WALES AUDIT OFFICE
SWYDDFA ARCHWILIO CYMRU

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National Audit Office

The Red Dragon project

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL AND THE AUDITOR GENERAL FOR WALES
PREPARED JOINTLY BY THE NATIONAL AUDIT OFFICE AND THE WALES AUDIT OFFICE | HC 296 Session 2008-2009 | 27 March 2009

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This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act; and under the Government of Wales Acts 1998 and 2006 for presentation to the National Assembly for Wales.

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9 March 2009

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This report can be found on the National Audit Office web site at www.nao.org.uk and the Wales Audit Office website at www.wao.gov.uk

Joint National Audit Office and Wales Audit Office findings

National Audit Office findings

Wales Audit Office findings

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Foreword

This report has been produced jointly by the National Audit Office and Wales Audit Office in response to a request from the Chair of the Defence Select Committee of the House of Commons. It examines the expenditure and financial commitments made by the Ministry of Defence and the Welsh Authorities on a new super-hangar for the Defence Aviation Repair Agency (DARA) and the acquisition of the St Athan site in preparation for an aerospace park centred around DARA's facilities.

The report considers the sequence of events surrounding the Red Dragon project and the costs incurred and benefits derived as a result. Each Chapter covers the actions and decisions in two Parts – the first for the Ministry of Defence and the second for the Welsh Authorities. This structure reflects our separate powers and the accountability arrangements which we support. The National Audit Office examined the activities of the Ministry of Defence under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act. The Wales Audit Office examined the activities of the Welsh Authorities under the Government of Wales Act 1998 and the Government of Wales Act 2006 and reports to the National Assembly for Wales. The summary and conclusions are, however, joint.

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Summary

1 Red Dragon was a project between the Ministry of Defence (MoD) and the Welsh Authorities[1] for the development of the St Athan site in South Wales. The original plan comprised the following elements, with a cost of some £134 million excluding payments from the Welsh Authorities to MoD:

- the construction of a state-of-the-art aircraft maintenance facility (super-hangar) able to accommodate up to 48 Tornado jets for the Defence Aviation and Repair Agency (DARA), costing £107 million;
- the rationalisation of MoD's requirement for infrastructure at St Athan, at a cost of some £5 million; and
- the acquisition of a premium head lease on 725 acres of the St Athan site by the Welsh Authorities and redevelopment of the site, with a view to securing DARA's continued presence and developing an aerospace park in the longer-term, at a cost to the Welsh Authorities of £34 million (of which £12 million was paid to MoD for the land and airfield).

Work on site preparation for the super-hangar commenced in February 2003. In March 2003 MoD signed an agreement with the Welsh Development Agency, which committed MoD to the rationalisation of the site and the land deal. The super-hangar was finished to approved time and budget by December 2004 and in the following month DARA began to move into its new repair facility.

2 Meanwhile, in January 2003, MoD commissioned a strategic review of aircraft support[2], which reported in July. The findings of this End-to-End Logistics Review eventually led to announcements in March and September 2004 that DARA's fast jet repair business for the Harrier jump jet and Tornado bomber at St Athan would close and the repair work would be moved to one main operating base for each fleet. These announcements undermined the Red Dragon project. In November 2005 MoD announced that all DARA St Athan's fast jet repair business would close by April 2007, so the super-hangar was no longer needed for its intended purpose.

3 Our examination of the Red Dragon project considered whether MoD and the Welsh Authorities worked well together to secure a good outcome from expenditure on the St Athan site. Our detailed methods are set out in Appendix 1.

4 We found that MoD and the Welsh Authorities did not work together sufficiently closely throughout the Red Dragon project, although there were examples of effective collaboration to address key issues of shared MoD and WDA interest. MoD and the Welsh Authorities had significantly differing perspectives on the longer term prospects for the St Athan site, because the transaction was initially regarded as commercial in nature, rather than as a joint project between two Government bodies. This basis for the project resulted in MoD and the Welsh Authorities being unsighted on the other's key assumptions on DARA's viability for commercial repair work. MoD's decision to transfer fast jet repair to frontline Royal Air Force bases was based on the prospect of greater savings for defence than those which would flow from St Athan rationalisation but the Welsh Authorities were not told as early as they might have been about the likely impact of proposed changes to the way in which fast jets were repaired. As a result of MoD's decision, neither MoD nor the Welsh Authorities have achieved the benefits intended from the Red Dragon project, although there are plans underway to use the site and the facilities for defence training and a smaller than intended aerospace park. Our specific findings are set out in the following paragraphs.

1 The Welsh Development Agency and the Welsh Assembly Government are collectively referred to in this Report as the Welsh Authorities. In April 2006, the Welsh Development Agency was merged into the Welsh Assembly Government.
2 *Streamlining End to End Air and Land Logistics*, Ministry of Defence, 1 July 2003.

5 There was no common purpose for the Red Dragon project though MoD and the Welsh Authorities had complementary objectives for the site.

a MoD's objective for the project was to make its fast jet repair activity more efficient. By setting up DARA as a Trading Fund, MoD intended that DARA compete with industry for previous MoD business and hence become more competitive as a result. Construction of the super-hangar gave DARA the best prospect to be more competitive through rationalising its estate and allowing more efficient repair under one roof.

b The Welsh Authorities' objective for the project was economic development in this part of South Wales. They wanted to safeguard DARA jobs and the South Wales aerospace cluster leading in the longer-term to the development of an aerospace park.

c Both parties agreed that their objectives were complementary and that they would both benefit from expenditure on the St Athan site which would improve DARA's competitiveness. MoD's objective of efficient aircraft repair, however, was only complementary to the Welsh Authorities' objectives as long as DARA St Athan remained the best option for fast jet repair.

6 MoD and the Welsh Authorities did not have a shared understanding about the assumptions underpinning their respective decisions on the future of the St Athan site.

a MoD and the Welsh Authorities produced separate business cases and investment appraisals on which to base their decisions.

b MoD estimated savings from the Red Dragon project of £263 million over 15 years, compared with savings in the region of £40 million if DARA St Athan were run down as military aircraft fleets were retired from service.

c The Welsh Authorities estimated that they could create up to 4,000 jobs over 15 years if they developed an aerospace park at St Athan. They commissioned economic and market appraisals showing that such a project could generate a positive return over 25 years. Because they were buying land and assets at market value, their financial exposure would be limited, although recovery of their expenditure in a worst case scenario would depend on the successful sale of the site leases, and resale of the additional land purchased outside of the St Athan site.

d The Welsh Authorities' plans for the aerospace park revolved around DARA as an anchor tenant which they expected would be in a position to undertake both military and civil aircraft repair. For MoD, the reason for DARA undertaking civil aircraft repair would have been to increase efficiency and reduce overhead costs, hence making UK military repair cheaper. Indeed, MoD's investment appraisal for the Red Dragon project made no reference to civil aircraft repair. Sufficient flexibility was included in the design of the super-hangar to enable DARA to increase the rate of repair of fast jets if needed in support of military operations, and to accommodate large military aircraft and therefore equivalent-sized civil aircraft. The Welsh Authorities did not have access to DARA's business plans to assess the likelihood of DARA securing future work.

e Given that MoD would continue to face pressure to reduce its logistics support costs, it wished to retain flexibility concerning use of the St Athan site should the assumptions in the Red Dragon business case change. In July 2002 it secured an option under which it could require the Welsh Authorities to purchase an interest in the super-hangar after five years. MoD had calculated that the efficiency savings achieved by the five year break point would outweigh its expenditure. Subsequently, and just before the final approval for Red Dragon, MoD commissioned a wider review of aircraft support which could have a longer term impact on DARA St Athan.

f The Welsh Authorities recognised the risk that MoD could close DARA's fast jets business after five years, but considered that MoD's financial commitment was such that it would not do so. They did not interpret the five year break point as implying that MoD had calculated it could exit without financial loss, although this was the case. Instead, they took verbal assurances from MoD officials, as well as comfort from the Minister's announcement in July 2002 that work would commence on the super-hangar later in the year, as evidence of MoD's commitment to the Red Dragon project.

7 MoD's vision for defence aircraft support was evolving when the commitment to St Athan was made.

a In making the decision to invest in St Athan, MoD had yet to reconcile its position on the right balance of logistics support for the RAF between provision at RAF bases, DARA and industry.

b MoD itself had not decided whether it would need to award DARA some aircraft repair contracts after April 2004 to meet a strategic need, to protect security interests or maintain alternative capacity.

c DARA was assuming that it would win all its previous Royal Air Force fast jet business, which would enable it, as some of these aircraft were retired from 2011-12, to secure other new military repair contracts.

d MoD found it difficult to reconcile effectively its roles as owner of DARA, where it had to support the business, and its role as principal purchaser of military aircraft repair services, where the imperative was to achieve the most efficient support for aircraft. The need to deliver efficiency savings in the short-term meant MoD did not assess the financial impact of delaying the super-hangar.

8 MoD's decision to transfer fast jet repair away from St Athan was based on the prospect of greater savings for defence, but the Welsh Authorities were not told about the impact as early as they might have been.

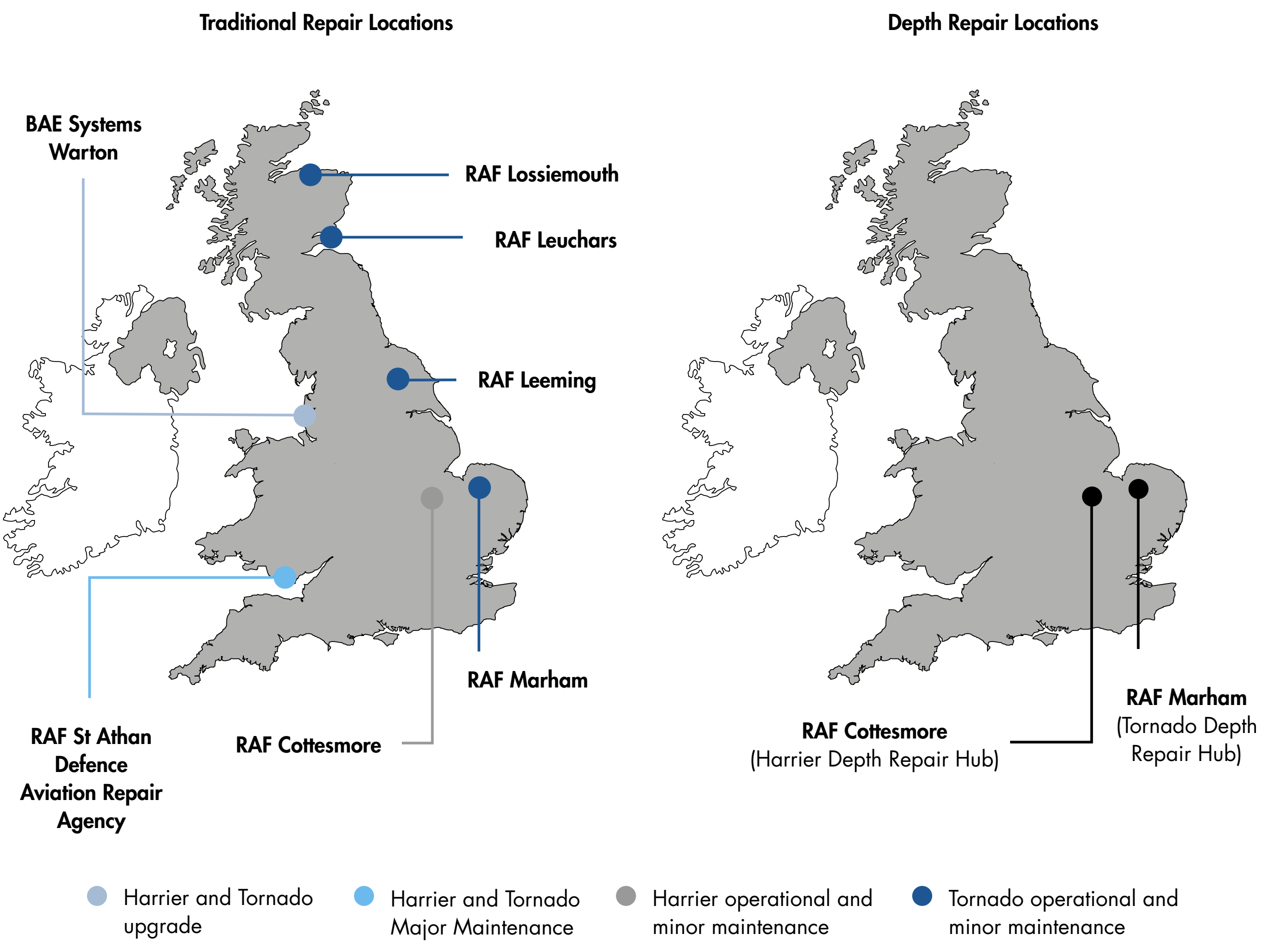
a MoD closed the Red Dragon deal before the recommendations of the review of rotary and fixed-wing aircraft support were published.

b The outcome of the review was a recommendation – subject to further work – to transfer repair to main military operating bases on the basis that each aircraft fleet would be maintained at a single location **(Figure 1 overleaf)**. The review estimated that this rationalisation would save the Royal Air Force in excess of £150 million a year, the majority of which would come from the fast jet fleets, compared with average savings of around £18 million a year from Red Dragon.

c MoD told the Welsh Authorities that the further work following the review could lead to the rationalisation of repair for each aircraft fleet, either at frontline bases or at DARA. But it was made less clear than it might have been that, even if the further work resulted in fast jet work remaining at St Athan, there would be a significant reduction in the number of civilian jobs there. Once MoD had taken the decision to transfer fast jet repair away from St Athan it informed the Welsh Authorities, and subsequently announced that it would work with them to explore alternative uses for the site.

1 Map showing the location of MoD and industry facilities to repair fast jets and how they were rationalised

In the past the repair and overhaul of fast jets was conducted at four levels, at numerous dispersed locations. From 2004 this was changed to two organisations at a reduced number of RAF bases.



Source: National Audit Office

9 The originally intended benefits of the Red Dragon project have not been realised, but joint working has been, and is being, undertaken to secure a viable future for the St Athan site, centred around defence training. Significant cost savings have separately been made in fast jets support by transferring repair to main Royal Air Force operating bases.

a The net cost to the taxpayer of the Red Dragon project is in the region of £113 million. MoD and the Welsh Authorities will have spent some £134 million directly on the Red Dragon over the life of the project, excluding the payments from the Welsh Authorities to MoD totalling £12 million. Although there is some uncertainty around the figures, MoD has achieved efficiency savings from the Red Dragon project of around £57 million compared with an anticipated £263 million, and there have been costs of £36 million for redundancy, removal and reorganisation of its other tenants at the site. The Welsh Authorities have achieved rental income of around £0.6 million from non-MoD tenants located at the site.

b Both parties have assets which may have significant value on the open market in the future. The super-hangar could generate up to £60 million for MoD, based on rental income between 2005 and 2018. The Welsh Authorities have acquired land and buildings (most of it suitable for development) with an estimated value of around £44 million after infrastructure costs. The super-hangar and a substantial proportion of the St Athan site are expected to be used eventually for the Defence Training Academy from 2013.

c MoD has not realised the anticipated efficiency savings from the Red Dragon project. However, it has reduced the costs of contracts for logistics support for fast jets by around £1.4 billion over a six year period from April 2001[3] by transferring repair to main Royal Air Force operating bases. These savings significantly outweigh the expenditure of £107 million on the construction of the super-hangar and the costs of the early closure of DARA's fast jets business at St Athan.

d The Welsh Authorities have not realised the intended benefits from their investment. Following MoD's decision to transfer the bulk of DARA's expected workload away from the St Athan site, around 1,900 DARA jobs have been lost. As a result of MoD's decision, the Welsh Authorities reviewed their immediate plans for the aerospace park. They focused in the short term on letting existing buildings and supporting efforts to attract the Defence Training Academy to the St Athan site, while continuing their marketing and developing revised plans for the aerospace park.

e The Welsh Authorities and MoD have cooperated on marketing the St Athan site but have attracted only four companies which have continued to be located there, with just 45 jobs. Nevertheless, the Welsh Authorities expect significant economic benefits from the Defence Training Academy at St Athan. Based on estimates from the consortium that is developing the Academy, they believe as many as 5,500 jobs could be created on site and in the wider economy, although around a third of the posts are likely to be filled by people relocating from elsewhere in the UK. They also expect that the Defence Training Academy will provide an impetus for current plans for an aerospace park, potentially creating around 2,000 additional jobs in the smaller area of land that is now available.

Recommendations

10 MoD and the Welsh Authorities had complementary objectives but did not have a common purpose for the Red Dragon project. They concentrated on formal procurement and the contracts for the super-hangar and site rationalisation. They did not develop a sufficiently strong, long-term relationship and were reactive when problems arose.

For large, complex projects crossing organisational and devolved boundaries, government departments and agencies should develop mutual objectives, problem resolution processes, key performance indicators and an ethos of openness and information sharing. This 'partnering' approach should be underpinned by a formal project document to align objectives, which expresses intended business outcomes and sets out the principles and attitudes that will characterise the arrangement. The project should be run by an integrated project team with a mixture of staff from the parties, with clear roles and responsibilities and agreed operating practices using a shared risk register, dataset and assumptions. The project should be overseen by a formal 'strategic' steering group, with senior engagement from all parties.

11 There was no integrated and coherent strategy for military aircraft support when MoD committed to the Red Dragon project.

In reviewing business cases for major investment, departments should identify all relevant business interests lying within their responsibility. They should prioritise and as far as possible align those interests before decisions are taken or commitments made.

3 C&AG's Report, *Transforming logistics support to fast jets*, HC 825, Session 2006-07.

Chapter 1 – The aims of MoD and WDA in developing the St Athan site were distinct but complementary

1.1 The Ministry of Defence (MoD) spent some £7 billion annually on logistics support for aircraft across a range of providers of repair and overhaul but throughout the nineties the defence budget as a whole was declining in real terms. This led to a requirement for greater efficiency in the delivery of defence support services, principally logistics. There were also changes in the global political environment which led the Strategic Defence Review (1998) to redefine the nature of the military operations for which the UK Armed Forces need to prepare, and to reconfigure the support arrangements for such operations. With the end of the Cold War the requirement for 'surge capacity' for repair changed, and peak operational activity could be supported to a greater extent by industry. As a result of the Strategic Defence Review, a decision was taken to form the Defence Logistics Organisation, and to create a single agency – the Defence Aviation Repair Agency (DARA) – for depth repair work on all military aircraft, in order to reduce the cost of maintenance and overhaul.

1.2 DARA was comprised of five business units spread over four sites. Depth repair and maintenance of fixed-wing aircraft fleets, most of which had been in service for at least two decades, was conducted at the St Athan site. This Chapter of the Report examines the reasons behind MoD and the Welsh Development Agency (WDA) intentions to develop the St Athan site. It shows that MoD and the WDA had distinct but complementary objectives, to improve efficiency at DARA St Athan and sustain the aviation skill base and employment in Wales respectively.

Part One: MoD envisaged efficiency gains through rationalising the St Athan site and housing aircraft repair under one roof

1.3 MoD's intention was for the new single agency to convert to a Trading Fund as soon as practicable in order to increase DARA's competitiveness, improve efficiency and reduce costs. The move to Trading Fund status was to provide a means for testing DARA's strategic role in a competitive market place where there was substantial capacity. DARA therefore needed to develop a clear view of its unit costs and a comprehensive business investment plan.

DARA started to understand its cost base and planned to improve its efficiency

1.4 A key priority for DARA, in addition to providing effective support for its customers, was to slim down the organisation and eliminate considerable duplication in business management, in part caused by 52 completely unconnected IT systems. DARA introduced an Activity Based Management programme to identify all non value-added activity and to re-engineer business processes. Units no longer repaired all the constituent parts of an aircraft and St Athan became the centre for fixed-wing airframe repair. The new Enterprise Resource Planning System was to deliver improved repair processes and turnaround times and reduce spares purchases, making savings in excess of £100 million across all the business units by 2007-08, or nine per cent per annum.

1.5 Site and personnel costs at St Athan comprised a significant proportion of DARA costs. When DARA first formed, there was still a requirement for a large number of deployable tradesmen should war break out and so Royal Air Force posted its personnel to St Athan and other sites to keep their aviation repair skills current. There was a high cost associated with using military personnel and so DARA worked in conjunction with the Royal Air Force to progressively reduce the number of Service tradesmen.

Concurrently with DARA's plans, Equipment Support (Air) started to look at options to reduce logistics support costs

1.6 In 2000, the Defence Logistics Organisation, the principal commissioner of work from and owner of DARA, set itself a target to reduce output costs by 20 per cent by 2005, while maintaining or improving the quality of service to the frontline. Although efficiencies resulting from establishing DARA as a Trading Fund contributed to the overall achievement of the Strategic Goal, there were costs of some £100 million in setting up the Trading Fund. In particular, the Defence Logistics Organisation agreed to invest in the Enterprise Resource Planning System and provide for redundancy costs, MoD would also have to continue to meet the costs of the Servicemen transferred from DARA to other duties as a result of rationalisation measures.

1.7 To achieve the required level of savings, Equipment Support (Air) – DARA's main MoD customer – also had to look radically at the scope for providing the same output for fewer resources. Repair of the Harrier and Tornado fleets consumed a major part of the resources for logistics support and Equipment Support (Air) began to explore joint-working with companies including BAE Systems and Rolls-Royce plc to reduce maintenance costs over the aircraft's whole life while improving capability through increased insertion of new technologies.

MoD's Red Dragon project was driven by the need for greater efficiency in repairing fast jets

1.8 The St Athan site, covering around 800 acres, housed some 1,000 buildings, some of which were pre-World War II constructions and in a very poor state of repair. MoD did not fund hangar refurbishment or runway repairs proposed during the time of the Trading Fund Business Case. DARA was the largest employer on the St Athan site and leased 13 buildings for its fixed-wing business from MoD. The overhead associated with this infrastructure represented a major risk to its competitiveness. In the autumn of 1999, DARA therefore initiated a number of projects for site rationalisation and its commercialisation, run by a small task force of finance staff, and began informal discussions with the WDA. DARA considered four options for the fixed-wing business: rationalise existing infrastructure for fast-jet repair; rationalise existing infrastructure for all fixed-wing aircraft repair; build a new facility at St Athan or relocate to new premises at Cardiff International Airport.

1.9 A concept study, commissioned by DARA, established the minimum footprint for a new super-hangar that could accommodate all fast jet work in a single facility on a notional site and estimated the costs of construction as £65 million in November 2000. DARA also commissioned a feasibility study for the building and running of the hangar under a Private Finance Initiative from external consultants. This recommended that a standard PFI contract was unlikely to offer value for money, principally because the role for the private sector once the new facility was operational was too limited.

MoD's vision for the DARA Trading Fund was difficult to achieve

1.10 If the Trading Fund was established MoD would no longer meet all the costs of running the agency directly; instead, DARA would receive revenue directly from its customers, with the opportunity to earn profit if it regulated its costs more stringently. Individual programmes would be priced annually, once the cost of the numerous outputs involved in aircraft repair had been calculated. While financial information existed, two factors made the pricing more difficult. Management systems to derive full cost recovery estimates were fairly immature because MoD was working towards the full implementation of Resource Accounting and Budgeting by 2001-02. Secondly, any inaccuracies in the customer's demand forecasting would influence the unit price of the repair because of the apportionments of fixed overheads.

1.11 Also under the Trading Fund, once a guaranteed initial three-year work programme of over 90 per cent of DARA's order book ended, MoD's plan was for DARA to be in a position to compete for all military aircraft repair and overhaul work, and operate on a fully commercial basis by 2004. MoD's forecasts of future demand predicted the maximum amount of work available for which DARA could compete and estimated that allocated work (where there was no practical opportunity to compete) would be in the region of 30 per cent in 2005. No estimate was made of the proportion of existing military work that DARA might realistically win. Given the inherent uncertainties, there were no forecasts of the type and volume of the wider commercial work DARA might attract. The assumption was that by reducing its overhead costs and being more commercial DARA would be more able to develop such expertise than if it had remained funded directly by MoD. Additionally there was limited information available on industry competition.

1.12 DARA was also to develop innovative support solutions, through the establishment of partnering arrangements, to improve frontline availability. These aims were challenging in a market of monopoly suppliers, where the ability to carry out repair rests on acquiring permission to access the plans of the aircraft from the designers and original manufacturers. From 2000, DARA had been brokering long-term agreements with companies such as BAE Systems, Boeing, AgustaWestland, Honeywell and Northrop Grumman and signed a strategic partnering arrangement with Rolls-Royce plc.

1.13 On 1 April 2001, after a year of shadow trading, the government gave DARA Trading Fund status as a wholly-owned subsidiary of MoD. The objectives of the Trading Fund were for DARA to become more efficient; provide customers with full visibility of the cost of outputs to enable them to select only those that add value; be competitive; rationalise, modernise and integrate the support chain through innovation and partnering initiatives; and exploit wider market opportunities to the benefit of MoD. The DARA Ministerial Advisory Board was to provide strategic oversight and direction of the Trading Fund. It was not clear, however, whether MoD's intention was for DARA to be treated as a strategic asset to which all MoD stakeholders would award their business in order to protect it.

Part Two: The WDA was keen to help secure DARA's future in Wales and create new opportunities for economic development

1.14 Prior to being merged with the Assembly Government in April 2006, the WDA was Wales' lead economic development agency, with an annual budget of around £300 million, employing around 1,000 members of staff. The WDA's objectives included creating and safeguarding jobs, supporting the growth of businesses in Wales, attracting investment and regenerating communities. The WDA employed various methods to meet its objectives, including acquiring and developing land and property for industrial and other uses.

1.15 In December 2000, building on their existing relationship and to improve the cost effectiveness of its fixed-wing (St Athan) business, DARA approached the WDA with a proposal for "Project Red Dragon": a new aviation centre of excellence with DARA as the cornerstone. DARA told the WDA that its St Athan base was no longer suitable because of the costs associated with occupying and managing the site, and the WDA was concerned that DARA might decide to relocate to an alternative location in England, with the result that around 2,500[4] DARA St Athan jobs would be lost to Wales. The WDA was also concerned that any closure of DARA could impact negatively on the cluster of aerospace companies in South Wales. The aerospace sector was, and remains, an important part of the Welsh economy. Research by the Aerospace Wales Forum in 2001 showed that some 17,000 people were employed in Wales in the aerospace sector (11 per cent of total UK aerospace employment)[5].

1.16 In early 2001, the WDA and DARA considered Cardiff International Airport at Rhoose, six miles east of St Athan, as a potential site for DARA to re-locate, with scope for the WDA to develop an aerospace business park alongside. The aerospace park concept was based around DARA as an anchor tenant, supporting the WDA in attracting other companies to locate to the site. Because of the scale and novelty of the proposals, the WDA kept the Assembly Government informed from an early stage.

1.17 Further feasibility studies on the proposals for Cardiff International Airport were carried out, with the £0.33 million costs shared equally between DARA and the WDA. In summer 2001, the feasibility reports showed that the proposed development at Cardiff International Airport was not feasible: it would entail high infrastructure and land preparation costs of at least £60 million; it would involve an unacceptably high impact on protected species and listed buildings within the area; and there was considerable opposition from the local community. Also, the amount of land available for development was not sufficient to provide for potential future expansion of DARA or the WDA's aspirations for an aerospace park. Discussions between the WDA and DARA therefore turned to alternative proposals based on DARA occupying a new super-hangar facility at St Athan, and the WDA purchasing land and buildings for possible use as an aerospace business park.

4 The Welsh Development Agency was concerned about the possibility of losing all DARA jobs at St Athan, not just the 1,900 employed in the fast jet business.
5 Aerospace Wales Forum presentation to Welsh Development Agency, 2002.

Chapter 2 – MoD and the Welsh Authorities' business cases were reasonable overall, but decisions were made without shared understanding of underpinning assumptions

2.1 Once relocating DARA was ruled out, MoD and the Welsh Authorities collaborated in the development of the St Athan site. The Red Dragon project had three principal and interlocking elements: a state-of-the-art aircraft maintenance facility for DARA; the rationalisation of MoD's requirement for infrastructure at St Athan; and the acquisition of a premium head lease on most of the St Athan site by the WDA with a view to developing an aerospace park in the longer-term.

2.2 This Chapter reviews the way that decisions were made for the redevelopment of the St Athan site. It shows that the respective decisions of MoD and the Welsh Authorities were based on analysis of the potential benefits and risks, but that there were fundamentally different perspectives on a number of aspects of the two parties' assumptions about the longer-term prospects for the site. DARA progressed its elements of the Red Dragon project in spite of MoD engaging consultants to work on making logistic support in the round more efficient.

Part One: Building the Red Dragon super-hangar was aimed at making DARA more competitive, and site rationalisation would bring benefits to defence as a whole

DARA was clear what was needed in order to succeed as a Trading Fund

2.3 The only way for DARA's St Athan business to continue to improve its financial and operational effectiveness was to further reduce manpower numbers and rationalise estate costs. DARA concluded that building a new facility offered the best opportunity to improve its competitiveness. Following studies into building design costs and environmental issues, DARA received Ministerial approval to proceed in the procurement process for the super-hangar in January 2002.

2.4 MoD Pricing and Forecasting Group recommended a number of steps that DARA would need to take to become competitive including reducing its level of operating costs by at least 30 per cent. They concluded that Project Red Dragon gave DARA the best chance of establishing itself in the competitive market and confirmed that the charge out rates would reduce from around £80 per hour to between £55 and £60. At this point DARA would potentially become competitive with the original equipment manufacturers for military repair. These reduced hourly rates still left DARA's prices significantly behind those of commercial aviation companies (£30 per hour), but the Red Dragon project was never planned to enable DARA to secure civil aviation work.

MoD identified cumulative benefits arising from lease arrangements, productivity gains and the super-hangar in its Investment Appraisal

MoD's process for determining the case for the Red Dragon project was thorough and quantified savings that could be achieved in excess of existing initiatives

2.5 As DARA's initial work had already resulted in the rejection of three of the four options to support its military business by addressing the increasing infrastructure costs, (paragraph 1.8), DARA did not duplicate this assessment for the final investment appraisal. Two options were considered: DARA St Athan winds down as fast jet fleets are retired; or the Red Dragon project **(Figure 2)**. This work was focused on DARA St Athan and at this stage of its decision making MoD did not look at wider possibilities for fundamentally changing the way in which aircraft repair was undertaken, such as using main Royal Air Force bases or using lean techniques.

2.6 There was no prospect of obtaining capital funding for the new build project from MoD. It therefore agreed that DARA would fund the construction through a private finance arrangement lasting 15 years. The DARA Business Case also proposed entering into a 15-year contract for facilities services. By leasing the hangar DARA provided itself with some flexibility in occupying the facility, so that it could manage changes in demand for its services.

2.7 It was difficult for MoD to give a robust estimate of DARA's likely future fixed-wing business once the allocated order book came to an end in March 2004. DARA knew the amount of work on the legacy fleets that MoD could not practically put out to competition was declining, and assumed that it would win all MoD business to be competed from 2005-06 for seven years. After 2012 it was evident that new business would need to be generated to meet the required demand level for the super-hangar.

2 Options for the St Athan site

Option 1: No Red Dragon project

Assumptions: DARA's fixed-wing business makes no productivity improvements, work for legacy aircraft declines as they near their out-of-service date, leading to closure and transfer of programmes to alternative suppliers. Existing tenants stay on and the Army occupies West Camp. Defence Estates remains the owner of the whole site.

Option 2: New Red Dragon super-hangar

Assumptions: New Build occupied in May 2004. WDA pay £1 million (plus VAT) for airfield assets, undertaking specified improvements, and £0.8 million annually for four years for the operation of airfield services by MoD. DARA vacates a number of hangars and offices to release around 250 acres for development. Defence Estates sells a head lease on 725 acres to the WDA for £8 million. MoD has the potential for a share in the profits from any WDA development of the site through a claw back arrangement and WDA becomes partly responsible for some remediation costs. Other MoD organisations and DARA are housed within the reorganised site, under leaseback arrangements with WDA. Army units would be accommodated in West Camp.

Source: MoD Investment Appraisal and Composite and Airfield Management Agreements, 2003

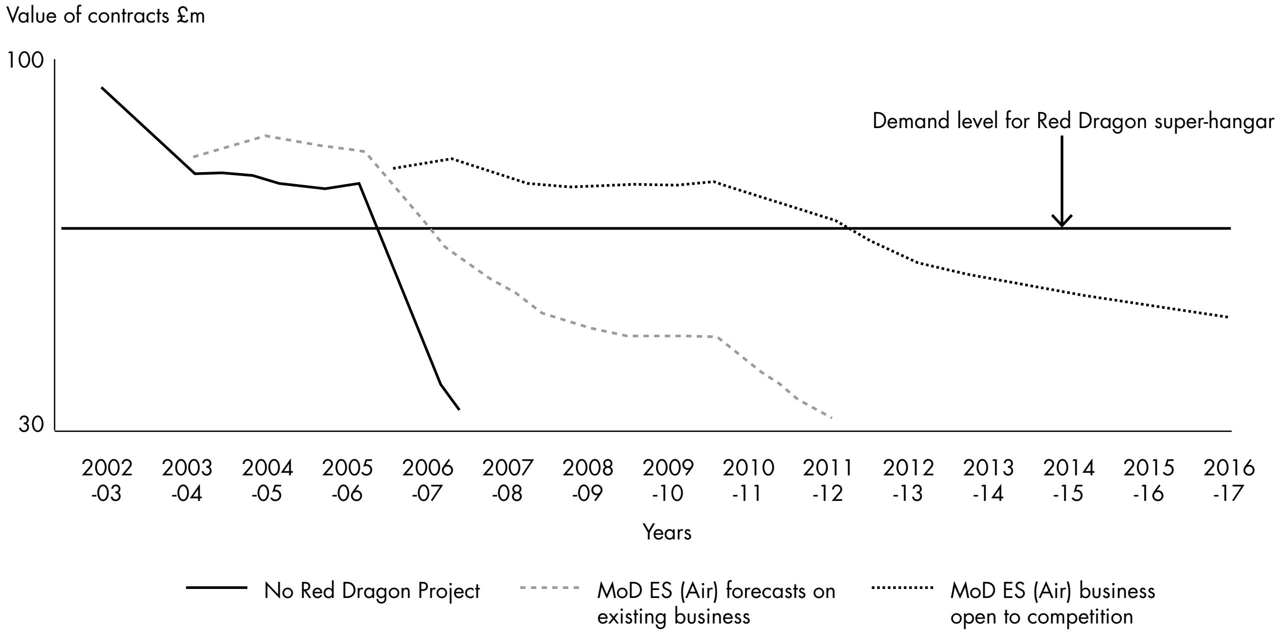
2.8 The investment appraisal for the new hangar estimated £148.5 million worth of work until year 15 from wider markets, including the Hercules C130 and the C-17 fleets – contracts which DARA had not previously won. Total estimated revenue up to year 15 was estimated to be £1.19 billion **(Figure 3)**. Given the uncertainty around entry into new markets, MoD did not conduct an exercise to understand the long-term prospects for aviation repair and the likelihood of competing successfully at that time. MoD relied on the commercial judgement of the DARA management team and MoD Red Dragon Project Director that the efficiency and business process improvements agreed as part of the Project would make costs more competitive with industry.

2.9 The investment appraisal calculation covered the efficiency savings as a result of the two options over 15 years.

- Total savings to MoD from closing DARA St Athan were in the region of £40 million, after the payment of the estimated redundancy and pension costs for the fixed-wing business unit. The investment appraisal highlighted the fact that there would be implications for the components and electronics business units, potentially leading to payments of a further £30 million.
- Total savings to MoD from the new super-hangar were estimated to be £263 million over 15 years. £173 million of the savings in the Investment Appraisal for the super-hangar resulted from manpower. There was less certainty on the anticipated benefits from the major productivity improvements expected and hence the savings were factored down **(Figure 4)**. Redundancy costs of £10 million were based on an assessment of likely jobs in the new super-hangar. There were also savings of £100 million expected in facilities management.

MoD also calculated that £25 million savings would be achieved by Army units occupying West Camp, the area of the St Athan site where MoD was retaining the freehold. These savings have been excluded from our analysis as it would have been possible to achieve them regardless of whether the Red Dragon project had been undertaken. MoD's view is that the Project was the catalyst for the Army moves and it is by no means certain that the savings would have been achieved without it.

3 The projected demand for DARA to repair and overhaul aircraft



Source: MoD Investment Appraisal, 2003

Some of the benefits resulted from related initiatives, not just the super-hangar

2.10 Some of the savings detailed in the Investment Appraisal were not solely dependent on the option of New Build. MoD estimated that it was going to cost significant sums over 10 years just to maintain the St Athan infrastructure and decreasing demand for repair of fast jets meant the estate would be less fully utilised. If the acquisition of a head lease for the site and lease back of buildings could be agreed with WDA then income would be generated and estate costs reduced. The Investment Appraisal also calculates savings generated by the various change and efficiency programmes (paragraph 1.4). These benefits were included in the savings produced by each option – £7.2 million in the No Red Dragon option and £56.53 million in the New Build option (Figure 4).

The proposal for the Ministerial Advisory Board had presentational weaknesses but with the scale of the savings the decision was likely to have been the same

2.11 MoD estimated the Red Dragon project would result in a reduction in aircraft maintenance and repair costs of 23 per cent as a result of overall savings of over £21 million per annum from the end of the fifth year (2006-07). MoD believed this level of savings were achievable through the efficiency and productivity savings from the building of the super-hangar combined with an assumed reduced expenditure of around £7 million per annum on DARA facilities, including the airfield, head office and information systems, and lower capital equipment, redundancy and removal costs. In fact the Investment Appraisal for the Red Dragon project showed efficiencies outweighing costs in the first year (2002-03), when the acquisition of the head lease of the site and the leaseback of certain buildings would take place, and therefore prior to any repair work commencing in the super-hangar (December 2004). Efficiencies were to outweigh costs in every subsequent year too.

4 DARA's appraisal of the benefits of working in the super-hangar

DARA estimated the cumulative savings of working in the super-hangar were £173.3 million, some £10 million of which it would achieve before any repair could be undertaken in the new facility.

	Year 1 2002-03 £m	Year 2 2003-04 £m	Year 3 2004-05 £m	Year 4 2005-06 £m	Year 5 2006-07 £m	Total Years 6-15 £m	Total Years 1-15 £m
Savings to be made from efficiency improvements if the super-hangar is built	(4.83)	(4.59)	(4.58)	(4.61)	(4.49)	(33.43)	(56.53)
Less Savings which could have been made through efficiency improvements from the existing initiatives if DARA remains a going concern (paragraph 1.4)	1.7	1.6	1.5	1.4	1.0	0	7.2
Total efficiency savings solely attributable to the super-hangar[1]	**(3.13)**	**(2.99)**	**(3.08)**	**(3.21)**	**(3.49)**	**(33.43)**	**(49.33)**
Productivity savings from working in the super-hangar	(0.02)	(0.03)	(8.1)	(12.16)	(12.22)	(110.74)	(143.27)
Total efficiency and productivity savings attributable to the super-hangar	**(3.15)**	**(3.02)**	**(11.18)**	**(15.36)**	**(15.72)**	**(144.17)**	**(192.6)**
Scaled down to reflect assessment of risks to delivery[2]	**(2.84)**	**(2.72)**	**(10.06)**	**(13.83)**	**(14.14)**	**(129.75)**	**(173.34)**

Source: MoD Investment Appraisal, 2003

NOTES

1 MoD judged that a long-term project such as the super-hangar would improve staff motivation and strengthen efforts under existing efficiency initiatives, thereby increasing the amount of savings to be made. But to prevent 'double counting' predicted savings under the original DARA efficiency programme were deducted from the forecast savings if the super-hangar was built.

2 The combined savings from the efficiency programme and productivity gains were risk assessed and then factored down by ten per cent.

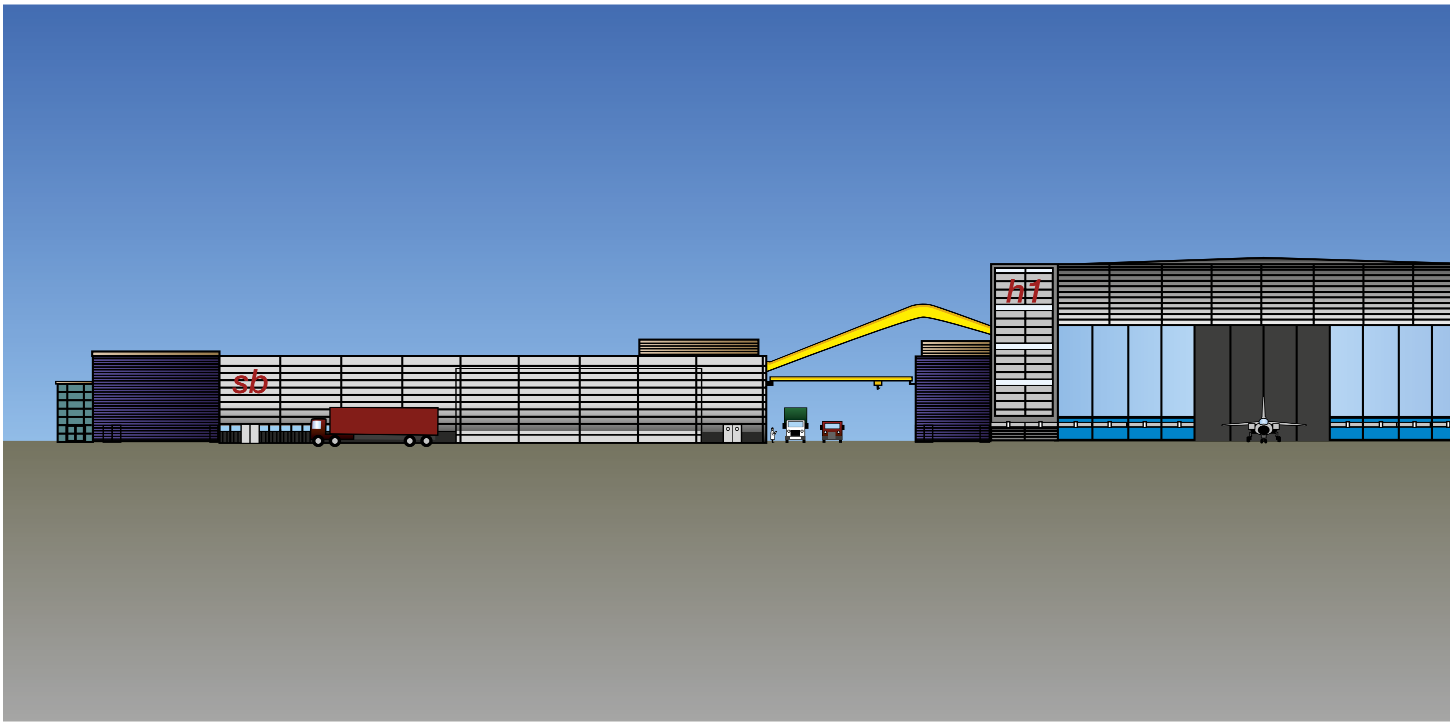
2.12 There were weaknesses in the presentation of information in the Investment Appraisal:

- The analysis was done on a savings basis. While it is important that an investment appraisal shows the benefits arising from the various options, the scale of the investment required and the timing of the payments should also be stated to reduce the risk that the approval is given without sufficient understanding of the affordability of the project.
- The figures in the Summary for the Investment Appraisal were not discounted, although discounted cash flow calculations were presented in Appendix VI of the main investment appraisal business case. As money has a greater value now than in the future, Treasury guidance recommends that the Net Present Value is used so all cash flows are stated on a comparable basis. At a discount rate of 6 per cent the super-hangar savings are £94 million lower than £263 million undiscounted.

The savings offered by the Red Dragon project were nevertheless considerable and had the revised information been presented to MoD, it is likely that the super-hangar would still have been approved.

2.13 MoD subjected the calculations to sensitivity analysis: higher cost of environmental remediation; nil proceeds from the head lease; lower cost savings as the result of transfer to other repair and overhaul providers; planning permission not granted and reduced efficiency savings. These five scenarios were examined in order to understand the effects of changes on the viability of the super-hangar. With all the worst case scenarios the net present value of the benefit of the new-build facility over the close option was still in excess of £80 million, irrespective of the discount rate applied. However, sensitivity to changes in volume of work before and after the fixed order book came to an end was not factored into the appraisal. As early as December 2000, consultants in their review of the Trading Fund Business Case identified that a five to ten per cent reduction in revenue against the plan would have a critical impact on the viability of the business.

5 The design for the Red Dragon super-hangar



Source: National Audit Office artist's impression using Aerospace St Athan brochure, DARA and the Welsh Authorities

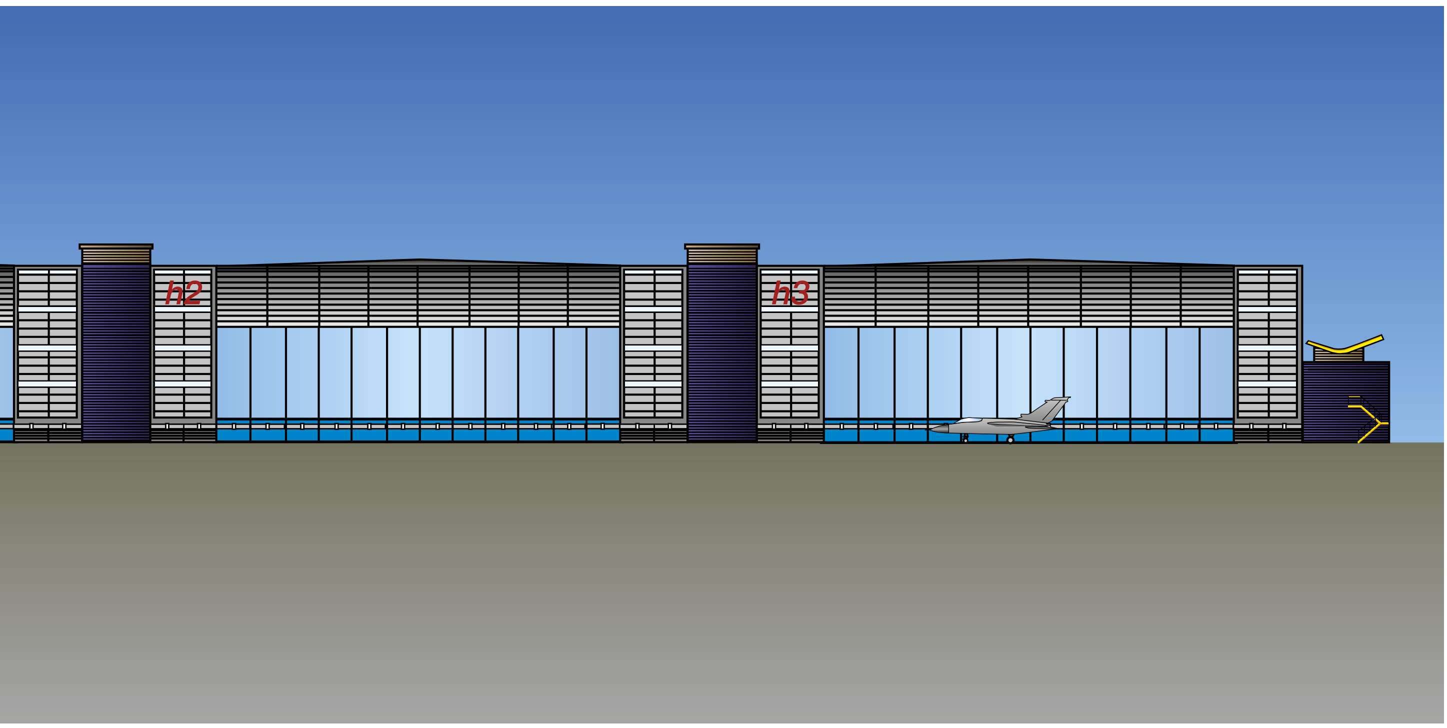
The Investment Appraisal was also subject to additional scrutiny

2.14 The MoD Project Director had frequent meetings with MoD's Senior Economic Advisor to obtain guidance on the production of the investment appraisal, before it was subject to his final scrutiny. MoD also commissioned consultants to conduct an independent examination. They concluded that £15 million of savings, which were based on management representations on an assumption of greater efficiency in the airfield's operation, should be excluded from the investment appraisal. The rationale for the exclusion was that as MoD intended the WDA would own the runway, it could not control the realisation of efficiency savings.

The building specification significantly exceeded DARA's existing capacity for aircraft repair

2.15 To meet its needs DARA suggested a 65,000m² building comprising a hangar and 20,000m² of support workshops, such as paint and plastic media stripping facilities, and offices. The design for 48 bays, which could accommodate the largest sized fast jets, was significantly in excess of DARA's existing maximum requirement of 37 bays, which would be needed if every aircraft on contract was repaired simultaneously. The hangar design sign-off report (October 2002) stated that with modifications to the internal structure large military aircraft with wingspans of around 40 metres, such as VC 10 and Hercules, could be accommodated also and therefore there was room for commercial aircraft with dimensions up to the size of a Boeing 737 **(Figure 5)**.

2.16 DARA argued that because the marginal cost of the extra bays was minimal, it would be better able to satisfy one of its primary military purposes as 'a capacity for surge workloads in time of crisis' and be in a superior position to pursue wider commercial opportunities at a later date, with a facility intended to enable it to provide the best aircraft deep repair capability in the country. MoD explored whether repair could have been accommodated in a smaller facility, through redesigning working practices, such as three aircraft in two repair bays and double shifts. Its analysis concluded that the DARA design proposal for 48 bays offered greater benefits.



All MoD stakeholders were represented in the governance structures for the Trading Fund and the rationalisation, but there were customer/owner tensions

2.17 MoD had an overlapping role as both owner and principal customer of DARA, and the obligations placed on the internal stakeholders in logistics support were varied. The DARA Ministerial Advisory Board advised the Minister of State for the Armed Forces, on behalf of the Secretary of State, on the progress and future development of the Trading Fund. This Board comprised all relevant stakeholders, including the MoD Finance Director and the Chief Executive of DARA. In reaching a view on Red Dragon, the DARA Ministerial Advisory Board had to balance the interests of DARA in rationalising their business with those of the Royal Air Force and other Service customers and with the wider interests of MoD logistics. These views were represented by the Chief of Defence Logistics and the Director General Equipment Support (Air). The DARA Ministerial Advisory Board was supported by a Red Dragon Steering Group, which included the stakeholders and other MoD organisations such as Defence Estates and was chaired by the then Director General Resources of the Defence Logistics Organisation.

2.18 At the same time, MoD had engaged consultants to undertake a study to increase efficiencies under the Defence Logistics Organisation's Change Programme and mid-way through 2002 the Director General of Equipment Support (Air) wrote to the Red Dragon project sponsor acknowledging that this work was likely to recommend a further study of logistics support processes from factory to the frontline but also saying that it was not possible to quantify the impact. Even so the Business Case for the super-hangar continued to be developed. The procurement strategy centred on a fully competitive bidding process and in July 2002 the Defence Minister announced work on the super-hangar would commence by December, subject to formal project approval.

Part Two: The Welsh Authorities' assessed the benefits and risks of acquiring the site and took a cautious approach to developing an aerospace business park

2.19 Throughout 2002, the Welsh Authorities progressed negotiations with MoD, based on an arrangement whereby the WDA would acquire 725 acres of the St Athan site on a head lease, on part of which DARA would build a super-hangar **(Figure 6)**. The WDA prepared a business case for the acquisition of the St Athan site which focused on potential benefits, opportunities and risks of making the purchase and entering into the contractual arrangements with MoD. The business case did not focus on the financial details of the aerospace park, as this proposed development was more speculative at this stage and, although the WDA did commission an appraisal by external consultants, further work was required to determine the costs and benefits.

The WDA identified the immediate benefits as safeguarding DARA jobs, and protecting the South Wales aerospace sector

2.20 The WDA's immediate goal in agreeing to purchase the site was to retain DARA in south Wales and safeguard around 2,500 jobs. The acquisition of the site freed MoD from its liabilities for most of the St Athan site, and meant that DARA could rationalise its activities in the new super-hangar. The business case reported that DARA St Athan would almost certainly be closed if the Red Dragon project did not go ahead, and that MoD would not approve the Red Dragon project unless there was a simultaneous commitment from the WDA to acquire the St Athan site. The WDA was also concerned that losing DARA might undermine the cluster of aerospace companies in south Wales and impact negatively on the wider aerospace sector in Wales.

2.21 The WDA was not able to fully assess the likelihood of DARA jobs being safeguarded in the longer term as a result of the Red Dragon project. The WDA knew that, in future DARA would have to compete for commercial work, but for reasons of commercial confidentiality, DARA chose not to share with the WDA its own detailed business plans. This made it difficult for the WDA to reach its own assessment on how well placed DARA was to secure contracts, but they took comfort from the fact that DARA was in contract discussions with at least seven large aerospace companies at the time.

Acquiring the site secured the opportunity for the Welsh Authorities to develop an aerospace park in the long term

2.22 The WDA's business case reported that the acquisition of the St Athan site would "turn a threat into an opportunity" by enabling the WDA to advance its aspirations for an aerospace park, which it hoped could create up-to 4,000 new jobs over a 15 year period. The agreement with MoD did not oblige the WDA to redevelop the site, although it required the WDA to submit a planning application for an aerospace park. The business case submitted to the WDA Board only sought approval for the purchase of the 125 year lease; further approvals would be sought for any significant aerospace park expenditure. Nevertheless, the business case reported on the feasibility work to assess the viability of developing the aerospace park at St Athan. The key features would be that:

- DARA would act as the anchor tenant, helping to attract commercial aerospace companies;
- it would be targeted at the manufacture, repair and overhaul sector, in line with the existing cluster of companies in the South Wales area, although the business case noted interest from other aerospace sectors which could also be developed; and
- it would initially be situated on 300 acres of the existing site, with options to expand on to part of a further 300 acres around the site, which the WDA was in the process of acquiring.

6 Key features of the proposed agreement between WDA and MoD

- In July 2003, the WDA was to purchase a 125 year lease of 725 acres, including the airfield, on the St Athan site from MoD for £8 million, with an option for the WDA to acquire the freehold at year ten.
- WDA was to apply for planning permission for an aerospace park, with an indicative application date of December 2003.
- WDA was to pay MoD a further £3 million on receipt of planning permission for the aerospace park.
- WDA was to construct road access if planning permission for the aerospace park was granted, subject to acquiring necessary land.
- WDA was to take over the site on 1 April 2005 and lease parts of the site back to MoD.
- MoD was to continue to manage the airfield; under an airfield management cost-sharing agreement, WDA would acquire airfield assets and make a contribution to the running costs of the airfield.

Source: Wales Audit Office analysis

2.23 In developing these proposals, the WDA sought to assess likely demand for an aerospace park, as well as the financial implications. The WDA commissioned a study by consultants, in March 2002 which highlighted the negative impact of the terrorist attacks in New York on the aviation industry in general, and associated demand for aerospace services, but concluded that:

- the aerospace sector would recover over a 2-3 year period;
- although there were no companies already lined up to locate at the St Athan site, which was at the time a MoD facility, there was considerable interest in the site from within industry; and
- if sufficient scale and capability could be developed and other regional capabilities leveraged to support the WDA's proposals, a high value aerospace cluster could be created around the St Athan site.

2.24 Although the assessment of likely demand was cautious, it was sufficiently optimistic for the WDA to further explore the opportunities the site offered. The business case reported that although there was interest from civil and military operators in the site, there were no guarantees that this would be secured. In light of this caution about likely demand, the WDA predicted that the project would take around 15 years to complete, if it went ahead. The WDA had also commissioned consultants to estimate indicative costs and receipts (from the sale and letting of land) for an aerospace park, which indicated a total cost of £49.6 million, excluding the cost of constructing new buildings or hangars. Taking into account potential receipts from the sale and rental of land, the WDA estimated that the net cost, over 15 years, would be around £4.6 million. Because income from the site would be realised after development had taken place, upfront expenditure of £29.6 million would be required to 2005-06. The WDA recognised that it would need additional funding from the Assembly Government to develop the aerospace park, and also intended to seek private sector partners to meet as much of the expenditure as possible.

2.25 The work by the consultants on costs and receipts included an options appraisal, broadly in line with Treasury Green Book requirements, which showed a positive net present value of around £20 million for an aerospace park development with an extended runway, over a 25 year period. However, the WDA recognised that many of the cost and benefit assumptions in the appraisal needed further investigation, and that additional work would be required to update the appraisal before any decision was taken to proceed with investment in an aerospace park.

The price reflected market values, which limited the WDA's financial exposure

2.26 An independent valuation commissioned from property and asset consultants by the WDA confirmed that the £8 million purchase price of the head lease and the £3 million to be paid on receipt of planning permission were reasonable and reflected market values, taking into account the value of the sub-leases with the Ministry of Defence and the anticipated level of remediation that would be required at the site. A report by external consultants valued the airfield assets at £3.1 million but under the airfield management agreement with MoD, the WDA would pay just £1 million for these assets, £0.4 million of which would be held separately in a fund for future asset replacement. The WDA also agreed to pay £0.8 million per year for four years towards running costs of the airfield. The WDA viewed the bulk of the first three of these revenue payments – totalling £2.4 million – as further contributions to acquiring the airfield assets at market value, with the final payment being a contribution to the airfield running costs for 2007/08, by which time the WDA hoped that commercial aerospace tenants would be using the runway. After 2008, the cost sharing arrangement would be renegotiated according to usage.

2.27 The financial risks to the WDA in purchasing the lease of the St Athan site and the airfield assets at market value were relatively low. The WDA's financial exposure on the project was limited to the extent to which its expenditure exceeded the value of the land and assets it has acquired. However, the business case did not take account of the opportunity cost of tying up funds in the site for a number of years. Nor did it consider the likely costs of developing the site for non-aerospace purposes, if the aerospace park was not a viable proposition. The WDA's fallback position was to recover its financial outlay by letting existing buildings and land for non-aerospace development, together with the additional land it was acquiring (the total cost of these acquisitions to date has been £5.1 million including fees). Although the business case did not explicitly consider the likelihood of attracting tenants to these properties, an earlier paper to the WDA Board reported that the WDA could potentially recover its expenditure, based on industrial land values at the time.

2.28 The agreement between MoD and WDA included a profit-sharing arrangement on the development of the land, which placed some restriction on the level of profit the WDA could realise. If the aerospace park went ahead, MoD would share 50 per cent of profits, but only after the WDA's full project costs had been recovered and the WDA had made a 15 per cent return on those costs. Also, MoD would share the profit from any increase in value to any part of the site in the event that the WDA obtained planning permission for a more valuable use than use as an aerospace park.

The assessment presented to the WDA Board identified the key risks

2.29 The WDA identified and assessed the key risks involved in acquiring the St Athan site **(Figure 7)**. The WDA's assessment identified risks in three key risk areas: cost, demand and regulatory. The risk assessment is generally sound and comprehensive, and is based on detailed information gleaned from feasibility studies carried out by expert consultants. It also makes clear where there is insufficient data to assess risk.

The business case for acquiring the site was further scrutinised by the Assembly Government

2.30 Because the agreement between MoD and the WDA was novel, it required approval from the Assembly Government. The Assembly Government's Financial Planning division carried out its own risk assessment, based on the WDA business case, which identified the need for further work in the future to develop the business case for the aerospace park itself. The Assembly Government's compliance office and Office of the Counsel General also reviewed and confirmed the propriety of the arrangements.

7 WDA risk assessment

Identified risk	WDA Assessment
Cost overruns in developing the site	Development of the aerospace park was planned to take place at a later date following further Board approvals, based on detailed costings and evidence. But potential liabilities, up to £11million, existed in relation to remediation – cleaning up any pollution or contamination – of the site, and providing a new water supply. The WDA business case reported that a £6 million reduction in the purchase price had been secured to reflect this risk.
Cost overruns in running the St Athan site	MoD agreed to pay a portion of the running costs, relative to its occupancy, but the WDA would have to meet any shortfalls until it could attract sufficient additional tenants to occupy the site and contribute to running costs. The business case did not quantify the anticipated running costs of the site, but the WDA believed that if there were few new tenants it could cut costs as there would be fewer occupied buildings to maintain.
Cost overruns in running the airfield	MoD would manage the airfield as contractor to WDA until 2008 and meet the majority of the running costs until then. After 2008, the financial terms would need to be reviewed and usage terms re-negotiated. The WDA believed that if there were not sufficient new users by 2008, MoD would continue to meet most, if not all, of the costs as it would still be less than they were paying at the time and they could not operate without runway access. If there were no new users and DARA and the Royal Air Force vacated the site, the WDA identified the option of closing the airfield; seeking planning permission for alternative uses and selling the operating assets at value.
Demand risks to DARA	The WDA recognised that DARA needed to attract enough military and civil work to remain viable, and that if DARA were to fail, particularly in the early years, it would undermine the credibility of the aerospace park and remove a major reason for other companies to locate there. The WDA believed that the commitment from MoD to fund the new facility, and the significant cost of closing it, would militate strongly against the risk of closure. The WDA was also aware that DARA was in negotiations with several aerospace companies to attract new business.
Demand risks to the aerospace park	The WDA identified the risk of a shortfall in demand for the aerospace park, but noted that there was interest in the site from some major companies, and cited evidence from consultants showing that there was potential demand. In any case, further WDA development of the aerospace park would be based on an analysis of demand at the time.
Regulatory risk – planning application approval	The WDA considered the likelihood of not getting planning permission was small. St Athan was a brown-field site and it was therefore likely that there would be a presumption in favour of re-use for industrial development. Also, the local authority had publicly stated its support for the proposals.
Regulatory risk – Civil Aviation Authority approval	The airfield operated under military licence but the prospect for the site would be maximised if it had Civil Aviation Authority approval. The WDA recognised that this approval would involve additional, unquantified costs and decided it would revisit the issue at a later date, based on a more comprehensive understanding of the costs and benefits.

Source: Wales Audit Office analysis of WDA papers

Chapter 3 – The project went ahead without MoD and the Welsh Authorities having a shared view on the likelihood of the risks materialising

3.1 MoD was making progress on the Red Dragon project while it was reviewing the success of its efficiency initiatives and identifying potential fruitful areas for savings. At the meeting of the Ministerial Advisory Board in July 2002 there were serious questions as to whether DARA should issue the Invitation to Tender for the super-hangar because of uncertainty about separate work on the potential for making logistic support more efficient by involving industry to a greater extent.

3.2 This Chapter examines the actions taken by MoD to maintain flexibility and limit its liability for site rationalisation and the super-hangar, and by the WDA to support DARA while protecting its investment. It shows that there were fundamental differences in understanding between the parties on the length of time that MoD was tied to DARA and the St Athan site by its expenditure on the super-hangar.

Part One: Although MoD was considering transforming logistics support it continued to pursue site rationalisation and the super-hangar contract, including an exit clause

A year five break option provided MoD with a contingency plan should the super-hangar facility become surplus to requirements

3.3 Recognising that some fixed-wing aircraft were due to be retired from service and the amount of other military repair work on DARA would win in open competition could not be predicted with any certainty, MoD decided to pursue an exit clause in the super-hangar contract for use in the event that the circumstances in the Red Dragon business case changed. The Deputy Chief of Defence Logistics negotiated a year five 'put option' with the Assembly Government in July 2002. The agreement protected MoD as it could serve notice requiring the WDA to purchase two-thirds of MoD's interest in the super-hangar for £15 million at the end of five years, with MoD receiving 50 per cent of any gain if the value was above £22.5 million.

Following the negotiation of the break clause, the Benefits Case for the redevelopment of St Athan was agreed

3.4 In August, the DARA Ministerial Advisory Board considered the arrangements for the head lease and building lease back arrangements and scrutinised the Red Dragon benefits projection, including the break clause. The Minister of State for the Armed Forces announced the next stage of the plan to redevelop St Athan, including the super-hangar and the aerospace business park, in August. The competitive tendering process was started: about a dozen companies responded and three were short-listed.

Work for MoD on logistics support had potential ramifications for DARA

3.5 The DARA Ministerial Advisory Board meeting of 24 October 2002 specifically discussed the implications for the super-hangar of the consultants' work on end-to-end logistics support. Although the study had not commenced, assurances were given that DARA had been involved bilaterally and would be invited to stakeholder meetings. The preferred bidder for the super-hangar project was announced in November 2002 and the Business Case and investment appraisal were circulated to the DARA Ministerial Advisory Board before Christmas. The End-to-End Review of Logistics in the Air and Land Environments commenced at the same time, with the aim of producing clear and realistic recommendations for equipment support and the supply chain for air and land forces at lower cost, though not at the expense of effectiveness.

The Investment Appraisal was subsequently approved despite concerns about the robustness of workload assumptions that assured long-term viability

3.6 In January 2003, the principles of the proposed land transaction drawn up between MoD's Red Dragon Project Team and the WDA were presented to the Second Permanent Under Secretary and the DARA Ministerial Advisory Board met to consider the investment appraisal. The members expressed a number of differing viewpoints and while some challenged the workload assumptions, others felt that having brought in the Chief Executive of DARA, together with a Senior Commercial Director, on a mandate to attract new work, their judgements had to be backed.

3.7 The Chief of Defence Logistics raised concerns over proceeding with the Red Dragon project because of inconsistencies between DARA's aspirations and the direction taken in some of MoD's work with industry. DARA had a high degree of captive MoD business until April 2004 and the Chief of Defence Logistics was apprehensive about presuming that this level of work would continue when the Royal Air Force was adapting to new military planning scenarios and having to become more flexible.

3.8 The Minister of State for the Armed Forces concluded that the DARA Ministerial Advisory Board were not in a position to take a final decision and asked the Chief of Defence Logistics to provide further advice. The Chief of Defence Logistics accepted that there were strong arguments for proceeding with the Red Dragon project which had many advantages in terms of regional policy and the Defence Estate, as well as the direct financial benefits set out in the business case. But he was particularly concerned that a decision to proceed with Red Dragon might have the effect of restricting his freedom of manoeuvre to deliver the efficiency savings which he had been tasked to achieve. He therefore reserved the right to seek further direction from the Minister if this seemed likely to happen.

3.9 Following the Chief of Defence Logistics' advice, the Minister wrote to the Chief Secretary to the Treasury on 3 February 2003, stating that a viable business case for investment in the Red Dragon project existed for both DARA and MoD overall, which fitted in with the WDA's aspiration to develop an aerospace park. He set out the risk that workload could reduce further as a result of the End-to-End Review of logistics support, but concluded that in the short-term DARA remained the only supplier for much repair on legacy aircraft, and therefore sufficient benefit would be derived from the project. He also referred to the year five exit clause which had been negotiated with the WDA in the event that the assumptions in the business case were not realised.

3.10 Failure to approve the Investment Appraisal would have resulted in the:

- loss of the sale of the head lease for the site;
- failure to achieve the identified and estimated benefits for all MoD parties;
- running down/closure of the Trading Fund, thus escalating prices in the short-term and bringing on closure costs in the medium-term;
- MoD being seen to have failed to support WDA in their aerospace aspirations, although internally MoD had expressed some concerns about the park in terms of the number of companies able to operate from such a venue and pressure from other areas considering the existence of aviation parks at Gatwick and Teesside; and
- loss of the opportunity for asset write down without impacting on Departmental Expenditure Limits, which would cease in April 2003 under Treasury rules.

3.11 The recommendations from the End-to-End review of logistics support were likely to have a significant effect on aircraft repair in the United Kingdom. MoD did not examine the impact of delaying the Red Dragon super-hangar because the review had only just started and the timing and outcome were uncertain.

3.12 DARA were authorised to enter into a formal contract with the winning consortium, consisting of Equion plc (a division of John Laing plc), Laing O'Rourke and Emcor Services Limited. The capital for the super-hangar was to be drawn from Barclays Bank using a special purpose financial vehicle. Work on site preparation commenced on 20 February and was followed in March 2003, with the signing of the Composite Agreement between MoD and the WDA, which committed MoD to the rationalisation of the site.

Part Two: In agreeing a purchase option to encourage MoD to approve the Red Dragon project, the Welsh Authorities knew that DARA St Athan might close after five years but thought this was unlikely to happen

3.13 At the same time as approving the business case for the acquisition of the lease for the St Athan site, the WDA Board also agreed to the WDA entering into the put option (paragraph 3.3). In June 2002, the WDA had initially agreed in principle with DARA to purchase the super-hangar for £15 million at year 15, if requested to do so. This would enable MoD to shorten its public/private finance arrangement for the super-hangar to 15 years, rather than the usual 25 years. In agreeing to this obligation, the WDA intended to show support for DARA and help make Defence Ministerial approval of the Red Dragon project "virtually certain". Helping DARA to secure Ministerial approval was a particularly important objective as the WDA became aware during 2002 that the Royal Air Force was considering alternative options for rationalising fast jet maintenance and creating depth repair hubs wherever possible. If they went ahead, these alternative plans would mean that DARA could be lost to Wales. The WDA believed that Ministerial approval of Red Dragon would irrevocably commit MoD to the new DARA facility and effectively kill off the alternative plans.

3.14 Despite the WDA's confidence that its support would help secure Ministerial approval, in July 2002, the WDA learnt that MoD had decided to delay its decision on approving the Red Dragon business case until October. The Welsh Authorities understood that the delay was due to MoD concern about its financial exposure on the project over a 15 year period and the need to retain flexibility to respond to changes in defence logistics. In response, the Welsh Authorities agreed in negotiation with MoD to accept an additional break clause at year five.

3.15 In August 2002, an agreement in principle was reached (subsequently concluded in August 2003) whereby if DARA vacated and MoD invoked the put option, the WDA would purchase a two-thirds' share of the super-hangar for £15 million. The WDA would also be obliged either to purchase the remaining one-third interest from MoD or to sell it on MoD's behalf, along with its own two-thirds' share, paying to MoD a fixed share of the market value or the proceeds of the sale. MoD could exercise the option at any time between years five and 15, but would receive a lower proportion of market value or sales proceeds the later it invoked the option. The WDA would acquire the lease of the super-hangar outright for £15 million at year 15 if MoD had not invoked the put option by that time.

3.16 MoD could continue to occupy the super-hangar under a new lease with the Welsh Authorities if it wished to do so. The Welsh Authorities concluded that the deal was relatively low risk because:

- the agreement valued the super-hangar at £22.5 million, which was in line with an independent valuation undertaken for the WDA of £25 million;
- the WDA would share in any benefits, with a 50 per cent share of any profits, should the super-hangar be sold for more than £22.5 million at year five (Assembly Government officials believed the value would almost certainly increase);
- the WDA believed that the level of MoD's expenditure, at around £77million compared with a much lower market value for the completed facility, meant that DARA would be unlikely to vacate the super-hangar at year five; and
- in the event that DARA did leave St Athan after five years, the WDA believed that it would be better placed than MoD to secure the economic benefits of the super-hangar; as part of the proposed aerospace park, if it had been successfully implemented by that point, or for other economic uses if not.

3.17 The Welsh Authorities recognised that the need for a five year break clause reflected a level of uncertainty about DARA's future, and that the ongoing uncertainty about DARA could have a negative impact on their aspirations for an aerospace park. The Welsh Authorities did not interpret the break point as implying that MoD had calculated that it could exit without financial loss, although this was the case. The Welsh Authorities sought assurances that MoD was committed to the continued presence of DARA at St Athan. Assembly Government officials' advice to the Assembly Economic Development Minister stated that "in negotiating, MoD was unequivocal in its support for DARA and that if the Red Dragon project was to proceed, then the Ministry would be setting up the organisation for success. Failure would not be contemplated." The Welsh Authorities took further assurance from subsequent Treasury approval of the five year put option. Assembly Government officials recorded that the Treasury was "adequately convinced that MoD will treat DARA business and DARA itself "strategically" and not "just as another five year contract"". The Treasury's formal approval was, nonetheless, on the basis that DARA's business at St Athan should be viable and offer value for money to MoD for at least the first few years of the project. Given the strength of the assurances, the Welsh Authorities did not believe it was necessary to re-evaluate their aspirations for the site because of the exit clause at five, rather than 15 years.

3.18 In January 2003, the WDA Board approved the final agreement reached between the WDA and MoD.
In February 2003, the Assembly Government wrote to the WDA approving the purchase of the lease of the St Athan site, reporting that Ministers would be prepared to consider further funding for the aerospace park as appropriate.

3.19 At the same time as approving the purchase of the lease for the St Athan site in January 2003, the WDA Board also approved the WDA working with a number of companies to develop a proposal to bring tri-service defence training to St Athan (the Defence Training Rationalisation Programme – see Chapter 6). At this stage, the WDA had not fully assessed the impact of this proposal on the aerospace park project, but were keen to pursue the potential job creation and economic development opportunities offered.

Chapter 4 – MoD closes DARA's fast jets business to make savings but disrupts the Welsh Authorities' aims for the St Athan site

4.1 The Red Dragon project and the End-to-End Review of logistics support were in effect pursued separately. As MoD brought its decision making on the two streams of work together, it decided to continue with the construction of the super-hangar for DARA's use, as appraisal work showed that Red Dragon would cover its costs in three to four years. Once MoD had decided in 2004 to transfer fast jet repair to main Royal Air Force operating bases, it completed the construction of the super-hangar and opted to use it for fast jet work in the interim.

4.2 This Chapter examines the rationale for MoD's decisions and the impact on the Welsh Authorities' aspirations for the site. It shows that MoD made the decision to close DARA's fast jet business because it could save in excess of an estimated £150 million per annum by concentrating depth repair at one of each aircraft fleet's main Royal Air Force operating bases and securing the closer involvement, on site, of the industry in the process. This action reduced DARA's workload by over 50 per cent and the approach of 'partnering' with original equipment manufacturers meant it would be unlikely to be chosen for a depth repair hub for fast jets again. MoD informed the Welsh Authorities in August 2004 that its decision on the location of fast jet repair had been taken and would lead to large scale cuts in the DARA workforce. In light of the uncertainty about the future use of the St Athan site, the Welsh Authorities decided not to submit a planning application for the aerospace park.

Part One: MoD closes DARA's fast jets business to achieve significant savings

Concurrently the End-to-End Review recommended consolidation of repair facilities for each fast jet fleet, and the deal for the super-hangar was signed

4.3 On 1 July 2003, the End-to-End Review report by an MoD team and its external consultants recommended radical transformation in the conduct of maintenance, repair and overhaul by the military, DARA and industry. It concluded that depth repair facilities should be concentrated and any processes that did not add value removed. In particular, it stated that optimal support would be achieved by creating a depth repair hub for each of the 17 aircraft fleets. The Review team did not calculate what savings could be achieved by concentrating all depth repair activity at DARA sites, but estimated that, by using main operating bases, the Royal Air Force would save in excess of £150 million on its annual logistics bill.

4.4 The potential implication of fully implementing the End-to-End Review was DARA's loss of fast jet repair. The Review recommended that all fast jet repair should be undertaken at Royal Air Force operating bases, subject to an investment appraisal, and that MoD should assess the viability of the Red Dragon project in the light of these findings. On 31 July 2003, MoD nevertheless reached financial close on the contract for the super-hangar. The result was a commitment of £85 million over 15 years, around £77 million of which related to the capital works.

MoD's re-evaluation of the super-hangar proposal found it would break-even if fast jet work moved from DARA after three to four years

4.5 MoD already knew that the costs to maintain aircraft repair capacity could be reduced because of the duplication of infrastructure, excess manpower and high levels of transportation. It was therefore inclined to accept the principal conclusion of the End-to-End Review that depth repair should be concentrated at hubs. But it did not know whether these depth hubs should be at RAF main operating bases or, in the case of fast jets, at DARA St Athan. It therefore carried out the investment appraisal work recommended by the End-to End Review in three phases:

- first, to assess whether continuing with the super-hangar was still justified in the light of the End-to-End recommendation;
- second, where the depth repair hub for the Harrier aircraft should be located (a decision on this needed to be taken quickly if the in-service date of the new GR9 variant was to be achieved); and
- third, where the other aircraft repair hubs, including for Tornado, should be situated.

4.6 The first phase of work to assess the viability of the super-hangar recognised that more than 50 per cent of DARA's fast jet business was based on the repair contract for the two Tornado fleets (GR4 bomber and F3 fighter). In October 2003 MoD carried out an assessment of the impact on the Red Dragon project if the location of depth repair of the Tornado bomber fleet, which was the largest single element of the St Athan workload, was moved to RAF Marham, its main operating base.

4.7 Management Accountancy Services (Army) undertook the assessment of the viability of the super-hangar for MoD. They took the cumulative savings calculation from the Red Dragon investment appraisal, and updated the workload projections[6] and refined the assumptions on the basis of the latest information. For example, these projections included a contract DARA had won in open competition for the major servicing programme of Hawk trainer jets. But they did not include any work beyond March 2009, as there were a number of legacy aircraft due to be retired on or around that date and it was uncertain if DARA would win work from competitive tendering. Management Accountancy Services (Army) concluded that DARA's annual turnover at St Athan would cover expenditure such that aircraft repair efficiencies would outweigh costs on the Red Dragon project within three to four years.

6 Equipment Support (Air) Throughput Study, September 2003.

4.8 MoD treated the lifetime expenditure of the lease on the super-hangar as sunk costs, because MoD believed it and the Welsh Authorities had to settle the balance of payments of £82.5 million regardless of whether the costs on the Red Dragon project had been covered by efficiencies. It did not, however, conduct work to determine if the obligations would have to be met in full at this stage of the contract, for example by taking legal advice on the likely success of any claim by the contractor, nor conduct sensitivity analysis on the level of break out cost incurred.

4.9 The implementation of the Red Dragon project therefore continued and, in November 2003, it was announced that a contract with EMCOR to provide full facilities services and management of the super-hangar, spanning 15 years, had been agreed. The company was also to supply estates and maintenance services in the construction of the new buildings.

MoD then decided to concentrate the maintenance of the Harrier jump jet fleet at its main RAF base, in order to protect the planned in-service date for the upgraded aircraft

4.10 Under the traditional approach to major upgrades for fast jets, MoD would have contracted with the original equipment manufacturer to undertake the work separately from the routine repair and maintenance conducted by DARA. Before the End-to-End Review started, the Harrier Integrated Project Team thought that carrying out both routine repair and mid-life upgrade work concurrently would be advantageous to MoD. Consequently it worked on proposals for RAF Cottesmore to undertake the major re-fit at the same time as routine repair and maintenance, which would increase the number of aircraft available to the frontline while reducing duplication of work, infrastructure requirements and ultimately cost. Its preferred strategy of concentrating the repair and upgrade at RAF Cottesmore was consistent with the conclusion of the End-to-End Review of logistics. The Business Case for the potential new contract for joint upgrade and maintenance indicated that some £44 million could be saved through the approach of 'partnering' with the original equipment manufacturers and collocation on the main operating base.

4.11 MoD needed to take an early decision on the location of Harrier depth repair because of the planned in-service date of the new GR9 variant. Any delay in the decision after 1 March 2004 was calculated to cost £0.8 million a month. In the second phase of their investment appraisal work, Management Accountancy Services (Army) compared the costs and benefits of the options for the site for the depth hub. This calculation encompassed the costs and savings of the changes related to personnel, such as redundancy and pensions, and infrastructure, including residential rent and construction of buildings. They calculated that the net present value of just under £6 million over 12 years favoured basing the depth repair hub at RAF Cottesmore as opposed to DARA St Athan.

4.12 In March 2004, Minister of State for the Armed Forces announced the decision to make RAF Cottesmore the Harrier depth repair hub. The final aircraft on contract was to be serviced by January 2005 and as a result there would be a gradual loss of around 200 jobs at DARA.

Repair of the Tornado bomber was also to be relocated to a main operating base, but minor maintenance of the VC10 tanker aircraft was transferred to DARA St Athan

4.13 In the third phase of the investment appraisal work, MoD looked at all the other aircraft types to decide the best location for depth hubs, including Tornado, the workload which was crucial to the future of DARA St Athan. In May 2004, Management Accountancy Services (Army) concluded that relocating the repair of the Tornado bomber to RAF Marham offered better value for money, when comparing the net present value of basing the depth repair hub at the main operating base with locating the hub at DARA St Athan. This calculation encompassed the same costs and savings as for the decision on the Harrier fleet. It produced a small difference, at around £10 million over 16 years, in favour of RAF Marham, but MoD was concerned as to whether it could afford the additional investment required under both options.

4.14 After further work on affordability, MoD announced in September 2004 that the depth repair of the Tornado bomber (GR4) aircraft was to be concentrated at RAF Marham, but the depth repair of the fighter variant (F3) would remain at DARA. More VC10 work would also be transferred from the Royal Air Force to DARA's fixed-wing business. This pronouncement to all intents and purposes ended the potential for DARA St Athan to win any new contracts for fast jet work as 'partnering' with original equipment manufacturers was the preferred approach to logistics support and hub locations were unlikely to change. The Minister confirmed that 500 jobs would go at Athan but about 350 jobs would be secured while the VC10 remained in service and the business could close in the longer term if DARA failed to win other contracts.

With only a short-term military order book the long-term prospects for DARA were poor

DARA had limited success with its plans to secure its future at St Athan

4.15 As the investment appraisal work proceeded, DARA undertook some exploratory work to assess the opportunities in civil maintenance repair and overhaul. DARA commissioned consultants to carry out the market analysis in April 2004, which showed that, although St Athan had facilities and a workforce with technical skills, it was a reasonable assumption that DARA would need to undergo changes to the work environment, potentially having to upgrade the runway to meet Civil Aviation Authority requirements, and retrain its staff because their skills were specialist military ones and not easily transferable.

4.16 The consultants felt DARA lacked credibility, experience and a competitive cost base and therefore it would need to attract industry partners to be viable. Hence DARA was not well positioned to enter the civil aircraft maintenance, depth repair and overhaul market; and without a core military workload, barriers to entry would be further exacerbated. There was also a risk from European Union legislation as, in order to be competitive, the rates charged would only cover the variable costs. DARA presented these findings to the full DARA Ministerial Advisory Board and it endorsed them, concluding that given the current status of the fixed-wing business at St Athan, conditions were not conducive for DARA to develop a strategy to enter the wider commercial market place for the maintenance, repair and overhaul of civil aircraft.

MoD concluded it no longer had a strategic need for all DARA business units

4.17 The Directorate of Management and Organisation sponsored an assessment of the implications of the evaluations of the location of Harrier and Tornado aircraft repair on DARA's future business by the Directorate of Management Consultancy Services in May 2004. The work formed part of the Strategic Review, undertaken to determine the future direction of both the Army Base Repair Organisation (ABRO) and DARA Trading Funds. The DARA viability assessment concluded all business units were in decline; terminally in fixed-wing where aircraft would be out-of-service by 2014 and DARA was still non-competitive against industry benchmarks. The DARA decline should therefore be managed in-house or the business transferred to industry to shape it to meet market requirements.

4.18 The Strategic Review of the DARA and ABRO Trading Funds reported in December 2004 and confirmed that there was no longer a tactical imperative for MoD to retain ownership of DARA. MoD therefore announced that it would engage external consultants by the end of January 2005, to test potential market interest in acquiring DARA business units. It stressed there were no preconceptions and that any final decisions would be taken on the basis of the best value for money for defence. The advisers were to concentrate on St Athan initially so as to provide advice as quickly as practicable on the potential options for the site.

4.19 In November, the Minister of State for the Armed Forces announced his decision that the VC10 tanker repair business unit would be taken to the market, subject to consultation, because it had remained viable and would be sustainable until 2014. He also announced that his preferred option to close the fast jet business at St Athan would be implemented by April 2007, two years earlier than originally planned and with the loss of up to 500 jobs. This timescale provided the best outcome for defence in terms of operational effectiveness and value for money.

4.20 The Armed Forces Minister also confirmed that MoD was working with the Welsh Assembly and the Welsh Office to explore alternative options for the use of the site after 2009. A strategic approach was agreed to determine the way forward.

Part Two: The Welsh Authorities' progress in developing plans for an aerospace park was disrupted by MoD decisions on DARA's work

The WDA made some progress in business development, including joint marketing and product development with DARA

4.21 The WDA began promoting the aerospace park concept through late 2002 and between January 2003 and June 2004, the WDA developed a marketing strategy and began publicising the brand "Aerospace Wales: St Athan" at international aviation industry events. The WDA recognised that this marketing, while generating interest and some business, was not likely to yield early results because the aerospace sector was in a difficult position globally following the events of September 11, 2001 and a slump in air travel following the outbreak of Severe Acute Respiratory Syndrome. The WDA wished to position the St Athan site to benefit from the anticipated recovery, however, and believed that the site had good long-term potential.

4.22 The WDA placed particular importance on joint working with DARA to develop synergies between DARA's activities and the proposed aerospace park. The WDA and DARA met monthly in a joint marketing forum to discuss shared opportunities. This discussion included proposals for a one-stop-shop product, with the WDA providing land and DARA providing skilled labour as part of a partnership with commercial aerospace companies. In 2003, the WDA worked with DARA to identify and negotiate with civil aerospace partners. The WDA's external consultants (paragraph 4.23) reported that DARA intended to enter the civil aviation market while developing its own civil aerospace credibility and accreditation through partnerships with industry. The WDA saw such partnerships between DARA and aerospace companies as an opportunity to kick-start the aerospace park.

The WDA did not submit its planning application for an aerospace park because of uncertainty; initially about the runway and subsequently MoD's use of parts of the site

4.23 The agreement between MoD and the WDA required the WDA to submit a planning application for the aerospace park, with a target application date of December 2003. The WDA commissioned an update of the original study by external consultants of likely demand (paragraph 2.23), taking into account the impact of the Severe Acute Respiratory Syndrome outbreak on the aviation industry, to inform a full development "Masterplan" for the site. The final report, presented to the WDA in December 2003, concluded that "subject to adequate aviation facilities being provided, the WDA proposals for St Athan should contribute to the needs of this growing industry and be sufficient to be able to create a self-sustaining aerospace cluster around St Athan."

4.24 The submission of a planning application, however, was substantially delayed while the WDA considered whether a runway extension would be required, and what options were feasible. The WDA found that there was little industry-wide agreement or guidance on runway length requirements for commercial aircraft and therefore appointed consultants to assess the safe landing and take-off lengths for different aircraft. The WDA believed that the delays to submitting the planning application were essential because any proposals to extend the runway would be controversial with the local community and the WDA would need to demonstrate before a public inquiry that it had fully considered all the options. The WDA completed its plan, showing the detailed configuration of an aerospace park based on the site, by late June 2004. However, in August 2004, the WDA became aware of the impending decision to end fast jet work at DARA, and decided not to submit its planning application, on the grounds that the uncertainty about the use of existing land and buildings on the site might undermine its case for planning consent.

The Welsh Authorities monitored the risk posed by the End-to-End Review but, prior to the decision to end Tornado work, continued to believe DARA's future at St Athan was secure

4.25 In July 2003, Assembly Government officials met with senior MoD officials to discuss the End-to-End Review. Assembly Government documents record that MoD was not willing to share a copy of the whole report, but did show extracts to senior Assembly Government officials. The Assembly Government recognised that this Review, if acted upon, represented a threat to the viability of DARA and its own aspirations for the aerospace park.

4.26 The Assembly Government sought further clarification on the potential impact of the End-to-End Review on DARA. In August 2003, Assembly Government officials met with MoD officials from the End-to End team. The note of the meeting reports that no decision had been taken, but in a worst case scenario up to 700 DARA St Athan jobs could be affected over a ten-year period. Key communications between the Assembly Government and MoD on DARA's future at St Athan subsequently took place at a Ministerial level. Following conversations between them, in September 2003 the Armed Forces Minister wrote to the First Minister saying: "I stand by the commitments made under the Red Dragon project. It is unlikely that we will embark on a course of action that ignored the substantial investment we are making there." In January 2004, the Armed Forces Minister wrote to the First Minister to explain that "whilst it should be possible to arrive at an outcome which delivers the results in the End-to-End report (including the retention of DARA as a competitive alternative) – significant rationalisation across all parts of the support area – including DARA – will be essential."

4.27 Following the March 2004 decision by MoD not to award the contract for Harrier jet repair to DARA, the Welsh Authorities recognised the risk that further cuts to DARA might arise as part of the End-to-End Review. However, they still believed that the extent of MoD's financial commitment meant that it was unlikely to completely undermine DARA. The Welsh Authorities did not fully recognise the impact of the End-to-End Review on DARA until the middle of August 2004, when the Welsh Authorities were given advance warning that the Armed Forces Minister was likely to announce in early September that the Tornado fast jet work would move from DARA to Royal Air Force main operating bases. The Welsh Authorities expressed concern at not being consulted until after the decision had apparently been made.

Chapter 5 – MoD and the Welsh Authorities worked together to help secure the future of the St Athan site

5.1 The decisions to transfer fast jet work from DARA, particularly the decision to end maintenance on Tornado jets, were particularly significant for the Welsh Authorities, whose plans and priorities had been based around retaining DARA at St Athan. The Welsh Authorities made a series of requests to MoD in order to minimise the impact of the loss of fast jet work.

5.2 This Chapter of the Report examines the joint efforts to identify and develop opportunities for the St Athan site. It shows MoD agreed to the formation of an inter-governmental steering group comprised of its own senior officials and those of DARA, the Assembly Government, WDA and the then Department of Trade and Industry, which was supported by the St Athan Working Group. MoD and the Welsh Authorities cooperated on marketing St Athan, attracting five companies to locate there and securing 45 new jobs, and the super-hangar and the site became part of the proposals for the delivery of Tri-service defence training.

Part One: MoD cooperated with the Welsh Authorities to help secure the future of the site

5.3 MoD recognised that the decision to move fast jet work was detrimental to the commercial viability and future of DARA St Athan. Consequently it strove to mitigate, where possible, the negative impact of its decision. It agreed to participate in a high-level inter-governmental steering group to develop a plan to make full use of the St Athan site. This steering group consisted of key stakeholders, including three senior officials from MoD and representatives from DARA and the Welsh Authorities. In recognition of the wider interests in the aerospace industry, MoD actively encouraged the then Department of Trade and Industry to become involved in the Steering Group.

5.4 Among its stated objectives were the:

- involvement of relevant Government Departments in the development of the aerospace park;
- setting of the direction for WDA and DARA/MoD joint working on development opportunities and site configuration; and
- encouragement of new/relevant MoD presence at St Athan.

MoD also contributed to number of joint working groups established to look at Development and Site Configuration at a more detailed level.

5.5 In October 2004, the Joint Working Group identified an opportunity for DARA to invest in a partnership with a private sector company, which it was believed might enable DARA to speed up entry into the civil aviation market. However, MoD told the Welsh Authorities that while it wished to see a successful future for DARA, this did not extend to making any additional investment in new partnerships. Indeed as early as 2001, the Chief of Defence Logistics informed the Ministerial Advisory Board that he was against entering into a joint venture with a private company on the basis that it would require permission from the Treasury which remained unconvinced about maintaining competitive pricing through partnering strategies.

5.6 Nevertheless all parties involved in this inter-governmental approach agree that it worked well. In particular, the Assembly Government was able to utilise existing MoD activities on site to support third parties in initial set-up and operation at St Athan. For example, MoD offered practical assistance to attract ATC Lasham, the aviation engineering company, to St Athan by agreeing to vacate another large modern hangar ('Twin Peaks') for 18 months. It was estimated that once a long-term lease was negotiated the ATC Lasham relocation could create 300 permanent jobs at the site. In order to create these jobs, the members of the Steering Group had to persuade quickly other parts of MoD and the prime contractor, BAE Systems, that vacating Twin Peaks was advantageous and removing VC10 aircraft repair work to the new super-hangar appropriate. The Welsh Authorities agreed to pay MoD £0.5 million towards the estimated £1.1 million costs associated with relocating its VC10 work from Twin Peaks to the super-hangar.

Part Two: The Welsh Authorities initially resisted and then responded appropriately to the closure of DARA's fast jet business

The Welsh Authorities initially sought to influence MoD into reversing its decision to end fast jet repair at St Athan

5.7 The Welsh Authorities' initial priority in acquiring the St Athan site had been to secure DARA and 2,500 jobs in Wales, and therefore its initial response to the advance warning of the decision on Tornado, was to try to influence MoD into reversing its decision. They argued that MoD had effectively reneged on its agreement and also argued that the decision did not take account of wider factors, in particular: the Assembly Government and UK Government strategies on aerospace sector,[7] and the Lyons review, which had called for more civil servants and public sector employment to be relocated away from the south east of England to other regions.

The Welsh Authorities cooperated with MoD through formal joint working arrangements

5.8 Following the Armed Forces Minster's announcement in September 2004 (paragraph 4.14), the Assembly Government publicly stated its belief that that the decision to remove fast jet work from DARA was "wrong". In order to minimise the impact of the loss of fast jet work, the Assembly Government and WDA made a series of requests to MoD to:

- transfer appropriate work of equivalent value to the St Athan site;
- hand ownership of the super-hangar over to the Assembly Government or WDA for a token sum;
- contribute towards the costs of conversion training for DARA staff, which would enable them to work on civil aircraft; and
- participate in a high-level inter-governmental steering group to develop a plan to make full use of the St Athan site.

5.9 MoD did not accede to these first three requests. However, it did agree that senior officials would attend an inter-governmental steering group and as part of the joint working, MoD, DARA and the Assembly Government established a St Athan Working Group (paragraph 5.3). This reflected the governance arrangements that had been set out in the agreement between MoD and the WDA, but which had not previously been fully implemented.

5.10 The St Athan Working group created a single integrated team physically co-located on the St Athan site in a dedicated Marketing Suite. The Working Group agreed a common development and sales strategy which was supported with additional revenue funding provided by DARA, MoD and the Assembly Government. The joint team pursued potential opportunities from within MoD for St Athan as well as external commercial opportunities. This led to several areas of joint-working, with MoD personnel actively identifying potential enquiries and assisting in negotiations with third parties on behalf of the Assembly Government and vice-versa.

5.11 Immediately after the September 2004 announcement on fast jets, the Welsh Authorities sought to work with MoD to retain DARA as a viable entity at St Athan; they identified commercial business opportunities for DARA, and possible partnering arrangements. Later, the WDA and the Assembly Government worked with MoD to test market interest in acquiring DARA.

7 The Department for Transport had identified St Athan as a centre for aerospace excellence in its strategy for the future of air travel. The UK Government and Welsh Authorities had been working together on strategies for aviation, with the Welsh strategy placing particular emphasis on the strategic importance of St Athan and DARA's ongoing presence as part of the South Wales cluster.

The Welsh Authorities sought to attract aerospace companies to the site, but were cautious about investing in new hangar space

5.12 The Welsh Authorities, working with MoD, sought to attract aerospace companies to St Athan in order to retain some of the DARA workforce and skills at the site. This required a short-term shift in focus from demolition of old buildings and long term redevelopment of the site to attracting companies to occupy existing buildings on the site. To attract companies, the Welsh Authorities, working with MoD:

- promoted the St Athan site at international aerospace events;
- promoted the St Athan site overseas, as part of a strategy to attract foreign direct investment to the site;
- made direct contact with target companies; and
- promoted the St Athan site to aerospace companies bidding for defence contracts.

5.13 Initially, the Welsh Authorities believed they could use the super-hangar to accommodate aerospace companies at the St Athan site. In October 2004, the Welsh Authorities understood that they had agreed with MoD that DARA would not move into the super-hangar, which the Welsh Authorities would take a lead in marketing to aerospace companies. Nevertheless, in December 2004, MoD decided that DARA would move in to the super-hangar, making the facility unavailable to interested companies, but that DARA would be prepared to consider moving VC10 work in order to make the Twin Peaks hangar available to potential tenants. Once ATC Lasham decided to take up residence in Twin Peaks in October 2005 (paragraph 5.6) there was no hangar space suitable for large aircraft available at the St Athan site.

5.14 Despite both large hangars being occupied by the end of 2005, the Welsh Authorities chose not to construct new hangar space, primarily because of concern about over-capacity. The Welsh Authorities believed it would not be an appropriate use of public money to invest in new hangar space when there was a possibility that MoD would make one or both of the existing large hangars available to commercial tenants by the middle of 2007, once DARA's fast jet work in the super-hangar ended and ATC Lasham's lease on the Twin Peaks hangar expired. It would have taken 15 to 18 months to get planning consent and build new hangars, so any new facilities would have become available for tenants around the same time as MoD hangars became vacant, creating a significant risk of over-capacity. The Welsh Authorities were prepared to construct bespoke hangars or upgrade the older hangars, subject to satisfying European Union state aid rules requiring the full costs of bespoke construction or upgrade to be passed on to the tenant. The Welsh Authorities also accommodated some small aerospace companies in the hangars and buildings vacated by DARA.

The Welsh Authorities continued to promote St Athan as a site for defence training

5.15 During 2005, the WDA became increasingly involved in promoting St Athan as the site for the Defence Training Review Rationalisation Programme (Part 6). Despite being shortlisted, the original bid to bring the tri-service defence training to St Athan (paragraph 3.19) had been withdrawn because one of the principal companies in the bid pulled out in early 2004. In July 2004, the WDA wrote to MoD team working on the Defence Training Rationalisation Programme inviting them to draw attention to St Athan as a potential location, and the three remaining bidders all visited the St Athan site. In February 2005, the Metrix Consortium decided to base its bid for the Defence Training Rationalisation programme at the St Athan site. From May 2005 onwards, the WDA worked closely with the Metrix team to promote St Athan and demonstrate that the key stakeholders, including local government and education agencies, could deliver the necessary infrastructure and support. However, one of the consequences of the Welsh Authorities' efforts to attract defence training to St Athan was to add to uncertainty about the future configuration of the site, and the availability of the super-hangar for aerospace companies once DARA left.

Chapter 6 – MoD and the Welsh Authorities have not realised the full intended benefits of the Red Dragon project but are working to achieve long-term viability for the St Athan site

6.1 The super-hangar was completed to approved time and budget in December 2004 and in the following month the workforce began the migration into its new repair facility. MoD has assessed that the costs of investing in Red Dragon would be covered by the efficiency savings that result.

6.2 This Chapter of the Report examines what benefits the super-hangar has delivered to date and gives an overview of the wider benefits to MoD of relocating the fast jets business and the impact of the Defence Training Review Rationalisation Programme on the St Athan site. It shows, against project expenditure of £134 million and additional costs of £36 million, MoD has achieved some efficiency savings from the Red Dragon project although these are unlikely to exceed around £57 million and the Welsh Authorities have had rental income of less than £1 million. But, by transferring fast jet repair work to main Royal Air Force operating bases, MoD has reduced its logistics support costs by some £1.4 billion over six years. While the Welsh Authorities did not secure 1,900 DARA jobs as intended, on the basis of estimates from the Metrix Consortium, the Welsh Authorities and MoD expect the Defence Training Academy to create up to 4,000 permanent jobs on site and in the wider economy and an additional 1,500 temporary construction jobs.

6.3 The net cost to the taxpayer as a result of the Red Dragon project is in the region of £113 million when judged against its original purpose. Both parties, however, have assets that have significant market value. The super-hangar could generate rental income of up to £60 million for MoD between 2005 and 2018 (the period covered by the put option under the Composite Agreement with the Welsh Authorities – see paragraphs 3.13-3.17). The Welsh Authorities have acquired land and buildings with an estimated market value of around £44 million if the site was developed for business and residential purposes. The super-hangar and a substantial proportion of the St Athan site will be used for the Defence Training Academy however, and the value of the assets will be realised through their value in use rather than sale or lease to third parties.

Part One: The efficiency savings MoD derived from the Red Dragon project are less than originally intended, but it has significantly reduced the costs of fast jet support, and looks set to benefit from use of the super-hangar longer term

6.4 MoD justified its decision to continue with the Red Dragon project, once it became apparent that relocating fast jet repair to Royal Air Force main bases could be the preferred solution, on the grounds that efficiency savings at DARA before and during the transition would cover the cost. It has not conducted a comprehensive post project evaluation, pending a decision on the future of the Defence Training Academy.

6.5 MoD provided a payback calculation to the House of Commons Defence Committee in November 2005 which sought to demonstrate that discounted efficiency savings have outweighed the discounted costs on the Red Dragon project. We reviewed the supporting evidence for the calculation and were unable to validate all of the stated efficiencies and costs. In particular:

- £6.4 million savings result from reduced payments by DARA to MoD, without recognising the consequent reduction in income to other parts of MoD;
- declining demand for DARA's services at St Athan, as a result of reductions in RAF fast jet numbers and extended maintenance intervals, reduced the need for retained facilities. DARA estimated the impact of the volume of repair on its site costs and this baseline should have been used in calculating the efficiencies as a result of the Red Dragon project. Our analysis shows the reduction in site operating costs is overstated by around £10.5 million;
- DARA also estimated declining demand for aircraft repair in 2003-04 would mean headcount would reduce by 100 and that none of the efficiency programmes would contribute to these savings. Our analysis of workforce data shows this number of personnel did leave for reasons other than redundancy and £7.5 million savings should not be attributed to the Red Dragon project; and
- MoD did not include the correct liability of £42.1 million on the super-hangar contract because it based the calculation on the 'option' allowing MoD to break the contract after five years and require the Welsh Authorities to pay a minimum of £15 million to acquire the facility. MoD is now unlikely to invoke the option as it plans to use the super-hangar for defence training.

6.6 Having adjusted for these factors we estimate that MoD's net expenditure on Red Dragon will total some £57 million **(see Figure 8)**. But, to set against these costs, MoD has a valuable asset for rental; a professional valuation of the super-hangar in December 2005 gave a market value of between £48 million and £60 million, dependent on the nature of the usage until 2018 and the number of tenants on the whole St Athan site.

6.7 The picture is further complicated as some of the benefits to MoD included in the payback calculation arise from expenditure by the Welsh Authorities and so are not savings to the taxpayer as a whole. Most notably £8 million inter-governmental transfer for the lease of the St Athan site and the reduced costs for operating the airfield (contribution of £3.2 million).

6.8 As a result we have found that MoD cannot provide conclusive evidence that there is a net saving for the taxpayer from the project against its original planned purpose, although further benefits will accrue if its use for future Defence training is confirmed. Our detailed commentary on the entries in the payback calculation is at Appendix 2.

MoD has realised significant savings with the closure of the fast jets business at DARA

6.9 The estimated £263 million of savings in MoD's Red Dragon Investment Appraisal have not been achieved due to the decision to move fast jet repair forward to main Royal Air Force operating bases which led to substantially greater savings. The consolidation of repair of Tornado bomber aircraft fleet at RAF Marham saved MoD £1.3 billion between 2001-02 and 2006-07 and the Department predicts further future savings. In the same period savings on the Harrier jump jet amounted to £109 million and MoD spent £18 million on infrastructure at the two main Royal Air Force operating bases.[8] The savings on fast jet repair were achieved by rationalising maintenance facilities, using 'lean' techniques to develop pulse line production, combining repair and upgrade work on the same pulse line and introducing incentivised contracts with the original aircraft manufacturer, some of which were recommendations from the End-to-End Logistics Review. There has not been a reduction in output as MoD maintained the same level of flying hours during the period of transformation, while reducing the cost per flying hours for both fleets. It is not possible to determine what proportion of the wider efficiency savings achieved by MoD could have also been realised if fast jet repair had been located at a depth hub at DARA St Athan.

8 C&AG's Report, *Transforming logistics support to fast jets*, HC 825, Session 2006-07.

6.10 Following the decisions on fast jet repair a Trades Union lodged a claim against MoD, BAE Systems and Rolls-Royce plc in the Cardiff Employment Tribunal. The union claimed protective awards on behalf of DARA St Athan employees because it alleged that employment legislation[9] should have been applied to the transfer of fast jet maintenance work to RAF Cottesmore and RAF Marham. The parties sought to negotiate a settlement outside of the legal process. Full and final settlement, in the region of £5 million, was achieved in mid 2008.

6.11 On 22 May 2007, MoD announced its intention to achieve even greater efficiency in maintenance, repair, overhaul and upgrade by merging the Army Base Repair Organisation, DARA and certain other defence support facilities. This new Defence Support Group was formed on 1 April 2008 and, where appropriate, will look to operate in partnership with MoD and the original equipment manufacturers. The future size and shape of the group has yet to be decided, but there will be a continued presence at St Athan until at least the out of service date of the VC10 fleet.

MoD looks set to get benefit from the super-hangar with the creation of the Defence Training Academy at St Athan, although this is yet to be quantified

6.12 Three single-Service Organisations currently provide defence training at about 30 locations. In 2001, MoD reported on its review of individual training and education and set up a project team to take forward the recommendation for the rationalisation of the delivery of some types of Phase 2 and Phase 3 specialist training.[10]

6.13 The creation of a new training facility at St Athan should enable MoD to gain some further benefit from the super-hangar. MoD intends that the use of the super-hangar for military training will be reflected in a reduction in the payments to the contractor for the provision of the Defence Training Academy. The Defence Training Review Rationalisation Programme comprises six specialist training schemes that have been split up into two packages: package one for engineering and communications; and package two for logistics, security and policing and administration. The Programme team engaged with industry to confirm the suitability of either a 25-year PFI or Public Private Partnership to modernise both training delivery and facilities and then developed the procurement strategy with MoD's Private Finance Unit and the Treasury **(Figure 9 overleaf)**.

8 Analysis of the costs and benefits for MoD of the Red Dragon project

	Estimated costs £m	Estimated benefits £m
Construction, including fixtures and fittings, and management of the super-hangar facility	107	
Costs for moving into the hangar	1.2	
Costs of relocating other MoD organisations	4.3	
Cost of relocating VC10 repair business to vacate hangar for rental by ATC Lasham	0.6	
Redundancy costs for those surplus to requirements for the super-hangar[1]	12.5	
Receipt from Welsh Authorities for lease of the St Athan site		8
Efficiencies from the Red Dragon project[2]		around 61
MoD net expenditure	around 57	
Market value of asset in use (rental between 2005 and 2018)	between 48-60	

Source: National Audit Office analysis of MoD papers

NOTES

1 These redundancy costs do not include the payments to staff made redundant as a result of the decision to close DARA St Athan's fast jet business which should be seen against the overall savings from moving repair work to RAF bases.

2 This figure includes cash savings of £4.2 million on rent and airfield operating costs but which were paid by the Welsh Authorities.

9 Transfer of Undertakings (Protection of Employment) Regulations 1981/2006 (TUPE Regulations).

10 Phase One training gives recruits basic military skills; Phase Two equips them to carry out specific roles within the Armed Forces and Phase Three training is more specialist or provides management training for officers and senior Non Commissioned Officers.

9 Key dates in the Defence Training Review Rationalisation Programme

Event	Date
Preliminary Information Memorandum to prospective tenders seeking to pre-qualify to negotiate for the Public Private Partnership issued	22 November 2002
Approval for the release of Invitations to Negotiate to short-listed bidders given	16 November 2004
Bids for Package 1 – aeronautical engineering, electro-mechanical engineering, communications and Information Systems – received	17 October 2005
Bids for Package 2 – logistics; police, guarding and personnel administration; security, languages, intelligence and photography – received	14 November 2005
Evaluation of Package 1 and 2 Bids completed	June 2006
Recommendation for both Packages made	November 2006
Preferred bidder announced for Package 1 and potential preferred bidder for Package 2	January 2007
Risk reduction contract for Package 1 let with the Metrix Consortium. Minister announces that Package 1 can proceed, but defers decision on Package 2	October 2007
Ministerial announcement of removal of preferred bidder status from the Metrix Consortium for Package 2 because they could not provide an acceptable and affordable solution	January 2008
MoD plan to secure initial approval and funding to take forward options such as improving the training and facilities at existing Colleges delivering Package 2 courses	Summer 2008
Planned evaluation of revised proposal for Package 1	Spring 2009
Expected date for financial close on Package 1 and anticipated date for start of construction at St Athan	2010
Anticipated completion of construction and commencement of training delivery	2013

Source: National Audit Office

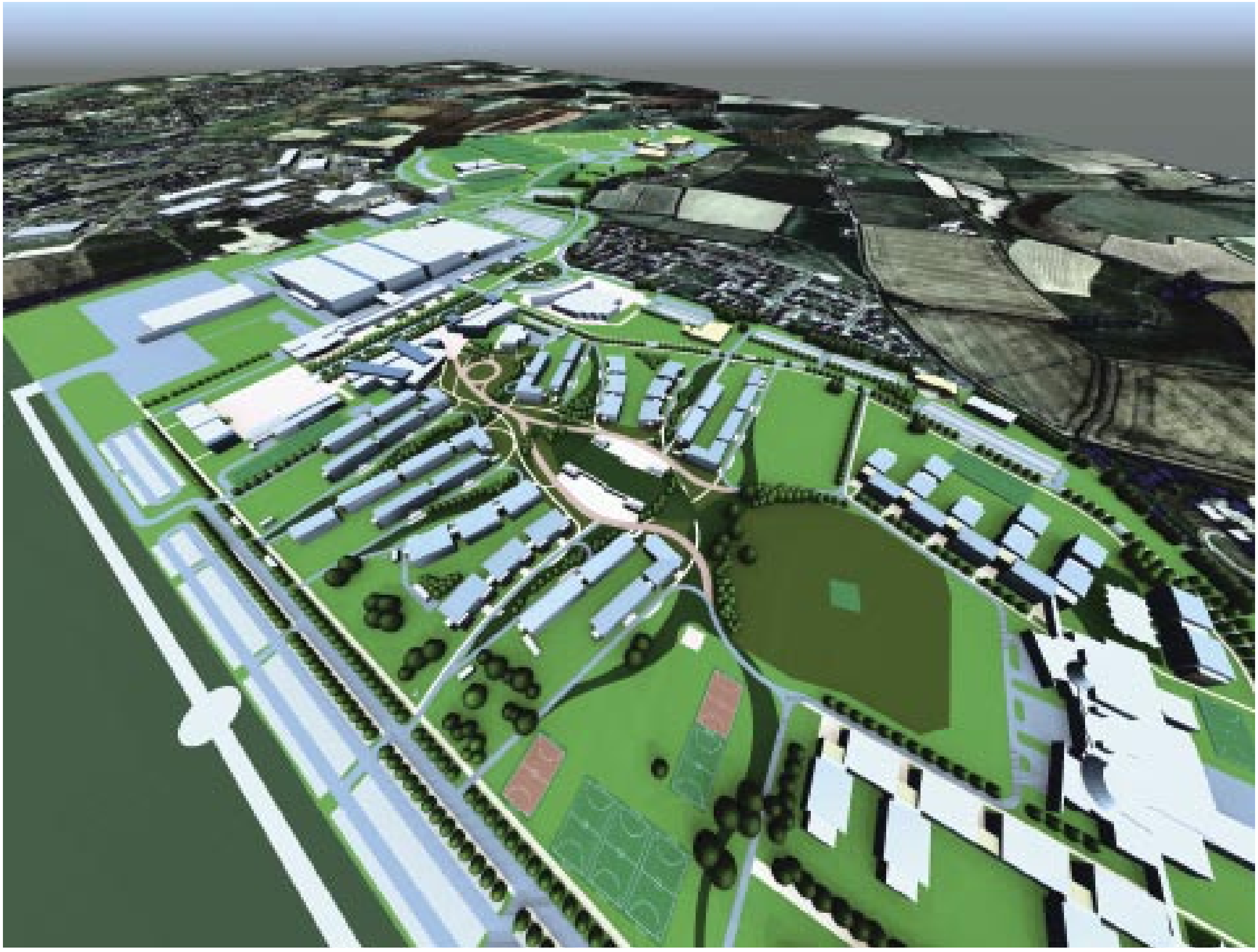
6.14 MoD's evaluation process separately identified the Metrix Consortium as a clear winner for both Packages. There was an affordability gap on the second package and MoD attempted to bridge this gap through a Whole Programme Solution. There was not enough in the way of efficiencies to take this combined approach forward and MoD focused its efforts on alternative approaches for Package 2. MoD believed that it would be able to proceed to the second stage of approval for the project by July 2007.

6.15 As yet MoD has not submitted the business case for Package 1 because in March 2008 Metrix presented an outline proposal showing significant cost growth. To address this affordability issue, MoD started a number of workstreams to drive down costs, the results of which were fed into a revised proposal. MoD is in the process of final clarification on the proposal, with a view to evaluating it in spring 2009 and financial close in 2010, after which construction will begin. We have not examined MoD's Defence Training Review Rationalisation Programme decisions, including the announcement of the Metrix Consortium as preferred bidder.

6.16 Package 1 training will make use of the super-hangar but further significant investment in simulators and e-learning technology, as well as a large new facility, single living accommodation and amenities for recreation is required **(Figure 10)**. Consequently, there will be a four to five year transition period following contract signature. Existing training centres will continue to function until at least 2011 and it is anticipated that the new training package for engineering and communications will begin in 2013.

6.17 MoD expects, under the Metrix consortium's plans, to utilise fully the super-hangar at St Athan. The super-hangar's existing combination of hangar, workshop and office space provides the opportunity to combine technical training in the classroom with hands-on demonstrations and practice on aircraft and vehicles, and their subcomponents, under one roof. The balance of classroom and workshop space can be altered relatively easily, for example, by extending the existing mezzanine floor that housed DARA's office space, to form additional classroom space. MoD has not conducted a separate financial evaluation of the benefits of re-using the super-hangar as part of the new Training Academy as this forms part of Metrix's overall bid.

10 Artist's impression of the Defence Training Academy superimposed on the St Athan site



Source: Metrix Consortium

Part Two: The Defence Training Academy and plans for an aerospace park offer potential economic benefits to Wales

The Welsh Authorities promoted St Athan as a site for defence training

6.18 By March 2008, the Welsh Authorities had spent £27.5 million on the St Athan project, of which £19.8 million was to acquire and improve assets. In addition the Assembly Government spent around £7 million on refurbishing the runway in December 2008. There are ongoing running costs of around £0.7 million per year for facilities management and, from 2007-08, another £0.8 million for the airfield. These ongoing costs are partly offset by rental income of around £0.6 million a year from MoD, which leases property at the site. Although the benefits of this expenditure in terms of jobs and economic development have, to date, been limited, the Welsh Authorities had always intended that the benefits of the site would be realised over a 15 year period, so it is too early to fully evaluate the impact of the investment. The original intention of securing 2,500 DARA jobs has clearly not been realised, although around 350 DARA staff remain on site, including head office staff and those working on the repair of VC10 aircraft.

6.19 To date, five companies have set up at the site. The largest of these, ATC Lasham, left in April 2007 **(Figure 11)** and another intends to leave around March 2009. Around 75 jobs have been created over the period, 30 of which left along with ATC Lasham and a further 15 will leave when the tenant vacates in 2009. The Assembly Government expects that a recently arrived tenant will create up to 60 jobs over the next three years. Despite the limited progress to date, the Assembly Government expects to realise economic benefits from the Defence Training Academy and an aerospace business park at the site.

11 ATC Lasham leaves the St Athan site after 18 months

The Welsh Authorities and MoD had intended that ATC Lasham would stay at the St Athan site in the longer term, beyond the initial 18 month lease (paragraph 5.6). The Welsh Authorities initially hoped that ATC Lasham would be offered a long-term lease in Twin Peaks or the super-hangar, once MoD had greater certainty about their future use. However, with ongoing uncertainty about these hangars, the WDA offered to upgrade one of the existing hangars to rent to ATC Lasham. Because state aid rules obliged the WDA to recover the costs of upgrading the hangar (paragraph 5.14), it would need to charge around £6 per square foot – almost double the rent ATC Lasham paid for occupying Twin Peaks. ATC Lasham was not prepared to pay this level of rent, and with no alternative hangar space available, chose to leave when its lease ran out in April 2007.

Source: Wales Audit Office

There are potentially significant economic benefits for Wales as a consequence of bringing the Defence Training Academy to St Athan

6.20 We have not examined in detail the economic impact of the defence training centre at St Athan. Based on figures provided by the Metrix consortium, the Assembly Government expects that the Academy will create 2,500 jobs on site, with a further 750 to 1,500 additional jobs in the wider economy and up to 1,500 construction jobs. Many of the on site jobs will not be new; around 1,750 of its staff may transfer from existing MoD training sites.

Potential benefits and risks remain in respect of plans for an aerospace park

6.21 Alongside the training academy, the Assembly Government is continuing to pursue its plans for an aerospace park as part of a wider strategy for the aerospace sector in Wales. The Assembly Government estimates that around two-thirds of the land that it owns at the St Athan site will be used for defence training, although the precise site configuration is not yet certain. The Assembly Government is continuing to seek to acquire additional land around the site to provide infrastructure for the aerospace park and defence training.

6.22 The Assembly Government calculates that the aerospace park could create up to 2,000 jobs within the smaller area of land that is available now that the Academy is likely to occupy most of the site. However, significant risks and uncertainties remain in respect of the aspirations for an aerospace park **(Figure 12)**. Some of these risks remain outstanding from the original risk assessment presented to the WDA Board in January 2003 (Figure 6). Because it has waited until there is more certainty at the site before investing in new facilities, the Assembly Government has had to keep under review its development masterplan for the aerospace park at St Athan, and has produced around ten different iterations of the masterplan and many more sub-plans showing different options for the site configuration and aerospace park. Going forwards, the Assembly Government recognises that it will need to address the outstanding risks as it develops firm plans for the site. In particular, the Assembly Government will need to revisit its options appraisal, based on more up-to-date information about the site configuration, costs and likely benefits. Officials are confident that an aerospace park is viable and will deliver substantial benefits for the local economy. However, they have the option of selling the land for alternative purposes if an aerospace park proves not to be viable, in which case its valuation of around £44 million indicates that the Assembly Government would recover its costs if sufficient land can be sold for development.

12 Key risks in future aerospace development

Demand	There is evidence of commercial interest in the St Athan site: in June 2008 there were four companies on site and a further ten live enquiries. The Assembly Government believes the slow progress in attracting companies to the site has been primarily due to uncertainty over the availability of existing hangars and the configuration of the site. The Assembly Government intends that the aerospace park will, in line with its strategy for the Welsh aerospace sector, target niche and emerging aerospace sectors, in order to reduce dependency on the manufacturing, repair and overhaul sector, where prospects for growth are less certain due to cost pressures and competition from developing countries. The Assembly Government is currently pursuing a marketing strategy, identifying target sectors, and is approaching specific companies in each sector. Following this approach, 35 companies visited the St Athan site.
Hangar space	There is a risk that the costs of constructing new hangars or upgrading existing hangar space will be prohibitive. The Assembly Government believes that it can provide a mix of hangar space at competitive local market rates to suit different sectors of the aerospace market; upgrading existing facilities for smaller companies or those requiring low price facilities, and providing new hangar space at higher rents to market to larger companies, and those operating in high value sectors.
Airfield costs	The current joint financial arrangements for running the airfield ended in April 2008. The Assembly Government has been negotiating with MoD on a new airfield management agreement for the past two years but the details are yet to be finalised. The Assembly Government has been contributing to the running costs of the airfield, even though there has not been any significant use by aerospace companies. Going forwards, the Assembly Government will need certainty over its contribution to the airfield costs in order to fully assess the viability of the aerospace park, and to offer long term landing rights to potential tenants.
Regulatory costs	The airfield currently operates under military regulations. However, if there is no military use of the runway in the future, may necessitate a shift to a different regulatory regime. The Assembly Government has identified two options in such a scenario – continuing as an unlicensed airfield or upgrading the airfield to meet Civil Aviation Authority requirements. The latter would involve capital costs to upgrade but the Assembly Government calculates that there would be a reduction in running costs.
Runway extension	The required length of the runway has been a source of ongoing uncertainty. Based on studies by consultants, the Assembly Government has spent around £7 million refurbishing the runway to meet Civil Aviation Authority standards. The Assembly Government believes that this will enable it to attract a sufficiently broad range of aircraft.

Source: Wales Audit Office

Part Three: There has been a net cost to the public purse as a result of the Red Dragon project but government owns assets which could provide significant value in use in the future

6.23 There has been a net cost to the taxpayer as a result of the construction of the super-hangar and the development of the St Athan site when judged against the original purpose of the Red Dragon project **(Figure 13)**. MoD and the Welsh Authorities hold valuable assets but at a maximum market value in use of £104 million (up to £60 million in rental income for the super-hangar and £44 million for the St Athan site and additional land) their estimated value is lower than the likely net cost of the project.

6.24 The existing Composite Agreement between MoD and the Welsh Authorities states that the Welsh Authorities will acquire the lease of the super-hangar on paying £15 million in 2018. As MoD plans to continue to use the super-hangar beyond 2018 for defence training, however, MoD and the Welsh Authorities are currently discussing the implications for ownership of the super-hangar.

6.25 Going forwards, the taxpayer may derive a net benefit from the expenditure if MoD uses the super-hangar for ten or more years for the Defence Training Academy, and the Assembly Government makes substantial surpluses from developing other parts of the site for an aerospace business park or for other economic uses. In any case, the Welsh Authorities have invested in the site to bring economic benefits to South Wales, rather than to secure a commercial return on their expenditure. Value for money from the Red Dragon project ultimately should be assessed on the long-term economic benefits arising from the St Athan site and MoD's ability to put the super-hangar to use in future.

13 Summary of expenditure on, and savings and income from, the Red Dragon Project[1]

	Cost of original plans £m	Estimated additional cost £m
Ministry of Defence		
Construction, including fixtures and fittings, and management of the super-hangar	107	
Costs for moving into the hangar	1.2	
Costs of relocating other MoD organisations	4.3	
Costs of relocating the VC10 repair business to vacate hangar for rental by ATC Lasham		0.6
Decommissioning costs		1.5
Redundancy costs as a result of the closure of DARA St Athan		33.5
The Welsh Authorities		
Spending on runway maintenance and remediation/development of the site	3.3	
Runway refurbishment in 2008	7	
Other land acquisitions around St Athan (including fees)	5.1	
Master-planning and related legal costs	3.4	
Facilities management, demolitions and miscellaneous	3.0	
Contribution to costs of relocating the VC10 repair business		0.5
	134.3	**36.1**
Estimated MoD efficiencies at DARA St Athan	Around (57)[2]	
Rental income to the Welsh Authorities from third parties	(0.6)	
Total cost to the public purse	**Around 113**[3]	

Source: National Audit Office and Wales Audit Office analysis of government data

NOTES

1 These costs/(savings) are not discounted to reflect the value of cash in different financial years. It is not possible to calculate the net present value of all these figures because the timing of some payments is still uncertain. Overall the effect will be to decrease the gap between the total cost to the public purse and the receipts.

2 The total excludes the inter-governmental transfer of £8 million from the WDA to MoD for the purchase of the main site and £4.2 million for the airfield assets and costs, and also excludes lease payments from MoD to the Welsh Authorities.

3 The totals also exclude any future inter-governmental transfers, including the £15 million payment from the Welsh Authorities to MoD to acquire the super-hangar, due at 2018 under the terms of the existing Composite Agreement, or future lease payments.

Appendix 1 – Methods

1 This Appendix sets out the scope of our examination of the investment of public funds in the Red Dragon Project and the methods we used in the course of our audit. While the audit work was planned jointly, the fieldwork was conducted separately: the National Audit Office undertook the work at the Ministry of Defence and the Wales Audit Office performed the work with the Welsh Authorities. We then brought our findings and conclusions together to produce a joint report.

Scope

2 We focused our work on the following main issues:

- Whether MoD and WDA started out by developing a shared purpose for the St Athan site;
- Whether the initial MoD/WDA investment in the St Athan site was soundly based given the state of knowledge at the time;
- Whether plans for the site had been developed sensibly since MoD decided to close the fast-jet business at DARA; and
- Whether the super-hangar has delivered benefit to date and will in the future.

3 Our study covered all MoD stakeholder organisations – the Defence Logistics Organisation and its Equipment Support (Air) arm (now all part of Defence Equipment and Support) and the Defence Aviation Repair Agency, a wholly owned subsidiary of the Defence Logistics Organisation – and the Welsh Authorities – the then Welsh Development Agency and the Welsh Assembly Government.

Methods

Meetings and interviews

4 During the fieldwork for this study we carried out semi-structured interviews, consulting key individuals within MoD and the Welsh Authorities involved in the planning, appraisal and delivery of the Red Dragon project (Figure 14). We sought to establish the timeline of events and the key factors affecting decision making at each point in time. We also discussed the issues pertinent to the re-development of the St Athan site.

Document Review

5 We undertook a review of the documentation of MoD and the Welsh Authorities. This included planning papers, strategies, internal reviews, correspondence, minutes of meetings of the Boards and their related committees and external reports. We used these to confirm the timeline of events and the perceptions of the stakeholders in the Red Dragon Project.

Data Validation

6 We obtained a wide range of financial and non-financial data from MoD and the Welsh Authorities on the cost and benefits of the Red Dragon project. MoD compiled data for the Business Case, Investment Appraisal and the submission to the House of Commons Defence Committee on the payback on the Red Dragon project. Our validations confirmed the source of the data and we considered whether the forecasts and assumptions were reasonable.

Visits to the DARA St Athan site

7 The audit teams conducted a joint visit to the St Athan site to meet with the Chief Executive of the Defence Aviation Repair Agency and key members of his management team. We also toured the super-hangar to observe the facility and the nature of the work undertaken.

14 Key individuals in each of the organisations

Ministry of Defence

- Senior Economic Adviser
- Defence Training Rationalisation Review Integrated Project Team
- Red Dragon Project Director

Defence Logistics Organisation

- Red Dragon Senior Responsible Officer
- Director General Equipment Support (Air)

Defence Aviation Repair Agency

- Chief Executive
- Red Dragon Construction Project Director

The Welsh Authorities

Welsh Development Agency/Assembly Government

- Director, Integrated Delivery
- Manager, Integrated Delivery

Source: National Audit Office and Wales Audit Office

Appendix 2 – MoD's payback calculation for the Red Dragon project

Savings declared to April 2007

	Outturn values (£m)	NAO Comment
Sale of the head lease on the St Athan site	(8)	Two inter-governmental transfers from the WDA (March and August 2003).
Reduced site operating costs – including operating lease payments	(38.3)	DARA's original landlord was MoD and reduced payments for DARA of over £3 million in 2002-03 for rent also mean reduced income for MoD which is not reflected in the calculation. In 2003-04, in preparation for the sale of the head lease to the Welsh Authorities, MoD made an adjustment to its accounts to reflect the market price of the St Athan site – a reduction in value of £47 million. Rent is tied to the value of the site and so DARA paid £3.2 million less in rent in 2003-04. This saving is also offset by reduction in MoD income and there would be a cost to MoD in its accounts on the revaluation of the site itself. Declining demand reduces the need for retained facilities and baseline for calculating efficiencies did not take this factor into account. Savings are overstated by around £10.5 million. From April 2004, DARA became the tenant of the Welsh Authorities and DARA claimed considerable savings from significantly reduced rents under the terms of the head lease but the size of the premium to MoD on this lease had been adjusted to reflect this reduction. DARA pays £0.6 million annually for the use of the Twin Peaks hangar and other existing buildings. The Airfield Management Agreement reduced MoD's liability for runway operating costs, but £3.2 million will have been paid by the Welsh Authorities.[1]
Reduced Corporate operating costs	(21.1)	All DARA business units are managed from St Athan and there was wider restructuring of DARA at the same time. MoD has only taken a proportion of DARA's total corporate cost savings for this calculation but MoD does not have detailed information to prove its estimated percentages are realistic. Savings could also be the result of declining demand and other pre-existing improvement initiatives.
Reduced Manpower costs (redundancies and natural wastage)	(25.7)	There was a significant reduction in the DARA workforce and our analysis shows that £7.5 million savings are not directly attributable to the construction of the super-hangar and the efficiencies it would provide, as opposed to natural wastage and redundancies arising from declining demand.
Total	**(93.1)**	**Efficiency savings unlikely to exceed £69 million.**

Costs related to St Athan site redevelopment and construction of the super-hangar to December 2009

	Outturn values (£m)		NAO Comment
	Lowest MoD payment	**Highest MoD payment**	
Operating lease final payment[2]	48.3	35.0	The 15-year operating lease agreement allows MoD to break the contract in December 2009 at the earliest and MoD would be liable for a termination payment of £71 million. MoD will not now invoke the 'option' negotiated with the Welsh Authorities and MoD's outstanding liabilities are £42.1 million.
Annual operating lease payments post April 2007	19.3		Confirmed
Project costs	5.4		Confirmed
Fixtures and fittings	11.0		Confirmed
Redundancy costs	12.6		Data on redundancies shows that in excess of 100 workers left under early retirement schemes. MoD could not provide data to support its estimate of an average total pay out of £35,000 in 2004-05 as being reasonable. It is likely that contributions would have been required after 2009 as redundancy terms are typically more generous in the first instance.
Costs of moving into super-hangar	1.2		Costs of approximately £1.1 million to move VC10 repair to the super-hangar so that the Twin Peaks Hangar could be sub let to industry has not been included. Of this, £0.5 million was recouped from the Welsh Authorities.
Decommissioning costs	1.5		Agreed to forecast documentation
Other MoD organisation costs	4.3		Insufficient detailed data
Total	**103.6**	**90.3**	**Total cost in the region of £97 million**
Total Costs/(Savings)	**10.5**	**(2.8)**	**Compared to total savings for the Red Dragon project in the Business Case of £263 million**

Source: National Audit Office review of MoD submission to the House of Commons Defence Committee

NOTES

1 The Welsh Authorities record the expenditure on the airfield as a contribution to acquiring the airfield assets at market value, rather than running costs (paragraph 2.26).

2 The figure for MoD's outstanding liability excludes any future inter-governmental transfers, including the £15 million payment from the Welsh Authorities to MoD to acquire the super-hangar, due at 2018 under the terms of the existing Composite Agreement, or future lease payments.

Appendix 3 – Glossary

Asset write down	A non-cash charge and was classified as Annually Managed Expenditure (spending which could not be reasonably subject to firm multi-year limits) prior to 2002-03. Once it became part of Department Expenditure Limits any charge would have an impact on the Operating Cost Statement.
Depth repair	Maintenance that consists of the scheduled repair, partial or full reconditioning and modification of aircraft, requiring specialist skills and equipment.
Depth Repair Hub	A single location, usually relating to one aircraft type, where all the required resources and equipment are centred.
Environmental remediation	The removal of pollution or contaminants from environmental media such as soil, sediment, groundwater or surface water from a brownfield site intended for redevelopment. Remediation is generally subject to an array of regulatory requirements, and can also be based on assessments of human health and ecological risks where standards are advisory.
Fixed-wing Aircraft	Any jet or turboprop powered aircraft, which is not classified as rotary wing (helicopters).
Lean techniques	A production process concerned with the identification and elimination of steps that do not add value to the end user and the placing of the remaining steps in the most efficient sequence.
Legacy aircraft	Aircraft that are currently in service in the Royal Air Force and require logistic support, for example Harrier, Tornado and VC10 tankers.
Premium head lease	Premium is a lump sum paid up front as rental payment for property rather than staged payments throughout the 125-year term with an obligation to keep buildings properly maintained unless unoccupied.
Pulse lines	Akin to a production line. Depth repair activity is broken down into packages of work designed to last for an equal period of time, for example ten days. After the period has elapsed all aircraft are "pulsed" or moved to the next area.
Put option	A contract giving the owner the right, but not the obligation to sell a commodity to the writer of the option at a specified price before a given date. The writer of the option is agreeing to buy the underlying asset if the put holder exercises the option. In exchange for having this option, the buyer pays the writer a fee (the premium).
State Aid Rules	European Union rules governing the provision of public sector support for undertakings involved in economic activity. Aid can be direct, in the form of grants, or indirect, for example, where the public sector charges a company rent that is below market value.

Streamlining End-to-End Air and Land Logistics	A Review which was part of the Defence Change Programme and sponsored by the Vice Chief of Defence Staff and Second Permanent Under Secretary. The objective was to produce recommendations on rationalising logistics processes throughout the supply chain, that is from the factory to the frontline.
Trading Fund	Established by means of a Trading Fund Order under the Government Trading Fund Act 1973, a Trading Fund is a financing framework for Government operations that are not seen as central to the process of government. An Agency is given greater freedom to manage its financial affairs than if its costs are met by its parent Department. Typically, trading funds operate in very specialised fields and rely on their ability to derive income from their activities in order to cover their costs.
VC10	A dual role air transport and air-to-air refuelling aircraft which entered service in the late 1960s.
Whole Life Support Solutions	Encompasses all scheduled maintenance and repair and significantly modifications, capability and reliability upgrade to the aircraft through its in-service life through the involvement of the Prime Contractor.

Appendix 4 – Timeline of events for the Red Dragon project

	1999	2000	2001	2002	2003
Ministry of Defence	DARA established	Strategic Goal to reduce output costs for logistics support by 20 per cent by 2005-06 declared	April – DARA given Trading Fund status DARA has a three year assured order book	January – Ministerial approval for DARA to proceed in the procurement process for the super-hangar February – MoD begin investment appraisal for the Red Dragon project at St Athan Summer – work to identify alternative options for more efficient delivery of logistics support July – Minister for the Armed Forces announces work on the super-hangar will commence in December August – Minister for the Armed Forces announces the plan to re-develop the St Athan site November – Preferred bidder for the super-hangar project announced December – End-to-End Review of Logistics Support commences	January – DARA Ministerial Advisory Board considers investment appraisal and approves Red Dragon Project July – End-to-End Review recommends repair and maintenance of each fast jet fleet is located on one site. Financial closure on super-hangar project reached October – the business case for the Red Dragon Project is re-evaluated November – 15-year facilities contract for super-hangar signed
Ministry of Defence and the Welsh Authorities				July – MoD and the Welsh Authorities negotiate the five-year break clause August – MoD and the Welsh Authorities sign the Heads of Agreement	February – turf cutting ceremony at the St Athan site for the super-hangar March – Composite Agreement between MoD and WDA signed, committing MoD to the rationalisation of the St Athan site and the parties to the lease/super-hangar agreements, conditional upon satisfactory completion August – Leases and super-hangar agreements, including the break clause, are completed by MoD and WDA
The Welsh Authorities		DARA and WDA work together on a proposal for an aerospace centre of excellence	Summer – studies show DARA/WDA proposals for aerospace park at Cardiff International Airport not feasible Autumn – plans shift to a project based at DARA's St Athan site	February – consultants begin examining demand for an aerospace park at St Athan June – consultants develop an options appraisal showing a positive financial outcome from an aerospace park over 25 years	January – WDA approves purchase of St Athan site and agrees to pursue a bid to site the tri-service Defence Training Academy there

2004

February – investment appraisal recommendation on location of Harrier depth repair hub

March – Minister for the Armed Forces announces all Harrier repair will be located at RAF Cottesmore, not St Athan. DARA has to compete for future military repair contracts

April – market analysis reports of poor prospects for DARA winning commercial repair contracts

May – investment appraisal recommendation on location of Tornado bomber and VC10 tanker depth repair hubs

September – Minister for the Armed Forces announces all Tornado bomber repair will be located at RAF Marham, but VC10 tankers will be repaired at St Athan

December – options for selling repair business units considered as no longer strategic imperative for MoD to retain ownership of DARA. Super-hangar finished to time and budget

First meeting of the Inter-Governmental Steering Group

Early 2004 – WDA consider possible runway requirements and commission consultants to identify requirements for different aircraft

July – WDA completes its development masterplan and prepares to go through internal approval before submitting its planning application

2005

January – DARA begins to move operations into the super-hangar

November – Minister for the Armed Forces announces DARA's fast jet business will close in April 2007 and the VC 10 business will be taken to the market

Payback calculation for Red Dragon Project submitted to the House of Commons Defence Committee

Metrix submits bid for both Packages of defence training based at St Athan

February – WDA begins working with Metrix Consortium on Defence Training Academy bid

April – WDA takes formal possession of the St Athan site

October – two aerospace companies announce they will set-up at St Athan

2006

September – one of the aerospace companies announces its intention to leave St Athan

2007

January – Metrix Consortium announced as preferred bidder for setting up the Defence Training Academy

2008

The Welsh Authorities continue to develop plans for an aerospace park in light of the expected site requirements for the Defence Training Academy (see figure 9 for details on this project)

By June – four aerospace companies are located on the St Athan site

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