embarking on a series of acquisitions in the United States. This ensured, not only its domination of UK procurement, but also a healthy slice of the much larger American market and its place as a leading military exporter.⁸

3.6 So the stress on competitive tendering, already tenuous in theory, became even more so in practice, as BAE began to consolidate itself both as the UK's leading platform manufacturer and as the systems integrator for a range of vital equipment, including command and control and missiles.

4. NEW LABOUR AND THE DEFENCE INDUSTRIAL STRATEGY

4.1 New Labour has, essentially, carried on with the policies of the previous government, ie, to fudge these inconsistencies and failures in the hope that nobody notices. On the one hand it celebrates the application of competition and market forces, despite the continuing cost over runs and delays in major projects. On the other, it emphasises the need for long-term relationships with preferred UK-based suppliers for what are considered to be essential areas of industrial and technological capabilities, but denies that the overall commitment to competition is undermined.⁹

4.2 Also highlighted are further internal reforms such as the Procurement Executive's re-branding as the Defence Procurement Agency and the introduction of Smart Procurement, now re-titled Smart Acquisition, to reflect a more thorough approach to the whole life cycle of equipment procurement and maintenance. Especially important was the clarification, at an early stage, of the technological challenges that might prove expensive to rectify if left to the later stages of production. But, again, there is little evidence of substantial improvements. On the contrary, some concerns have already been expressed that the new regime is not being applied consistently and may need to be re-focused. Even Smarter Acquisition perhaps?

4.3 Unsurprisingly, the MoD projects the DIS as a radical framework, posing real challenges to the prime contractors. Much is made of the reduction in platform numbers, from the middle of the next decade, and the need for contractors to move to "life-cycle procurement" around upgrades and other forms of innovative systems integration. If this really were a radical departure from previous policy then it would deserve greater attention. But there have always been peaks and troughs in the procurement cycle and virtually all major platforms have experienced upgrades, especially of electronic equipment, which have, in some cases, been more expensive than the original contracts.

4.4 What is more interesting about the DIS, is the greater clarification given to the consistent but less transparent policy of protecting those industrial and technological capabilities deemed essential for national security, despite the rhetoric that still surrounds competitive tendering and market principles. The DIS identified the design of complex ships; nuclear submarines; armoured fighting vehicles; fixed-wing aircraft; helicopters; general munitions; complex weapons; command and control; chemical, biological, radiological and nuclear protection; and test and evaluation as key areas—all of which involve high-technology capabilities and a long-term commitment by the government to support military R&D and procurement in the UK.

4.5 Here is where the true significance of the DIS lies. The government sees itself, through the MoD as having a strong influence over the continuation of an advanced, military-industrial technology base that spans specialised areas of aerospace, engineering and electronics. But the quid-pro-quo as far as industry is concerned, must be the maintenance of a steady ordering pattern for new equipment, despite the public emphasis on reduced platform numbers. To put this into context, total spending by the MoD was nearly £31 billion in 2004–05, of which over £8 billion was on procurement and £2.6 billion on research and development, the majority with private industry.¹⁰

4.6 One obvious conclusion to be drawn is on the future of the UK's nuclear weapons system after Trident. Although no public announcement has been made on what the government's preferred option is, and we still await a parliamentary debate on one of the most important decisions this government will make, the logic of the DIS is irresistible. A new generation of submarines will be ordered and work will begin after the peak production on other naval systems in 2015. Questions may remain over whether ballistic missiles or cruise missiles will be deployed, but these relate more to the future strategic choices of the United States and, therefore, the UK's continued dependency on American options for its own nuclear forces. What

cannot be in dispute is that an upgrade to the existing Trident submarines and attendant systems is simply not consistent with the strategy of the DIS nor with the demand for production contracts from industry in order to profitably maintain that capability.

4.7 The other obvious factor is the growing stranglehold of BAE on procurement, since the MoD's emphasis on strategic need closely fits the company's range of monopoly production in the UK. We estimate that over 50% of major contracts by value were placed with BAE in the last financial year (although no breakdown is provided by the MoD other than a figure of £500 million or more). The government seems comfortable with this position because the company is viewed as a global asset; vital both to the UK's industrial base, and to the country's export strategy through the sale of military equipment, including the recent contract with Saudi Arabia for Typhoon fighter aircraft.¹¹

4.8 So the logic of the DIS is to conflate the interests of a private company with the interests of the country, even if this means we have a very narrowly defined concept of advanced technologies and that the government continues to pour billions of pounds into specialised military R&D and procurement that has little application to the broader civil, industrial and technological base.

5. ALTERNATIVE APPROACHES

5.1 None of this is inevitable. The government clearly has a pivotal role to play in the strategic direction taken by major UK industries and the opportunity still exists to consider policy options other than the present industrial and technological cul-de-sac. What is lacking is the political will for radical reform.

5.2 A European alternative is one approach that deserves serious consideration. Instead of continuing as a junior partner to the United States in its global power projection, the UK could play a leading role in the development of the EU as an independent power in world politics and international security. This would build on the work already undertaken to establish a joint force to carry out what became known as the "Petersberg tasks", first defined by EU partners in 1992, namely peacekeeping, humanitarian aid and crisis management, including peace enforcement, all within the framework of UN sanctioned intervention.¹²

5.3 Concerted efforts are needed to rationalise national military-industrial capacities, to co-ordinate procurement and to integrate forces to carry out such operations. Inevitably, there would be loss of specialised military R&D, industry and employment but the trends in employment have been steadily declining in any case, from 550,000 in 1990–2001 to 305,000 in 2003–04. Of this, MoD related-employment had declined from 405,000 to 245,000, while export-related employment declined from 150,000 to 65,000.¹³ The focus would be on how to tap into a much broader European, civil technological and industrial base that was supported by all European governments, providing new opportunities in the expanding international civil markets, while also satisfying the demand for some military specialisms tied to peacekeeping and peace enforcement operations.¹⁴

5.4 Under this policy, the shift of procurement and R&D funding from the MoD could be significant. There would be the opportunity to expand the role of the DTI in developing new forms of support with UK industry around civil programmes, with the MoD playing a subordinate role of advising the DTI on which military specialisms might need to be maintained, either in the UK or through joint European capabilities.

5.5 A more ambitious project still, would be to replace the DIS with an International Security Industrial Strategy (ISIS). Tony Blair was absolutely right to identify climate change as the greatest threat facing the world through its multi-faceted impacts on sea levels, extremes of weather, destruction of complex ecologies, etc. A simple test of the strategy would be its effectiveness in helping to reduce, and quickly to eliminate, our dependence on external fossil fuel and uranium supplies, through research, development and production of new forms of renewable energy systems and of new materials that conserve energy consumption. (Compared to the MoD's £2.5 billion R&D budget, the government provided just £12.2 million in renewable energy R&D in 2002.)¹⁵

5.6 An international security industrial strategy would relate these capabilities directly to the UK's development policies, providing assistance to emerging economies in reducing their demand for non-renewable energy supplies and so helping to cut global warming and the debt pressures that do so much to undermine security. Instead of leading in arms exports that add to regional tensions, the UK would be sending a clear signal that it saw itself as a world pioneer in peaceful technologies and in supporting sustainable international development that made the world a safer place. The implications would, of course, be profound since these forms of security would take precedence over traditional defence preoccupations.

6. CONCLUSIONS

6.1 The concept of a military-industrial complex (MIC), made famous by President Eisenhower, that organises security policy around the needs of an elite group of private businesses and military bureaucracies in order to maintain high levels of military spending, may have fallen into disrepute. But the UK's DIS provides ample evidence that a powerful military industrial network exists, which if not dominant, clearly has substantial influence. Senior members of that network move effortlessly through the system, from senior

positions in the defence procurement and R&D agencies to senior positions in the major defence contractors (and back again) while sitting on important committees, think tanks and other agencies with direct connections into the heart of government decision making.

6.2 The map of international security can then easily be transposed onto a pre-defined superstructure that emphasises the continued importance of “high-technology” military-industrial specialisms in aerospace, shipbuilding and engineering and provides an irresistible logic that there can be no alternative approach. Such is the influence of this network.

6.3 We are left in the invidious position that virtually no debate is taking place about decisions that will profoundly influence the nature of security and industrial policy for the next 20 to 30 years. As a result, UK military spending will remain artificially high and focused on expensive platforms, including a massively costly replacement for the Trident system; monopoly supply through BAE; specialist military R&D with little benefit to the broader civil industrial and technological base; and global arms sales.

6.4 The repercussions are serious. By committing ourselves to a new generation of nuclear weapons we undermine the Nuclear Non Proliferation Treaty at a critical time of potential breakdown, and when there is a specific responsibility on existing nuclear weapons powers to do everything possible to work towards nuclear disarmament.

6.5 BAE, with the government’s enthusiastic support, will be left in the enviable position that all private companies aspire to, monopoly power, whereby it can plan for the long-term with absolute assurance that both large contracts and relatively high profit margins will be maintained. At the same time, this is presented as an important contribution to national security, a boost to our high technology industries and employment, and vital to our export potential.

6.6 There is no guarantee of BAE maintaining a presence in the UK. Since the takeover of GEC in 1999, employment at the company had declined from 115,600 to 68,100 by 2002¹⁶ and, while BAE will continue to play its trump card as the “national champion” of UK manufacturing, it is also in a strong position take advantage of further international consolidation, including a possible merger with a US military-industrial giant like General Dynamics. Restructuring could see the loss of capacity in the UK and sourcing to foreign subsidiaries with highly skilled and low-paid foreign workforces.

6.7 Nor should exports of fighter aircraft, warships, missiles, etc, be greeted with universal acclaim when taking into account the levels of hidden subsidy and inherent corruption that surrounds such deals. Our overseas agents may, on occasion, call themselves princes earning commission, but they are simply petty criminals taking bribes. It should be a source of shame rather than celebration, that the UK plays a leading role in an arms trade that damages the real needs of so many developing countries, and contributes to destabilisation, particularly in those areas of regional tension.

6.8 When faced with the enormous power of vested interests and the effective closure of debate, it would be easy to accept this as a *fait accompli*. But, the very fact that political influence is still important over the scale and direction of the military-industrial sector demonstrates that there is nothing inevitable about this process. The Labour government under Harold Wilson provided a strong critique of the UK’s dependency on military R&D and a similar debate is needed now in the modern context of the UK as a medium-sized European economy that can contribute to new security challenges through its industrial and technological capabilities.

6.9 In 30 years, with oil and gas running low and our all-singing, all-dancing, military platforms lying idle in their bases for lack of fuel, the UK might face some calamitous environmental disaster; perhaps an unprecedented tidal surge that swamps the Thames barrier, causing extensive flooding in London and the South East. Future generations will look back at the decisions we are making now, to pour billions of pounds into armaments, with a combination of incredulity and anger that such a narrow interpretation of security continued to dominate the psyche of our national leadership. Who knows, there may even be a spare copy of the DIS floating out of the MoD, down the Thames, and into the briny expanse of what was once Norfolk.

20 January 2006

REFERENCES

1. Malcolm Chalmers, *Paying for Defence—Military Spending and British Decline* (Pluto Press, 1985).
2. *Ibid*, pp 54–55.
3. Richard Coopey, “Restructuring Civil and Military Science and Technology: The Ministry of Technology in the 1960s”, in Richard Coopey, Matthew Uttley, Graham Spinardi, *Defence Science and Technology Adjusting to Change* (Reading, Harwood Academic Publishers, 1993).
4. Trevor Taylor and Keith Hayward, *The UK Defence Industrial Base: Development and Future Policy Options* (Brassey’s Defence Publishers, 1989).
5. *Ibid*, p 100.
6. Public Accounts Committee, *Control and Management of the Development of Major Equipment* (House of Commons Paper 104, Session 1986–87). Hence the term “gold-plating” with the continued addition of capabilities irrespective of cost.

7. Steven Schofield, "The Levene Reforms: An Evaluation", *Defense Analysis*, Vol 11, No 2, pp 147–174 (1995).
8. Key Note, *Market Review 2003—The Defence Industry*, pp 101–123 (Hampton, 2003).
9. *Defence Industrial Strategy*, Cm 6697 (December 2005), also builds on the MoD's Defence Industrial Policy, MoD Policy Paper No 5 (MoD, 2002).
10. See *UK Defence Statistics 2005*—www.dasa.mod.uk/natstats/ukds/2005/c1/sec1intro.html. Also, early in 2006, the privatisation of QinetiQ, once part of the Defence Evaluation Research Agency (DERA), was completed, although the government still retains a 25% interest—*Guardian*, 13 January 2006, "Labour Condemned Over QinetiQ flotation".
11. See Ian Davis and Emma Mayhew, *What Happens When A White Elephant Meets a Paper Tiger? The Prospective Sale of Eurofighter Typhoon Aircraft to Saudi Arabia and the EU Code of Conduct on Arms Exports*, BASIC Paper No 49, December 2005 <http://www.basicint.org/pubs/Papers/BP49.htm>
12. These tasks were established in June 1992 at the Ministerial Council of the Western European Union (WEU) held at the Petersberg Hotel, near Bonn, Germany.
13. *Defence Statistics*, 2005.
14. Steven Schofield, *The UK and Non-offensive Defence*, pp 23–25 (Security Studies Network, 2002). See also, Chris Langley, *Soldiers in the Laboratory—Military Involvement in Science and Technology and Some Alternatives* (Scientists for Global Responsibility, 2005), www.sgr.org.uk
15. New Economics Foundation, *Mirage and Oasis—Energy Choices in an Age of Global Warming*, p 3 (NEF, 2005), www.neweconomics.org
16. Key Note, p 119.

Memorandum from Serco

You invited industry to submit written evidence to your inquiry on the Defence Industrial Strategy (DIS) published by the Ministry of Defence in December 2005.

We welcome the DIS and congratulate Lord Drayson and the MoD team on the robust way they have developed this paper. If implemented and joint implementation between the MoD and Industry during 2006 is going to be critical in initiating the changes proposed in the document, then it has the potential to be a watershed within the Defence community. Conversely, if it is not implemented properly, it may drive the wrong behaviours by industry. We reinforce that success will depend on a change of culture on both sides.

In particular we welcome:

- The proposal to review the "acquisition construct";
- The greater clarity DIS provides on policy, capability planning and budgets in individual sectors;
- The emphasis on different procurement models to ensure long-term value for money.

The DIS is inevitably focussed on the part that technology development and our manufacturing industry plays in delivering operational capability. We support your view that it is critical for the MoD to invest early in identifying the true costs of programmes, including the operation, upgrade, maintenance and repair of platforms and weapon systems, together with the manpower and appropriate training support required to provide the desired operational capability. However, whilst stressing the importance of improved "Through elsewhere. Whilst manufacturing companies are an essential element of TLMP, there are a range of other companies who can bring an independent approach and have the potential to provide better long-term value for money solutions.

It is also important that in implementing the DIS, the MoD recognises more clearly that industry does not consist only of manufacturing "Primes", a supply chain and innovative SMEs. The term "Prime" should more logically describe the role that a company plays in a particular project and not, as the paper suggests, represent a position in the marketplace. The paper gives little recognition that there will be projects where it is more appropriate for non-manufacturing companies to take a "Prime" role and for manufacturing companies to be sub-contractors and part of the supply chain.

Overall, along with the rest of the DIC, we thoroughly support the aims and benefits of the strategy and look forward to playing our part in its implementation.

19 January 2006

Memorandum from the Defence Industries Council

You requested the submission of evidence in advance of your inquiry into the recently published Defence Industrial Strategy (DIS). I have been asked to provide the attached on behalf of the Defence Industries Council (DIC).

The DIC worked closely with the Government on the development of this paper and welcomes the Government's decision to publish a DIS. We appreciate the very constructive approach that the Government has adopted in seeking industry input into this exercise. The DIC fully shares the Government's aim to equip the UK's armed forces with the best operating capability whilst achieving good value for taxpayers. It is also central to a successful DIS that the Ministry of Defence should specify its future priorities and the capabilities that must be retained within the UK with great clarity so that industry can plan with more confidence for the future.

We are pleased that MoD recognises the contribution the UK defence industry makes to our Armed Forces' operational efficiency and welcome the emphasis the Report places on:

- having a profitable defence industry which can attract investment;
- increased openness and transparency in MoD/industry relations;
- MoD's willingness to adopt a variety of procurement models that offer better value for money (including partnering and competition);
- greater industry involvement in delivery services to the front line;
- the implementation of Through Life Capability Management; and
- the increased alignment of the Research and Development, procurement and support programmes.

The DIS paper is a detailed document which will take time for companies to assess fully and for the defence trade associations to gather the views of their members. The DIC has not met since publication to discuss the final paper and we have not attempted to reach a common view. We recognise that the paper contains some unwelcome news for some companies—but given the changes that are taking place in defence industry over recent years this news is unlikely to be entirely unexpected. There has already been considerable restructuring within the UK defence industry and that trend is likely to continue as defence market in the UK changes. It will be important for MoD to provide further clarification on what the report means for the whole of the defence industry, through all of the elements of the supply chain which contribute to defence capability, as well as specific sectors and for specific projects.

Following publication the DIC is keen to work constructively with MoD to ensure implementation is taken forward as effectively as possible. We wish to ensure that key initiatives like the appointment of an MoD Commercial Director, the establishment of the Pathfinder programmes and the post DIS review of internal processes are fully supported with high quality fully resourced teams. We are looking at the NDIC's role and aim to reinvigorate the various MoD/Industry working groups so that they can support implementation. The DIC Secretariat will attend the DIS—Internal Change Launch Workshop scheduled for 24 January and we look forward to receiving further briefing at the next National Defence Industries Council meeting which is on 1 March.

I attach a background note on the Defence Industries Council for your information. If the DIC can be of any further assistance to your inquiry please do not hesitate to contact me or Michael O'Connor, Assistant Secretary to the DIC with whom I know you are discussing arrangements for the DIC to provide oral evidence.

18 January 2006

Memorandum from BAE Systems

In your Operational Note of 15 December 2005 you invited submission of written evidence on the government's Defence Industrial Strategy (Cm 6697). I am writing to provide the views of BAE Systems.

BAE Systems welcomes the publication of the Defence Industrial Strategy as a blueprint for the way in which the government and the defence industry should work together in the future to meet the needs of our Armed Forces, deliver value for money to the taxpayer and sustain the UK's world-class defence industry.

We also very much welcome the level of engagement with industry in the formulation of the Strategy and the leadership shown by the Defence Secretary, the Minister for Defence Procurement and their Ministerial colleagues in other Departments in delivering a comprehensive review against a demanding timetable.

While we are still assessing the Strategy's detailed implication for BAE Systems across the breadth of our business activities, the more open dialogue between government and industry that it advocates should certainly enable more effective planning of investment in people, skills, technologies and facilities. The Strategy has the potential to bring an end to the boom and bust industrial cycle that has afflicted the industry in the past and help to secure a healthy, profitable and innovative UK defence industrial base acting in support of the UK Armed Forces.

As part of this we welcome the Strategy's recognition that the deliver of through-life capability depends on establishing long-term partnerships and having a variety of contracting mechanisms. We very much support the emphasis the Strategy places on the need for affordable and value-for-money solutions to the needs of the armed forces. BAE Systems was pleased therefore that a partnering arrangement between the company and the MOD was signed on 15 December 2005 for the support of the Army's current and future armoured fighting vehicle fleets. In the air sector we are committed to engaging constructively with the Ministry of Defence to develop an appropriate long-term arrangement to deliver through-life availability for a significant proportion of the fixed wing fleet. And we will work with government and others in the industry to address the Strategy's conclusion, which we share, that there would be benefit from consolidation in the maritime sector, based on the substantial forward core work on complex surface ships, submarines and their support. BAE Systems recognises that such long-term partnering arrangements place real challenges and require considerable change on both sides to ensure value-for-money outcomes.

The Strategy importantly recognises the need for government and industry to work in partnership to identify and secure the best technologies available to meet the needs of the Armed Forces and for the United Kingdom to have adequate control over any offshore technologies to ensure that the UK's sovereign needs are safeguarded. BAE Systems fully supports these principles and will work closely with the Ministry of Defence and other government departments to achieve these mutual objectives. BAE Systems also welcomes the focus on rapid, incremental technology insertion.

The Strategy makes clear the importance of the UK industry's systems engineering and integration skills and capabilities across the air, land and sea domains. We welcome the acknowledgement that such skills and capabilities, including at the highest level of systems integration, are essential both to deliver operational independence to the armed forces and to sustain the continued capabilities and competitiveness of the defence industry. BAE Systems also recognises the challenges set to develop the whole supply chain to maximise the deliver of capability to the front line.

We were accordingly pleased that the Ministry of Defence intends to invest in a new technology demonstrator programme in the key area of Unmanned Air Vehicles (UAV), a domain in which BAE Systems already has significant skills and experience. In the land domain the FRES programme is essential to sustaining a vital area of national military and industrial capability and, in line with the principles set out in the Defence Industrial Strategy, BAE Systems will continue to evolve its land systems business in co-operation with the Ministry of Defence and industrial partners to ensure it is in the strongest possible position to lead this programme.

Publication of the Strategy is, of course, only the beginning of the work that now needs to be done to give it effect. And the Strategy poses significant challenges for both the Ministry of Defence and industry to be able to fully capitalise on the potential benefits it offers. We do not underestimate the size and complexity of the task. For its part, BAE Systems stands ready to meet those challenges and looks forward to working with government and with colleagues in industry in the interest of Team Defence.

19 January 2006

Memorandum from Fleet Support Limited

1. The DIS is a welcome step forward and the broad thrust is supported. The current process is too demanding upon the national ship repair capability and new ways of working create the opportunity to drive out further costs.

2. The move to an Alliance construct will require open debate about costs, capacities and capabilities. This cannot proceed within the present competition, law environment and Ministerial permission is needed to allow this necessary debate to take place within envisaged timescales.

3. There is a clear opportunity here to use the findings on cost effective support solutions for new ships (T45) and pull the benefits forward into the current fleet.

23 January 2006

Memorandum from QinetiQ

INTRODUCTION

QinetiQ has an important locus in defence of the United Kingdom: through its role as an originator of cutting-edge technologies for the Armed Forces and Britain's defence industries; as a partner of defence contractors to exploit innovation into the supply chain; and through its testing and evaluation of aircraft, munitions and other equipment for the MoD. When QinetiQ was created by MoD, it was constrained so as

to sustain access to independent, expert advice to provide technological support to procurement. QinetiQ also provides an important route for defence-funded research to create value in adjacent civil markets, and has a growing position in technology innovation across a number of global markets.

As MoD's second largest UK supplier, we welcome the publication of the Defence Industrial Strategy, and also the Select Committee's decision to instigate an inquiry into the implications of the Strategy, not least for UK defence research and technology.

EXECUTIVE SUMMARY

QinetiQ supports the main conclusions of the Defence Industrial Strategy (DIS). We share the vision that future defence capability will need an agile industry, where defence capability is driven more by technological innovation in sub-systems rather than platforms. We also support the approach based on MoD-owned architectures that enable open access to the best suppliers, with technology insertion into the increasingly longer-lived major systems becoming the central model for procurement. Where there is one clearly dominant UK player, we agree that a partnering approach makes sense, supported by technologically strong independent support to the MoD customer side. We see many issues to address, including the behaviour within industry and processes within MoD, but there are instances where the basic approach set out in the DIS is working.

However, there is a disparity in the treatment of the research supply base compared with the other sectors. Although the importance of research and innovation is mentioned throughout the document, the implications of the continual decline in research are not addressed. Despite the highlighting of benefits that have come from research undertaken within QinetiQ, and QinetiQ's leading position in most of the important and emerging technologies for the future, there is no analysis of QinetiQ's role in supplying research and innovative technology, and no consideration of the consequence of broadening the supply base on sustaining key centres of excellence.

Whilst we recognise that much further work is planned by MoD in implementing DIS, and QinetiQ will input strongly into this process, The Committee should carefully consider the implications of DIS treatment of research and innovation.

QINETIQ'S EVIDENCE IN DETAIL

1. The Defence Industrial Strategy sets out a well-argued case for agility in the defence supply base in order to meet the unpredictable defence context that the UK is bound to face for the foreseeable future. QinetiQ welcomes the strong case that DIS makes for maintaining world-class defence research, technology and innovation. We also support the analysis that identifies four different models for achieving value for money in defence equipment procurement, and the emphasis on partnering and open access to the most effective technologies wherever these originate in the supply chain, although we do not underestimate the cultural change this implies across industry and inside MoD.

2. We see successful examples of this partnering approach emerging in a number of current programmes where QinetiQ is working closely with defence prime contractors to take advanced technology rapidly into existing equipment through technology insertion, as in Tornado, or where we are bidding with defence primes to provide world-class sub-system capability, as in Soothsayer programme where QinetiQ's advanced electronic surveillance solution has been selected. In most of the equipment programme examples highlighted in Section B, QinetiQ is a partner contributing key intellectual property through teaming relationships with prime contractors.

3. We also support the recognition of the importance of systems engineering and the role architectures play in enabling future flexibility and encouraging open access to innovative solutions. It will be very important that these architectures are owned by MoD to preserve supply options for whole life support, and MoD will need expertise to support the development and evolution of architectures, and to help them manage their relationship with the prime contractors, especially in long term non-competed relationships. QinetiQ has traditionally supported MoD in this area. For example, QinetiQ devised the specific architecture approaches mentioned in the DIS.¹ We find it surprising that DIS does not consider the need to sustain this source of expert support, independent of the defence manufacturers.

4. DIS is right to highlight the successes UK has achieved in defence research. The table headed "Benefits R&T investment has brought to military capability" lists important examples achieved in recent years, most of which are due to the excellence of QinetiQ's teams.² Our record of competing in the world market shows that the UK does have a peer position with the best in a wide range of defence technologies, and has a clear lead in some. Innovation in defence technology, and the successful development of those technologies into combat tested equipment, is an area where the UK can take considerable pride.

¹ Defence Industry White Paper, Tornado and Submarine Combat Systems inserts, p 137.

² Of the seven examples, six are the result of MoD funded QinetiQ research.

5. The White Paper also cites analysis which shows that the quality of a nations' defence equipment correlates strongly with its previous funding of R&T, and that the impact follows a curve with a "knee" above which benefit saturates.³ It shows the UK funding in 2001 to be below this saturation point, and concludes that "there is a simple 'you get what you pay for' relationship between R&T spend and equipment quality . . . and that R&T investment buys a time advantage over open market equipment."⁴

6. However, there are two issues that call for further attention:

- The internal logic of DIS argues strongly that the decade-long decline in research funding should be reversed, yet this possibility is not even considered.
- There is no strategy to sustain excellence in the research supply base, in contrast to the explicit proposals to sustain capability in the other market sectors.

7. Considering first the level of defence research funding in industry, the UK MoD defence research budget has declined to half its value in real terms since the early 1990s, and although there have been gains in efficiency through the creation of DERA, and in better exploitation of research through the commercial opportunities enabled by the transformation to QinetiQ, defence research funding by MoD is now at an all time low.⁵ This reducing spend is exacerbated by a recent shift in priority away from strategic and long-term research towards near-term exploitation. QinetiQ has examples of exciting innovations which MoD has not been able to support, and instead has had to win research funds from the US. These include some disruptive technologies that we believe could have pivotal impact on defence capability 10–15 years out.

8. On the basis of data in the White Paper, MoD currently spends around £250 million per annum on defence research in industry,⁶ with a profile that is broadly flat in nominal terms (hence a decline in real terms) over the next 10 years. This compares with whole life equipment costs of around £11 billion per annum, rising at an expected inflation rate. Even considering other priorities, it is surprising that there is no intention to increase R&D spend given the certain payback in future defence capability/affordability that DIS itself argues is likely.

9. The Committee should consider this apparent internal contradiction in a document that speaks so strongly to the importance of technology and innovation on almost every page, yet is silent on the level of defence research funding. We argue that there is a strong case for increasing funding for defence research in industry.

10. Turning to the second apparent contradiction, the Strategy looks in detail at the choice of four models "so as to sustain key sovereign capabilities and to ensure long term value for money".⁷ In all the market sectors reviewed, bar research, an explicit sustainment strategy has been developed, for example to negotiate a long term partnering agreement with BAES Land Systems for AFVs, or, for submarines, to shape an industry that protects systems engineering and manufacturing capability. In these market sectors, attention is paid to the unintended consequences of fragmentation and loss of sovereignty.

11. In contrast there is no consideration of capability sustainment in the defence research supply base, even though this is an area that is perishable and strategically important, dependent upon world class experts and the coherent capacity to fuse often apparently diverse technologies together to meet any particular defence need.

12. A particular gap in the strategy is the role played by Research and Technology Organisations (RTOs).⁸ There is much debate about the catalysts for innovation and how innovation operates across universities, small companies and larger corporations. Lord Broers, in his Reith Lectures, observed that the resources needed for innovation are typically greater than those needed in scientific research, and that they have to include both an excellent understanding of the target environment and an intimate knowledge of the science that underlies the technology. Small and medium sized companies are one source of innovation, but in practice, successful exploitation is achieved by "creative technologists" working in an innovative environment where well networked people with widely differing technical backgrounds work together with others who understand the application space. QinetiQ has been able to provide this diverse and stimulating environment, and this accounts for its impressive track record of achievements.

13. QinetiQ has always been a nexus for the best ideas from universities and SMEs. Our research projects routinely involve the leading academic and industrial players in any field. QinetiQ's experts have the scientific depth and diversity of disciplines to be able to play on a world stage and harvest the latest thinking from defence and civil activities. Of the eleven "Technologies enhancing capability delivery", and the eight "Emerging technologies with defence relevance" listed in the paper,⁹ QinetiQ is a leading centre of excellence

³ Defence Industrial Strategy White Paper Fig A5(i).

⁴ Defence Industrial Strategy White Paper, A5.8.

⁵ The Management of Defence Research and Technology, NAO Report, HC 360, Session 2003–04; 10 March 2004.

⁶ Deduced from the graphs in Section B. There may be more spend in areas not covered in the White Paper.

⁷ Defence Industrial Strategy White Paper, A7.7.

⁸ As well as QinetiQ's businesses, RTOs include organisations such as Roke Manor, ERA, AEA, PA Technology, and Government organisations such as Dstl.

⁹ Defence Industrial Strategy White Paper B11.22.

in all but one. The MoD Defence Technology Strategy referred to QinetiQ “world-class defence science and technology organisation able to support MoD in taking key decisions and in developing innovative and timely solutions”, words that were repeated by Lord Drayson in September 2005.¹⁰

14. We have always supported the introduction of competition into research as an important means to allow excellence to flourish. However, unlike previous statements by MoD, there is no commitment in DIS to judging research proposals solely on the basis of excellence and efficiency. The DIS is silent on the implications on the role of UK companies in research, except for a commitment to broaden and deepen the role of SMEs. There is no recognition of central role played by RTOs as the strongest source of successful technological innovation and exploitation, and leaves open the potential for fragmentation to erode the assets in QinetiQ and other RTOs so as to become non-viable.

15. Whilst QinetiQ is mentioned in passing (in the context of the introduction of competition), and also identified as number two in the list of indigenous industrial suppliers, DIS takes no view of the benefit or otherwise of having a company capable of world class defence science and employing 6,000 highly-qualified scientists and engineers in the UK.

16. The Committee should look carefully at how MoD intends to take forward DIS implementation to ensure the research supply base is treated strategically like the other market sectors addressed in the White Paper, and should seek to gain assurance that fragmentation will not cause existing, relevant defence centres of excellence to become non-viable.

20 January 2006

Memorandum from the Society of British Aerospace Companies Ltd

INTRODUCTION

1. SBAC is the national trade association representing with its regional partners 2,600 companies operating in the UK supplying the air transport, aerospace defence, homeland security and space markets.

2. SBAC welcomed the DIS when it was published on 15 December. The Government’s initiative was the culmination of a long, intense and productive dialogue with industry, chiefly through the National Defence Industries Council. Industry argued throughout that an industrial strategy was needed to ensure that the UK’s industrial base could be transformed to meet the rapidly evolving needs of the Armed Forces and to sustain the industry’s considerable contribution to the UK economy.

3. It is particularly welcome that MoD, DTI and the Treasury are all committed to implementing the DIS. The Defence Industrial Policy that was published by the Government in 2002 admitted the case for action but left largely open the mechanisms for implementing the Policy. The DIS marks a major step forward towards implementation. It reiterates the Government’s commitment to a “dynamic, sustainable, globally competitive” defence sector in the UK, and then sets out, a substantive framework to carry out this commitment through a series of sectoral analyses and a broader policy action plan.

4. Whatever arguments there may be about detailed aspects of the DIS, and specific industrial concerns about the specific impact of sector plans, the DIS represents a full response by Government to the case put forward by industry. SBAC is keen to work with Government in implementing it.

SBAC urges the Select Committee to express its support for the objectives of the DIS, and lend its weight to see that it is carried through into action.

KEY AREAS FOR INDUSTRY IN THE DIS

5. There are specific aspects of the DIS which SBAC would like to highlight and commend to the Select Committee. The principal ones are:

(5A) Greater clarity of capability plans and budgets including which capabilities need to be developed in the UK

Industry’s investment plans need to be informed by as much certainty as is possible in a changing world over the future requirements of the UK Armed Forces, over the budgets available, and over the extent to which the Government sees the need for industrial capability onshore. Early consultation benefits MoD as well as industry and is an aid to efficiency, especially if accompanied by investment in technology demonstration to reduce risks. The DIS provides industry with the assurance it has been seeking that MoD will work more closely with industry on future plans. Implementing this assurance effectively will be critical to the success of the DIS.

¹⁰ MinDP speech to RUSI, 12 September 2005 and MoD Technology Strategy (Restricted), May 2005.

One can see for the aerospace sector clear indications of the areas where MoD is looking for industrial support in the UK. This is apparent in the technology demonstrators for Unmanned Aerial Vehicles, and in the emphasis in through life support and technology insertion for the sector more broadly. It is clear that in these areas the Government will encourage companies to invest in the UK, as opposed to relying on the open market to meet the needs of the UK Armed Forces.

SBAC welcomes the Government's move to greater transparency about its future requirements and the budgets involved.

(5B) Establishing long-term value for money as the bedrock of procurement policy

SBAC recognises that open international competition played a positive role in sharpening industry's competitiveness after the end of the Cold War. But such a policy, if applied continuously across the board without embracing an industrial strategy, would lead to an unacceptable erosion of the UK's industrial capability. This is true at least in part because other major industrial nations have positive policies towards the development of their industries. There are inevitable problems in sustaining critical capability in the UK if our Government maintains an open competition policy when most other countries do not. The DIS recognises that this is an issue for national sovereignty and security as well as one for industrial policy. The outcome will certainly not be to give up competition. It will remain the basis of much defence procurement but will be applied more judiciously along with some partnering arrangements and other procurement strategies tailored to meet specific circumstances. That makes sense. The economic stimulus that competition can provide is vital in the supply chain and in many sectors, particularly in those, eg communications and software development, where innovation will move faster and further in the civil sector than in defence.

In some areas partnering arrangements will provide a sound basis for security of supply and sustaining centres of excellence. DIS proposes that Fixed Wing Aircraft and Helicopters are two such areas. Planning projects on a through-life basis will also be easier in such cases. Industry sees advantages in partnering to facilitate planning in areas where MoD wants to retain a UK capability and provide work in a coherent way, to avoid "feast and famine" in the placing of orders.

SBAC recognises that the application of partnering and competition policies will be watched carefully by industry at all levels of the supply chain. It will be important to ensure that innovation from smaller companies and non-defence suppliers is not stifled. There will be differences of view and interests between companies and it would be sensible for Government to monitor the achievement of value for money and the effect on supply chain relationships. The record of open competition in ensuring value for money was by no means unblemished but its achievement under partnering must also be monitored.

The change of approach to adapt the method of procurement to circumstances rather than always favouring competition is an approach fully supported by the SBAC.

(5C) Recognising the needs of companies if they are to be effective suppliers to the Armed Forces

The DIS shows a welcome understanding that Government plays an important role in determining whether industry can operate efficiently and profitably in the defence sector. The UK defence industry will have to adapt to changing demand and this will require significant restructuring and investment. Along with the greater openness on future plans that has already been commented on, industry has noted in the DIS discussions a much greater realism on the part of MoD in terms of the pressures on business.

Industry has to deliver satisfactory returns to shareholders and to justify investment in the capabilities needed by the Armed Forces as opposed to other possible use of resources. DIS recognises the needs of business to have sustained workloads in order to develop and retain its skill base and facilities where there is a defence need that cannot be supplied by goods and services available in civil markets. In sum, MoD now talks of helping to create the right market conditions for business to invest in the UK market. It will be important that during implementation of the DIS the impact on business in the UK is assessed by Government and industry.

SBAC welcomes the Government's recognition of its key role in determining market conditions for defence businesses and looks forward to working with Government to monitor the impact of DIS on industry.

SIX AREAS OF THE DIS WHICH NEED FURTHER DEVELOPMENT

6. SBAC has been impressed with the drive and determination which led to the production of the Defence Industrial Strategy within a tight timescale. Aply led by Lord Drayson at the heart of MoD, but with a motivated team of officials drawing in DTI, Treasury, and industry via the Defence Industries Council, the DIS outcome is coherent and well-argued, and it is in that context that SBAC would like to suggest a number of areas that require further development, some of which are expressly recognised in Part C of the document. The key areas are:

(i) *SBAC has argued that consultation with industry needs to be continued and deepened and should utilise the defence trade associations*

SBAC has already made the point to MoD that the constructive efforts to involve companies in the production of the DIS through sectoral workshops, had inevitable limitations in scope and depth, imposed by the short time available. This should be seen as a spur to further effort to bring Government and industry together in the implementation phase. Industry needs to understand how implementation will be taken forward and how companies will be involved. Some areas are not covered in detail in the DIS eg in the aerospace sector companies involved in the small aircraft sector have pointed out that their area is not mentioned.

Industry is anxious to understand how MoD will develop the greater openness envisaged in the DIS (for example will it use similar methods to the US DoD). Also the impact on the MoD's spending plans of the switch of emphasis from platform building to through life management and technology insertion. Openness and planning will need to deal with a more complex scenario where most of the procurement is incremental, systems and support-based rather than new platform-based. Government should be prepared to evolve its thinking in the light of further consultation.

Trade associations should be able to play a positive role in ensuring that a wide range of industry has a opportunity to make an input, and the SBAC and its regional partner organisations are keen to fulfil that role. For example, SBAC has organised a consultation meeting on the impact of DIS on the Guided Weapons sector, and it intends to undertake further such meetings.

(ii) *SBAC believes that implementation will require a sustained and determined effort and that further organisational change may be needed*

Section C of the DIS is concise and purposeful and SBAC applauds the determination of Ministers to drive it through. Delivering change will require the kind of effort put in during the last six months, but over a longer period and involving a wider group of people and organisations. Industry will have to play its part, particularly in terms of the changed commercial relationship the DIS envisages. Earlier efforts to drive change through Smart Acquisition have shown the long-term and fundamental nature of the change required.

Industry is not a unitary organisation and there will need to be a process of engagement and persuasion of mutual benefit over a wide range of companies by size, sector and ownership. Equally, MoD has a number of organisations whose policies and practice will need to be adapted to achieve the kind of coherence that DIS requires, such as introducing a genuinely whole life approach to acquisition. The challenge of changing culture must not be underestimated. It may not be achieved without further organisational change in MoD. The experience of large organisations in the private sector might be used to help MoD in this task.

(iii) *SBAC supports DIS in encouraging innovation throughout the supply chain and achieving better supply chain relationships*

DIS will be welcomed less readily by companies in the supply chain removed from direct supply to MoD and by smaller companies who may have been inhibited from entry into the defence market. There are some welcome comments in the DIS regarding the use of specialist contractors to support technology insertion, and developing contractual mechanisms to allow value to flow through the supply chain to levels that are producing innovation. Some will see DIS as concerned essentially with the relationship between MoD and the primes. There will be concern about the risk of more vertical integration in the supply chain. MoD could usefully revisit the supply chain Codes of Practice that it launched under Smart Acquisition to improve supply chain relationships, as the principles there set out remain valid.

DIS could be developed in such a way as to provide more opportunities to smaller business and improve supply chain relationships. But it will be hard work to achieve this outcome. In the meantime, the sceptics will remain doubtful. The Smart Acquisition Codes of Practice had Ministerial and senior business support. But the evidence suggests that that awareness and implementation soon faded. MoD will have to improve its performance as an intelligent customer, and that of its key suppliers, if there is to be a genuine improvement in innovation and productivity in the UK supply chain. The emphasis on partnering with major suppliers in the DIS makes it doubly important to understand where there is critical capability in the supply chain and to nurture its development. SBAC supports such an effort and is therefore making supply chain relationships its key theme for 2006.

(iv) *SBAC believes there is an urgent need to invest in and co-ordinate science and technology more effectively*

It was a key element of industry's case for the DIS that there needed to be enough investment in Science and Technology to support the future needs of the Armed Forces. As Section C2.5 of the DIS shows, there is a good deal more work to be done before the UK has a full analysis of the resources needed to acquire the technology and to match it to future capability plans. Industry has always suspected that more resource is needed to sustain our Armed Forces. But this cannot be properly assessed without linking potential

technologies solidly to future requirements and having a clear view on where investment in the UK is justified. Given the importance of new technology to the DIS it is important that this gap in its analysis is urgently filled.

In a scenario of MoD moving towards technology insertion in existing programmes there is a risk of neglecting more long-term research. Long-term research is an essential seed corn for future capability. It is also the source of leverage for the UK in undertaking collaboration with the US and European partners, who have tended to increase long-term investment. It is in longer term research where industry would expect Government to make key decisions and to invest in the future. It is inappropriate for Government to rely on seeking matched funding from industry. Shared funding is appropriate for programmes that are likely to produce a commercial return within five years. For longer term projects, industry will have great difficulty persuading senior management and shareholders to invest. Other governments in partner nations are much more ready to fund longer-term research without an industrial contribution.

Arguably, the R&T aspects of the DIS are the area least joined up with industry, which is surprising given the regular dialogue between Government and industry. Industry would like to see a more overt commitment from Government to nurture the UK's industrial capability to undertake science and technology and also its links with the universities, which can be a fruitful source of innovation. DIS calls for a better understanding of the innovation process, but there is unlikely to be one simple process. Industry would see the need for the development of a long-term partnership between Government, industry and the universities to generate new disruptive capability for defence and security. The DIS should be a catalyst to develop such a partnership.

The work on R&T that DIS envisages might well cover a wider range of defence and security aspects than the MoD has traditionally addressed, taking in the emerging "homeland security" needs. The inclusion of Counter-Terrorism in the DIS is an indication of this development. SBAC represents a number of areas: eg space, autonomous systems where the synergy between defence and security looking forward is very clear. Industry would like to have a more coherent dialogue with Government on its requirements in the security arena and would welcome the Committee's support for that approach.

SBAC looks forward to playing a full part in the further work on R&T planned under DIS in 2006. The aerospace community has already developed a joint programme with Government to undertake the joint technology effort needed to sustain the industry in the future. The National Aerospace Technology Scheme (NATS) arose out of the joint government/industry Aerospace Innovation and Growth Team. Lord Sainsbury at DTI and Lord Drayson at MoD have indicated positively that they wish to see NATS and the DIS developed coherently. Industry looks forward to discussing in more detail how the DIS will affect MoD's involvement in the NATS.

(v) *SBAC believes DIS must be supported by action to maintain and develop the UK skill base*

The DIS has a lot to say about project delivery skills and industry supports the thrust that the kind of acquisition system that DIS envisages will require a great deal more exercise of judgment by skilled people. Government and industry need to take steps to ensure supply and retention of people who can do these jobs. But the availability of necessary skills is an underlying theme throughout the DIS document and must be a critical element in its implementation.

SBAC has taken a lead nationally with SEMTA to establish a Sector Skills Agreement and is a partner in the National Manufacturing Skills Academy. This seeks to ensure that the education and training provision is linked more closely to the industry's future needs. Skills is an area where collaboration between interested organisations is essential and SBAC has been working with a range of organisations including the Learning and Skills Councils, SEMTA, DFES, Amicus and, via its regional partner organisations, the Regional Development Agencies. There have been many initiatives in the skills agenda, perhaps too many, and we are keen to build critical mass around the Government's Academy programme. SBAC looks forward to working more closely with MoD on this area in the future.

(vi) *SBAC sees the need for more discussion of the international implications of the DIS*

The UK as an open trading nation has a natural bias towards open markets and the DIS does not set out to change this predilection for the defence sector. But it does leave open some questions about the way UK will take decisions in the future. A key section of the document notes (Executive Summary, paragraph vii) "the DIS does not seek to set out a preferred route to international restructuring: that is very much industry's business. But DIS does seek to create a clear UK context to inform these decisions." The emphasis is on ensuring that MoD obtains the necessary information to maintain and upgrade equipment through life.

SBAC would support further dialogue between Government and industry on international implications. There are a number of aspects which merit further consideration. Recent events have shown that other governments intervene directly in the market place to shape restructuring. Many foreign governments and companies, including those with interests in the UK, will be monitoring how the DIS will affect the UK's approach to such issues. There is very little in the document on how international collaboration will be handled under the DIS. Collaboration surely needs to be an essential part of the way forward.

Industry would also like to know how the Government sees the European Defence Agency developing its policies and practice on the European defence market, the supply chain, and European defence R&T. It would be interesting to discuss how far these will be consistent with the DIS. Government and industry should also consider further the possibilities for improving technology transfer and collaboration across the North Atlantic.

SBAC has a very wide range of membership and supports a pragmatic approach by Government to international markets. One that encourages fruitful collaboration and trade with partners, and investment here to stimulate innovation in the UK supply chain.

7. SBAC warmly welcomes the decision of the Select Committee to hold early hearings on the DIS. MoD Ministers have indicated that they see the implementation of DIS as a two year programme. SBAC believes the Committee could play a positive role in monitoring the progress towards achievement of its goals and encouraging wider debate on the issues it raises.

20 January 2006

Memorandum from Professor David Kirkpatrick

DEFENCE ACQUISITION STRATEGIES AND INDUSTRIAL POLICY

To achieve the defence policy goals of the UK, its armed forces must be able to undertake or contribute to a variety of missions (such as defeating a major strategic attack on NATO, suppressing a regional conflict or relieving human misery). For any one of these missions, the armed forces need several military capabilities (such as ground manoeuvre, control of theatre airspace, and expeditionary logistics and support) and a larger number of different types of equipment. It follows that the ability of UK forces to perform a mission depends on a hierarchy of inputs, which include systems, subsystems and components as well as the other lines of capability development (personnel, training, infrastructure, etc). A deficiency in any of these myriad inputs before or during a conflict would imperil the ability of UK forces to complete their mission successfully and at an acceptable cost.

ACQUISITION STRATEGIES AND CUSTOMER/SUPPLIER RELATIONSHIPS

For each class of equipment which the UK requires to sustain its military capabilities, and for the associated services, the MoD must select an acquisition strategy and an appropriate customer/supplier relationship. The four principal strategies which offer progressively less control, and hence more risk, are acquisition from:

- State-owned facilities.
- UK-based contractors.
- Collaboration with allies.
- Foreign contractors.

STATE-OWNED FACTORIES

In former times, when a government needed specialised defence goods and services which were not available from commercial contractors, the government established its own factories to supply them. The rulers of the Assyrian Empire set up a factory to manufacture composite bows, the arsenal of the Venetian Republic mass-produced war galleys, and the US Federal Government ran the Manhattan project. The UK government once owned gunpowder mills, ordnance factories and naval dockyards, as well as several laboratories researching defence technologies. A government with state-owned factories retains the power to direct research and development and to invest in production facilities to ensure the delivery of military equipment of adequate quality and in sufficient quantity to satisfy the needs of its armed forces. It can ensure that its factories hold stocks of materiel and can surge production in a crisis. On the other hand such public-sector factories, shielded from the stimulus of market forces, may fail to adopt new technologies or to institute more-efficient methods. Because of its perceived inefficiency, the provision of defence goods and services by public-sector organisations is now deeply unfashionable in the UK, and the UK government has sold into the private sector many of the factories and facilities which were formerly state-owned. However, there are even today some defence goods and services which are strategically vital to the security of the UK and which are not available with the required standards of quality and trustworthiness from the commercial market. The MoD insists on retaining the supply of such goods and services (such as cryptography and NBC technologies?) under its own direct control in state-owned facilities.

UK-BASED CONTRACTORS

The MoD currently buys most (82% in 2004–05) of the defence goods and services which it requires from companies within the UK defence industrial base. This is defined to include any company, irrespective of the location of its corporate headquarters and the nationality of its managers and shareholders, which contributes substantially to the economy of the UK by:

- undertaking capital investment;
- creating and retaining intellectual property;
- creating and sustaining employment; or
- developing skills and expertise.

at one or more locations within the frontiers of the UK. The principal benefit of buying from a UK-based contractor is that the equipment can be designed to meet the MoD's own user requirement, based on the judgements of UK Service and civilian staff about the role of UK armed forces in future conflicts, rather than on a foreign government's requirement. A second benefit is the proximity within the UK of Service operating bases and the contractor's facilities, which facilitates the provision of cost-effective contractor logistic support. A third benefit is that MoD can rely on UK-based contractors to give priority to its Urgent Operational Requirements (UOR) in response to a geopolitical crisis, whereas a foreign contractor might be distracted by demands from other customers and priorities imposed by its own government.

However in the current globalised defence market, any UK-based prime contractor may rely extensively on imports of subsystems, components and raw materials which can be obtained more economically from overseas. The prime contractor would thus be unable to maintain production and support, or to surge both activities in a crisis, without the continued goodwill of foreign subcontractors and their governments and the uninterrupted flow of goods from foreign countries. Since in most projects it would be impracticable to ensure complete security of supply by having the entire supply chain, right back to raw materials, under UK control, it follows that most equipment projects incorporate some insecurity and the length and vulnerability of a project's supply chain must be assessed when considering acquisition. Insecurity of supply can be alleviated by stockpiling some vital subsystems, components and raw materials within the UK, but this policy would incur additional costs.

COLLABORATION WITH ALLIES

Any nations can acquire defence equipment by collaborating with allied governments, provided it has its own industrial base which can contribute technology and/or production facilities to the multinational consortium formed to deliver the collaborative project. Collaboration with allied nations is financially most attractive on projects with large "fixed" costs (such as combat aircraft and guided missiles) and therefore exhibit significant economies of scale. There are also military benefits from interoperability when two or more nations in a coalition force deploy the same equipment to a distant theatre of operations. In 2004–05 the MoD bought 13% of its requirements through collaborative projects.

Collaborative projects almost invariably incur delays during the preliminary negotiations on requirement capture and work sharing, and often incur additional costs later if nations insist on duplicating production or test facilities and/or insist on allocating work according to their own regional or industrial policies with little regard for economy. Collaborative projects are also at higher risk of disruption because each of several partner nations may change the scope and scale of their requirements during the acquisition process.

It is generally more difficult for collaborative projects to win substantial export orders, because delays incurred in launching puts them at a competitive disadvantage relative to rival national projects, and because any of the participating nations may object to exporting to nations of which it disapproves.

FOREIGN CONTRACTORS

The acquisition from a foreign contractor of equipment already developed and produced for other customers can simplify MoD decisions on acquisition, since the performance, cost and delivery schedule of the equipment is already well established when those decisions are made. If the equipment is in service with allied forces, its reliability and maintenance characteristics can also be determined with confidence to assist MoD planning for integrated logistic support. On the other hand the potential for fluctuation in foreign exchange rates introduces some budgetary risk, and support from a foreign contractor might become significantly more expensive, or even be withdrawn entirely, whenever its principal customer (generally its own government) withdraws the equipment from service.

Acquisition of off-the-shelf equipment allows MoD to benefit from economies of scale, but the equipment may have to be modified to match UK legacy equipment and may require additional trials to satisfy UK criteria for entry into service.

The adverse effect on the UK's balance of trade resulting from the acquisition of foreign equipment might be partially offset by negotiating for a UK-based contractor to undertake under licence some of the manufacturing and maintenance/repair work on the equipment (though this policy may extravagantly increase the through-life cost) or by an offset agreement whereby the foreign contractor agrees to promote

imports to its own country of UK products. Licensed manufacture and support depend on the willingness of the foreign contractor and its government to release (and continue to release) all of the necessary technical information.

CUSTOMER/SUPPLIER RELATIONSHIPS

The alternative acquisition strategies discussed above may be implemented by a variety of relationships between MoD and its suppliers. The simplest is a purely-commercial relationship with each party playing its traditional role in a free market. This relationship works well enough for discrete purchases of well-defined products, which are characteristic of most commercial transactions and a few areas of defence acquisition. But it is inappropriate for innovative, protracted defence equipment projects where success depends on a joint approach to problems and trade offs, and where adversarial haggling is an irrelevant distraction.

Smart Acquisition policy insists that management of such projects is facilitated by a “partnering” arrangement between the MoD and its chosen prime contractor, implemented by an Integrated Project Team involving all stakeholders. Within this arrangement the partners exchange information, manage risks jointly and share through win/win contracting the benefits of good management.

In some areas of the defence market, it might be beneficial for MoD to establish a long-term multi-project relationship with a “client” company. Typically the client company would receive most or all of the MoD contracts in its area of expertise (on carefully-negotiated terms to preclude excess profit) and could seek economies of scale by competing for orders from other customers. If it were successful, the resulting efficiency gains would yield an agreed mix of higher profits for the company and lower prices to MoD. On the other hand if MoD were heavily reliant on the client company, MoD would be virtually obliged to rescue the company if it got into serious difficulty (like Rolls-Royce in 1971).

If the supplier were a state-owned facility, the MoD could direct the project unilaterally, subject only to resource constraints (and the laws of physics).

SELECTION OF AN ACQUISITION STRATEGY

For each class of defence goods and services the MoD can select its preferred acquisition strategy, and the appropriate customer/supplier relationship, from a range of alternatives. In some classes the choice is wide, but in others the choice is limited in practice by the scarcity of relevant technologies and skills or by the MoD’s insistence on retaining direct control of a few strategically-vital products (for example, for counter-terrorism and for defence against chemical, biological and nuclear weaponry).

In principle any customer/supplier relationship could be used with any commercial supplier. In practice however it would be impractical for MoD to have a client relationship with a foreign contractor or with a multinational consortium, or to have a partnering relationship with a foreign contractor without a substantial stake in the UK. In some collaborative projects MoD would find it difficult to impose an adversarial commercial relationship on a foreign company likely to be defended by its own government. At present there are probably only seven practicable alternatives, shown in the matrix below.

	<i>Foreign</i>	<i>Collaborative</i>	<i>UK-based</i>	<i>State-owned</i>
Commercial	x	x	x	
Partnering		x	x	
Client			x	
Directed				x

The MoD has traditionally selected its preferred acquisition strategy and the associated customer/supplier relationship for each new defence equipment project with regard only to the military effectiveness and the through-life cost of the alternatives proposed by rival contractors to meet the MoD’s stated user requirements. It is necessary that all of the alternatives seriously considered should be affordable, and that their costs should include the measures needed to reduce their risks (including insecurity of supply) to comparable and acceptable levels. If the risks of the alternative proposals differed significantly, these differences would have to be considered separately alongside the military and financial factors.

Sometimes the MoD’s selection of a preferred supplier has been influenced by political, diplomatic and industrial arguments put forward by other branches of the UK government, particularly when the levels of cost-effectiveness of the rival proposals are virtually indistinguishable. In some cases where definitive MoD advice has been overruled, MoD officials have been explicitly and publicly directed to acquire equipment which is less cost-effective and does not make best use of MoD’s budget.

DEFENCE INDUSTRIAL STRATEGY

In October 2002 the MoD's Policy Paper 5 on Defence Industrial Policy advocated a close dialogue with industrial suppliers and the systematic inclusion within acquisition decisions of the effect of those decisions on the UK's defence industrial base. It would be nugatory for most defence projects to attempt to distinguish their effects from the many other interacting influences on individual defence companies and on the overall UK economy. But occasionally there are particularly large and important "flagship" projects for which the chosen acquisition strategy could have significant effects on the UK defence industrial base. In such cases those effects must be assessed as rigorously as possible, despite the inevitable clamour of grinding axes from the interested parties in MoD and industry. Assessment of a flagship project should take account of the MoD's need for:

- support to maintain its legacy equipment;
- assurance of reasonable security of supply;
- avoiding the emergence of monopolists;

and of any effects of the project on the overall economic welfare of the UK.

Legacy equipment

If a series of decisions on acquisition projects (based solely on the value for money of the projects themselves) deprived one or more UK-based contractors of new contracts, and if those companies consequently shrank to less-efficient or even unviable levels, the MoD would be forced to negotiate new (and more expensive) arrangements for support of the legacy equipment which those companies had supported previously. Accordingly MoD should assess how a particular acquisition decision on a major project, or a series of such decisions, might affect the future of any of its key suppliers, in a situation when any information provided by the supplier itself cannot necessarily be relied on.

Security of supply

In assessing alternative acquisition options, the MoD should take account of the security of supply of the equipment itself, and of the spares and other supplies and services needed to keep it operational. Almost all the equipment procured for UK armed forces is dependent to some extent on goods and services from overseas, and on the continuing goodwill of foreign contractors at the far end of long supply lines. Supplies could be interrupted if the interests of foreign contractors or their governments diverged significantly from those of the UK. The MoD must consider the likelihood that supplies will be interrupted, the effects of interruptions, and the countermeasures which would reduce the risk.

The likelihood that the supply or support of foreign systems or subsystems might be interrupted depends on the viability of the foreign contractor responsible, on the demand from its other customers, and on any significant disputes between its government and HMG which might cause an embargo. Some foreign governments are more likely than others to impose a hostile embargo, but even allied nations have done this whenever the UK has adopted an unpopular foreign policy.

The effect of any significant shortfall in a military capability depends on the current geopolitical situation and on the resulting threats to the UK and its interests. If the UK were facing alone (as it has more than once in the past) the clear and present danger of invasion and occupation by a cruel and tyrannical enemy, any shortfall in military capability could be disastrous and should be avoided as far as practicable. Similarly, if the prosperity of the UK were threatened by disruption of trade by a foreign nation or non-state group, a shortfall in the UK's military capability to respond appropriately could be very damaging. While it remains UK policy for its armed forces to engage in a major conflict only as part of an allied coalition, a shortfall in any of the UK's own military capabilities would probably be supplied by the armed forces of one of its allies, which may be diplomatically humiliating but is not a disaster. In less-troubled times, when there is no evident threat to the UK and its interests and when its armed forces are deployed only in optional "wars of choice" to achieve some chivalrous goal, the consequences of a temporary shortfall in any military capability would impose on the UK only some regret that the goal could not be achieved (though the consequences for a foreign population which remains subject to war or misgovernment are more tragic). In both these cases it is assumed that the UK's leaders would not court disaster by spurning assistance from allied forces or by sending UK armed forces on missions for which they were ill equipped.

Government industrial policies favouring a defence industrial base have been encouraged by the nature of warfare in earlier epochs. Throughout most of recent military history, the duration of typical wars was much longer than the time needed to train a new recruit or to produce the materiel to equip him to fight. Accordingly a nation on the outbreak of war expanded its armed forces as fast and as far as its conscriptable population and its supplies of materiel would permit, to levels which far exceeded their levels in peacetime. In World Wars I and II for example the British Army expanded by factors of 14 and 10. In this situation any nation which lacked its own defence industrial base was at a disadvantage and had to rely on heterogeneous equipment delivered from fickle suppliers over long and vulnerable supply lines. Today however the increased speed of deployment and operation of military forces, and the increased lethality of their weapons, has reduced the likely duration of a high-intensity conflict to a few weeks. This is much less than would be

required to manufacture additional items of sophisticated modern equipment, or to train a recruit to use it effectively. Thus modern wars must be fought by already-trained personnel using pre-existing equipment, with only marginal increases in capability from the recall of reservists and hasty upgrades of equipment to correct perceived deficiencies. Dependence on foreign equipment is thus less damaging in modern warfare, though it remains necessary to ensure adequate stockpiles or continuing supplies of fuel, ordnance and other consumables.

To reduce the risks of any potential interruption in support for foreign equipment (hardware *and* software), the MoD might arrange for the transfer of technology and of delegated design authority to a UK-based contractor which could then undertake support, upgrades and urgent operational requirements within the UK's frontiers. MoD might also procure a lifetime buy of spares to ensure their availability when required, arrange for two or more independent sources of supply and even establish an onshore manufacturing facility (as the US has done for vital microchips). All of these policies would incur additional costs. MoD has already reduced the risks of interruption by negotiating agreements with its principal trading partners, providing mutual assurance of continued supply of defence goods and services.

Structure of the defence industrial base

HMG regards competition as a vital stimulus to innovation and productivity, in the defence industry as in other parts of the public and private sectors, and would deplore the emergence of a global monopolist which would be able in the future to control the supply and price of one or more classes of defence equipment. In accordance with that policy the MoD might (other considerations being more or less equal) prefer an acquisition decision which would favourably affect the development of the defence industrial base at national or international levels. However the MoD's influence is limited, and the development of the defence industrial base will be largely influenced by contracts from other customers (notably from the US DoD) and by corporate policy decisions favourable to shareholders.

Formerly the UK's defence industrial base included companies with expert capabilities in:

- total weapon system design and development;
- performance enhancement through systems integration;
- manufacturing;
- repair; and
- maintenance.

for almost all of the various classes of military equipment required by the armed forces. In general a company with capability at any level in the above list was able to undertake that activities at the lower levels but not vice versa (eg a company which could do repair could also do maintenance but not design, and a company which could do design and development could do everything) but it might choose to delegate some of the lower-level activities to specialist subcontractors. In recent decades some areas of expertise for some types of equipment have been lost from the UK defence industrial base as the MoD has chosen to rely on foreign suppliers having a competitive advantage in, for example, the manufacture of ammunition. In future the erosion of national design and development capabilities from the dearth of new projects will present the MoD with the fresh challenge of sustaining, in a less-balanced industrial base, the expert capabilities in systems integration, etc which it might wish to retain onshore.

Economic welfare

It is often claimed that MoD orders to a UK-based company yield wider benefits for the UK economy, both immediately in terms of employment and potential exports and later from spill-over of technology promoting the prosperity of the commercial sector.

Politicians favour equipment contracts which provide jobs for their constituents, and trade union leaders support orders which employ members of their unions. However the Treasury has always argued that individual defence equipment contracts have only a negligible effect on the overall level of UK employment unless they generate work in an exceptionally-slack labour market (eg during an economic depression or in an isolated locality), and has insisted that MoD's comparative assessment of rival projects should take no account of their presumed effects on employment.

Exports of defence equipment are constrained by the economic resources of potential customers and by the UK governments arms control policies, so they generally amount to only a small fraction of the number procured for the UK's own armed forces. Exports do provide some slight economies of scale in production and support and they can enhance the interoperability of coalition forces, but their effect on the overall UK economy has been assessed (by a York University study) to be insignificant.

In former times defence-related research and development (in, for example, metallurgy, navigation and aircraft propulsion) promoted successful commercial exploitation of these technologies. However today much defence research and development is directed into defence-specific areas (like human and vehicle survivability) without large commercial markets, or into the military application of generic technologies (like communications systems and information management) whose advance is driven primarily by the huge

investments of commercial companies. It is now less clear than formerly that the technological knowledge and management skills developed in the defence industrial base are of great benefit to the rest of the UK economy.

CONCLUSIONS

The MoD's own paper on Defence Industrial Strategy (Cm 6697, December 2005) recognises that an integrated strategy for the UK's defence industry is required, for all of the reasons discussed above. MoD will work with industry in the coming years to develop and implement a defence industrial strategy. The strategy will present real and fundamental challenges and will require tough decisions; it remains to be seen when MoD will take them.

19 January 2006

Memorandum from Professor Trevor Taylor

This Defence Industrial Strategy is a long document covering a wide range of issues. This paper highlights four important aspects of it.

THE POTENTIAL OF THE DIS IS TO LOOM LARGE, OR TO DISAPPEAR WITHOUT TRACE

The Defence Industrial Strategy paper is of enormous potential importance for UK defence and security over the long term. The emphasis should be placed on the word "potential".

On the one hand, the paper brings formal recognition of the importance of defence industry for the UK's capability to conduct military operations. Preparing a book on British defence industry with Keith Hayward some 15 years ago, we were told by a three star military officer in the Ministry of Defence that any future war in which the UK took part would be a "come as you are war" in which the activities of industry would have no place. The DIS represents a formal and sound rejection of that position, a significant consideration. There is a clear link between the DIS and the UK experience in early 2003 when Britain could confidently go to war in Iraq only after spending more than £500 million with industry to meet Urgent Operational Requirements. Large scale military operations today require industrial support, as every UK war since 1982 has shown. Thus, defence policy should include some reference as to where that industry is to be found.

On the other hand, the Ministry of Defence shapes industry only through procurement choices and, unless the DIS has an impact in this area, it will steadily pass into irrelevance. The danger that this could happen is increased by the omission from the paper of any explicit consideration of costs. The paper speaks at some points in binary terms about the desirability of different UK defence industrial capabilities: for some areas there is a "need" but "we would be prepared to source torpedoes from abroad provided . . ." At other points it has more detailed sense of value: for instance, for the UK to be able to design complex ships and submarines is a "high priority"; "there are a number of specific maritime system capabilities and technologies that we should retain onshore", and in aerospace "critical mission systems . . . are also areas where we wish to retain onshore capability".¹¹ While the particular calculations that led to such judgements are not explained, the report does indicate that there was a system for earning credit involving estimated contributions to the survival of the state, the operational capabilities of UK forces, UK strategic influence and potential value in the civilian economy.¹²

But nowhere is there any clear sense of the different premiums that the UK is willing to pay in terms of cost, performance or time, for the variety of defence goods and services that are provided by industry in Britain and contribute to "appropriate sovereignty" for the country. It is understandable why the Government might not want to be too explicit about what costs it views as acceptable, since this may induce complacency in industry. It is also clear that the government will want to hold such premiums to a minimum and is looking to a closer dialogue with industry as a means of achieving this when competitive tendering may not be possible. However, it is also possible that the lack of reference to premiums for a British product disguises significant disagreements within government as to what those premiums should be in practice. Such disagreements could arise between MoD Main Building and the Defence Procurement Agency, with its focus on bringing individual projects into service on time and to the performance specified. They could also arise between the MoD and other sections of Government, especially the Treasury. The Treasury has endorsed the document issued but may not appreciate how it could be interpreted.

On the other side of the ledger, there is also no sense of the magnitude of the savings that the Government expects to make from stressing its lack of commitment to specific sectors, most prominently manned combat aircraft and surface ship hulls.

¹¹ DIS Executive Summary pp 8–9.

¹² Defence Industrial Strategy pp 22–3.

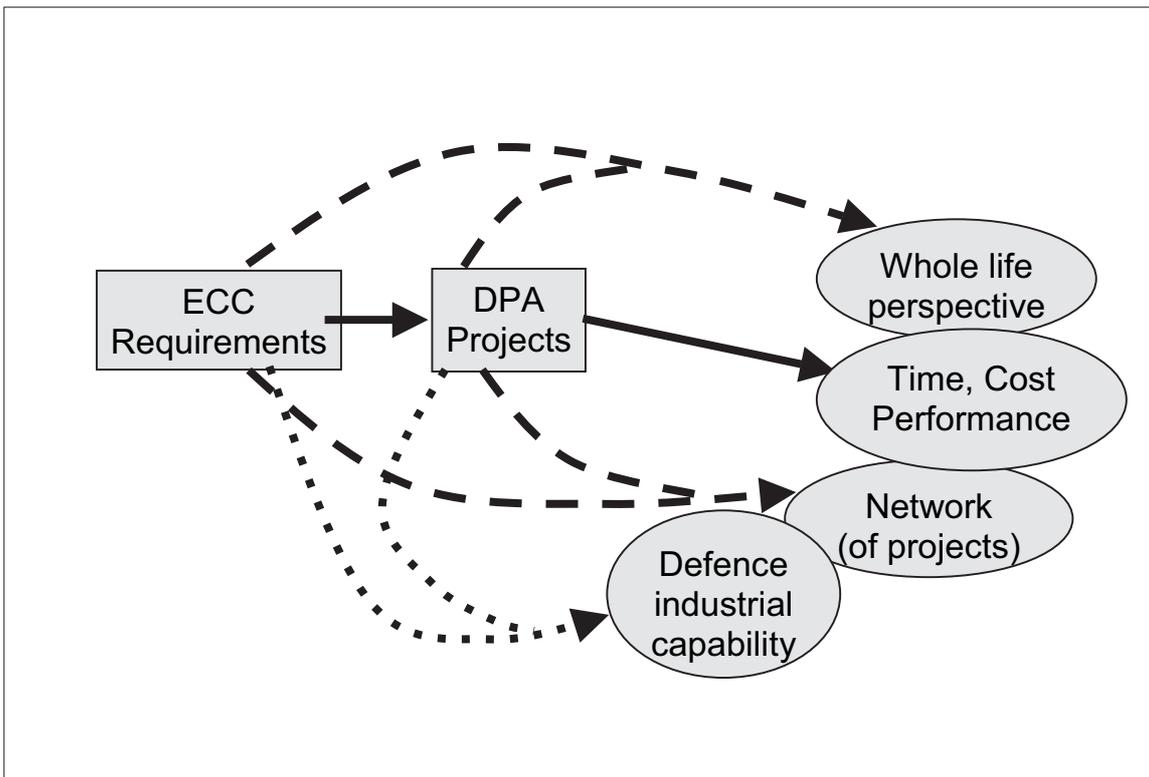
ORGANISING THE MoD TO IMPLEMENT THE DOCUMENT

The document recognises that implementation, or perhaps interpretation, will be a key consideration and is looking at the creation of new senior posts in the MoD to direct implementation of the DIS. The DIS implies a significant burden on the Equipment Capability Customer area, which does not have a four-star head and which numbers only around 300 people. The ECC is charged with the specification of required capabilities and presumably henceforth these should refer not just the basic performance of a piece of equipment but also to the need for the equipment to be modifiable and sustainable by British industry so that British appropriate sovereignty about its use can be maintained. The ECC area already has formidable responsibilities for the specification of requirements and their prioritisation into an affordable Equipment Programme that then has to be amended every year or so. In recent debates about how the ministry should assure itself that all Lines of Development (Support, Infrastructure, Personnel, Organisation, Training, Doctrine and Information) are available to enable delivered equipment into usable military capability, ECC staff have been given additional responsibilities as Senior Responsible Owners. The time and energy they have left for the implementation of the DIS is worth monitoring. Significantly the Director General Equipment in the ECC has long had industrial sector responsibilities but not the human resources to do effective work. The drive and effort for the Defence Industrial Strategy came from David Gould and his staff at the DPA.

Along with the ECC, the Defence Procurement Agency itself now has more demands on it. Its National Audit Office overseer remains focussed on the delivery of individual new projects from industry to the MoD on their time, cost and performance schedules. At the same time procurement is supposed to take account from an early stage of the whole-life costs of a piece of equipment, not just its procurement and production costs. A further aspiration is that projects can be knitted together to form a network permitting Network Enabled Capability, but it is not clear how the costs of linking projects are to be allocated. The DIS means that procurement choices will also be expected to reinforce the “appropriate sovereignty” linked to UK defence industrial capacity. As well as sometimes paying some time, cost or performance premiums for the British content of a deal, this could occasionally mean placing an order for something that the MoD does not urgently need so that an industrial team can be kept together. In the US and to a lesser extent France, where defence industrial considerations have long been prominent, this latter has long been a familiar if not especially welcome feature of defence life.

Diagram A summarises the outputs that are expected from DPA procurement on individual systems. These constitute a difficult challenge and there must be real questions about the capacity to deliver of the current management structure (a small-staffed ECC in Central London, a DPA marked by only loosely-linked IPTs in Bristol, and a separate DLO with its own IPT structure in Bath, Andover and Wyton). It is notable that in France the DPA equivalent, the Delegation Generale pour l’Armement, has a separate and powerful section devoted to support for French (and perhaps European) defence industry.

Diagram A



COMPETITIVE TENDERING AND THE UK AS AN UNATTRACTIVE PLACE TO DO DEFENCE BUSINESS

There is no doubt that military experience with mobilising industry for Operation Telic was one factor behind the generation of the DIS. However, perhaps of greater importance was the need to stem the flow of defence industrial effort and resource out of the United Kingdom towards the US. British defence industry, led by first GEC and then BAES and Rolls Royce, has for some years been heading westwards, in part because of the size of the American market. A major further consideration, however, has been the greater profitability associated with dealing with the US Government, which does not ask its defence suppliers to take on risky fixed-price development contracts. The DIS only implicitly accepts that, by asking defence firms in competition to make fixed price commitments when perhaps only 6% of the initial procurement cost has been spent on risk reduction work, the government has made the UK a rather unattractive place to do defence business. The readiness of the US to welcome British defence investment funds has meant that British firms that traditionally felt restricted to the UK have a choice about the customer they will pursue, and many of them have seen the UK as unappealing. Thus DIS implementation will need to address not just any preference for UK solutions, or the technology transfer arrangements that will be required for any major defence import, but also the nature and place of competition in defence procurement.

INTERNATIONAL IMPLICATIONS

The document's focus on national capability leaves open how the UK will address international cooperation. The stress on the need for the UK to be able to modify and support its equipment is most likely to be problematic for the United States Government with its acknowledged reluctance on technology transfer issues. Equally significant is the belief of some in the Defence Procurement Agency that the US is more reluctant to release technology when there is no other (i.e. European) alternative available. On the other hand, reconciling the DIS with the aspirations of the European Defence Agency and the European Code of Conduct on a European defence market is not straightforward. Implementing the DIS, coordinating it with British international policy commitments and making sure all are reflected appropriately in procurement choices, will not be easy.

CONCLUSION

The DIS is an impressive and thoughtful piece of work but it is far from being a strategy in the sense of something that defines a desired end-state and lays out how it is to be achieved in the face of potentially hostile forces. It indicates that a few areas will certainly be protected (and so funded) but these concern technologies that anyway cannot be easily bought from overseas. It can be quoted selectively to indicate support for a range of procurement stances. The real work will come from deciding what "appropriate sovereignty" should mean and organising the government's defence machine so that it delivers what is wanted.

19 January 2006

Memorandum from the Defence Manufacturers' Association

BACKGROUND

The DMA began lobbying Government to develop a formal policy with regard to industry and defence procurement/acquisition in the early 1990s. It therefore very much welcomes the publication of the Defence Industrial Strategy (DIS). Considerable credit is due to the Minister for Defence Procurement (MinDP), Lord Drayson, and all the officials involved for producing a clear, effective and timely analysis.

RATIONALE FOR THE DIS

We judge that the Government has taken this step for one or a combination of reasons. Increased rationalisation of companies in the defence sector, on a global basis, is judged by the MoD to be reducing their opportunities for competition in defence procurement without risking a loss of national control of technology and intellectual property. Particular concern and frustration arises here from the difficulties of achieving a level playing field of technology transfer with the US. A number of major UK companies have also indicated a willingness to move key industrial capabilities offshore in the absence of business incentives to do otherwise. Current and projected operational commitments have increased the imperative for the MoD to have a guaranteed access to technology and skills needed to design, support and upgrade systems in-service quickly. The DIS refers to this as appropriate and operational "sovereignty"—the DMA will be seeking more clarity as to what this will mean in practice for Industry. Finally, pressure on acquisition

budget will continue and this, combined with this need for “security of supply” of skills and technology, places increased emphasis on considering defence projects on a whole life, “value for money” basis rather placing emphasis on initial acquisition costs.

Given all this, the DMA recognises that the DIS is, primarily, an MoD Industrial Strategy for Defence and not a Strategy for the Defence Industry. Lord Drayson has himself noted that the DIS is “about maximising the military capability and security of the country”. Nevertheless, it is an important document for Industry. It recognises the key and, indeed, increasing role of Industry in sustaining operational capability. Industry, now, is engaged not only in research, development and production but in many aspects of training and in support (including deploying its staff as “Contractors on Deployed Operations” (CONDO)).

ACQUISITION POLICY

The DIS signals a clear change, in future, in the MoD’s approach to defence acquisition. Significantly, it indicates a shift in the balance between the use of competition (currently covering 73% of contracts by value) and alternatives such as “partnering” or “alliance” arrangements. Where “partnering”, or other alternatives to competition, will achieve best value for money on a whole life basis and ensure the retention of “sovereign” capabilities in UK then it makes sense for it to be adopted—especially at prime contractor level. However, competition still provides the main access to market opportunities for SMEs and new entrants and encourages investment in the UK by foreign owned suppliers. A key interest for the DMA then, in this new situation, is how the opportunities for and benefits from supply chains, equipment suppliers and SMEs are to be maximised. Many of the companies involved have key technologies and innovation to offer. It is to everyone’s advantage that they, too, are treated as being integral to the successful implementation of the DIS.

BAE SYSTEMS

Their development and acquisitions in recent years have left BAE Systems as, undeniably, the UK owned, “national champion” within the UK Defence Industry. Under the DIS, BAE Systems has secured, understandably, a clear “preferred supplier” position in a number of key Sectors. Its influence, downstream, will be significant and it will be important for the MoD to clarify future “route to market” opportunities for other prime contractors. BAE Systems will also have a key role to play in the engagement of supply chains and SMEs, as identified above.

SECTOR REPORTS

In its key, Sector reports, the DIS makes a useful start in providing industry with much increased clarity about future programme aspirations and budgets, and promises more transparency in future. The Sectors addressed are those that seem to present the greatest, immediate challenge for the MoD and Industry in terms of risk to “sovereign” capabilities or future over-capacity due to shrinking MoD spend. The DMA would hope, however, that other Sectors, omitted currently (eg guns, logistic vehicles, personal equipment, etc), are addressed in the near future since they cannot be divorced from the whole life and “system of systems” approach to acquisition that the DIS advocates.

BUDGETS

The budget charts, shown in each DIS Sector Report, are helpful and, we appreciate, are only indicative. More detail is promised for the future and they will be subject to change in successive EP budget rounds as programmes develop. Nevertheless, we note that the total of all the Sector Report budgets combined indicates, even allowing for inflation, that there is a significant growth in EP spending in 2014–15 compared to 2006–07. Since this would appear to make aspects of the programme, as constructed at present, unaffordable and we would look to the MoD to clarify the position as soon as possible.

RESEARCH

The DIS notes that R & T is “critical to the delivery of battle winning capability” and then goes on to make a powerful business case for R & T investment. It is disappointing, therefore, that there is then no commitment to increase defence research funding. We estimate that the MoD currently spends some £300 million a year with Industry, including QinetiQ. Even a doubling of this figure would require a transfer of only 2% from the total acquisition (STP and EP) budget, with the likelihood of considerable savings and/or improved capability in future years as a result of the investment. The wider benefits for UK Limited and defence exports could also be substantial.

SHARED DATA ENVIRONMENT

A considerable amount of good work has been undertaken, in recent years, to develop an effective system for the sharing of data, electronically, between the MoD and Industry. Much remains to be done and it is important, if DIS is to be implemented successfully, that there is real progress and that the systems adopted can be applied throughout the supply chain. They should, wherever possible, be provided free of charge or utilise industry standards and readily available hardware and software (eg Internet Broadband) so that they are affordable by companies at all levels.

DEFENCE EXPORTS

Exports are given only brief mention in the DIS Report. It is understandable that the Government did not wish to detract from the main DIS issues related to domestic defence acquisition. However, the importance of defence exports to the sustainability of the UK Defence Industry (they amount to some 40% of its business) must not be underestimated. Domestic business is insufficient to maintain industrial capability in many key areas. Exports help to fill the gap and, if enhanced, could do much to absorb the future “overcapacity” problems that are identified for some of the Sectors reported on in the DIS. Further, the track record of UK companies giving priority to the national interest, in terms of support to the Armed Forces in recent conflicts, should reassure those in the MoD concerned that exports might detract from their own security of supply. Indeed, without exports, the supply may not be there at all. It is interesting to speculate on whether the DIS Report on the “Fixed Wing” Sector would have been able to offer a more optimistic assessment had the possible sale of Eurofighter/Typhoon to Saudi Arabia been factored in to the analysis. The DMA would, therefore, look for strong continuing support for exports from DESO and other departments and for greater consideration to be given, at the design stage of equipment, to export potential (as promised in the DIS).

IMPLEMENTATION

Implementation of the DIS is critical. It will require the MoD and Industry to work together in an unprecedented way. Work will be needed in a number of areas: the clarification and development of a governance regime in the MoD and its interface with Industry; an agreement as to the meaning of “operational sovereignty”; an agreed definition of “value for money”; the establishment of agreed metrics and milestones to validate success and measure progress. We would also hope for the production of regular DIS reports (annually?) and would welcome continuing interest by the Committee.

COMMERCIAL INTERFACE

Implementation of the DIS, day to day, at the working interface between the MoD and Industry will require considerable change in commercial and contractual arrangements. There will also need to be greater coherence between DPA and DLO staff in interpreting, more specifically than hitherto, concepts such as “value for money”. We have some concern as to whether there are now sufficient resources, knowledge and experience available to the MoD Commercial Staff to manage the change programme at a pace that Industry would hope to see to enable the potential benefits to both parties to accrue in a timely fashion.

CULTURE

Finally, there is a need to secure “buy in” to the new ways of doing business on both sides of and at every level of the defence acquisition community. The DMA and its members, active in every aspect and all environments of defence supply, is uniquely placed and ready to help in whatever way it can.

20 January 2006

Memorandum from the English Regional Development Agencies¹³

1. The English RDAs aim to co-ordinate regional economic development and regeneration, enabling the regions to improve their relative competitiveness and reduce the imbalance that exists within and between regions. They have five statutory purposes:

- To further economic development and regeneration.
- To promote business efficiency, investment and competitiveness.
- To promote employment.
- To enhance development and application of skills relevant to employment.

¹³ This document was prepared with input from the North West, East Midlands and South West RDAs, the Midlands Aerospace Alliance and West of England Aerospace Forum.

— To contribute to sustainable development.

2. The defence industry is one of the last remaining sectors in which the UK is globally competitive at all levels by virtue of a range of sophisticated air, land and sea systems. This supports tens of thousands of jobs across the UK with some of the greatest concentrations in the less economically successful regions. As such, the impact of major changes to the MoD's procurement strategy could be particularly significant in areas that are least equipped to deal with such change.

3. Whilst MoD is the dominant customer for such equipment and services, the industry has had significant success in export markets and is the world's second largest supplier of defence equipment. In 2002, exports amounted to £4.1 billion which supported an estimated 76,000 direct and indirect jobs¹⁴.

4. For example, it is estimated that in the South West, Scotland and North West of England 6.4%, 3.1% and 2.9% of all manufacturing employment respectively is dependant on defence exports alone¹⁵. The manufacturing economies of other regions such as East and West Midlands are in no small part underpinned by Roll-Royce and its supply chain. The East of England has great expertise in aircraft support and modification as well as extensive research activities whilst the South East has a broad range of high-technology businesses and R&D institutions involved in defence matters. Elsewhere, Yorkshire and the North East have specialisms in, amongst other things, metallurgy, fast aircraft, armoured vehicles and marine platforms.

5. An example of the economic importance of a Prime Contractor's footprint in a single region is shown as follows¹⁶:

- 11 sites;
- 1,200 suppliers;
- 35,000 jobs sustained by its activities;
- 5.4% of regional GDP in 2000;
- £4 billion turnover in 2004.

6. The DIS emphasises the need to balance the current capacity to build and support fixed wing aircraft, submarines and surface vessels with future demand for such platforms. This will inevitably have a particular impact on the North West aerospace industry and the marine regions across the whole UK. There are specific issues related to the disposal of de-fuelled submarines and their reactor compartment which are not addressed in the DIS but may warrant the attention of the Maritime Industrial Strategy activity.

7. Defence companies tend to be research intensive, have higher skill needs, provide more training to their staff and pay higher salaries than most other industrial sectors. As such they offer the type of high-skill, knowledge based employment which is needed to meet the RDAs' statutory obligations. 31% of defence sector employees have a degree and at £55,000 per head, GVA is 60% higher than for the economy as a whole.

8. Much of the R&D expenditure in the UK is related in some way to defence activity. "Direct defence exports create wide spillover benefits that contribute to productivity of the UK economy to boost living standards. The evidence from our own research and wider literature is suggestive of a strong relationship between R&D and productivity".¹⁷ Obvious examples include:

- civil aerospace (much of the UK's wing and engine technology have their origins in military programmes undertaken since WW2);
- composite materials (increasingly used in aerospace, construction, marine and advanced automotive applications);
- advanced micro-systems (such as those originally developed as advanced missile guidance systems but now used to prevent cars from losing control under extreme braking);
- opto-electronics and infra-red sensors (used widely in the security, counter-terrorism and para-military activities including search and rescue).

9. Recognising that the UK cannot compete on price alone with emerging, low cost economies, the importance of R&D cannot be overstated. Much of the RDAs' work involves engagement with Higher Education, public research institutions and those companies which have a need for innovative solutions to commercially significant problems. RDAs are therefore active in exploring practical ways in which they can create the conditions which encourage investment in R&D and its effective exploitation, eg working with the Defence Diversification Agency to promote technology pull-through in both directions.

10. Examples include RDA support for the DTI-sponsored Innovation and Growth Teams programme. The Aerospace Innovation and Growth Team (AeIGT) report commissioned in 2003 has evolved into the National Aerospace Technology Strategy (NATS) which has determined that, if the UK wishes to maintain

¹⁴ The Economic Impact of UK Defence Exports, Oxford Economic Forecasting report June 2004.

¹⁵ As above.

¹⁶ NWDA.

¹⁷ The Economic Impact of UK Defence Exports, Oxford Economic Forecasting report June 2004.

its position as the world's second largest aerospace economy (after the USA) by 2022, the nation will have to invest heavily in R&D. The current NATS programme envisages an expenditure of around £1.5 billion over the next eight years of which RDAs are identified as a significant funder.

11. The first of 18 major NATS programmes is ASTRAEA—a research programme which aims to facilitate the routine use of UAVs (unmanned air vehicles) in civil airspace within a decade. Contracts are being prepared at the time of writing but it is envisaged that three English RDAs, Scottish Enterprise and the Welsh Development Agency will contribute around £11 million out of the £32 million total.

12. It seems likely that this work will build on UAV work previously undertaken for the MoD, and if it is to be commercially exploited in the future, it will require the skills of many companies which are currently dependent on MoD contracts.

13. Whilst the identities of the largest defence contractors are well known, there is more limited visibility of the long supply chain which is an under utilised source of innovative solutions to issues facing the MoD. The RDAs feel there is a need for a cross-sector supply chain analysis of the industry and would be receptive to exploring ways of participating in such work.

14. English RDAs fully recognise MoD's needs to choose equipment and services which best meet operational needs and to obtain best value for money. The RDAs have a role to play in fostering the conditions which encourage wealth generation and are committed to working with Defence Select Committee, National Defence Industries Council, DTI, industry, and MoD itself to this end in a way which avoids serious damage to the UK's long-term prosperity.

20 January 2006

Memorandum from EDS Defence

INFORMATION AND CAPABILITY INTEGRATION AS A STRATEGIC INDUSTRY FOR THE UK

Within the UK there is an information service capability available to the Ministry of Defence that will optimise the MoD's efficiency and effectiveness from both the commercial and operational standpoint and within budget constraints. It can be delivered today by companies that are based in the UK and are already an integral part of the nation's defence industry, working in partnership with MoD.

The capability is founded on current and emerging technologies and makes extensive use of Commercial off the Shelf (COTS) systems. The challenge—demanding but eminently achievable—is to develop these conventional and emerging technologies into a new, unprecedented resource that will deliver unconventional effects, transforming all areas of MoD operation—from business to battlespace.

The incremental transformation to the fully integrated capability described in this paper will be delivered by holistic, secure, information and capability integration (IaCI), embracing battlespace, logistics, military personnel management and other business support functions. IaCI enables information flow and interaction across these “communities”. This means that the best use can be made of all available assets, military and non-military, from the supplier's factory floor to the front line.

IaCI is more than just the technical connection of disparate IT systems: it is the development and provision of an information and decision support service that will enable the user to rapidly make decisions and assess situations within complex data sets. Its creation and implementation will require a range of high level skill sets and experience, all of which are available in the UK. Collectively they represent a key strategic component of the nation's defence industrial base.

IaCI is the natural progression of MoD's thinking and builds on the investment already made. Specifically it will be a key enabler in delivering the MoD's Defence Vision of evolving strategy and military doctrine that is flexible and geared to changing conditions; and behaving with speed, flexibility and creativity. It accounts for an increasing proportion of MoD's expenditure and acts as a force multiplier in terms of producing effects-based operations.

The opportunity is described in the following eight brief paragraphs.

1. COMMERCIAL PARALLELS

IaCI will deliver the tailored information flow and decision making support now employed by enterprises such as Tesco, whereby all aspects of the supply chain, from individual suppliers to the supermarket shelf are integrated to optimise responsiveness to shopper demand and enable precision forward planning.

The MoD requirement is significantly more complex than that of the retail industry and, on occasion, is driven by life or death imperatives. Accordingly IaCI must adapt the Tesco approach to new levels of capability. However, the ability to deploy the appropriate level of resource, be it manpower, firepower or

materiel, will result not only in enhanced operational effectiveness, but also significant cost efficiencies, for example through faster achievement of mission goals and reduced inventories. In so doing IaCI will achieve the MoD's goal to accelerate the transformation of logistics information systems.

2. KNOWLEDGE BASED DECISION MAKING

Central to this strategy is the ability to transform data into information, and information into the knowledge necessary for optimised decision making. Decision makers are automatically provided with precisely the information they need for their purposes—no more and no less—from across all relevant areas of the enterprise.

We are not talking new, unproven, high cost technology. The building blocks for this strategy are already in place via initiatives such as the Joint Operational Picture (JOP) and Joint Supply Chain Blueprint, as well as programmes such as the Joint Operational Command System (JOCS), Joint Personnel Administration (JPA) and Defence Information Infrastructure (DII). Legacy systems will be optimised—or fixed—not made redundant, while new capabilities can be run in parallel with the legacy system until proven.

3. ADDRESSING MILITARY IMPERATIVES

The IaCI strategy, which accommodates both expeditionary and homeland security imperatives, addresses the fact that the future operating environment is uncertain, complex and diverse. It can involve simultaneous war fighting (often asymmetric), peace keeping and humanitarian operations. These are joint service and usually mounted in conjunction with the United States and other coalition partners. The duration of operations cannot always be predetermined. This imposes an unprecedented demand for flexibility to counter the unpredictability of the threat and enable interoperability with allies.

4. NEW LEVELS OF EFFECTIVENESS AND COST EFFICIENCY

Enhanced decision making, combined with traceability, will optimise logistics, personnel management and other processes, ensuring that the appropriate level of support is provided while minimising over-supply or under-supply, with resultant cost savings. Assets will only be employed when and where they are needed, with the military imperative more directly driving the process.

The capability will have a global reach and will eventually embrace all elements of the supply chain, from industrial supplier to battlespace consumer. For example, it will provide visibility for materiel flow in the end-to-end supply chain, rather than monitor static inventories, progressively enabling the transfer of inventory risk to industry and the employment of service-based contracting arrangements, such as Contractor Logistics Support. With MoD contracting for capability, there will be a powerful driver for industry to enhance turn round times and aggressively eliminate redundancy and latency in the supply chain.

5. HOW IT WORKS

IaCI will enable industry to design systems whereby data, information and knowledge will be managed, shared and reused across applications, enterprise and community boundaries much more easily than is currently possible.

Operating above the stovepipes of existing systems, IaCI will provide a comprehensive information exchange capability that includes all relevant participating stakeholders. In addition to providing the knowledge necessary for optimum decision making, IaCI can also monitor trends and provide automatic triggers to respond to forecasted demands.

Users at all levels are able to focus on the process of decision making, rather than the accessing of information.

6. CORE ELEMENTS

There are three core elements to consider in the development of IaCI: the business processes that govern the nature and flow of information; the technology that enables these, and the development of the people that interface with the system and utilise the information. A willingness to adapt to profound change—as set out in the MoD's Vision—is vital to success and the transformation must embrace all aspects, particularly training and education of the personnel involved.

Early focus would be on making the best use of current capabilities, including the many legacy stovepipe systems that have been procured over the years.

Success will depend upon genuine joint development of the way forward—only closely coupling MoD and industry will build the trust and long-term view that enables the MoD to nurture long-term partnering arrangements and public companies to invest over time against a maturing requirement.

7. PARTNERSHIP IS ESSENTIAL

A robust, clearly defined partnership between MoD and industry must be created with joint, balanced MoD—industry governance. MoD will not be handing over the reins to industry; instead industry will become the Intelligent Supplier, complementing the MoD's role as the Intelligent Decider. However, the status of industry within the partnership would have to reflect the transfer of risk.

IaCI is envisaged as a long-term partnership with an ongoing pattern of evolution always closely tied to MoD imperatives—doctrinal, operational and commercial. VFM will be ensured by competitions for incremental capability programmes run under the auspices of the partnership.

8. STRATEGICALLY IMPORTANT TO THE UK

The UK is, with certain important exceptions, moving increasingly away from the manufacture of equipment platforms. IaCI is fundamental to the future operations of the UK's armed forces. If the capability to develop and support delivery is not maintained as a strategic onshore asset, then the UK will be vulnerable in crucial areas such as system security and potential technology transfer restrictions imposed by overseas suppliers.

Furthermore, the most effective and cost effective method of implementing the UK IaCI strategy is through a "coalition of the willing"—companies that are based in the UK (even if they have overseas parents) with their decision making and accountability firmly based in this country. They will possess the authority to partner with MoD in the implementation and evolution of the strategy, and the long-term commitment essential to its successful implementation.

9. RESPONSE BY GOVERNMENT

IaCI should be regarded as the lifeblood of the MoD's network enabled future; the key to support of MoD's overall capability.

Failure to capitalise on IaCI will deprive the MoD of the opportunity to raise its capabilities to new levels—levels that can be continuously yet affordably enhanced in response to demand. At the same time the UK will lose a cornerstone of its technology skill base.

We would urge MoD to consider engaging with industry as a matter of priority.

23 January 2006

Memorandum from Prospect

1. I am writing on behalf of the Trade Union Prospect which represents scientist and professional staff in the former Royal Ordnance Factories (ROF's) now owned by Bae Systems.

2. We are in favour of the Government having a coherent Defence Industrial Strategy (DIS) and we support the overall policy aims of the DIS. We have particular concern about the ability of the MoD to obtain security for supply, in particular for small arms ammunition and high explosive, particularly the strategically imported warhead initiator TATB if Bae Systems planned closure of the ROF at Chorley (small arms) and Bridgewater (high explosives) goes ahead.

3. We believe that the decisions to close the two factories were made before any discussion about the DIS and its potential impacts had taken place and as such the Committee should now review the decisions and the future of the whole former ROF business in the light of your deliberations on the DIS.

Our comments are set out below:

BRIDGEWATER

- (a) Bridgewater is the only site manufacturing military explosives in the UK.
- (b) With closure Britain will lose all national capability for the production of military explosives.
- (c) Every military product used by the UK's arm forces containing explosives—bombs, missiles even some small arms and gun propellants would have part of its production in the hands of a foreign owned provider. Foreign governments have in the past refused to sell the UK Government military products where its proposed use was not in accordance with their own foreign policy (Belgium and the refusal to sell 155mm shells 1996).
- (d) The decision would be almost impossible to reverse. In 1938 it took two years to build a fully productive factory using materials and skilled personnel from pre-existing factories.
- (e) The defence strategies of our European and transatlantic allies clearly show a marked preference for a fully integrated military industrial strategy. The decision to close the factories will move

Britain significantly out of step with our allies “France can enter Joint Ventures and Partnerships but must preserve its capabilities and the capacity to develop and manufacture alone if necessary” (French Government Defence Procurement Policy and industrial Strategy’).

- (f) Britain will lose the ability to manufacture and supply necessary products at short notice as was shown by the rapid production of active armour during Gulf War 1.
- (g) There are issues with the certification of imported weapons systems by the Ordnance Board.
- (h) Bae Systems operates in an unfair arena for weapons production in that European arms manufacturers are subsidised. US explosive production is run on a Government Owned Contractor Operated systems. UK production operates at a high level of safety and environmental issues.
- (i) Bridgewater is the only UK producer of the explosive TATB use in the initiator for the warheads of Britain’s nuclear deterrent. Bridgewater supplies all the MoD’s requirements for TATB and also the US Department of Defence. There is only one other factory capable of producing TATB to the level required by then MoD, this factory is located in France. Two other facilities, located in the US exist, they are capable of laboratory levels of production only. One of these facilities is currently closed following a fatal accident. We do not believe it is possible for Bae Systems to guarantee two sources of supply for TATB effectively placing the ongoing operation of the UK’s strategic and tactical nuclear weapons in the hands of France.
- (j) Bridgewater has one of the highest levels of unemployment in Somerset. Closure of the plant will lead to a further loss of skilled jobs and training opportunities for young people in the form of graduate and craft apprenticeships. We believe that the site closure will lead to the loss of £5.6 million with the consequential impact on local employers and the social services.

CHORLEY

- (a) Bae Systems claim that Chorley site is a loss making operation. However, it is unclear why production at Chorley remains stopped following the fatal accident there last year. The HSE have given the site a clean bill of health and failure to restart production and tap into a large internal and export market makes the financial situation intentionally self fulfilling. It is unclear how this fits with a desire to retain strategic production capability.
- (b) The proofing ground facility at Chorley which is used for the testing and certification of a wide range of Bae Systems products will close. The facility has a long history of safe and environmentally friendly operation and transport operations. It is not clear where this activity will be undertaken on the closure of the site. Any change will carry considerably risk in terms of establishing equally safe processes and transport operations. Again off shoring at this facility would not seem to be in the strategic interests.
- (c) Closure of production will place production of MoD’s small arms requirement in a dependent position on foreign owned companies. Recent attempts to source small arms ammunition from a non UK arms manufacturer resulted in the dumping of 21 million unusable rounds of 9mm ammunition.

In conclusion Bae Systems have already indicated that 20% of the companies they have approached to establish contractual relationship for the supply of products currently sourced from Bridgewater and Chorley were foreign owned or located. All of the countries in which these companies are based have had recently difficulties with UK foreign policy. The breakdown is one out of three businesses for Bridgewater Product UK based and one out of six businesses UK for Chorley product.

23 January 2006

Memorandum from the Ministry of Defence Trade Unions

1. I am writing on behalf of the trades unions with members in the Ministry of Defence in connection with the above inquiry.
2. While we are in favour of the government having a coherent Defence Industrial Strategy (DIS) and we support the overall policy aims of the DIS, we have particular concerns about the potential impact on the MoD’s in-house civilian capability: both in support of our armed forces and in acting as an intelligent customer in procuring equipment and services.
3. The MoD Trades Unions—as representatives of the views of MoD staff—were only consulted belatedly during the development of the DIS and, although we had the opportunity to express these concerns to Ministers, we do not believe they have been taken fully on board.
4. Our principal concerns fall under two headings.

FURTHER PRIVATISATION

5. In our view, it is inevitable that a policy designed to support “on-shore” capability and to provide long-term order books to the UK defence industry will result in the further outsourcing of defence activity. If one of the aims of the DIS is to secure UK-based industrial capacity in key activities, then work will have to be provided to sustain that plant and labour during “quiet” periods. We believe this could mean functions currently carried out efficiently and effectively within MoD being transferred to industry in order to fill gaps in workload. The DIS, combined with the “through-life” approach resulting from the End to End Review, could reduce the MoD’s involvement in defence equipment to just procurement.

6. It has been apparent from the actions of certain Defence Logistics Organisation (DLO) Business Units that the DIS has been pre-empted by some teams, using their own interpretation of its implications, and acting accordingly. In the run-up to publication of the DIS, a number of senior officials in the DLO publicly stated that the DIS was the justification for the privatisation of tasks. The DLO Business Units in which DIS was quoted as effectively stopping any in-house option were Smart Weapons and Project MASS. We also have some concerns that the recent decisions regarding ABRO and DARA are described by Ministers as “consistent” with the DIS.

7. We believe this consequence, even if unanticipated and unplanned, places the quality, safety and security of supply of defence equipment at risk. We also believe it will, in the longer-term, create a monopoly or near-monopoly of supply and result in price increases which will be out of the MoD’s control. This is not a criticism of the industry—to gain control of supply and then to squeeze it for profit is rational economic behaviour.

8. In the past, Ministers have given assurances that programmed, properly resourced in-house options will be developed prior to privatisation/partnering/outsourcing decisions being made and that the MoD in-house option will be genuinely and fairly considered as an alternative. We would not want the DIS to change this position or be used to justify its change.

IN-HOUSE EXPERTISE AND THE INTELLIGENT CUSTOMER

9. Whatever the impact of the DIS, the MoD will continue to need the skills to specify equipment needs, procure equipment and manage its contracts. In fact, the need for the MoD to improve its capability in these areas is widely acknowledged and the DIS is likely to increase this need further. We fear that the DIS could have the opposite effect. To lose this capacity risks the government allowing companies to specify the work and then bid for it.

10. Most of the skills and knowledge to provide this “intelligent customer” function are grown within the MoD’s rapidly shrinking, in-house capacity to design, deliver, maintain and repair equipment. The risk inherent in such loss is rarely considered in any of the projects the MoD implements. Buying-in many of these skills by outsourcing the intelligent customer capability is not a realistic option for two reasons. First, in some of the labour markets the MoD simply cannot compete. And second, some of the areas of expertise are so specialised that the MoD is the labour market and the dispersal of these specialisms is likely to dilute them to the point of extinction. The consequence of that will be to purchase the skills and knowledge overseas, with the possible security implications that entails.

25 January 2006

Memorandum from Mr Tony Edwards

I believe that Lord Drayson and his team should be congratulated for producing a report of considerable clarity in such a short space of time. However, the Defence Industrial Strategy raises a number of important questions which must be addressed, not least by UK industry. This also applies to SMEs—whose future has not yet been addressed in DIS—as well as the larger companies.

It is my impression that the Defence Industrial Strategy implies that the Government sees the future of the UK defence industry primarily as a provider of sophisticated through-life support systems and services for platforms that will increasingly be designed, engineered and manufactured overseas.

Perhaps one could point to shipbuilding as an exception to this proposition. But even here the prospect is for just one last round of orders for this globally less competitive industry. As for land systems, when BAESystems acquired Alvis/Vickers (which had run out of orders) effectively they bought a capable and successful Swedish armoured vehicle manufacturer with its headquarters located in Newcastle! Ironically, the most globally competitive sector of the UK Defence Industry (Aerospace) has already heard “last orders” with Eurofighter/Typhoon/JSF/Hawks. The only ray of hope in terms of manufacturing is the UAV demonstrator programme.

The MoD's position is eminently understandable, given the budgetary constraint of £30 billion per annum and the demands of an expeditionary foreign policy. Tight defence budgets are not, of course, just a UK phenomenon. The same challenge faces all European countries and when it is considered that the United States spends twice as much on defence as Europe on half the number of troops, the gulf becomes starkly apparent.

But what implications does this new era have for UK-owned and UK headquartered defence companies? There is only so much support services business to go round and in any case, the business that will be on offer won't necessarily fit their capabilities. What is there to keep their focus and centre of gravity in the UK when there are no more opportunities to prime?

We can see what has happened already. Valuable UK-owned defence and aerospace companies have already sold themselves to foreign companies with longer term perspectives and/or foreign government resources behind them. Lucas Aerospace has gone to Goodrich via Varsity and TRW; Messier-Dowty is now part of French government-owned SAFRAN. Racal is part of Thales; Claverham is part of United Technologies; QinetiQ/Dera is jointly controlled by Carlyle Group of the US; BAE Airbus is part of EADS. Shorts is part of Bombardier; Westland Helicopters is part of partially government-owned Finmeccanica.

The few remaining British companies, BAESystems, Rolls-Royce, Smiths Aerospace, Cobham, Meggitt and Ultra could well conclude that their best option will be to either sell themselves to the highest bidder (most likely French, Italian or American) while their value is at a maximum, or move their headquarters to a more supportive location (eg BAESystems and Rolls-Royce to the US). Although relatively highly valued in the UK their market valuations are low by global measures.

Would this matter if it did happen? I believe it would. UK MoD has few enough "British" defence levers to pull as it is. And Britain's last British-owned engineering-based globally competitive manufacturing industry will disappear forever, with unfavourable consequences for the country's training, employment and balance of payments.

Further, UK industry will be waiting to see just how tangible the move away from "value for money comes only from competition" will be. How workable is this, given the ever accelerating globalisation of the defence industry—with the associated cost efficiencies it brings? Would it be cynical to suggest that apart from some window dressing to accommodate Britain's "champions", the procurement process will continue pretty much as before?

So, by way of the Defence Industrial Strategy, the future state of the UK Defence Industry is becoming clear. The more important parts of the industry will be owned by foreign defence prime contractors. They will serve two purposes for their foreign owners:

- (a) support of their equipment in use by the UK armed forces;
- (b) "pull through" in a marketing sense of more foreign designed, engineered and manufactured equipment.

Of course it's not industry alone that must meet the challenge of the Defence Industrial Strategy. The history of defence procurement in this country is at best somewhat chequered. The onus is on MoD to accept the reality of their situation; to stop factoring in programme delays (FRES, Air Tanker, CVF) to save money today at the expense of tomorrow, or worse still sacrificing today's capability (Ships, Sea Harriers, Jaguars) to protect tomorrow's dreams and to come to terms with the fact that their wish list is substantially bigger than their available budget. Let the reality displayed by the Defence Industrial Strategy be reflected in our procurement community too.

These are my views, based on more than four decades of experience in the defence and aerospace industry gained in the United States, Canada, Scandinavia and the UK.

26 January 2006

Memorandum from EADS UK Ltd

EADS is a leading player in the global aerospace and defence market. The company is the second largest aerospace and defence employer in the UK, with 16,000 employees and annual revenues of £1.8 billion in the UK. EADS is involved with some of the most significant MOD programmes including Skynet 5, the Future Strategic Tanker Aircraft, A400M and Eurofighter Typhoon (designing and building over 40% of every aircraft) and—through MBDA—in a variety of complex missile programmes, such as Storm Shadow. The EADS' company Eurocopter is also the platform systems Design Authority for the Puma and Gazelle helicopters. A defence industrial strategy is therefore of considerable relevance to consideration of our future investment plans in the UK.

EADS welcomes the publication of the DIS and the detail it provides, which has the potential to assist industry with its business planning. We agree with the broad thrust of what is proposed, in particular the emphasis on through-life capability management and making a greater proportion of the MoD's overall business available to industry. This could make the UK a more attractive place for defence companies to do business.

There are four specific issues to which we would wish to draw attention and that merit further debate.

First, *Intellectual Property (IP)*. The DIS rightly identifies the importance to securing “appropriate sovereignty” of the MoD and the UK’s armed forces having effective access to IP. This is clearly essential if equipment is to be upgraded and modified successfully in service. This is a requirement that the MoD should not compromise on. It does however assume that the MoD can rely on international interdependence, and that the system is sustained for mutual benefit whereby one country is able to access (with appropriate protections) the IP created in another country.

There are three main sources for the generation of technology: UK-only; UK-US; and UK-Europe. There have been widely publicised concerns about the transatlantic technology relationship. The DIS itself recognises that the US technology disclosure policy is less well adapted to the needs of cooperative procurement than those of the UK’s European partners, and the need for this situation to improve. The current situation resembles more closely a position of significant over-dependency, rather than the desired inter-dependency.

One way to achieve a more balanced approach is to ensure that scarce European resources used to create IP are leveraged as effectively as possible. EADS invests over \$3 billion of its own money in research and technology. As a pan-European company it is involved with technology partnerships with each of its three other “home” nations. In terms of its level of business and scale of industrial presence, the UK is one of EADS’ four home markets. The company believes this creates considerable opportunities to improve European R&T collaboration, to increase the overall impact of both the public and private investments that are made. Accordingly we would suggest increased focus on working with EADS in this field to achieve enhanced UK independence as well as encouraging European interdependence.

Second, *sustaining key industrial capabilities*. One of the key issues to flow from the DIS is the strategy for sustaining the key skills and capabilities to maintain “appropriate sovereignty” and the operational independence of the UK’s armed forces. With the shift in focus to through-life support and contracting for availability, attention is rightly given to maintaining onshore a comprehensive range of key systems engineering skills and capabilities. However, many companies seeking to protect their legacy infrastructure would seek to secure funding for product design engineering and production engineering with the related cost of maintaining expensive support facilities. This will have a significant impact on the cost model, furthermore if we are not careful the defence budget would be required to continue to fund the maintenance of large domestic production factories. For example, the DIS states that it is not an absolute sovereign requirement to maintain a separate national helicopter design and production capability within the UK for new helicopters. This could have simply been achieved by creating a systems engineering skills centre which would be both appropriate and affordable.

Third, *alternative procurement options*. The DIS signals a more pragmatic application of competitive procurement, with a bigger role for long-term partnering arrangements. This will have the effect of making programmes bigger and more complex. The DIS states that the choice between competition and partnering will be made on a case by case basis. It would help industry to be given a clearer understanding of what is likely to be competed and what is not. And where a competition is to be held, what the ground rules for such competitions will be. EADS is prepared to compete vigorously to supply the UK’s armed forces with the best equipment and support at the best price. The company would however be seeking reassurance that the process of applying discretionary concerns relating to protecting “appropriate sovereignty” are well understood.

Companies such as EADS will be prepared to invest in the UK to help sustain the key industrial skills and capabilities, if they feel there is a genuine market for their products and services. The DIS does recognise that, for example, additional effective systems engineering capabilities at platform systems level could emerge in the UK on the back of companies winning contracts to supply the UK’s armed forces. It also recognises that the systems engineering capabilities currently embedded in existing Design Authorities need remain where they currently are. The extent to which the MoD encourages a dynamic market in this area will be the ultimate test of whether or not the DIS is primarily driven by the capability requirements of the armed forces or industrial and political considerations.

Fourth, *R&D*. As the Committee has already noted the DIS is not definitive about the MoD’s R&T strategy, with much of the detail to be fleshed out over the next 12 months. We will be interested to understand how the MoD will manage the transition to a more competitive environment for R&T funding and a reduced dependence on Dstl or QinetiQ. There is as we have mentioned earlier an opportunity to create a multiplier effect from the enormous R&T investments that companies such as EADS are already making in this area.

Memorandum from Professor Keith Hartley

INTRODUCTION

1. The Defence Industrial Strategy White Paper is a welcome contribution to public knowledge and understanding of UK Defence Industrial Policy and its likely future developments. It is the first time a UK Government has made such a detailed statement outlining the main features of the UK defence industrial base (UK DIB), the objectives of defence industrial policy and identifying the key defence industrial capabilities which it seeks to retain in the UK.

2. The Defence Industrial Strategy (DIS) starts from the need for change in the UK military-industrial complex: the changes affecting the Armed Forces will impact on the UK DIB. New threats, new technology and budget constraints are the main drivers for change. Whilst the Defence Industrial Strategy addresses the implications of such changes, it also raises a number of further questions and issues which cannot be ignored in the development and implementation of the policy. This Memorandum of Evidence starts by placing the DIS into context and then focuses on these outstanding issues.

CONTEXT: THE DEFENCE ECONOMICS PROBLEM

3. A starting point for assessing the DIS is the defence economics problem. This results from declining or relatively constant defence budgets in real terms and rising costs of both equipment and military personnel for an all-volunteer force. For equipment, the outcome is a long-run decline in numbers purchased (eg compare numbers of RAF Hunter aircraft and Typhoon; decline in numbers of nuclear-powered submarines, destroyers/frigates and main battle tanks; but modern equipment is far more effective). The defence economics problem means that difficult choices cannot be avoided. These choices are affecting both the UK's Armed Forces and its DIB and such choices have to be made in a world of uncertainty where the future is unknown and unknowable. No one can correctly foresee the future and the likely needs of the UK Armed Forces for national defence industrial capabilities. This makes it necessary to ensure that UK defence industrial policy is sufficiently flexible to respond to the unexpected and to allow new entrants into the UK DIB (cf the 1957 White Paper forecasting the end of manned combat aircraft with the service entry of Typhoon in 2003 followed by JSF). The current DIS will be followed by further versions in the future. Inevitably, difficult choices will continue to be needed between support for the UK DIB and importing foreign equipment.

4. A major contribution of the DIS is its recognition of lower production levels once current major equipment projects have been completed and a shift of industrial work to support and upgrading of equipment. The UK DIB will have to adjust to a future comprising major gaps in development and production work, raising questions as to which defence industrial capabilities the UK wishes to retain, how such capabilities will be retained and at what cost?

5. The DIS presents a clear statement of the defence criteria to be used in selecting which UK defence industrial capabilities are to be retained. These include "appropriate sovereignty" (ie operational independence; security of supply; responding to Urgent Operational Requirements); through-life capability management (with more opportunities for military outsourcing), maintaining key industrial capabilities ("key" are not specified) and maintaining intelligent customer-intelligent supplier relationships. The application of these defence criteria to the UK DIB requires industrial re-structuring and capacity reductions in the maritime, aircraft and land systems sectors. These industrial changes raise some of the outstanding issues for the DIS which can be grouped around procurement policy and industrial policy.

SOME OUTSTANDING ISSUES FOR THE DIS

(i) *Procurement policy*

6. *Competition.* Governments are central to understanding defence equipment markets. They are major buyers and in some cases, the only buyer (monopsony buyer—eg UK nuclear submarines). They can use their buying power to determine the size, structure and performance of the UK DIB (eg via promoting or preventing entry/exit; via controls on profits and exports). Whilst the DIS continues to support a competitive procurement policy, it also announced a significant shift towards alternative approaches, especially partnering. The DIS commitment to supporting/retaining key UK defence industrial capabilities might mean that competition is not possible: hence, the emphasis on partnering.

7. *Partnering.* The DIS outlines some of the benefits and costs of competition (eg benefits of lower prices, innovation and competitively-determined profits; but at a cost in terms of bidding costs, unrealistic time-scales and over-optimism: DIS, p 48). A similar analysis of the benefits and costs of partnering is needed. Here, the language used is interesting and by no means neutral. It is claimed that competition is adversarial with "win-lose" outcomes. In contrast, there is a belief that partnering is less adversarial, based on mutual understanding and trust with a willingness to share information leading to a "win-win" outcome (DIS, p 133). However, it does not follow that partnering agreements offering firms guaranteed markets will always lead to cost-efficient outcomes. Firms and groups within firms have little incentive to economise and

minimise costs unless there are strong pressures for them to do so. Once a contract has been awarded, the pressure of competition is removed and inefficiency is likely to emerge. More generally, all forms of contracting and business relationships such as partnering involve the risks of opportunistic behaviour by one or more parties to the transaction. Long-term partnerships are no less prone to such tensions than competitive contracts and indeed may be more so. For example, the DIS refers to the weaknesses of the Framework Partnering Agreement, namely, a failure to adequately incentivise BAE Systems Land Systems to reduce its cost base (DIS, p 99, para B6.34). Partnerships have the potential for creating a “cosy” relationship between major contractors and MoD. In these circumstances, attention is needed to the contracting and profit arrangements for non-competitive contracts associated with partnering.

8. *Non-competitive contracts and profitability.* Various parts of the DIS refer to non-competitive contracts and the need to provide industry with adequate rewards so as to induce firms to remain in the market. The challenge for the Defence Procurement Agency is to undertake accurate cost-estimating which reflects efficiency and provides incentives for efficient behaviour in the absence of competition; to provide adequate profit incentives which reward risk and innovation in non-competitive markets; and to formulate these into an appropriate type of contract. The DIS solution is outlined in terms of a joint MoD/Industry willingness to share cost data; to provide estimates of the full cost of ownership (here the track record of obtaining reliable estimates of life-cycle costs leaves much to be desired); and an increased use of Target Cost Incentive Fee contracts and the use of risk adjusted profits related to the type of work. A shift to Target Cost Incentive contracts will require a major change in MoD procurement policy and practice. In 2004–05, only 4% of MoD contracts by value were of the Incentive type compared with 65% priced by competition. With Target Cost Incentive contracts, MoD and Industry have to reach agreements on efficient cost estimates, on cost sharing arrangements, on a maximum price liability and on an agreed profit rate. Such negotiations and bargaining offer extensive opportunities for “game playing” involving “bluff, tit-for-tat and brinksmanship.” It is not all obvious that such behaviour will deliver value for money benefits to the UK Armed Forces and the taxpayer. Further complications arise from the reference to “wider factors” in procurement choices.

9. *Choice criteria: wider factors.* This part of the DIS remains vague (Chapter A9). The definition of “wider factors,” their relevance and their weighting in procurement choices remains unclear. The DIS offers some indications but more specific information is needed. There are references to a preference for general rules which do not distort resource allocation and which avoid case-by-case intervention (DIS, pp 33–34). Typically, in previous UK industrial policy, wider factors referred to wider economic and industrial benefits embracing jobs, technology, spin-offs and exports. The DIS refers to the need to retain some UK industrial capabilities which do not meet the strict defence criteria but which are of “high value to the industrial economy” (DIS, 56, para A9.9). Here, there are references to world markets, high-value added economic activity, technology spill-overs and the impact on industrial activity regionally (including the number and quality of UK-based jobs that are created or sustained). Elsewhere, there are references to defence export potential, “foreign and security policy interests” and “wider MoD policy.” The role and importance of these wider factors in procurement choices needs to be clarified. For example, economic theory suggests that governments should intervene where markets are failing to work properly. On this basis, the DIS “wider factors” need to be related to clear failures in labour, technology (R&D markets and spill-overs) and export markets (and that defence procurement is the appropriate solution). Such a case has not been made in the DIS.

(ii) *Industrial Policy*

10. The DIS makes major statements about the retention of key defence industrial capabilities. Sectors to be retained in the UK include the submarine industry, a core of warship building, a through-life capability to support fixed wing aircraft, a capability in high grade cryptography and a surge capability in general munitions. Major down-sizing is expected in the maritime, fixed wing aircraft (with a forecast of the end of UK fixed wing manned aircraft industrial capability) and missile sectors and there are specific statements of a willingness to buy from overseas some UK warships, large aircraft and training aircraft, torpedoes and helicopters. The DIS recognises that these changes will require substantial industrial restructuring and a need to improve productivity and industry responsiveness to change. However, within the DIS, there are a number of industrial policy issues which need to be addressed.

11. Monopoly versus competition. Support for a UK DIB will mean MoD becoming more dependent on domestic monopolies (with partnering). Typically, monopoly compared with competition leads to higher prices, monopoly profits, inefficiency and a poor record on innovation. Also, in recognising the need for industrial restructuring, the DIS claims that MoD “. . . will not micromanage industry’s restructuring but it must be customer focused and we are likely to express preferences as different approaches emerge” (DIS, p 75, para B2.51). Elsewhere, there are references to “some form of Government stake in how . . . industry develops” (DIS, p 75, para B2.51). In the case of the maritime sector, it is suggested that one fully-loaded warship yard might offer better value for money than several partly loaded yards in competition (DIS, p 77, para B2.75). This raises two issues. First, a single fully-loaded warship yard will be a monopoly supplier lacking the competitive pressures and incentives to reduce prices, be efficient and be innovative. Second,

there is a more general issue of the role of government in industrial restructuring in defence markets. One view which seems contrary to the DIS is that government's role is to specify the market demand for defence equipment, leaving industry to determine restructuring on the basis of commercial criteria.

12. *The price of UK independence and the willingness to pay.* Supporting key parts of the UK DIB will not be costless. The DIS does not indicate the UK's willingness to pay for supporting its key industrial capabilities (eg is it willing to pay, say, an extra 5% or 10% or more?). There are, though, references to avoiding "a UK premium being priced into domestic bids" (DIS, p 55, para A9.7) and for retaining a UK capability in small arms ammunition "but not at any cost" (DIS, p 97, para B6.21). The general point remains that supporting parts of the UK DIB will involve costs (compared with importing equipment). Where efficiency is a concern, MoD can always "shock" UK industry into improved performance by threatening to import foreign equipment, but at a price in terms of the loss of trust in a partnership. One price of retaining parts of the UK DIB involves the adequacy of profit margins on defence work: industry will require a minimum acceptable return to induce it to remain in the UK market.

13. *The profit formula for non-competitive defence contracts.* The growth of non-competitive contracting associated with the DIS means an increased use of the Government Profit Formula for such contracts. This Formula aims to provide defence firms with non-competitive contracts a profit return equal on average to the overall return earned by British industry (having regard to both capital employed and cost of production). The 2003 General Review of the Profit Formula introduced new arrangements relating profits to both capital employed and costs of production; it introduced a new risk/reward matrix; and it introduced sharing arrangements between MoD and contractors for "excessive profits and losses" (sharing 75:25 between MoD and the contractor). Under the new arrangements, a baseline profit rate of 5.67% on costs of production was recommended for non-competitive contracts. The greater use of non-competitive contracts will be a challenge for the Profit Formula. Questions arise as to whether it offers efficiency incentives, whether it provides sufficient reward for risk and whether the profit rates are "too generous" where the UK DIB is guaranteed work.

14. *The dominance of BAE Systems.* The DIS confirms BAE's dominance in the UK defence market with its domestic monopolies in air, land and sea systems. BAE will be the subject of various partnering agreements. This raises two issues. First, BAE will be a powerful producer group which will seek to influence government policy in its favour. The DIS recognises that defence markets are characterised by "a significant element of advocacy from firms" (DIS, p 34, para A4.5). Second, in view of its dominance, consideration might be given to treating BAE as a regulated firm in the same way as the UK regulates its privatised utilities: there might be lessons from such wider experience with regulation (eg pricing; efficiency incentives; use of cost of capital techniques; and profitability rules).

15. *Modelling UK dependence on imports.* The DIS focuses on the retention of key parts of the UK DIB. There is a missing element in the approach. No detailed analysis is presented of the implications for UK of an alternative policy scenario of relying on imported defence equipment. For example, with such a policy, the UK Armed Forces would lose their security of supply and re-supply in conflict; without a UK DIB, the UK would lose its bargaining power when buying foreign equipment (eg the latest equipment might not be offered); and there would be the loss to the UK economy of its DIB.

CONCLUSIONS

16. There are other issues which cannot be ignored and which will be summarised:

(i) Supply chains are recognised by the DIS, but MoD and DTI need much more data on the extent and complexity of such supply chains in the UK DIB. Analysis needs to proceed to the second and third tiers of supply chains for major air, land and sea systems, recognising that such analysis will involve difficult data problems and definitions of the DIB.

(ii) The UK Defence Electronics Industry. The DIS provides detailed analysis of the major sectors of the UK DIB, but in view of new technology (eg NEC), there is scope for further separate analysis of the UK Defence Electronics Industry (recognising that the DIS makes some reference to this Industry in its Chapter on C4ISTAR).

(iii) The European defence market. Various parts of the DIS refer to the EU defence market, EDA and OCCAR. However, there was no vision of whether and how such an EU defence market might contribute to the future of the UK DIB.

(iv) The future defence firm. The DIS needs to consider the future of the defence firm. Today's defence firms are radically different from those of 1900 and the defence firm of 2050 will be radically different from today's defence firms.

17. The DIS is welcomed as a challenging document but, as this Memo suggests, it is only the first stage in a complex process. There are more questions to be answered which will involve some difficult choices.

2 February 2006

Memorandum from Northern Defence Industries

Introducing NDI

In my capacity as Managing Director of Northern Defence Industries Ltd, I head up an organisation that works to create access to markets for around 200 subscribing member companies. Almost all of them are SMEs (ie less than 250 employees) and many are micro-businesses (less than 25 employees); in the main they are based in the North of England, although there are some in the South and Scotland.

NDI represents only a portion of the defence and aerospace SME population: In the initial CVF round of “road shows” NDI registered over 300 suppliers and sub contractors who wished to secure business on the programme. (We are now working closely with the Carrier Alliance to ensure that as many as possible are successful in future phases. Several have already secured contracts during the Assessment Phase.)

Economic value of defence spending

The importance of the defence industry to the economic well-being of the regions should never be underestimated.

It is an industry populated for the most part by dynamic and flexible SMEs who can react quickly and innovate; SMEs that for instance, between them account for more than 8,000 jobs and an £800 million contribution to GDP in the north east alone. It is estimated that at least 50 pence in every defence procurement pound ends up with a UK SME.

They are in a very real sense as much a part of the UK’s intellectual capacity as the systems engineers and designers in the multinational primes. They are of course very much under sovereign control—often owner managers who have invested not just their wealth and time but their creativity and commitment to sustain their businesses against competition from all-comers.

The UK engineering industry, especially that in the north of England, has a long and proud tradition of supply to the defence industry. But it is now faced with serious dilemmas about its future direction, its viability and its sustainability. MoD projects such as CVF; MARS; FRES and a host of smaller programmes are critical to the future of defence and aerospace suppliers and sub contractors who encompass manufacturing, engineering, design and services.

We therefore welcome the publication of the Defence Industrial Strategy, which gives a broad (if incomplete) forward view of the market. Not unexpectedly it is MoD-centric, but in aspects it is disappointing to SMEs. Perhaps inevitably, it concentrates on the prime contractor level, and no doubt they will react positively to the new environment, which puts emphasis on partnerships as well as competition. But it has also been described as a “big boys charter” which inevitably concerns the SME sector. NDI would therefore maintain that if the MoD is changing the rules, it should expect also to referee the players.

Successful partnerships which include SMEs

At the lower tiers where our members operate it seems to be expected that competition red in tooth and claw will still operate. This is not necessarily inevitable, or desirable.

NDI has sought to operate in areas less populated by intense competition. For instance, the intelligent interpretation and implementation of “offset” or “industrial participation” policy has enabled some of our SME’s to secure long term contracts with international defence primes such as SAAB Bofors, Raytheon and Lockheed Martin.

The example of NLAW is important. SAAB Bofors committed to 100% IP and as a result have built a UK based supply chain that is clustered together to develop and deliver new technology on time and within budget. SAAB relied on SME’s with embedded knowledge of their machinery and systems to contribute to the cost and weight reduction of NLAW.

The effect is a cluster of engineering companies that have secured long term contracts that will sustain these companies and their staff supplying components to both MoD and export customers.

One is a micro business that was encouraged into the defence supply chain in a way described in the attached case study, and which has developed a further subcontract relationship with another hi tech small business—trickle down in action, and also a demonstration of the value of DESO- encouraged international defence exhibitions in this country.

A composites business based in rural Northumberland helped to develop new technology to help reduce the weight of the rocket motors and as a result has opened up new business opportunities with other primes that will help to sustain jobs and revenue for sometime into the future.

An electronics business that previously only did business with the automotive sector that has developed new micro switch technology that is specific to NLAW, and there are other examples.

“Javelin”, a Raytheon Lockheed Martin JV, gave a 2005 “Global Gold Supplier Award” to a small Tyneside firm of precision engineers. Another won the “Augusta Westland Supplier of the Year” title for components on military helicopters. These awards are not won easily, or for political reasons, but because the companies concerned are innovative, cost effective and collaborative suppliers to major programmes who are cherished by their primes and encouraged.

NDI has assisted SME’s to secure openings on “Watchkeeper”, another high technology programme that will support the sustainability of small firms.

The need for a champion

The increased forward visibility of programmes as a result of the DIS is certainly helpful, but has a slightly abstract feel at lower levels of the supply chain. Now we know a lot better about what the MoD is planning—but how does it help us to do business?

Our first thought is that those with the least clout get squeezed first. We need a champion to ensure that the sector is encouraged rather than exploited, and that staff in integrated project teams do not ignore something they may consider to be the primes’ problem.

(By way of parallel: The Late Payment of Commercial Debts (Interest) Act 1998 gives a tool to SMEs to ensure prompt payment but most feel unable to use it until commercial relationships have broken down, for fear of losing the customer by asserting their rights—a syndrome recognisable around school playground bullies! In this instance the MoD, which plays by the rules itself, might require its primes to report publicly how they comply too. Similar sentiments apply to SME IPR.)

The special defence business cycle

It is worth pointing out again that defence operates in a peculiar environment. There can be few other industries—if any—where the procurement process is so elongated—or convoluted.

Major defence projects can take anything up to 10 years to reach full scale manufacturing. You simply don’t order a battle-tank, a new aircraft or a large ship “off the shelf”. The bidding process alone can sometimes take years to complete.

One of the almost inevitable consequences of this unusual trading environment is the creation of a “boom and bust” business cycle. If SMEs can somehow stay the course during the long, expensive and often frustrating bidding cycles, then their reward lies in an extended period of supply into and support of major defence projects—as the first case study indicates. If not, what then?

Push versus pull approaches to sector support

The most agile among the SMEs that form the backbone of defence supply chains seek out new markets; they develop new capabilities—and shed old redundant or unprofitable ones.

And this is where a major dilemma is apparent.

In order to—at the very least—sustain, or—at best—grow the business infrastructure that underpins the defence sector, there are two distinct courses of action open to business and Government.

One is to invest in advance—the “push” approach—in things like training, in order to meet the demand for a skilled workforce for future business. The Government is committed to such training and that, of course, is to be welcomed and encouraged. However it must also be recognised that this can be a considerable burden to the SME community in terms of time and cost.

The danger of this “push” approach, however, is that unless there are significant changes in the way defence procurement is managed, the nation may be investing in preparing a workforce with skills—but no business upon which to practice those skills.

Access to markets forms the logical beginning of a chain of events. We are stimulating supply chain visibility by the launch at DSEi last year of a substantial database of members’ capabilities. This is designed to inform the prime contractor community interested in collaborative working, especially in the manufacture of components and sub systems rather than making every nut and washer themselves.

Access to markets leads to new orders. New orders create revenue and wealth. Wealth creates a climate that encourages growth. Growth brings about new jobs—and new jobs in turn create demand for support programmes and training. These are desirable social market outcomes.

If this argument is followed through, it means therefore that there should be a radical shift towards Government investing in meeting the demands of business already won, rather than in future skills to meet the hoped-for demands of business yet to be achieved.

NDI believes that the nation should enhance such “pull” strategies, giving businesses the extra resources that will enable them to build on their current successes. In doing this, the skills base that already exists is further strengthened. Thus strengthened, SMEs are further encouraged to seek access to additional markets, which as we know leads to more orders and thus the positive feedback cycle continues. Here is an opportunity for the departments represented by the smiling faces in the introduction to the DIS to show that they really are “joined up” in strategic implementation.

A final word of warning

But for this to happen there has to be an unequivocal recognition by Government that defence orders need to be planned and placed more in accordance with the needs of the commercial world and its timetables, rather than the timetables dictated by politics and grand strategy. There must be more understanding of the world that is inhabited by the SME supply chain.

The primes have a strong voice through direct access to ministers; through trade associations; through the National Defence Industries Council; and even direct to your committee. SMEs have a thousand voices—and very many of them are faint and tremulous—which makes it even more important for them to be listened to.

National champions, to use a footballing analogy, can buy star players from overseas whose loyalty may go no further than their next transfer. And they can invest in academies and feeder leagues to encourage home grown talent who will walk through walls for them. Like the MoD, the primes need to be more aware of what the SME community can do to help them continually achieve long term business success.

One thing is certain: If despite the publication of the DIS nothing changes in the world of defence procurement, then we could see a situation in the not too distant future where the supply chains that currently exist to service the needs of prime contractors and ultimately the Government disappear.

The agile—and therefore most capable—SMEs will have tired of waiting. More than just the innovation they are widely recognised as bringing to the party will no longer be available for defence purposes. They will have discovered new markets—and moved on. The capability they now provide will be lost to the nation and with it self-reliance in meeting defence needs, and the economic benefits that flow into the UK economy from Government expenditure on defence goods and services of £16 billion every year will accrue overseas rather than at home.

CASE STUDY

How a small company broke into a defence supply chain

A visit to the DSEi exhibition in London in 2001 yielded big dividends for 11-employee Northern Defence Industries’ member company Springwell Precision Engineering of Washington. The company’s managing director Phil Gatens went to see if he could pick up some new business leads. This is his story . . .

“We weren’t exhibiting at DSEi, but I knew that, like all NDI members, I had an “open invitation” to visit the NDI stand and use it as a base during my visit.

“While on the NDI stand, I spoke with Managing Director, David Bowles and he suggested that I would be wise to go and see Roy Williams on the SAAB Bofors Dynamics stand. I took David’s advice, told Roy all about Springwell, and he said to contact him again in a few weeks when he was due to be in the North East for a brief visit.

“I duly met Roy Williams again in Newcastle; he produced some drawings at that meeting and simply said ‘Give us a quote’.

“The drawings were for components for what would be the sighting system assembly for NLAW. We submitted our proposals and waited . . .

“About four or five months later, I got a phone call from the people at SAAB. Before we knew it we were entertaining a delegation from SAAB at our site in Washington. We made a presentation to them and showed them around—and got some very good feedback as a result.

“SAAB Bofors Dynamics were in the process of putting together a team of UK based contractors who would help them to win the order for the NLAW system from MoD, and we were subsequently invited to a number of team conferences, the first of which was held in Birmingham.

“It became clear from the outset that SAAB were particularly keen to direct work to small specialist companies such as ours—they were looking to develop ‘clusters’ in exactly the same way that NDI works so hard to promote.

“SAAB held a showcase event in London at which they described in detail to MPs and other interested parties how the NLAW offset programme would be managed, and they encouraged each participant to lobby their respective MPs.

“I spoke with North East MPs Kevan Jones, Joyce Quin and Fraser Kemp and told them about our involvement with the NLAW programme—and I have to say that they were unfailingly supportive of what we were doing.

“There were many changes in designs and amendments to components over a two-year period and eventually came the news that the Government had awarded the NLAW contract to SAAB Bofors Dynamics.

“To cut a long story short, just before Christmas 2004 I had the pleasure of going to the SAAB Bofors offices in Karlskoga, Sweden and I signed a five year agreement with them for Springwell to manufacture the sighting system brackets for NLAW.

“Our NLAW win will be worth about £1 million to us over the five-year contract period. To put that in perspective, we have a workforce of 11 people at Springwell Precision; this contract means work for at least three men for five years.

“The benefits of our involvement go beyond simply winning the contract from SAAB, however. Because of our interaction with other members of the NLAW cluster, we’ve been getting enquiries from them for work on projects outside of the NLAW programme. We have also obtained orders from two parts of the Thales group, in Belfast and in Basingstoke.

“This interaction is not all one-way traffic either: we have established a relationship with fellow NDI members, Micro Metalsmiths Ltd from North Yorkshire, who are providing us with specialised castings for our components. I went to see them some while ago, liked what I saw, and signed a supply agreement with them. Liam Todd and his team are very good”.

Liam Todd at Micro Metalsmiths says: “Our collaboration with Springwell sees us blending the best of both our companies to manufacture components that have unique demands. Our casting and machining knowledge allows Springwell to explore manufacturing techniques that will ultimately save a lot of time on the parts”.

Phil Gatens says: “Involvement in NLAW has opened doors for Springwell. It’s our first step on that particular ladder and I’m confident that we will be in a position to win more business in the future based on our experience of this programme.

“What really struck me about the SAAB philosophy is that they know and understand the circumstances under which SMEs like us operate; I think that large Scandinavian businesses are further down the road of sourcing parts and components from SMEs than their British counterparts, but I hope that this will improve markedly in the UK over the next few years”.

6 February 2006

Memorandum from Keep Our Future Afloat

PART A: EXECUTIVE SUMMARY

i. The “Keep Our Future Afloat Campaign”, (KOFAC), is a trade union-led lobby Campaign. The CSEU, Amicus and GMB are the lead unions involved. KOFAC was launched in April 2004 in response to a further round of large scale job losses at the BAE SYSTEMS owned Barrow shipyard in north west England associated with completion of HMS BULWARK in June 2004. Paragraph 5 of our evidence sets out the campaign’s aims, which focus on “sustaining and growing jobs in naval shipbuilding in NW England”.

ii. The Keep Our Future Afloat Campaign strongly welcomes the Defence Industrial Strategy, (DIS), December 2005 as providing real clarity of purpose for the UK’s naval shipbuilding industry.

iii. DIS must be implemented with adequate funding to enable the new naval platforms required by the Royal Navy, (listed in Table 1 and page 5 of this evidence), including their “through life” support to be delivered and core skills in key shipyards to be sustained. Implementation of DIS should therefore make best use of available physical shipbuilding assets, and the workforce, especially those located at Barrow-in-Furness. Effective implementation of DIS will require:

- (a) Clarification of definitions of “complex warships”⁽¹⁾ and those which are regarded as “less complex”. This is especially important for three reasons:
 - Firstly, DIS (paragraphs B.2.21 to B.2.24, page 70) changed policy regarding where warships can be built. There is now no absolute sovereign requirement to construct all warship hulls onshore, (in UK) and MoD’s advisors Rand⁽²⁾ have recently set out under what conditions work could be outsourced “to foreign sources”?

- Secondly, because Rand Europe in advising UK MoD indicated “Barrow is an untapped source of production capability and could likely play a significant role in the coming shipbuilding programme.”⁽³⁾
- Thirdly, because the way in which MoD classify warships will to a large extent define core workloads likely to be available to shipyards like Barrow.

The Select Committee should also ask the Government to identify the criteria and conditions it will use when seeking to build ships in UK and those to be used when it wishes to outsource or obtain ships from abroad.

Source: ⁽¹⁾ Defence Industrial Strategy, 2005, paragraph B.2.22.

⁽²⁾ Rand Europe 2005, *The UK’s Naval Shipbuilding Industrial Base, The Next 15 Years*, page 158.

⁽³⁾ Rand Europe 2005, *The UK’s Naval Shipbuilding Industrial Base, The Next 15 Years*, page xxxii, ISBN 0-8330-3700-4.

- (b) British Government to provide the financial resources for a regular, and sufficient “drumbeat” or flow of warship and submarine orders to:
 - (i) Maintain a modern naval force, delivering the required operational “capability and effect” identified in the 1998 “Strategic Defence Review” and subsequent, 2004, “Future Capabilities” Command Paper.
 - (ii) Sustain core skills and workload at the remaining UK shipyards such as Barrow in NW England.
 - (iii) Encourage shipyards and companies in the supply chain to invest in infrastructure and skills development, rather than lay off skilled people when workload gaps appear as orders are completed.

Government need to confirm “affordability”⁽⁴⁾ of the naval shipbuilding plan in the planned Maritime Industrial Strategy.

- (c) Early implementation by UK Ministry of Defence of “through life” support based procurement contracting strategies for new warship and submarine platforms, including “Astute” class submarine, boat four and follow on boats. Early implementation of “through life” invitation to tender by MoD will enable companies within the naval shipbuilding industrial base to offer innovative procurement solutions based on supply, maintenance and upgrade of equipment at component or system level for new platforms through their operational life. The Select Committee may wish to invite MoD to clarify how “through life” procurement will be implemented in ordering future submarines such as the fourth boat of the “Astute” class and for future warships.

iv. The Maritime Industrial Strategy (MIS)⁽⁵⁾ needs to be based on a strong partnership—“team navy” involving industry and Ministry of Defence. It needs to:

- (a) Make best and flexible use of available shipyard and workforce assets in the industrial base, in order to strive for submarine and warship affordability.
- (b) Plan for incremental upgrades throughout the operational life of the proposed new naval fighting platforms (listed in Table 1) to sustain help skills.

Note ⁽⁴⁾ Rand Europe in *The UK’s Naval Shipbuilding Industrial Base, The Next 15 Years*, 2005: on page 17 defines affordability as the “ability of the Government or DPA to budget for ship acquisitions”.

⁽⁵⁾ Referred to and defined in Defence Industrial Strategy 2005, paragraph B.270 to B.272.

- (c) KOFAC considers the DIS proposals for separate surface ship alliance or company (Ship Co) and submarine alliance or company (Sub Co) may not offer the best way forward for UK plc. Establishing two separate legal entities would inhibit full exploitation of the surface ship potential of Barrow shipyard to design and build large complex warships and submarines. It could also create an artificial, potentially expensive barrier between surface ship and submarine supply chains. Separate “companies” might also create workload gaps at Barrow if Barrow is unable to break into or secure surface ship work.

v. As Defence Minister The Rt Hon Adam Ingram MP said recently “We need to sustain high-end skills to design and integrate complex warships and maintain them through life. We need to retain, too, the ability to design, manufacture and support all aspects of submarine capability”.⁽⁶⁾ Barrow shipyard, with its track record of building “first of class”, large warships and submarines, and domain knowledge firmly embedded in the shipyard, offers MoD flexibility to build and deliver large complex warships, warlike vessels and nuclear submarines.

vi. Barrow shipyard’s capacity and capability is highlighted in Appendix A. MoD can reduce risk to the planned naval shipbuilding programmes, but only if there is a continuity of workload that sustains the skills-base.

vii. Government need to order a batch of three or four new submarines “at one go” (by 2007) rather than one at a time, and to start significant design work very quickly on a replacement to the existing Vanguard class submarines. A return of surface ship work must also take place so as to sustain design and other skills available at Barrow.

Source: ⁽⁶⁾ *Hansard*, 2 February 2006.

PART B: THE KEEP OUR FUTURE AFLOAT CAMPAIGN (KOFAC)

1. The “Keep Our Future Afloat Campaign” (KOFAC), launched in April 2004, has the support of the CSEU, Barrow Borough and Cumbria County Councils, Furness Enterprise and Northwest Development Agency. In September 2004 the then Secretary of State for Defence The Rt Hon Geoff Hoon MP described the lobby as “one of the most effective defence lobbies he had come across.” More recently the Rt Hon Alun Michael MP, Minister for Industry and the Regions on 13 December 2005 indicated “this (KOFAC) type of approach by management, trade unions and the local authority is very powerful”.⁽⁷⁾

2. KOFAC aims⁽⁸⁾ to:

- Sustain and grow jobs in naval shipbuilding in north west England.
- Secure full utilisation of the unique assets found in the Northwest region’s naval shipbuilding industrial base—the shipyard at Barrow and a supply chain of 1,700 companies.
- Sustain the 60% of UK naval ship/submarine design capability, which is located, in Barrow.

Outline of the KOFAC Submission

3. We assume that the Government intends to fully resource delivery of the new naval platforms identified in Table 1, below.

Table 1
PLANNED NAVAL SHIPBUILDING PROGRAMMES

<i>Platform</i>	<i>Type or number of vessels required</i>
Future Aircraft Carriers	2
Type 45 Destroyers	Up to 8
Future Surface Combatant	2 classes, number not specified
Astute Submarines	Up to 8, subject to affordability
MARS fleet	Tankers
Replenishment Ships	Logistics ships/hospital ship
Type 23 Frigate upgrades	Life extension programme
Vanguard Replacement Option	Combat/platform system upgrade Design work to keep option open

(Source: Defence Industrial Strategy, Page 68–69, Maritime Chapter, Equipment Programme paragraphs B.2.3 to B.2.15, December 2005)

Source: ⁽⁷⁾ Keep Our Future Afloat Campaign Secretariat, Notes from meeting with Rt Hon Alun Michael MP, 13 December 2005, Furness Enterprise 2005.

Source: ⁽⁸⁾ Keep Our Future Afloat Campaign pamphlet, September 2005.

4. Our Memorandum to the Defence Select Committee outlines KOFAC’s views on:

- The Defence Industrial Strategy; the need to define what types of warships and submarines will be constructed in UK (paragraphs 10–17); our welcome for the proposals for submarine work including cooperation with USA (paragraphs 10–17).
- “Drumbeats” of future orders and core workloads.
- The Maritime Industrial Strategy including possible arrangements for warship and submarine delivery/support.
- The importance of skills retention and development.

5. KOFAC’s continuing concerns remain that order gaps and consequent workload gaps result in loss of skills. New warship and submarine orders need to flow soon. Adequate funding (by HM Treasury and MoD) to permit level loading of work is essential to sustain skills and capability to deliver the naval equipment the armed forces require. Definitions are needed as to what ship types will be classified as large/complex and those that will not. There is also a need to use people with specialist submarine designer skills on surface ship design work to sustain that skills base between submarine orders.

KOFAC Welcomes the Defence Industrial Strategy

6. KOFAC strongly welcomes the Defence Industrial Policy and Defence Industrial Strategy (DIS). The DIS provides a robust framework for sustaining key skills, tacit knowledge and jobs in the UK naval shipbuilding and submarine industrial base whilst enabling MoD to deliver its required “capability and effect” identified in its 1998 Strategic Defence Review.

7. DIS is a foundation for “truly smart” defence procurement, affordable equipment delivery and effective “through life support” of naval vessels including submarines and naval guns.

8. KOFAC believes DIS must sustain jobs and skills in the naval shipbuilding industrial base in order to enable, what Lord Drayson recently described as our key objective, to enable the “armed forces to receive the equipment they require, on time, and at best value for money for the taxpayer.”

9. KOFAC seeks clarification on a number of issues identified in the DIS, these include:

- Definitions of what are “complex” and “less complex” ships.
- Implications of proposed drumbeat of orders, for ships and submarines.
- Defining what are to be regarded as core design skills and how to sustain them.

KOFAC Welcomes the DIS Proposals for Submarines

10. KOFAC welcomes the DIS proposals for submarines . . . “that for the foreseeable future UK will retain all those capabilities unique to submarines and their nuclear steam raising plant” . . . contained in DIS (paragraphs B.2.7, B.2.18 and B.2.26 to B.2.28). The Maritime Industrial Strategy should focus on consolidating at the BAE SYSTEMS, Barrow’s Submarine Centre of Excellence the UK’s capability in these fields in order to help sustain an affordable submarine industrial base.

11. DIS (paragraph 2.62) observes “submarine design capability is at risk if long gaps emerge between first of class design efforts”. International collaboration can help sustain the UK submarine industrial base. In particular KOFAC notes and welcomes MoD Ministers’ statement in the House of Commons on 14 December 2005 that “a statement of intent for cooperation and exchange between the USA and UK on submarine concepts, design and construction was signed on 7 October 2005 . . . (it) records the “intention to work to mutual advantage” . . . and . . . “for the construction, equipment production and logistics support to be maximised. Such work will not compromise the retention of submarine design capability in this country” (UK).⁽⁹⁾

Source: ⁽⁹⁾ *Hansard* House of Commons, Column 2043W, 14 December 2005.

Definitions Need to be Clarified

12. In the context of the DIS stating “we need to build onshore to the extent that it sustains the ability to design and physically integrate complex warships” (DIS paragraph B.22) KOFAC seeks from MoD/dti agreement on definitions on what they regard as “complex warships” and “less complex” naval vessels in order to help define potential future labour loading in the shipyard at Barrow and whether some vessels are more likely to be tendered for beyond UK shores.

13. It is not clear which of the classes of ship constitute “complex warships” and which may be regarded as “less complex” warships, or whether in some cases large, complex warships could be built abroad. The debate about the projected MARS⁽¹⁰⁾ fleet has to date indicated some of these ships may be classed as “warlike”, some such as tankers may be more commercial in type. The Select Committee may wish to invite MoD to clarify the extent to which the MARS fleet performs military tasks and therefore be classed as complex warships.

14. KOFAC is aware that in some quarters even the Future Aircraft Carriers could be regarded “less complex ships” able to be supplied from outwith UK. KOFAC takes the view that the Future Aircraft Carriers should be classed as large complex warships and would ask for this to be confirmed.

15. KOFAC considers it to be essential to develop an understanding of what shipbuilding capability should be retained in the UK (eg complex MARS vessels/Amphibious vessels v Commercial standard Tankers/RoRos).

16. From such definitions flow the potential visibility, for industry and the workforce, of core workload for UK shipyards and likely demand for highly skilled, high gross value added, labour.

17. “Complex warships” should reflect the degree of systems integration and multi-role purpose of warships, this would embrace the following planned classes of ship:

- Future aircraft carriers.
- Type 45 Destroyers.
- The non-tanker elements of the planned MARS fleet.

18. KOFAC urges MoD to define MARS vessels as “warlike” and for the more complex MARS ships to be built after peak carrier build labour needs occur to sustain use of available shipyard facilities and skills.

19. Clear criteria need to be established jointly by MoD and industry by which future ships can be classified as being either large/complex warships or less complex warships. This will affect and guide future programmes that may emerge, for example any HMS Ocean helicopter carrier replacement platform.

Note: ⁽¹⁰⁾ MARS—Military Afloat Reach and Sustainability may include fleet tankers, joint sea based logistics and fleet solid support vessels (*Source:* Defence Industrial Strategy, paragraph B.29, page 69).

Drumbeat of Orders and Core Workload beyond “Astute”

20. The planned naval shipbuilding programmes, (see Table 1), have potential to retain and expand highly skilled employment in British shipyards if orders are made in a timely way.

21. DIS proposes that new nuclear submarines will be ordered to a drumbeat of one every 24 months⁽¹¹⁾ (delivery) with HMS “Astute” being scheduled for delivery in August 2008. Surface ship drumbeat will be one every 12 to 24 months.⁽¹²⁾ KOFAC wants HM Treasury and MoD to ensure funds are made available in the MIS to sustain these drumbeats and the skills needed to maintain them.

22. The planned MIS must define how new platform builds are programmed and how core skills of the naval shipbuilding industry can be sustained.

23. Prior to publication of DIS, the MoD foresaw a nuclear submarine programme drumbeat of one submarine every 18 months. This has now been replaced with a 24 month sequence. In the recent past there was a 12 year interval between submarine class designs which led to loss of skills and knowledge and increased costs. KOFAC agrees that it will be necessary for “MoD and industry to demonstrate on ability to drive down and control the costs of nuclear submarine programmes”.⁽¹²⁾ DIS’s proposal for an eight year update of a submarine class design will not employ all the core skills required to sustain a submarine design capability in the UK. KOFAC considers that designers will need to be able to undertake work on warships and submarines (see paragraphs 38–40, below).

24. An “Astute” class boat four order may be made in 2007. Ordering one boat will not sustain the industrial base. KOFAC sees the central issue facing MoD of being:

Do MoD order boat four, or four boats?

HM Treasury and MoD need to be persuaded of the merits of ordering a batch of boats. BAE SYSTEMS has driven “Astute” overhead cost reductions of 27% by 2005. Over 60% of the cost of a new boat now lies with procurement through the supply chain rather than through the prime contractor such as BAE SYSTEMS. Some key suppliers foresee costs rising. There is a need for MoD, dti and industry to develop new “supplier sustainability solutions” in order to help achieve the required affordability. Considerable “ground breaking” work is being undertaken at Barrow to assist suppliers strive to implement innovative solutions and improvements in the supply chain⁽⁹⁾ in order to help drive down the cost of each new naval platform. There may be opportunities for dti and Regional Development Agencies to build on this industry initiative to help make the supply chain more efficient.

25. In order to ensure “survivability” of the nuclear submarine industrial base in the UK, MIS set out a policy to procure a batch of three or four nuclear powered submarines of the “Astute” class “at one go” when the time comes to order “Astute” class boats four to eight.

Source: ⁽¹¹⁾ Defence Industrial Strategy 2005, paragraph B.2.56.

⁽¹²⁾ Defence Industrial Strategy 2005, paragraph B.2.63.

26. This will enable the nuclear submarine industrial base of the UK to have clear visibility of core workload, develop long lead equipment supply options more affordable than if a single boat is ordered, and allow scope for industry to offer innovative through life support solutions for equipment supply, and future in-service capability enhancements.

27. The way in which platforms, systems and equipment is ordered is crucially important for the future of the UK submarine programme. DIS emphasise throughlife procurement. KOFAC considers MoD should gear up to enable a through life basis for tender to supply systems and equipment for new naval platforms, especially submarine. The Select Committee may wish to invite MoD to illustrate what its programme is for introducing through life support tenders as part of boats four to eight procurement. KOFAC notes MoD, at a seminar held in Barrow on 6 September 2005,⁽¹³⁾ suggested “through life” procurement for boat four may be a step too far, although boat four to eight should incorporate potential for it. Defining with certainty whether through life support should be platform, system or based equipment is going to be a key element of the forthcoming MIS.

28. MoD indicate it will also need to make transformational change to enable it to implement DIS. The Committee may wish to invite MoD to outline what type of changes it envisages being made in the light of MoD having received guidance from Rand.⁽¹⁴⁾

Core Workload beyond “Astute”

29. KOFAC welcomes the commitment to “ensure options for a successor to the current Vanguard class deterrent are kept open in advance of eventual decisions likely to be necessary in this Parliament.”

30. Rand⁽¹⁵⁾ (see Appendix B), in advising MoD indicated “with retirement of the ‘Vanguard’ class starting around 2018, the design for a follow-on class would have to begin immediately”. MIS needs to plan and programme concept design work for replacement options to Vanguard to be introduced by 2007. DIS and MIS need to define the specification, capability, and effect it wishes to see delivered and the likely budget available so that industry can assess what is required and present suitable options for “team navy” (MoD and industry) to examine and approve.

31. Incremental upgrades have been a key feature of “Astute” programme so far. KOFAC wishes to see Maritime Industrial Strategy include plans for this to continue through build of boats 2, 3 and successor boats, to help preserve core design skills funded jobs.

Source: ⁽¹³⁾ BAE SYSTEMS Submarines Supplier Day, 6 September 2005.

⁽¹⁴⁾ MoD Roles and Required Technical Resources, ISBN 0-8330-3797-8 (2005).

⁽¹⁵⁾ Rand Europe: The UK’s Nuclear Submarine Industrial Base, Volume One: Sustaining Design and Production Resources, 2005, on page xviii.

The Maritime Industrial Strategy (MIS) and Budgeting for the Naval Platform Build Programmes

32. MIS will identify “volume and timing of future business” . . . and “define core workload”.⁽¹⁶⁾ MIS will also encourage formation of new industry led alliances or companies which rationalise the present naval shipbuilding structures, reduce overheads and help contribute to making through life support of vessels affordable. MIS will through this process enable MoD and industry to define which shipyards are likely to be best able to supply the demand for future warship building capacity.

33. The term “Ship Co” and “Sub Co” have been used to refer to potential for separate organisation to manage warship delivery and “through life” support and submarine delivery and “through life” support.

34. MIS must evolve as a partnership policy developed by “team navy” involving industry and Ministry of Defence, rather than become an imposed solution.

35. DIS highlights the drive to-start negotiations with key submarine companies with the aim of achieving a programme level partnering agreement with a single industrial entity (Sub Co) and to reach an understanding of the core load required to sustain the high end design, systems engineering and combat systems integration skills required for surface shipbuilding (Ship Co).

36. KOFAC considers the proposals for “a single industrial entity for the full life cycle of the submarine flotilla” Sub Co and a separate surface ship alliance or company (Ship Co)⁽¹⁷⁾ may not offer the best way forward for UK plc.

37. Establishing two separate legal entities would inhibit full exploitation of the surface ship potential of Barrow shipyard to design and build large, complex warships and potentially create workload gaps at Barrow that could lead to reductions in labour force size.

38. KOFAC considers it to be essential to share work between these two sectors to enable high capability, large, complex naval ships like the amphibious vessels, complex MARS ships and Future Aircraft Carriers to be delivered effectively whilst providing a cost effective way of sustaining the submarine design skills base.

39. The submarine sector is directly linked into the large naval warship procurement and support and would be difficult to sustain separately. The submarine industrial players offer a significant slice of the UK’s design expertise and possess unique facilities—they need to be involved with any surface ship activity. This is essential to create a sustainable and affordable industrial naval ship and submarine sector. It is also critically important for Barrow if it is to sustain current design and manufacturing skills base.

Source: ⁽¹⁶⁾ Defence Industrial Strategy 2005, paragraph B.2.71.

⁽¹⁷⁾ Defence Industrial Strategy 2005, paragraph B.2.73.

40. KOFAC considers that the MIS should be subject to annual review thus it would pick up on Rand’s recommendation that “a strategic examination of the overall build programme with respect to industrial impact should be done at least annually with an outlook of 10–15 years.”⁽¹⁸⁾

Skills for Shipbuilding including Design Skills

41. Rand advised MoD that “Four large programmes—Type 45, CVF, MARS and Astute—is likely to cause demand for direct labour (all skills . . .) to peak in 2009 at a level 50% higher than 2004 demand levels.”⁽¹⁹⁾ “A fundamental fact of naval shipbuilding is that it takes time to find and recruit workers. Often, newer workers must be trained by more experienced ones. Expanding the workforce too rapidly may result in lower productivity. . . . MoD will need to consider the demand it places on the firms on a firm-by-firm basis to fully understand the implications of its build plan.”⁽¹⁹⁾

42. KOFAC seeks an “across Government” integrated approach to naval shipbuilding industry skills development. We welcome DIS recognition of the importance of retaining high value skills and sustaining of skills development routes for people to enter the industry, learn trades and progress.

43. We welcome Defence Minister Rt Hon Adam Ingram MP’s statement that “We need to sustain high-end skills to design and integrate complex warships and maintain them through-life. We need to retain, too, the ability to design, manufacture and support all aspects of submarine capability.”⁽²⁰⁾ dti Sector Skills Councils regional development agencies and Learning and Skills Councils must be encouraged to make funding available to encourage new entrants to the naval shipbuilding industry at graduate, apprentice and mature apprentice levels and retaining its skills base need to be developed with industry. This needs to include enhancing the image of engineering at all levels including amongst school students.

44. The industry is taking action in conjunction with regional and local partners, for example, at Barrow BAE SYSTEMS is:

- Replacing contract personnel with employee jobs.
- Using Furness Enterprise/Learning and Skills Council funding to take on an extra 30 apprentices over a three year period.

45. Whilst there may be potential to bring retired workers back into the industry there is a challenge because the industry may not be able to recruit those currently receiving Incapacity Benefit.

Source: ⁽¹⁸⁾ Rand Europe, The UK’s Naval Shipbuilding Industrial Base, The Next 15 Years.

⁽¹⁹⁾ Rand Europe, The UK’s Naval Shipbuilding Industrial Base, The Next 15 Years.

⁽²⁰⁾ Debate on Defence Procurement, Column 491, 2 February 2006.

46. Until new orders are confirmed it could be difficult for shipbuilders to sustain core skills and develop training and other schemes aimed at meeting projected work and labour loadings arising from the planned shipbuilding programme. We echo the views of Scottish Enterprise, Glasgow in their evidence to the Defence Select Committee on the future aircraft carrier project.⁽²¹⁾ KOFAC considers Government should support industry in developing a “growing our own” skills-base including accelerated apprentice and graduate recruitment.

47. Whilst KOFAC welcomes the DIS recognition that top level skills for systems engineering design skills base is fragile. KOFAC has concerns whether MoD recognise the industry’s definition of core design capability.

48. “Team navy” (industry and MoD) must agree on what constitutes core design skills. It is believed MoD, influenced by recent Rand research (recorded in Appendix B), may have a too tightly defined definition. KOFAC regards this skillsbase as embracing naval architects and the detailed technical drafting designers who ensure detailed design is effected and translated into the finished product. The Select Committee may wish to seek MoD’s views on this topic and identify an agreed definition which the industry and MoD can adopt.

49. Submarine designers can undertake surface ship design work, but the same is not true in reverse. Design for the tight space constraints of a submarine is a unique skill that needs to be sustained. One way to do this is to allow the skilled submarine design teams to have a core workload of ships and submarine design work, to bridge any workload gaps between submarine design orders.

Source: ⁽²¹⁾ House of Commons Defence Committee Future Carrier and joint Combat Aircraft Programmes, Second Report Session, 2005–06, Ev 50 Memorandum from Scottish Enterprise, Glasgow.

CONCLUSIONS

50. DIS includes a range of measures to safeguard the critical capabilities of the armed forces, now and in the future. The switch to greater emphasis on systems and their integration offers great challenges and opportunities to British industry and MoD, as does the welcome shift to looking at through-life costs, rather than the initial substantial outlay on ships. Similarly, stressing the importance of lifetime capability management through ongoing support and upgrades is absolutely crucial if the industry is to have a long term future. DIS⁽²²⁾ provides the required clarity, and recognise the fragility of the design base and the implications of the blurring of the line between initial build, important through-life support and upgrades of systems. If the industry is to gear up effectively in terms of capital investment, and recruitment/development of the required people skills Government need to set out clear criteria for selecting the type of naval platforms to be built in the UK. In this respect we note MoD received advice from Rand Europe suggesting it may be possible “to allow the yards to outsource work to foreign sources when (1) there was a need to reduce a labour peak, (2) the workforce was not available elsewhere in the United Kingdom, and (3) the workforce necessary would only be needed for a short period. We did not imply that entire vessels should be procured from foreign sources.”⁽²³⁾

51. Rand Europe told MoD that “the importance of this shipyard-specific analysis should not be underestimated. It is . . . important for the MoD to know the impact of its programmes at an individual shipyard level, . . . excess or insufficient demand could cause productivity, economic, facilities, or other strains on individual yards”.

Source: ⁽²²⁾ Defence Industrial Strategy 2005, paragraph B.2.26 to B.2.28.

⁽²³⁾ Rand Europe, The UK Naval Shipbuilding Industrial Base, The Next 15 Years, 2005, page xxxiv.

APPENDIX A

IMPORTANCE OF THE FACILITIES AT BARROW SHIPYARD

“Barrow is an untapped source of production capability and could likely play a significant role in the coming shipbuilding programme . . .” where, “. . . the demand for final assembly facilities will be particularly high between 2006 and 2010 . . .”.^(*)

A.1 Barrow shipyard occupies 169 acres of land. It has a range of facilities that enables it to function as a “mixed capability” naval shipyard able to build large complex naval ships, including warlike MARS fleet replenishment ships, and nuclear powered submarines simultaneously. The facilities available at the shipyard include:

- The largest single concentration of naval design expertise in UK. 60% of the UK’s naval ship design capability is located at Barrow.
- Large covered shipbuilding hall for modular build of units. Individual units weighing up to 2,300 tonnes have been constructed to date.
- New Assembly Shop NAS assembly facility.
- Heavy lift transporters capable of carrying in excess of 2,000 tonnes and cranes (140t and 40t).
- Superberth slipway of 260 inches by 100 inches size, able to accommodate with its own support facilities for 1,500 people working on the berth.
- 400 metre long Buccleuch Dock outfit quay.
- Submarine Marine Installation Test Establishment (SMITE).
- Skilled workforce of 3,200 and a pool of former shipyard workers and a pool of new apprentice and graduate recruits flowing into the industry.

A.2 All large vessels are launched when tides are at 9.35 metres or above. These are available over 10 times a year.

A.3 Since 1945 almost every “first of class” large warship for the Royal Navy has been designed and built at Barrow.

A.4 Considerable domain knowledge has been gained, practices developed and embedded within Barrow as a result of the recent design, build, test and commissioning of large warships for the Royal Navy. The most recently delivered large warships are HMS Albion and HMS Bulwark (18,500 tonnes each) and RFA “Wave Knight”.

Source: ^(*) Rand Europe 2005, The UK’s Naval Shipbuilding Industrial Base, The Next 15 Years.

A.5 Admiral Sir Alan West, First Sea Lord, described this capability, delivered through Barrow, as follows:

“The two landing platform docks: Albion and Bulwark, Albion now fully at R2: she has, . . . an amazing command and control capability; her ISTAR set up there, her intelligence officers, they have really set up a network enabling capability for running major operations . . . at the end of the day, for the amount we paid for it, it is amazing. It is an amazing ship. We should be very proud that was knocked up and Britain built and is there. The same sort of platform, the LPD17 in America, I think is almost twice as much, to give the flavour”.

A.6 Steve Mogford the Chief Operating Officer at BAE SYSTEMS informed the trade unions in April 2005 at the BAE SYSTEMS April 2005 TU Conference that “Barrow will be involved in the Design and Manufacture of CVF”. This came after BAE made a policy change in October 2004 to the effect that “BAE SYSTEMS Barrow will be actively considered for Design or Design and Build of Future Surface Ships for the Royal Navy.”

A.7 Barrow shipyard has capacity for building a series of additional “Astute” submarines, whilst at least one mega-block for each Future Aircraft Carrier is built here too.

A.8 Naval shipbuilding has long been identified with Barrow-in-Furness, it is the largest source of manufacturing employment within the “travel to work area” and Barrow Borough. Within Cumbria the shipyard provides one of the highest sources of Gross Value Added (GVA) employment.

A.9 Barrow is ranked 29th on the ODPM English Indices of Deprivation 2004 (revised) as one of the most deprived areas in England.

A.10 If DIS and MIS support using Barrow shipyard for building complex, large, warships and submarines they will contribute to wider Government Economic Regeneration and Defence Industrial Strategy objectives, including regeneration of Barrow “Travel to Work Area”. Workflows from the planned naval shipbuilding programme could therefore act as stimulus for high value job creation and economic recovery in Furness.

APPENDIX B

RAND OBSERVATIONS ON THE NUCLEAR SUBMARINE DESIGN SKILLS BASE

“Gaps in design and production can lead to the departure of experience personnel to other industries and to the erosion of defence system production skills.”

“The submarine design base is rapidly eroding. Demand for the design and engineering resources is declining as the design of the first of class nears completion. The number required will be fewer than that needed to sustain a viable nuclear submarine design base.”

“To sustain the United Kingdom’s nuclear submarine design expertise, some minimum core of professionals must continuously work in that area. The number required varies with the domain of expertise. The total number required across all domains is approximately 200. The workforce could drop below this critical level in the near future without a new design programme.”

There are options for sustaining the 200-person submarine design core, the ideal way would be to soon commence the design effort for a new class of submarines. No decision have been made regarding any programmes beyond the Astute class. The current Vanguard SSBN class could begin retiring as early as 2018. Design of a follow-on SSBN class would have to start approximately 15 years prior to the desired in-service date for the replacement submarines. The design for a follow-on class would have to begin immediately. The Astute-class design would have to begin some 10 years in advance of delivery of the first of class.”

“There may still be a period of time when the design core is inadequate in at least some of the specialties required to sustain expertise. How might the design core be sustained through periods of slack demand? There are several possibilities:

- Evolution of the Astute design as more boats are built to take advantage of new technologies.
- Continuous work on conceptual designs for new submarine classes, whether or not those classes are ever built.
- Design of unmanned undersea vehicles.”

“These options could be exercised simultaneously. However, taken together, they could not by themselves adequately sustain a submarine design core.”

“Collaboration with the United States or another submarine-producing country should also be considered. Design work on each country’s submarine programmes could help sustain the other’s design core.”

“A core of 200 designers, engineers, and draughtsmen would require annual funding of perhaps £15 million.”

Source: Rand Europe 2005, Volume 1 of The UK’s Nuclear Submarine Industrial Base: Sustaining Design and Production Resources.

Memorandum from the Farnborough Aerospace Consortium

The Farnborough Aerospace Consortium (FAC) is a large trade association focussed on enabling its members to win business in the global aerospace and defence markets. FAC has more than 300 members spread across the South East Region of England, most of which are SMEs. In total these SMEs employ over 7,000 people and have a turnover as great as BAE SYSTEMS.

FAC recognises that for the UK to grow its share of world trade it must focus on innovative solutions to meet market needs in both the Military and Civil sectors. Consequently it has an organisational structure targeted on high technology sectors including Space, UAVS, Defence Systems and Advanced Materials. Supporting these, FAC has secured funding to enable its members to participate in the National Aerospace Technology Programme and to develop differentiating capabilities within the formation of Programme Knowledge Networks.

FAC is very concerned that the progressive erosion of sovereign owned industry in the UK is growing foreign ownership of defence companies and will lead to a dilution in technological capability of the UK supply chain.

Government statistics show that 99% of the business enterprises in the UK employ less than 50 people, yet in total they account for 58% of the employment and 51% of the turnover. Whilst the DIS makes reference to improving collaboration between the MOD Primes and SMEs, it does not offer the structural changes to the contracting route necessary to ensure retention of a highly innovative and agile indigenous supply chain. It still allows large companies to source anywhere and to claim an overhead rate that includes staff training and development.

FAC believes that this investment in people and technology should extend to the entire supply chain and that future contracts given to large Primes should define a specific value that must be allocated to SME firms. FAC is currently working with both the Defence Procurement Agency and with SEEDA to set up a “virtual prime” contracting route that would allow Government money to flow directly to groups of SMEs and University research departments,

24 February 2006

Memorandum from General Dynamics UK Ltd

THE NEW PARTNERSHIPS BETWEEN MOD AND PLATFORM PRIMES

Consideration needs to be given as to how the MoD will achieve buy-in to the DIS from industry. To ensure transparency, the MoD should publish both the scope and terms of its new partnership agreements with companies (such as BAE Systems on Armoured Fighting Vehicles) as well as how it intends to police these new partnerships at the platform prime (or tier 1) level so that they do not preclude a healthy competition for business at tiers 2 (sub-systems) and 3 (equipment). Currently, partnerships are with platform tier 1 primes who (or whose associate group companies) also operate at tiers 2 and 3. It is easy to assume that they will use the partnership agreement to increase their tier 2 and 3 content to the detriment of the rest of industry. GD UK believes publishing will help to allay these fears.

Indeed, we would presume that the MoD already has convincing evidence that these new partnerships offer value for money. Previously, for example, were a contractor (A) to offer a complete solution for an upgrade, it would have involved the design authority (B) on the final certifications (safety, etc). Now, however, the design authority becomes the prime contractor for the upgrade which must, by its very nature, constitute an extra cost should A provide the solution, as A and B will necessarily have some degree of overlap in the task and especially the management and thus financial cost of risk. The solution from A could now be unaffordable within the programme budget given B's new role. The corollary could be that a cheaper and sub-standard solution would be selected. We presume that the MoD has considered this aspect and will put in place checks and balances to ensure that the best solution is chosen and that value for money is being maintained.

FUNDAMENTAL CHANGE IN THE MOD—INDUSTRY CONTRACTING CULTURE

The timescale for noticeable change that has been set is challenging. This is as it should be and there should be quick wins delivering successes in 2007. The real legacy of the DIS, however, will only be seen if the deeper changes in culture and working practices in both MoD and industry become “business as usual”. Embedding substantive cultural change in any organisation takes years and DIS has must have the persistence to see these fundamental changes through to success. Several areas could be worth consideration. GD UK suggests that a senior Industry-MoD group be set up to exchange ideas and to prioritise those which they agree are likely to lead to substantive and lasting change.

For example:

Defence procurement is driven by the CADMID cycle (Concept Assessment Development Manufacturing In-Service Disposal), which has many merits. It tends, however, to aim for a final specification level and the execution process is dominated by risk reduction activities, which take a long time to mature to the final state. In procurement of UORs (Urgent Operational Requirements), time is of the essence and the much-vaunted 80% solution is often delivered quickly. The benefit to the Armed Forces is that it gets new capabilities earlier which can then provide early feedback which is much more realistic than that from a typical trial. Enhancements which are closely allied to real user needs can then be included in the next capability release, ie real incremental acquisition. Such increments are embedded in modern contracts, but often they are slowed by a process too allied to the slowness of CADMID. Combining the rigour of systems engineering to set the overall capability specification with the natural speed of a UOR within a framework of greater shared MoD-Industry partnership would provide the basis for the cultural change needed to radically enhance the speed and quality of defence procurement. This would palpably demonstrate a true MoD-Industry IPT. Not only could this work for equipment level acquisitions, but there is no reason why it should not apply to more complex systems, such as the C4I domain.

RESHAPING DEFENCE TECHNOLOGY CENTRES

Currently, DTCs involve two main phases; 1) early-TRL (Technology Readiness Level) research (levels 1 to 3); and 2) aspects of exploitation (TRL levels 4 to 6) leading towards production. The funding model has a 50% industry contribution in both phases. Phase 1 is almost “blue sky” and it is difficult for most businesses to see the benefits within any reasonable investment appraisal period. Consequently, there may

be a reluctance for industry to get involved. The requirement for shared funding precludes small companies and discourages large ones. There would be significantly greater industry enthusiasm for Phase 1 should the industry funding contribution be reduced and the MoD contribution be increased, say to 80%. The right place for most businesses to invest is in Phase 2 where MoD funding could remain at 50%. The management of Phase 1 should, nevertheless, remain in the hands of industry in order to derive value in Phase 2 and beyond. GD UK would welcome the creation of a structured DTC on ISTAR.

LINKING DIS TO EP FUNDING

The DIS gives greater clarity to MoD's approach to future acquisition streams and goes some way to providing a macro view in certain areas. Indeed, there is certainly clarity about how the MoD will approach shipbuilding, helicopters and armoured fighting vehicles. For much of industry, however, especially those not working at the platform prime level, stability only comes with the detail on specific programmes. The problem many face in the current tight funding environment is a lack of clarity of when programmes are likely to go live. The concomitant difficulties of making investment and manpower decisions are obvious. This not that DIS should have published a line-by-line account of the acquisition programmes but that DIS will be diminished in its impact should clarity on the specific programmes be too long in coming.

BUDGET CLARITY

The budget data in the DIS is vague. Indeed, there is the question of whether or not it actually adds up. Industry needs clarity on the MoD's programme funding decisions over the next five years, at least. In addition, although GD UK welcomes the MoD's recognition that companies need to make a reasonable profit margin, the MoD nevertheless produces current budget targets that are unrealistically low.

INDUSTRY REPRESENTATION

GD UK welcomes the opportunity presented by the DIS process to engage in high-level dialogue on the business of UK defence. It has been suggested that the main vehicle for industry dialogue with the MoD on the DIS should be the NDIC. GD UK feels, however, that the NDIC has a bias towards a few large companies, ie BAE Systems, Thales and Rolls-Royce. Representation on the NDIC by smaller companies who play a strategic role in the defence of the UK would be beneficial for the overall DIS process.

Unless, however, the MoD is prepared to champion the DIS, the process will have been a wasted opportunity for developing a closer working relationship between industry and the MoD.

28 February 2006

Memorandum from the Ministry of Defence

<i>Area</i>	<i>Action</i>	<i>Milestone</i>
MARITIME	We will immediately start negotiations . . . to achieve a programme level partnering agreement with a single industrial entity for the full lifecycle of the submarine flotilla . . . This will be matched by the implementation of a unified submarine programme management organisation within the MoD.	For the award of the contract for the fourth and subsequent Astute class submarines
MARITIME	For surface ship design and build, we aim within the next six months to arrive at a common understanding of the core load required to sustain the high-end design, systems engineering and combat systems integration skills . . .	Within six months from publication
MARITIME	For surface ship support, we will start immediate negotiations with the industry with the aim of exploring alternative contracting arrangements and the way ahead for contracting the next upkeep periods, which start in the autumn of next year. Key maritime equipment industrial capabilities will be supported by the production of a sustainability strategy for these key equipments by June 2006.	June 2006
FIXED WING	. . . we will work with BAE Systems and the other companies in the defence aerospace sector so that it can reach the appropriate size and shape for the demand . . . we aim during 2006 to agree the way ahead—which will be challenging given the scope of the scale of the transformation that is required—and to implement it from 2007.	Implementation in 2007

<i>Area</i>	<i>Action</i>	<i>Milestone</i>
FIXED WING	. . . we intend to move ahead with a substantial Uninhabited Aerial Vehicle Technology Demonstrator Programme in 2006.	In 2006
AFVs	We will be working hard with BAE Systems . . . to give effect to the long term partnering arrangement . . . We intend to establish a joint partnering team within the early part of 2006 and to establish a business transformation plan underpinned by a robust milestone and performance regime.	Early part of 2006
HELICOPTERS	We hope that by the Spring 2006, subject to value for money having been demonstrated, we will have reached agreement on a Strategic Partnering Arrangement (SPA) . . .	Spring 2006
COMPLEX WEAPONS	We [will establish] a multi-disciplinary team charged with working with all elements of the onshore industry to establish how we might together seek both to meet our ongoing requirements and sustain in an industrially viable manner the critical guided weapons technologies and through life support capabilities that we judge to be so important to our operational sovereignty . . . Our intention is that we should have a clearer way ahead by mid-2006.	Mid-2006
GENERAL MUNITIONS	We will be taking forward Project MASS, with a view to making decisions on how best to sustain our required access to general munitions in the summer of next year . . . We are also actively pursuing partnering arrangements with other [non-BAES] suppliers.	Summer of 2006
RESEARCH AND TECHNOLOGY	We will [complete] the ongoing MoD Science and Technology Capability and Alignment Study . . . by Summer 2006.	Summer 2006
RESEARCH AND TECHNOLOGY	We will conduct further work better to understand the underpinning technologies that the UK must have . . . by Autumn 2006.	Autumn 2006
RESEARCH AND TECHNOLOGY	We will by mid-2006 update our Defence Technology Strategy.	Mid-2006
RESEARCH AND TECHNOLOGY	We will develop a better understanding of the innovation process and map out the technology trees for major capabilities, systems and platforms in a report, which we aim to produce by the Autumn of 2006.	Autumn 2006
INTERNAL CHANGE	We will work with industry to develop, roll out and implement a joint plan for embedding the Defence Acquisition Values throughout the acquisition community. We expect to be in a position to launch this within three months and will apply the real commitment of resource, time and effort that will be required to effect lasting change through 2006 and beyond.	April 2006
INTERNAL CHANGE	We are currently scoping two Pathfinders programmes to test and de-risk a programme approach to through-life capability management with the intention that the Pathfinder programme teams will launch in the first half of 2006.	First half of 2006
INTERNAL CHANGE	We will address the shortages in Project Delivery Skills within the Department by building on our existing Project Delivery Skills Strategy to deliver an accelerated pan-Defence Project Delivery Skills programme . . . Key milestones are to be achieved by April 2006.	April 2006
INTERNAL CHANGE	An evaluation of current incentivisation initiatives will be completed by October 2006.	October 2006
INTERNAL CHANGE	The DPA will be piloting the operating framework during 2006, working in conjunction with the other areas of acquisition to ensure consistency and alignment.	During 2006
INTERNAL CHANGE	We will review—so that we are in a position to make judgements about this by May 2006—the extent to which the current process and organisational construct supports, encourages, hinders or obstructs the delivery of excellence in acquisition. This would allow us to commit to changes that are required this side of the summer recess.	May 2006

<i>Area</i>	<i>Action</i>	<i>Milestone</i>
INTERNAL CHANGE	We are looking forward to discussing further with industry—in the first instance through the commercial policy sub-group of the NDIC early in the New Year—our ideas about alternatives to competition as a means where appropriate of assessing value for money, with a view to developing a concrete action plan for taking them forward.	Early in 2006
INTERNAL CHANGE	We will start with immediate effect, to deliver on our revised policy of providing industry with a better and longer term understanding of our future plans.	Immediately

1 March 2006

Memorandum from Angela Smith MP, Department for Enterprise, Trade and Investment (NI)

Ian Rogers, Audit Adviser to the Defence Committee, wrote to Leslie Morrison, Chief Executive of Invest Northern Ireland on 25 January 2006 asking him to provide a Northern Ireland perspective on the Defence Industrial Strategy as part of the ongoing review. I am replying to this request as Minister with responsibility for Enterprise Trade and Investment in Northern Ireland.

Northern Ireland's prime Ministry of Defence contractors at present are Thales Air Defence Ltd (TADL) and Raytheon Systems Ltd. TADL employs some 560 people in Belfast. The company is a recognised prime contractor with the Ministry of Defence for High Velocity Missiles and has a niche capability in Short Range Air Defence as well as Electro Optic Counter Measures.

TADL represents some of Northern Ireland's most advanced capabilities in this very specialised area of precision engineering design, development, testing and manufacturing. Some 40% of TADL's workforce is engaged in Design Engineering and the company is a very significant investor in R&D.

I know that TADL continues to maintain a close relationship with the Ministry of Defence and I understand that the company's core capabilities were evaluated during the formation of the White Paper.

I do wish to take this opportunity to emphasise the importance of this company, not only as a significant employer in Northern Ireland and a major contributor to economic development, particular in terms of export sales, but also to the vital role that it has played in the past as a provider of some of the UK's most sophisticated and effective short range defence weaponry. I know that the company is already engaged in the development of the next generation of sophisticated defence systems as a partner with the Ministry of Defence.

Raytheon is a smaller company, based in Londonderry, with 60 employees. A subsidiary of the US Raytheon Corporation, the Northern Ireland operation is involved in leading-edge work in phased array radar systems and the development of leading-edge software for civil and military air traffic control systems. The company has participated in major MoD contracts, including the ASTOR and JETTS programmes. Raytheon is a valued Invest NI client which is providing valuable, high-quality employment in a disadvantaged area of Northern Ireland.

I would be grateful if the Committee's attention could be drawn to both TADL's and Raytheon's excellent track records as prime contractors with the Ministry of Defence and their clear commitment to playing major roles in the future development of the UK's defence systems.

27 February 2006

Letter to the Clerk of the Committee from Andrew Davies, Managing Director, Land Systems, BAE Systems

Thank you for your letter dated 20 December addressed to our Chief Executive, Mike Turner, enclosing a petition concerning the munitions facility at Puriton, now owned and managed by BAE Systems, Land Systems.

The facility at Puriton was originally established to manufacture explosives at a volume that greatly exceeds the MoD's current annual requirements. Moreover, a high level of investment would be needed to sustain manufacturing operations in the future at this site. Taken together, these facts mean that the plant is no longer economically viable at a price that MoD would be prepared to pay for materials that can be sourced elsewhere.

In discussion with MoD, BAE Systems has demonstrated that the necessary materials can be sourced from a number of secure alternative suppliers in allied countries, fully meeting the requirements of appropriate sovereignty that were described in the MoD's Defence Industrial Strategy paper issued on

15 December 2005. The materials will be processed at the BAE Systems, Land Systems site at Glascoed, where significant investment has been made in order to produce world-leading innovative Insensitive Munitions technology, essential for the greater safety of our Armed Forces.

It is against this background that ME Systems has reached the decision to close the Puriton facility. The intention, subject to consultation with employee representatives, is to close the operation by the end of 2007, with a loss of some 130 jobs.

It is with regret that BAE Systems has reached this conclusion. The company and its primary customer—the MoD—recognise the important role that Puriton has played over many years, and appreciate the dedication and professionalism of the workforce and the support of the local community. Unfortunately, the changing nature of defence needs means that the decision to close the facility is now necessary.

20 January 2006

**Letter to the Clerk of the Committee from Steve Rowbotham, Managing Director, Munitions,
BAE Systems**

Thank you for your letter to Andrew Davies dated 24 January 2006, seeking further information with respect to our outsourcing strategy arising from the planned cessation of manufacturing activities at Bridgwater and Chorley. Andrew has forwarded your letter to me for response in my capacity as Managing Director of the Land Systems Munitions Business.

In terms of our approach to outsourcing products and materials, we are following a structured and well proven in-house process in the areas of explosives (Bridgwater) and Initiators (Chorley). The process starts with the identification of potential suppliers; an initial assessment is then conducted, based primarily on technical and business competence. A key element of this is a risk assessment, with the Company's assessment of security of supply being a heavily weighted factor. This initial assessment and down-selection is followed by formal competitive action, with suppliers' inputs being scored against technical and commercial criteria.

Dependant upon the output of this assessment, the Company will decide whether to qualify one or more sources of supply in order to ensure an ongoing competitive environment and improved security of supply. This decision will be taken by the company on a case by case basis.

Where appropriate, Land Systems Munitions will manufacture strategic stockpiles of material to bridge the gap between cessation of in-house manufacture, and availability of the new source of supply.

The Company's overall approach to the outsourcing of Bridgwater and Chorley products, and the detailed plans for re-qualification of materials and products have been formulated with full consultation of the relevant MoD departments.

The current status with respect to specific materials and products ex Chorley and Bridgwater is as follows:

1. CHORLEY—PRIMERS FOR SMALL ARMS AMMUNITION (SAA)

We had already commenced the qualification of 5.56 Primers from ATK of the United States as a potential second source to Chorley. These Primers are now fully NATO qualified and are in service with UK MoD pending full DOSG clearance.

For 7.62 mm primers RUAG are the only currently qualified source. In order to mitigate any future potential supply problems we will stockpile these primers to protect the modest quantities required.

Contracts for the supply of both primers are already in place, and these products are currently being incorporated into Land Systems Munitions' Small Arms Ammunition.

2. CHORLEY—TUBE VENT ELECTRIC, CAPPED HOLDERS, MEDIUM CALIBRE CAPS AND L106 FUZE COMPONENTS

Five potential suppliers have been invited to respond to a Request for Quotation (RFQ) for the supply of a range of compositions and devices. The suppliers are:

Nobels Energetics (part of the Chemring group), UK
 RUAG, Switzerland
 DynITEC, Germany
 Davey Bickford, France
 Giat France

Responses to the RFQ have now been received and are being evaluated.

3. BRIDGWATER—HIGH EXPLOSIVE (HE) MATERIALS

It should be noted that cessation of manufacture at Bridgwater has been planned to coincide with the need to qualify a new range of Insensitive Munition (IM) compatible explosives in order to satisfy the UK MoD IM policy. This policy requires that all new munitions introduced into service shall be compliant with STANAG 4439, ie be IM compliant, and that all existing munitions shall have planned technology insertion points in order to achieve a level of IM compliance.

In response to the UK MoD IM policy, Land Systems Munitions, have developed a range of IM compatible explosives based on Polymer Bonded Explosive (PBX) technology, and have invested in a high volume PBX shell filling facility at the Land Systems Munitions facility located in South Wales. The first production batch of IM shells (105 mm Field) will be produced at Glascoed in Autumn 2006, and the manufacture of all other general munitions using conventional RDX / TNT based HE will be phased out over the next three to five years.

In order to mitigate risk to continuity of supply of IM explosives, it is Land Systems Munitions intent to outsource the manufacture of base chemicals only, and to retain the processing of those materials and the production of PBX explosives at the Glascoed facility.

Base Nitramines RDX and HMX, manufactured to a US MIL Specification, are commercially available from international sources. These materials are not subject to any shelf life constraints, and as such could, if necessary, be stockpiled in order to ensure continuity of supply of the base materials.

Our initial assessment considered five potential suppliers:

Holston Army Ammunition Plant, United States (a BAE Systems operated GOCO)
Eurengo, European Joint Venture between France and Scandinavia
Dyno, Scandinavia
ADI, Australia
Somchem, South Africa

The initial assessment led to the selection of Holston AAP and Eurengo as the most appropriate potential suppliers of base materials.

Accordingly, an RFQ was issued to both companies, and their formal responses are currently being assessed. Purchase orders for the supply of material samples have been placed to support further evaluation of each company's product. A decision as to whether one or both potential sources will be taken through full qualification has yet to be taken by the Company.

In order to convert these base materials into PBX, the Company will invest in "Pre-mix" and "Pre-cure" manufacturing facilities at the Glascoed facility. Part of this investment will be the transfer of a large high shear mixer from Bridgwater.

The above approach provides a low risk, cost effective solution, which will allow the products to be manufactured to a consistent standard, and provides the opportunity to develop the technology further and offer additional operational benefits and technology insertions. Installation of a facility to manufacture the PBX materials at Glascoed is a logical extension of the ongoing investment on the same site in the IM Fill Assemble Pack (FAP) facility.

4. BRIDGWATER—IM BOOSTER COMPOSITION (TATB)

Bridgwater currently has the capability to manufacture a material known as TriAmino Trinitro Benzene, more commonly known as TATB. This material is the principle energetic constituent of a reduced sensitivity booster composition referred to as ROWANEX 3601, and is a key element of Land Systems Munitions IM products.

Our plan with respect to TATB is to manufacture sufficient quantities to meet current contractual commitments, and then procure the material from an alternative source.

5. BRIDGWATER—DEMOLITION EXPLOSIVES

Bridgwater currently has the capability to manufacture a range of special explosives for demolition usage, eg plastic explosive. The Company plans to invest in the transfer of the demolition explosive manufacturing capability to the Glascoed facility.

14 February 2006

Memorandum from Remote Airworks

My Name is Ingo Massey. I run a small company, which has developed a range of VSTOL remote aviation. I have some UAV experience both here and overseas.

Over the last decade the MoD (previously DERA & DPA) have been approached on several occasions, some by appointment, some by mail, in order to view the products, with negative result. In fact, over the last five years I have never succeeded in generating sufficient interest for the MoD/DPA even to visit our product, nor for them to adopt a competitive, comparative fly off policy as part of a procurement process; to compare flight envelope, safety, efficiency, capacity, purchase and operating cost. This is to me an obvious commercial first step in a procurement process, even more so when one considers that we have a range of one design airplanes, producing commonality in a number of areas, which results in further efficiencies thereby, logically, reducing costs. Some comparative costings are included and attached¹⁸. Therefore, I find it difficult to understand Defence procurement purchase of Israeli Elbit systems Hermes/Watchkeeper, (an obsolete, expensive, single engine pusher design), without a UK product investigation.

I was advised only yesterday that underwriting loss ratios for single engine UAV (most of them) is 100%. All single engine pusher designs are inefficient with limited agility, increased fuel costs, require long runways or specialist launch (Phoenix), which requires additional logistic transport cost. Additionally, identified elsewhere here, competition equipment cannot be used for anything else, unlike ours, which were designed as multi purpose from the outset.

I read, therefore, with interest the various reporting and dissertation of the Defence Review; it would seem that instead of widening the competition, our champion is going to be BAE Systems and the like. In terms of my own industry, for reasons of intellectual property, payload safety, payload comparison and driving down costs, one requires direct access to the buyer. Additionally, there is the question of ongoing technology advances, (eg—4kg weight, side scan radar with its ability to see through cloud and foliage can be fitted within our 3M wingspan twin engine bird; 2.5M, if we were pushed), which we deal with, via modular payloads, coupled with procurement lead-time. Also, we are a small country, with a reducing manufacturing base, yet we have to have effective, and be seen to have, effective global reach.

Back when HMS Ocean was launched, we asked whether it had configured UAV spaces and an operating criteria, to protect it. Certainly our equipment can operate from it, providing up to a 1,000 mile radius defence envelope. As a country, we cannot afford a conventional task force; to achieve our aims, this means lateral thinking, unless you would wish to hand over long range maritime applications to Javier at E.D.A. Like it or not, well within the next decade civil aviation will operate remotely via a digital highway. Why? three reasons:

1. Safety;
2. Aerial congestion; and
3. Cost.

American Remote admitted expenditure per year is \$4.2 billion. What are we doing? In comparison, very little at all and I find it hard to understand this, particularly in the light of current and future deployment. Another factor here was the finding of a Chinese UAV in Afghanistan, late 2005. On searching the remains, recoverable imagery showed American search team detail and, one has to assume, this to be an increasing trend.

Considerable, close, suitable air surveillance, with some offensive capability, is essential for force protection; also covering supply routes, and with vehicle/foot patrols controlling the air vehicle. Close, is defined as below 1,000 ft and, in some circumstances, down to 50 ft. This requires structural and propulsion redundancy, along with both decoy and air egress capable resupply drones. In other words, three different types of remote aviation. Ground teams would also benefit from cheap, losable, remote, ground vehicles, to act as decoys and detonate, improvised explosive devices.

I understand that we have a number of our service people learning to drive Predator—48.5 ft wingspan single engine (1st Series); \$4 million each, flight hour cost between \$4,000–\$7,000.

Eight hours assembly, with four men and 1,500 ft of runway. Global Hawk—\$40 million; \$100,000 per flight hour, 1,800 ft of runway.

Watchkeeper/Hermes—single engine—\$2 to \$3.5 million—38 ft wingspan—single engine. \$1,381 per flight hour, 1,400 ft of runway.

Hunter—wingspan, single engine, ratio or 700 ft of runway, \$936 per flight hour. Pricing does not include the ground control station and is on a per airplane basis. So why does it cost so much? Well, the payload equipment is expensive but coming down, but a significant cost is the voracious appetite for the bottom line. Equipment from large industrial conglomerates, who have enormous sales resources, can create an illusion greater than the final result. No doubt, also, Defence Procurement are overloaded. Our product is twin engine, very short take off and landing (between 2 and 5% length, compared to the competition) and we know what it costs to build and operate (dependant on payload and control range). Our product, we believe,

¹⁸ Not printed.

is better and costing detail for our equipment is attached.¹⁹ At least, if our equipment is used to drive down competition pricing, it achieves something. Encouraging small companies can speed up innovative development, at worst, and, at best, may come up with a better product, generally, at much lower cost.

Currently there is, and has been for decades, secondment of service people to the CAA. The effect of this both retains UK airspace as a WWII airfield and huge military airspace zones, along with the military low flying demands. Block plans for commercial aviation, both for existing and projected usage, illustrate clearly increasing airspace congestion, albeit at higher levels for commercial aviation.

America is currently certificating remote aviation. The CAA have, in over a decade, progressed to 500 metres, providing one gets through their moving goalposts; by no means certain, for what is termed a commercial exemption. Interestingly, the CAA, I understand, have, at best, limited experience in the design, build, standards definition, flight operator requirements and flight operations for remote aviation. Full flight commercial certification is still designed around manned aircraft; priced by decree, with no negotiation accepted, requiring deep pockets (up to £65,000.00 for noise tests) and an open cheque book (we tried, last year). We wasted our time in objecting to the Minister of Transport.

It has been estimated, by others, that this industry can support between 12,000 and 14,000 employees in both defending our interests and civil aviation. The FAA is currently certificating (for free). The CAA, by persistent commercial refusal for over a decade, have, and continue to have, sabotaged the industry. It has been incredibly difficult for a small company to develop any form of remote aviation here due to CAA policy, compared to Europe. The people that I dealt with all those years ago (a significant number are pilots) are still there, halfway to their pensions, but now at least Europe have authority for UAVs over 150KG.

1 March 2006

¹⁹ Not printed.