National Audit Office

Allocation and management of risk in Ministry of Defence PFI projects

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL | HC 343 Session 2007-2008 | 30 October 2008

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LONDON: The Stationery Office
£19.15

Ordered by the
House of Commons
to be printed on 28 October 2008

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.

Tim Burr
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24 October 2008

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CONTENTS

SUMMARY

1 The Ministry of Defence (the Department) undertakes a wide range of activities, including front line military capability and essential support functions. To deliver these activities efficiently, the Department uses various forms of relationship with the private sector, with differing approaches to sharing risk. The Private Finance Initiative (PFI) represents one important form of relationship. In PFI projects the Department usually defines the outputs it requires and invites the private sector to design and deliver the required service outputs for an agreed annual price.

2 Risk management is important to all forms of procurement undertaken by the Department. Effective risk allocation and management is particularly important to delivering value for money in PFI contracts. These contracts seek to optimise value for money by agreeing an allocation of risks between the public and private sectors over the course of a long-term contract. This is not the sole contributor to value for money but it is very unlikely that the best possible PFI outcome will be achieved without effective risk allocation and management.

3 This study examines whether there has been effective allocation and management of risk in the Department's PFI projects. Our findings are based on a detailed examination of eight PFI case study projects. This analysis is supported by a census of all the Department's PFI contracts let in 2007 and consultation with the Department's staff, contractors and advisers. We selected the case studies to reflect the diverse nature of the Department's PFI portfolio **(Figure 1)**. Appendix 1 contains detailed findings from each case study. Our examination has also drawn on our previous experience of examining risk management in PFI projects (see Methodology, Appendix 2).

1 The eight case study projects

The case study projects, other than the cancelled Armoured Vehicle Training Service PFI project, were selected to present a range of the Department's PFI projects in full service in 2007.

Project	Year contract let	Year full service commenced	Capital Value £ millions	Type	Description
Heavy Equipment Transporter (HET)	2001	2004	65	Equipment	Service to move battle tanks and other heavy equipment during peacetime and on operations.
Field Electrical Power Supplies (FEPS)	2002	2005	73	Equipment	Provision of 1347 generator sets to support operational electrical requirements in the field.
Medium Support Helicopter Aircrew Training Facility (MSHATF)	1997	2001	114	Training	Helicopter training facilities for Chinook Mk 2/2A, Merlin Mk III and Puma Mk 1 aircraft. Training includes initial conversion to type, continuation, pre-deployment and mission rehearsal.
Armoured Vehicle Training Service (AVTS)	Contract not let as procurement was not completed	Services to be provided under other contracting arrangements	N/A	Training	Provision of live and synthetic training of gunnery and specialist driving for Armoured Fighting Vehicles. To provide crew training for a wide range of Armoured Fighting Vehicles, including Challenger II tanks, Warrior Infantry Fighting Vehicles and Combat Reconnaissance vehicles.
Main Building Refurbishment (MBR)	2000	2004	439	Accommodation	Development and refurbishment of the main Ministry of Defence building in Whitehall and temporary accommodation to other buildings, as well as upkeep of the Old War Office building.
Defence Animal Centre (DAC)	2000	2002	11	Accommodation	Redevelopment of new office and residential accommodation, animal husbandry and training support.
Defence Fixed Telecommunications System (DFTS)	1997	2000	200	Other Support	Provision of secure and survivable Wide Area Network voice, data and video telecommunication services across the Ministry of Defence to users (Ministry of Defence staff and in some cases its contractors) based in the United Kingdom and Overseas.
Tidworth Water and Sewerage	1998	1998	Nil	Other Support	Provision of fresh water and sewerage services in Tidworth Garrison.
Total capital value			902		

Source: National Audit Office review of case studies

4 Our analysis of these projects focussed on ten key risks. In doing so we recognised two important features of the Department's portfolio of PFI contracts. Firstly, the Department's approach to procuring PFI deals has developed over time. Our case study projects were relatively early contracts entered into between 1997 and 2002. These were chosen to provide a good level of operational experience to examine. Since these contracts were let the Department has achieved a greater standardisation of contractual terms and conditions. It has also improved its internal scrutiny of PFI deals and all large projects in the light of previous experiences. Secondly, we recognise that the Department has faced particular challenges arising from the fact that its PFI portfolio is less homogenous than those of other departments.

5 The Department's portfolio of more than 50 PFI projects represents a small, but important, part of the Department's annual spending. The total private sector capital investment in Defence is over £9 billion. In 2007-08 the Department spent £1.3 billion in PFI service charges. The projects range from small projects with a capital value of under £50 million to larger projects with a capital value of over £1 billion. The larger projects include the service accommodation contract Allenby and Connaught let in March 2006 (capital value £1.3 billion, total contract value £8 billion) and the Future Strategic Tanker Aircraft, the Department's largest PFI deal completed in March 2008 (capital value £2.6 billion, total contract value £13 billion). The capital value of the case study projects we examined, focussing on projects in full service in 2007, was just over £900 million (Figure 1, page 5)

Findings

6 The Department has achieved a good service delivery on a broad and diverse portfolio of PFI projects. Across its whole PFI portfolio of more than 50 projects most have reached full service delivery on time, for the cost set out in the contract and are delivering services satisfactorily. These new projects have enabled the Department to achieve considerable benefits from a range of services. Some of the projects are delivering new equipment and training which are contributing to improving the effectiveness of military personnel. Others are providing support services which are helping the Department to carry out its work more efficiently.

7 In the case study projects we examined most of the risks were being well managed by the Department with the projects delivering value for money but there were exceptions. We concluded that in nine out of the ten risk categories we examined there was either a low risk to value for money or moderate risk to value for money **(Figure 2)**. In one risk category, the specification of the asset or service, we concluded there was significant risk to value for money to the procurement phase although not to the subsequent management of the projects in their operational phase. The specification issues had contributed to problems on two procurements: the Armoured Vehicle Training Service project which was cancelled during its procurement and the Defence Animal Centre where the contract will need to be renegotiated. In the other six case study projects we examined the risks had generally been well managed contributing to value for money. The Defence Animal Centre has a capital value of £11 million and is therefore, under current Treasury policy, below the threshold of projects which would now need to be procured under PFI. Since these deals the Department has taken a number of steps to address the risk of inadequate specification of assets or services **(Figure 3)**.

2 Summary of the NAO risk assessment

NAO risk assessment	Nature of risks
Low risk to value for money	Construction or service implementation; delivery of the ongoing service; environment and safety; service user and stakeholder satisfaction; relationships with contractors.
Moderate risk to value for money	The delivery of a PFI solution during the procurement phase; the specification affecting the management of the contracts; technology and latent defects; performance monitoring and management; resources and skills; risk management processes.
Significant risk to value for money	Specification of the asset or service affecting the procurement phase.

Source: National Audit Office

3 Examples of changes introduced by the Department to address the risk of inadequate specification of assets or service

1 The Department's strategic planning assumptions were changed after deployments to Afghanistan and Iraq to include wider operating parameters than existed previously (particularly relevant for the Heavy Equipment Transporter project);

2 There have been several improvements to systems and guidance built around an identified individual in the project teams acting as a Requirements Manager and a central specialist function with responsibility for specifying and delivering equipment capability; and

3 The Department has rolled out a web based Acquisition Operating Framework available on line, including guidance on producing a statement of User Requirement Principles and an aide-memoire on how to define systems requirements and produce a Statement of Need.

Source: Ministry of Defence

8 The Department has developed commercial disciplines for scrutinising the value for money of its PFI procurements and has extended these into other projects. The Department has over time developed appropriate processes for scrutinising PFI procurements. The Department has an experienced Private Finance Unit which provides support and guidance to PFI projects. Large PFI projects also need to satisfy the Department's Investment Approvals Board. Recently the Department has used its PFI experience to establish a further review process for its large projects under all forms of procurement. The new review process draws on the checking, known as due diligence, which the private sector funders carry out on PFI deals. It aims to improve assurance that the proposed commercial arrangements will enable the project to meet operational requirements with appropriate contract terms.

9 The Department is using these disciplines to take tough decisions on some PFI projects although these decisions could have been made on a more timely basis. Although most of the Department's PFI projects have delivered the services required the Department is prepared to take decisions to abandon inappropriate PFI project proposals or to renegotiate or terminate PFI contracts which are not delivering the required services. These decisions are taken in the interests of achieving value for money, but in some cases the Department has taken a long time to decide on the appropriate action. For example, the Department took the right decision not to proceed with a proposed PFI procurement for Armoured Vehicle Training but only after spending six years in developing the project. The Department is rightly seeking to renegotiate its Defence Animal Centre contract but has also taken six years to reach this position despite ongoing dissatisfaction with the service delivery.

10 The Department took on average 37 months to procure the projects we surveyed, where data was available, but large projects often took longer. The Department's methods for overseeing PFI procurements aim to avoid inappropriate deals being completed. It is right that time is spent on undertaking such assessment. But it is also important that procurements are efficient so that service delivery is not unduly delayed and bid costs, which are likely to be factored into contract prices in the long term, are kept within reasonable limits. The average procurement time in the Department's PFI projects we surveyed, in the 77 per cent of projects where the Department held such data, was 37 months. These statistics compare with the average PFI experience across government of 34 months in a 2006 NAO survey (*Improving the PFI Tendering Process* HC 149 2006-07). Larger projects often took longer to procure, the average for the Department's PFI projects with a capital value of over £50 million, where data was available, being 45 months. This longer time reflects: the special requirements of the Department's projects compared with repeat projects such as hospitals or schools; the range of the Department's in-house stakeholders who are involved in decisions about the projects and the assessment of the deals; and some scope, despite these special considerations, for the Department to improve the speed at which it closes larger deals, which it is seeking to do through improvements to the oversight of its capital procurements.

11 The Department's efforts to allocate and manage risk at the outset of the projects that we examined were often hampered by a lack of data on the services required. Lack of data represented a significant risk to value for money in the eight case study projects we examined. Insufficient service information creates a risk because the Department may not get the service which matches its needs or the contractors may increase the pricing of deals because of the resulting uncertainty. Procurement times have also been affected by the need to clarify specification issues. In particular lack of data on the Department's service requirements was a factor in the cancelled Armoured Vehicles Training PFI project. Some issues, which could have been identified earlier, only emerged after contract letting. For example, in the Field Electrical Power Generators project the Department had to pay the contractor £7.3 million without competition to modify the generators when the Department found that some of its vehicles, when pulling the generators, had manoeuvrability problems and could not turn corners safely.

12 The Department's PFI contracts have flexibility to deal with changes but there are risks to maintaining value for money where changes are required. The Department works in a fast changing, often unpredictable, environment. It often finds that changes are needed to its projects either in the run-up to contract letting or once the project is in service because:

- the operational needs of its military staff may change, particularly if they need to be deployed in new territories;
- new technology used in equipment or training may be developed; or
- in some cases, changes are needed because the Department's needs are initially difficult to define precisely across its large complex organisation.

Any change after appointing a contractor creates a risk to value for money as it may involve added costs in a situation where competition is absent. The NAO report *Making Operational Changes in PFI Projects* (HC 205, 2007-08) analysed the risks arising from contract changes, and described how Departments and agencies can best manage these risks. The capacity for the Department's needs to change, sometimes at short notice, does not mean that the PFI is an inappropriate form of procurement: well-designed PFI contracts are flexible and can adapt the services provided as circumstances change. It does mean that changes, and the pricing of them, have to be carefully negotiated between the Department and their contractors.

13 There are instances where contract management could be improved, especially in assessing performance. The Department's PFI projects in service are managed by teams who are generally addressing contract management issues in an appropriate manner and building effective working relationships with their contractors. The Department's Private Finance Unit has also already made a useful step in evaluating the Department's overall experience of using PFI through its 2005 review of the operational experience of its PFI projects. Our examination has, however, identified the following areas for improving project management:

- User satisfaction feedback had not been obtained in 25 per cent of the projects in our census.
- Risk management processes such as risk registers were not used consistently.
- In some projects post contract evaluations, to consider the costs and efficiency of the procurements, were either not carried out or were not done on a timely basis.
- In the Defence Fixed Telecommunications project, the Department had to recover £1.3 million from the supplier BT after it became apparent that employees of BT had inflated the number of calls being answered within the required time limit by calling each other. This fraud was not detected initially because there was no adverse consequence for the Department's staff using the telecommunications services. The Department and BT have taken steps to address the circumstances which led to this fraud. The Department and BT have now imposed a new management structure and governance arrangements on the contract. There is more detailed performance reporting by BT which is subject to audit by the Department. BT has also made changes to the staffing of the project.

14 Appropriate skills are required for managing PFI contracts so that value for money is not eroded during the contract's life. There is a particular need for the knowledge of the contract and the aims of the project to be transferred to those who will manage the contract. There was a lack of staff continuity on some of the case study projects we examined, but other case study projects had benefited from retaining at least one member of the contract negotiation team in post for the first year or two of the operational phase.

Value for money conclusion

15 In six of the eight case studies we examined the Department has procured and managed successful PFI solutions. One project was cancelled before contract letting and one other contract we examined will need to be renegotiated. In the PFI projects we examined the Department has therefore generally achieved effective allocation and management of risk. The allocation and management of risk, which has been the focus of this examination, is however not the sole contributor to value for money. Effective competitions, or strong benchmarking processes where there is a single supply source, are also needed to obtain the best prices for the risks transferred. The case study contracts we examined were all procured through competitive tendering.

Recommendations

These recommendations relate to the Department's portfolio of existing PFI projects and any further PFI procurements they may undertake. The recommendations may also have relevance to other forms of public/private partnerships which the Department may develop in the future.

i A lack of robust data for project teams to specify their requirements and the risks being transferred to contractors has been an issue for a number of the case studies examined. **Project teams should ensure that the initial planning stage of each project includes the production of suitable data on any existing use of the required service, forecast usage and the condition of assets being transferred to the private sector. The Department's Private Finance Unit should check that this information is available before bidding competitions commence.**

ii PFI contracts are long term contracts which have the potential flexibility to deal with the Department's changing requirements. But change requires negotiations between the parties which need to be managed effectively to ensure value for money is not eroded during the contract period. **The Department's PFI project teams should assess the likely impact of future changing circumstances on the PFI contracts they propose to enter into. In particular, they should:**

- **be fully conversant with the prescribed processes for dealing with change, including Treasury and Departmental guidance;**
- **only enter into contracts that set out clearly how changes will be made to the project including processes for benchmarking the price of variations;**
- **continue, during the service period, to undertake regular assessments (at least yearly) of factors that could affect future requirements and the impact these may have;**
- **actively manage supplier relationships with the private sector to successfully incorporate changing requirements on terms which are value for money; and**
- **when considering a possible change in the use of an asset delivered by the private sector, remember that the Department may become liable for repairs arising from the change.**

iii Some of the Department's projects with early PFI contracts may experience difficulties in enforcing the performance they require because of a lack of clarity in the drafting of the contract. **Where the Department's projects experience service problems because the contract does not set out their requirements clearly they should either renegotiate the contract or seek, through their relationship with the contractor, a mutually agreed working arrangement to overcome the contract deficiencies. Terminating a non-performing contract represents an extreme option. It imposes significant transaction costs on the Department, but these costs may be lower than the ongoing costs of poor performance. The Department should not rule out termination of non-performing contracts on the grounds of transaction costs alone.**

iv Although it is normal practice in PFI projects for the private sector to record performance and the public sector to monitor performance levels there is a risk that contractors might misrecord performance to avoid payment deductions. **The Department's project teams should assess the appropriateness of the systems used to validate contractors' service performance. In particular they should be alert to the risk that the extent of successful service delivery could be overstated without any adverse effect on users of the service that would draw their attention to the situation. Project teams should carry out audit work on the performance monitoring systems, consider whether the performance data being provided is adequate and carry out spot checks of the authenticity of the underlying data.**

v Good contract management involves retaining knowledge about the project, monitoring risks and carrying out regular evaluations. There was a lack of staff continuity on some of the case study projects we examined, which meant that it was harder to achieve a high standard of contract management. **To improve the management of PFI projects the Department's PFI project teams should:**

- **keep at least one senior member of the team in post for the first year after the contract has been let, so there is a suitable transfer of knowledge to the team who will manage the contract;**
- **have staff with appropriate contract management skills acquired through either previous experience or appropriate training;**
- **capture project risks on formal risk registers in both the procurement and in-service phases;**
- **undertake user satisfaction assessments on a systematic basis; and**
- **carry out post contract evaluations and subsequent annual reviews of overall contract performance. The NAO framework for evaluating PFI projects may assist this process[1].**

vi The Department's Private Finance Unit has carried out valuable work in reviewing the procurement and service experience of its PFI projects. **The Department's Private Finance Unit should extend its review of PFI projects by:**

- **identifying and disseminating lessons from its project teams' post contract evaluations and subsequent annual reviews;**
- **analysing information on the internal and external costs of procuring recent and current PFI deals to identify action points for improving the efficiency of the procurement of future deals; and**
- **recording and monitoring the main risks affecting the successful delivery of services across the Department's PFI portfolio taking account of the project evaluations and the issues identified in this report.**

1 Available from the NAO website www.nao.org.uk.

PART ONE

Delivering Ministry of Defence services through PFI contracts

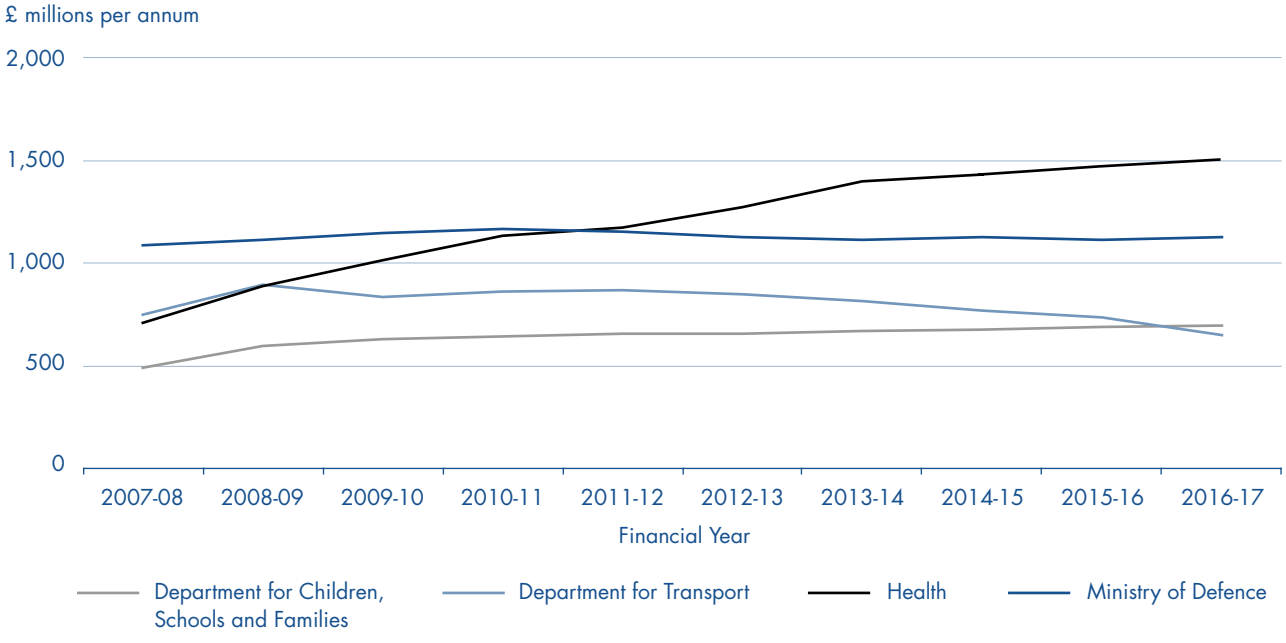
This part of the report describes the Department's portfolio of PFI projects and the oversight which it provides to the procurement and management of these projects.

The Department's portfolio of PFI projects

1.1 In relation to the total defence budget, PFI represents a small, but important, part of the Department's annual spending. In 2007-08 the Department paid £1.3 billion in PFI service charges, approximately four per cent of its total outturn of around £36 billion.[2]

1.2 The Department is the fourth largest user of PFI in central government in terms of the number of contracts signed. But these are often large value contracts and the Department's annual payments to PFI contractors of over £1 billion are projected to be greater than those of any other central government department over the next three years **(Figure 4)**.

4 Projected annual PFI contract payments for the four major Central Government users of PFI



Source: Treasury – Information taken from the list of signed PFI deals taken from the Treasury website www.hm-treasury.gov.uk

2 Source: *Ministry of Defence Resource accounts* (2007-08) – This figure includes amounts paid on a small number of projects that the Department's Private Finance Unit considers to be Public Private Partnership (PPP) deals.

The services procured by the Department through PFI

1.3 The Department's PFI portfolio of operational projects in 2007, which was the subject of our census, comprised 47 contracts[3] **(Figure 5)** covering four broad categories: accommodation, training, equipment and other support projects. Other support projects included the provision of utilities and information and communication technology (ICT). Key facts from the 47 projects are at **Figure 6 on pages 14 to 19**.

1.4 The Department's PFI projects are critical to maintaining operational capability. Several projects directly support front line military operations, such as the Strategic Sea Lift Roll-on Roll-off Ferries and the Heavy Equipment Transporter projects. Other projects provide indirect support to front line operations, for example by providing training for front line troops. These include simulator training projects such as those for the Lynx Aircrew Training Service, and the Medium Support Helicopter Aircrew Training Facility.

1.5 The Department has also used PFI to provide other services such as accommodation (for example, office accommodation and barracks) and infrastructure (for example, water and sewerage services to defence sites, telecommunications and information technology).

The size and value of the Department's PFI projects

1.6 In our census the capital values of the Department's PFI projects (the cost of building the asset as opposed to delivering the service) varied from zero (where the PFI contractor is taking over the operation of an existing asset) to £1.3 billion **(Figure 7 on page 20)**. Over half of the 47 projects had a capital value of £50 million or less but the remaining larger contracts contributed to around 83 per cent of the Department's PFI payments of £1.1 billion in 2006-07.

Balance Sheet Treatment of the Department's PFI Projects

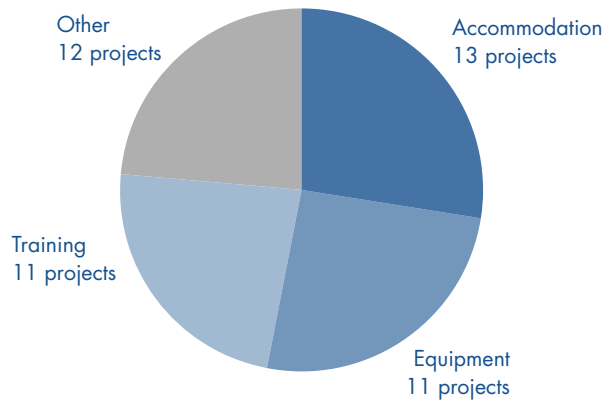
1.7 78 per cent of the MOD PFI projects by number (62 per cent by capital value) have been accounted for off the Department's balance sheet. Across central government as a whole, we have considered that most PFI projects, predominantly government buildings, should be on balance sheet because departments have the risks and rewards of ownership. The MOD's PFI portfolio, however, includes a range of other projects including a number of training and information technology (IT) projects. Most of these projects have been accounted for by the Department off balance sheet because the risks and rewards of ownership lie with the private sector contractors. For example, in training projects the contractors' remuneration often varies in relation to the volume of staff using the training or the success of the training.

1.8 Central government will implement International Financial Reporting Standards (IFRS) from 1 April 2009. It is likely that when these new accounting rules are introduced, each project will undergo a fresh detailed assessment of its accounting treatment. As the assessment criteria will be different from those used when the projects were first assessed, it is possible that some contracts currently categorised as off balance sheet may come on to the Department's balance sheet.

The Department as a mature user of PFI

1.9 The first PFI contract signed by the Department covered the provision of non-combat vehicles (known as the "white fleet") in 1996. The Department has since signed a steady stream of deals. As well as the 47 projects in our census of the Department' s PFI operational projects in 2007 **(Figure 8 on page 20)** the Department has now signed further projects. These include the Future Provision of Marine Services and the £13 billion contract for Future Strategic Tanker Aircraft. It is also currently procuring further PFI projects such as the helicopter Search and Rescue project (SAR) and tri-service Defence Training Rationalisation project. A timeline for the Department's PFI projects is at Appendix 3.

5 The four categories of the Department's PFI contracts



Source: National Audit Office analysis of Ministry of Defence projects database

3 The list of 47 PFI projects was agreed with the Department's Private Finance Unit.

6 The Ministry of Defence PFI portfolio

Project	Description	OJEU/ Contracts Bulletin Date
Accommodation		
1 Allenby/Connaught	Redevelopment of Aldershot Garrison, and the garrisons in the. Salisbury Plain Area. Construction of new barracks will give military staff brand new/refurbished living and working accommodation.	Feb 02
2 Bristol Bath And Portsmouth Family Quarters	Serviced accommodation for 317 service families.	Jul 99
3 Central Scotland Family Quarters	Services accommodation for 164 houses.	Jan 97
4 Colchester Garrison	Redevelopment and refurbishment to provide accommodation and associated costs.	Feb 97
5 Defence Animal Centre	Redevelopment of new office and residential accommodation, animal husbandry and training support.	Nov 96
6 Devonport Support Services – Armada	Provision of Support Services and Fleet Accommodation Centre services at Devonport Naval Base (HMS Drake) for 25 years.	Sep 00
7 Main Building Redevelopment (MBR)	Development and refurbishment of the main MOD building, and temporary accommodation to other buildings, as well as upkeep of Old War Office Building.	Dec 96
8 Northwood Headquarters Project	Integrated provision of support services, facilities management and capital works improvement, to meet requirements at the Northwood headquarters.	Exempted
9 Portsmouth Housing 2	Proposal for 148 Officers' houses.	Mar 02
10 RAF Cosford – RAF Shawbury Family Quarters	Accommodation for 145 service families.	Jun 97
11 RAF Lossiemouth Family Quarters	Redevelopment and provision of 279 married quarters.	Dec 96
12 Wattisham & Woodbridge Married Quarters	Provision of serviced accommodation for 250 service families.	Sep 99
13 Yeovilton Family Quarters	Accommodation at Yeovilton for 88 aircrew of 2 Lynx squadrons moved under Project Movit from HMS Osprey at Portland.	Jan 97
Equipment		
14 C Vehicles	Procurement, maintenance, repair and management for approx 4,000 items of earthmoving plant machinery and material handling equipment.	Jun 99
15 Commercial Satellite Communication Service – INMARSAT	Replacement of the INMARSAT terminals and airtime contract for Royal Navy ships.	Oct 98
16 Field Electrical Power Supplies (FEPS)	Provision of generator sets to support operational electrical requirements in the field.	Oct 96
17 Heavy Equipment Transporters (HET)	Service to move battle tanks and other heavy equipment during peacetime and on operations. Reserves making up one third of the manpower required to deliver the service.	Feb 97
18 Marine Support To Range & Aircrew Services (MSRSS)	To bring the management, operation and maintenance of air support crew and range safety craft into one contract.	N/A[3]
19 Materiel Handling Equipment (MHE) – (Follow On)	Provision of tri-service materiel "Pathfinder" handling equipment for Army, Navy and RAF storage depots. One of the MOD's Pathfinder PFI projects.	Oct 00

Date of financial close	Initial service date	Full service date	Capital Value (£m)	Term (Years)	End Date	Unitary Charge Est 2006-07 (£m)	Balance sheet treatment	Public Sector Survey received	Private Sector Survey received	Case Study
Mar 06	Jul 06	Jan 16	1,257.1	35	2041	134.8	On	✔	✔	–
Nov 01	Jul 02	Oct 03	78.0	25	2026	8.9	Off	✔	–	–
Aug 99	Jan 01	Mar 02	24.0	20	2019	3.4	Off	✔	–	–
Feb 04	Jun 04	Oct 08	539.4	35	2039	33.2	Off	✔	–	–
Aug 00	Jan 02	Jan 02	11.2	25	2025	3.8	On	✔	✔	✔
Jul 04	Oct 04	Mar 08	44.5	25	2029	10.9	On	✔	✔	–
May 00	Sep 04	Sep 04	439.0	30	2030	75.8	On	✔	✔	✔
Jul 06	Oct 06	Oct 06	161.5	25	2031	9.7	On	✔	–	–
Oct 05	May 06	Jun 07	27.0	25	2030	0.0	Off	✔	–	–
Mar 99	Dec 99	Jun 00	15.0	25	2024	2.2	Off	✔	✔	–
Jun 98	Apr 99	Sep 99	33.5	20	2018	4.6	On	✔	–	–
May 01	May 02	Mar 03	13.0	25	2028[1]	3.8	Off	✔	–	–
Jul 98	Jun 99	Mar 00	8.0	30	2028	1.1	Off	✔	✔	–
Jun 05	Jun 05	May 06	114.4	15	2020	41.8	Off	✔	✔	–
Apr 01	Apr 01	Novated May 2005	2.5	5	2006	0.0	Off	–[2]	–	–
Jun 02	May 03	Apr 05	73.4	20	2022	10.1	On	✔	✔	✔
Dec 01	Jul 03	Jul 04	65.0	20	2021	13.1	On	✔	–	✔
Dec 01	Apr 02	Apr 02	11.9	10	2011	5.6	Off	✔	✔	–
May 02	Aug 02	Aug 02	12.3	8	2010	6.5	Off	–[2]	–	–

6 The Ministry of Defence PFI portfolio *continued*

Project	Description	OJEU/ Contracts Bulletin Date
Equipment continued		
20 Roll-On/Roll-Off (RORO) Strategic Sealift	Provision for a 6 ship transport service.	Jan 97
21 Skynet 5	Range of satellite services, including management of existing Skynet 4 satellites.	N/A[3]
22 Tri Service Materials Handling Service	Provision of equipment, maintenance, training and IS for MHE fleet, comprising of 2,200 commercial lift trucks and associated handling equipment located worldwide.	N/A[3]
23 Tri Service White Fleet	Standard commercial production vehicles used for non-operational administrative and support functions.	Dec 98
24 VLF Naval Communication Service	Provision of communications service for submarine fleet.	Exempted
Training		
25 Army Foundation College (AFC)	Provision of facilities and services including vocational education.	Jun 97
26 Astute Class Training Services (ACTS)	Provision of a 36 year service to deliver operator and maintainer training for Astute Class submarines.	Mar 97
27 Attack Helicopter Training Service	To provide training services to support the British Army's Apache AH1 Attack helicopter.	Exempted
28 Defence Sixth Form College (DSFC)	Design and construction of the Sixth Form college which will help in the future to recruit Armed Forced and MOD Civil Service. New living accommodation will cater for 340 MOD selected students and teaching staff. Will be a principal source in Technical Officer recruitment to all UK armed forces and MOD civil service.	Oct 01
29 Fire Fighting Training Units (FFTU)	Provision of fire fighting training facilities for Naval Recruiting & Training Agency (NRTA).	N/A[3]
30 Hawk Synthetic Training Facility	Synthetic training service on Hawk T1 aircraft for refresher and ab-initio fast jet pilots.	Dec 95
31 Joint Services Command And Staff College (JSCSC)	Project merger between three MOD senior defence colleges into a single facility combining education and accommodation.	Mar 96
32 Lynx Mk 7/9 Aircrew Training Service (LATS)	Aircrew training for Lynx pilots at a purpose built facility known as 'School of Army Aviation'.	Apr 98
33 Medium Support Helicopter Aircrew Training Facility (MSHATF)	Synthetic training service for aircrew of Chinook, Merlin Mk3 and Puma helicopters.	Aug 95
34 RAF Sentry E3D Aircrew	Synthetic training service for flightdeck aircrew of Sentry E3D aircraft.	N/A[3]
35 Tornado GR4 Synthetic Training Service	Synthetic training service for aircrew of Tornado GR4 aircraft.	Dec 96

Date of financial close	Initial service date	Full service date	Capital Value (£m)	Term (Years)	End Date	Unitary Charge Est 2006-07 (£m)	Balance sheet treatment	Public Sector Survey received	Private Sector Survey received	Case Study
Jun 02	Aug 02	Mar 03	195.0	25	2027	25.2	Off	✔	✔	–
Oct 03	Mar 07	Mar 09	1,079.0	17	2020	141.6	Off	✔	✔	–
May 00	Feb 01	N/A[3]	35.0	10	2010	8.4	Off	–[2]	–	–
Jan 01	Apr 01	Sep 01	40.0	10	2011	54.0	Off	✔	✔	–
Jun 00	Apr 04	Apr 04	58.5	30	2030	7.2	On	✔	–	–
Feb 00	May 00	Nov 02	65.2	30	2030	17.2	Off	✔	–	–
Nov 01	Nov 06	Jan 08	72.8	36	2037	1.1	Off	✔	✔	–
Aug 98	Jul 00	Apr 04	232.3	19	2017	47.0	Off	✔	✔	–
May 03	Sep 05	Sep 05	50.5	30	2033	11.3	Off	✔	–	–
Apr 99	Jan 01	Jan 01	21.8	20	2019	7.5	Off	✔	–	–
Dec 97	Dec 98	Feb 00	20.2	13 + 5 yrs potential extension	potentially to 2015	2.9	Off	✔	✔	–
Jun 98	Aug 00	Sep 00	93.0	30	2028	16.8	On[4]	✔	✔	–
Jul 00	May 02	Oct 03	15.0	13 + 12 yrs potential extension	potentially to 2025	3.7	Off	✔	✔	–
Oct 97	Aug 99	Mar 01	114.0	20 + 20 yrs potential extension	potentially to 2037	19.9	Off	✔	✔	✔
Jul 00	Oct 01	Oct 01	5.5	25 + 5yrs potential extension	potentially to 2030	1.3	Off	✔	✔	–
Jun 99	Nov 02	Jan 03	54.2	22 + 10yrs potential extension	potentially to 2031	9.7	Off	✔	✔	–

6 The Ministry of Defence PFI portfolio *continued*

Project	Description	OJEU/ Contracts Bulletin Date
Other		
36 Defence Fixed Telecommunications Service (DFTS)	A fully managed telephone service designed to service 200,000 plus telephone users making 2.5 million calls a day, across 2,445 UK sites. Facilities include voicemail, data switching and video conferencing.	Mar 95
37 Defence Housing Executive – Information Systems (DOMIS)	Provision of IT/IS infrastructure services to around 200 DHE sites.	Jun 98
38 Electronic Messaging System (Armymail)	Project to provide email connectivity between MOD IS networks.	Sep 96
39 Hazardous Stores Information Systems	Provision of a Hazardous Stores information system across whole MOD for 10.5 years.	Mar 96
40 MOD – Wide Water & Wastewater (Project Aquatrine) Package A	Provision of water and wastewater services at over 4,000 MOD sites in 3 geographic packages. Covers Wales, Midlands and South West England.	Mar 00
41 MOD – Wide Water & Wastewater (Project Aquatrine) Package B	Provision of water and wastewater services at over 4,000 MOD sites in 3 geographic packages. Covers Scotland.	Dec 00
42 MOD – Wide Water & Wastewater (Project Aquatrine) Package C	Provision of water and wastewater services at over 4,000 MOD sites in 3 geographic packages. Covers North & East of England.	Dec 00
43 RAF Fylingdales Power Station	Provision of guaranteed power supply to the missile early warning system.	N/A[3]
44 RAF Lyneham Sewage Treatment	Refurbishment of existing facilities to meet regulatory standards. Population served 7,000.	N/A[3]
45 RAF Mail	Informal messaging services for RAF.	Exempted
46 TAFMIS (IT)	Training administration and financial management information system.	Aug 95
47 Tidworth Water & Sewerage	Provision of water and sewage services in Tidworth Garrison.	May 95

NOTES

1 The contract end date is calculated from the date that the service provided under the contract becomes fully operational.

2 Survey returns were not received from these project despite the intervention of the Department's PFU.

3 Information not available from the Ministry of Defence.

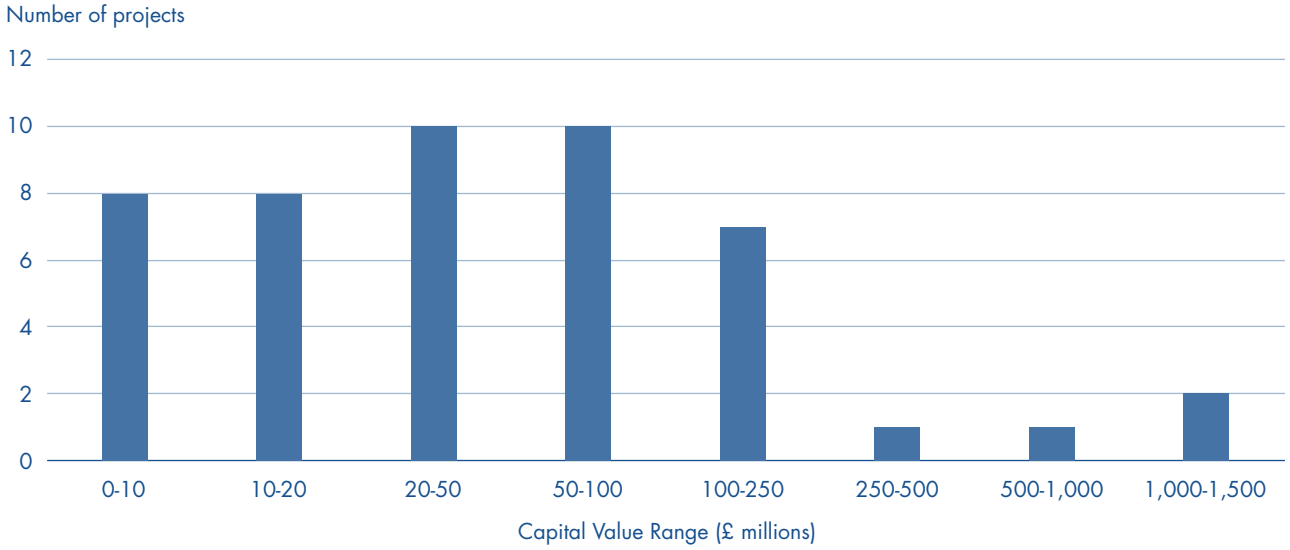
4 Part of this project is off balance sheet.

5 A survey was not sent to these projects as the contracts were being subsumed into another contract at the time of our study.

6 Actual not available, contractual target was five months after contract signature.

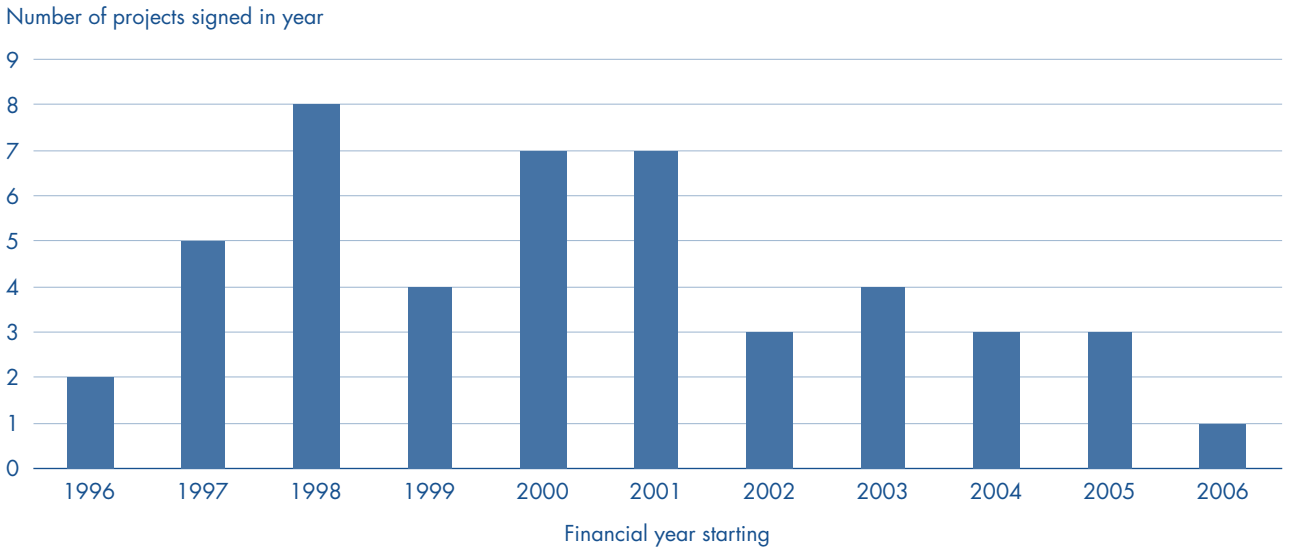
Date of financial close	Initial service date	Full service date	Capital Value (£m)	Term (Years)	End Date	Unitary Charge Est 2006-07 (£m)	Balance sheet treatment	Public Sector Survey received	Private Sector Survey received	Case Study
Jul 97	Dec 97	Jul 00	200.0	15	2012	143.6	Off	✔	✔	✔
Sep 01	Oct 01	Oct 01	11.0	9	2010	7.6	Off	✔	–	–
Apr 97	Oct 97	Oct 97 (Novated during 2006)	0.0	10	2007	2.0	Off	–[5]	–	–
Feb 97	Dec 97	Dec 97	1.0	10	2007	0.2	Off	–[5]	–	–
Apr 03	Dec 03	Dec 03	153.9	25	2028	31.8	Off	✔	–	–
Sep 04	Mar 05	Mar 05	48.7	25	2029	11.7	Off	✔	✔	–
Oct 04	Mar 05	Mar 05	174.3	25	2029	32.3	Off	✔	✔	–
Dec 98	Apr 99	Apr 99	8.0	25	2023	2.5	On	✔	–	–
Jul 98	Jul 98	Jul 98	4.0	25	2023	0.5	Off	✔	–	–
Nov 98	Nov 98	–[6]	12.0	10	2008	2.0	Off	–[2]	–	–
Aug 96	Mar 97	Dec 97	41.0	10	2006	23.1	Off	✔	–	–
Feb 98	Sep 98	Sep 98	0.0	20 + 5yrs optional extension	potentially to 2023	0.7	Off	✔	✔	✔

7 The capital value of the Department's currently operational PFI contracts



Source: National Audit Office analysis of Ministry of Defence projects database

8 The volume of current operational PFI contracts signed by the Department



Source: National Audit Office analysis of Ministry of Defence projects database

The Department's oversight of its PFI projects

1.10 The Department has become a mature user of PFI. It has developed an approach to overseeing the procurement and management of these projects in the light of lessons learned from its early PFI projects. The Department has a number of ways in which it provides oversight to the procurement and management of its PFI projects. These procedures are all aimed at obtaining value for money and ensuring that the risks of the projects are properly identified and managed.

1.11 The Department's PFI projects are often procured and managed within integrated project teams (IPTs). For example, the Flight Simulators and Synthetic Trainers (FsAST) IPT is responsible for the acquisition and integration of air environment synthetic training for all three armed services. These IPTs allow individual projects to benefit from the Department's accumulated specialist knowledge of a particular service area.

1.12 Before a large PFI project can be procured, it must in line with other Ministry of Defence projects satisfy the Department's Investments Approval Board that there is a value for money case for proceeding with the procurement. The Investment Approvals Board also establishes whether the project is consistent with the Department's strategic investment plans, well-founded in relation to delivery of the customer's requirements, takes account of all key cost-drivers and is deliverable.

1.13 To provide the Department's PFI projects with oversight and advice on the specific issues relevant to PFI procurement the Department established a Private Finance Unit in the late 1990s. In 2005 the Private Finance Unit was strengthened and the management of the Unit was centralised in London. The Private Finance Unit currently comprises around 12 individuals, based in both London and Abbey Wood near Bristol.

1.14 The Department's Private Finance Unit provides specialist commercial expertise to both operational and procurement project teams. It provides this by issuing Departmental PFI policy and guidance and by offering its PFI project teams assistance, advice and a project information resource. It also provides assurance to the Department's senior management that PFI projects are properly managed, soundly based and in compliance with Treasury requirements. The Unit conducted a review of operational projects in 2005 which concluded that the Department's PFI projects are substantially delivered on time and to budget and the projects then deliver the services required. Our findings generally confirmed this conclusion.

1.15 In 2007 the Department's Commercial Directorate introduced a new process whereby seven additional staff provide commercial scrutiny and due diligence on business cases for all major projects that go to the Department's Investment Approvals Board. This process seeks to replicate the checking process that banks typically apply to the risks and commercial terms of a project before agreeing to make funding available. Its aim is to provide a higher level of assurance than previously existed, ensuring that the proposed commercial arrangements will meet the approved operational requirement and to reduce errors and omissions in contracts before they are signed. It is also intended to help develop commercial policy based on the experience of actual deals which have been completed.

PART TWO

Managing risks

This part of the report analyses the risks that the Department's PFI projects may face in successfully delivering projects both in procurement and the in-service phase.

2.1 Previous National Audit Office reports on PFI projects have established that the appropriate allocation of contractual risks during the procurement phase and the effective management of those risks during the operational phase are key aspects of obtaining value for money.

2.2 We examined the eight case study projects for ten key risks to the delivery of the PFI service for the end user **(Figure 9)**. The risks may relate to both the procurement and contract management of the project.

2.3 We have assessed our findings in relation to the risks to value for money of the eight case study projects using the classification set out in **Figure 10**. Value for money is a comparison with other forms of procurement and with the best possible PFI outcome taking into account the deal as a whole and the particular features of the project. This is consistent with Treasury guidance on assessing the value for money of PFI deals.

2.4 A summary of our assessment of risk performance for the eight case studies is included as Figure 18 on page 46 and 47. We concluded that in nine out of ten risk categories we examined there was either a low or moderate level of risk to value for money. In one risk category, the specification of the asset or service, we concluded there was significant risk to value for money to the procurement phase although not to the subsequent management of the projects in their operational phase. The specification issues had contributed to problems on two procurements: the Armoured Vehicle Training Service project which was cancelled during its procurement and the Defence Animal Centre where the contract will need to be renegotiated. The Defence Animal Centre has a capital value of £11 million and is therefore, under current Treasury policy, below the value threshold of projects which would now be procured under PFI. Since these deals the Department has taken a number of steps to address the risk of inadequate specification of assets or services (Figure 3, page 7). In the other six of the eight case study projects we examined the risks had generally been well managed with value for money being delivered for the taxpayer. Our detailed findings on each of the risks is set out starting at page 24.

9 Ten key risks to project delivery

Type of risk	Risk Category	Definition of risk
Design and delivery of the project	1. Specification of the asset or service	Failure to adequately specify the asset or the service to be performed so that the service does not correctly match the need and demands of users.
	2. Delivery of a PFI solution	Failure to deliver a PFI solution in the procurement phase or, after a contract has been let, failure to deliver the implementation of the required service in terms of the specification, the contractual timescales or the expected Department budget.
Delivery of the service throughout the lifetime of the contract	3. Delivery of the ongoing service	Failure to deliver the service to the required standards as set out in the contract.
	4. Service user and stakeholder satisfaction with delivery	Users are not satisfied, or satisfaction is not assessed in order to ensure that value for money is being achieved from a user perspective.
	5. Technology and Latent Defects	The technology being used to provide the asset or service may not be fit for purpose throughout the life of the contract, due to inadequate design, or unexpected use or misuse by the user.
	6. Environment and Safety	Security of physical assets and information may be compromised by inadequate project design or management. Expected or unexpected environmental issues (such as military contamination like fuel spillages or contamination from the use of certain weapons) may affect the safe and effective delivery of the service.
Contract management processes	7. Performance monitoring and management regimes	Inadequate contract performance mechanisms may not provide sufficient incentive to the contractor to deliver the service specified in the contract.
	8. Relationships with contractors	Poor relationships between the contractor and the public sector can impact the service being delivered and thereby reduce value for money.
	9. Resources and skills	Insufficient resources, including human resources (staff capacity, skills, recruitment and retention) or inadequate financial capacity to manage or procure the contract effectively.
	10. Risk management processes	Failure to put in place robust systems to monitor and manage ongoing risks to the delivery of the service.

Source: National Audit Office

10 Classification of risk level based on the evidence from the case study projects

- Red means that there is a significant risk to value for money from this aspect of these projects.
- Amber means that there is a moderate level of risk – there are some risks to value for money from this aspect of these projects.
- Green means that there is currently a low risk to value for money from this aspect of these projects.

Source: National Audit Office

RISK 1: Specification of the asset or service

Definition

Failure to adequately specify the asset or the service to be performed so that the service does not correctly match the need and demands of users.

	Procurement phase	Management of the contracts
Overall assessment of this risk category in the eight case study projects	Significant risks to value for money	Some risks to value for money
Heavy Equipment Transporter	●	
Field Electrical Power Supplies	●	
Medium Support Helicopter Aircrew Training Facility	●	
Armoured Vehicle Training Service[1]	●	
Main Building Refurbishment	●	
Defence Animal Centre	●	
Defence Fixed Telecommunications System	●	
Tidworth Water and Sewerage	●	

Reason for overall assessment of this risk category in the eight case study projects:

Procurement of these projects: Significant risks to value for money.

Effective specification of the required service is critical to successful project delivery. Issues were identified in all of the case study projects we examined. There was a lack of data, particularly on existing services or the condition of assets being transferred to the contractor. One project did not reach contract letting following delays caused in part by a lack of information on the service to be delivered. Our case studies also identified examples where the asset was not capable of providing the full service required, or where the actual level of usage has been different than that expected when the project was developed.

Management of these contracts: Some risks to value for money.

The Department's analysis of in-service projects shows that most projects, once procured, are receiving the service they require from the contractor. Our evidence suggests that, nevertheless, on some existing contracts action may be needed where service delivery problems arise from deficiencies in the contractual specification.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

Data to quantify risk and to support planning

2.5 In order to allocate risk effectively, both parties need to understand the size and nature of that risk. For specifications to be effective departments need to be clear on what they require, which in turn depends on accurate data relating to any existing service provision, the condition of assets being transferred to contractors and the future needs of the service users. The Department often experiences challenges in these areas because of the complexities of some of its projects and the large numbers of potential users of the services required.

2.6 In our case study projects we found that robust data was not always available. Collecting robust data may be difficult if the project is providing a new service. We found, however, that the data on existing services was frequently insufficiently robust, both for performance information and on the condition of the assets being proposed to be transferred to the private sector.

Insufficient initial definition of the service requirements

- **Armoured Vehicle Training Service project:** The complexities of this training project were underestimated and the requirement was not defined sufficiently clearly before engagement with the contractors in the bidding process. Advancing the procurement took a long time as requirements were identified and developed as the project progressed. It was not until six years after the project was advertised to bidders that the Department understood the risks and decided to abort the plan to procure services under the PFI. Some of the requirement has already been delivered under an alternative conventional programme which the Department is proceeding with. Further details are at paragraph 2.15.The costs associated with the Armoured Vehicle Training Service are discussed in paragraphs 2.16 and 2.17.

Changes needed to make equipment fit for purpose

- **Field Electrical Power Supplies project:** When the generators were deployed in October 2003 the Department discovered that they were incompatible with certain vehicles. The vehicles, when pulling the generators, suffered manoeuvrability problems and could not safely turn corners. The Field Electrical Power Supplies Project Team had nevertheless accepted the generators as suitable for their needs following validation testing and user trials in 2002 and 2003. The Department decided to modify the generators and paid the subcontractor £7.3 million to extend the 'A' frame that attaches the generator to the vehicle. This contractual change was made without competition in order to get the generators operational within the required timeframe. The project team does not believe it maximised value for money from this change.
- Further details of the issues and results of problems experienced by the case study projects arising from insufficient robust data are set out in **Figure 11**.

2.7 In some of our case studies, actual usage has turned out to be different from the Department's expectations when developing the project. Some of these problems arose because the Department's operational needs proved to be different than those initially anticipated in the specification.

Initial usage lower than expected

- **Medium Support Helicopter Aircrew Training Facility project:** The Department guaranteed payments to the contractor equivalent to a level of usage of 80 per cent of the facility's capacity, across the first 20 years of the contract. The aim was to ensure that the contractor could recover the capital cost of the facility. Actual usage of the facility has been, and is currently, lower than the usage guaranteed to the contractor **(Figure 12 on page 27)**. It is difficult to identify a single cause for the lower than expected usage. Factors that may have caused a discrepancy between the expected and actual usage of the facility may include:
  - the Chinook Mk3 aircraft has not been introduced into service;
  - changes to the timing and numbers of Chinook, Puma and Merlin helicopters procured by the Department; and
  - higher than expected operational deployment during the contract period, which means that aircrew are not available for training.

Overall usage to December 2007 was 64 per cent of the hours guaranteed in the contract. As a result the Department has contracted for guaranteed capacity that it has not needed of 34,000 hours. However usage increased during 2007 to 84 per cent of the guaranteed hours level. If this trend continues the facility will be utilised, in future, at or above the quarterly level relating to the Department's agreed payments to the contractor. If the Department needs additional training above this level it will have to buy additional hours from the contractor at a cost of at least £250 per hour.

11 The result of not having sufficient robust data

Project	Issue	Result
Armoured Vehicle Training Service	A key part of the deal structure was the transfer to the contractor of the risk of students not passing the training course. Information critical to assessing the risks included historical data on student pass rates and the amount of live resource used in training (such as the usage of ammunition and hours spent in armoured vehicles). The Department did not have sufficient data available or the systems to collect data of sufficient quantity, quality and relevance to enable a robust value for money PFI deal to be agreed. However, the project team advanced the discussions with PFI bidders in the absence of this data.	There were misunderstandings between the public and private sector about the scale of the risk being transferred. The private sector's ability to commit to a structure and price in their proposed solution was limited. After six years the Department decided that a PFI solution would not give value for money.
Defence Animal Centre	Detailed information on the condition of the estate was not available to bidders. The Department expected bidders to carry out their own surveys during the bidding process, or at the preferred bidder stage as part of due diligence. The project agreement stated that the contractor should, before the commissioning date, inspect the old equipment and project facilities to ensure that it complied with the availability criteria. The Department was entitled to carry out this inspection jointly. The inspection was not, however, carried out. The contractor and the Department failed to agree the condition of the assets to set the baseline to determine whether the asset was fit for purpose and deemed 'available' in the future.	This information would have helped bidders in their pricing by reducing the uncertainty in the pricing. The contractor was exposed to unexpected cost which contributed to the project's difficulties. As no baseline was set it increased difficulties for the Department in enforcing the performance regime.
Main Building	The Department did not carry out additional surveys of the Main Building premises. They were carried out by Modus after their appointment as preferred bidder. The surveys found that further building work would be required because of the condition of the building. Our report on the redevelopment of MOD Main Building recommended that Departments consider the merits of making a detailed survey available to all bidders to enable redevelopment building risks to be priced competitively by all bidders.	There was a price increase in the region of £37 million. Although the Department was satisfied that the work was necessary, the opportunity to benefit from competition between bidders on these additional elements was lost.
Tidworth Water and Sewerage	The conventional option used to compare the PFI proposals included investment in new sewerage treatment facilities. As the facility was actually in a better condition than the Department had envisaged, Thames Water chose to repair and maintain the existing infrastructure rather than build a new waste treatment plant. All maps, data, drawings and records should have been made available in advance of the invitation to tender phase. Much of this information was, however, retained by the Department's Establishment Works Consultant (EWC).	The public sector comparator understated the good condition of the facility and overstated the investment required by the Department. This information would have helped bidders in their pricing.
Heavy Equipment Transporter	Some data on usage of the existing fleet was not available as it had never been recorded. However, in this case the bidder had sufficient information based on the knowledge and experience of their own bid team.	This information could have helped bidders in their pricing.
Defence Fixed Telecommunications System	Our previous report on the Defence Fixed Telecommunications System project identified shortcomings with the information the Department presented to bidders, particularly on volume of usage and details of assets.[1] This shortcoming was also identified in an earlier report on the Management of Telephones in the Ministry of Defence.[2]	Bidders found it difficult to price tariff charges accurately.

Source: Social Fund Annual Report

NOTES

1 HC 328 1999-00 *The Private Finance Initiative: The Contract for the Defence Fixed Telecommunications System.*

2 HC 637 1993-94 *The Management of Telephones in the Ministry of Defence.*

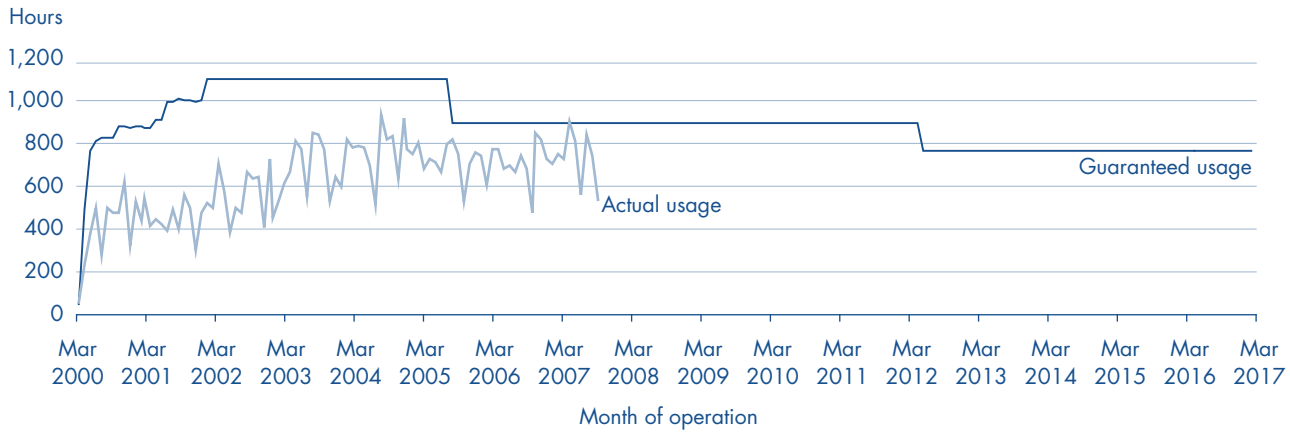
Late change in procurement to reflect change in operational requirements

- **Heavy Equipment Transporter project:** The requirement was changed from 120 to 92 vehicles at an advanced stage in the procurement. This reduction resulted from a change in army structures and an associated reduction in the number of vehicles that the Heavy Equipment Transporter fleet would need to transport at any one time. The project team could not have been expected to foresee this change as the information was not made available to them until a late stage in the procurement process. Late changes of this magnitude could affect the bid process, although in this case the procurement was completed successfully.

Equipment being used outside of its defined operational parameters due to new operational needs

Both the **Field Electrical Power Supplies project** and the **Heavy Equipment Transporter project** operate in environments outside of their defined contractual operational parameters. In Iraq temperatures are above the level specified in the contracts (45°C was specified but actual temperatures exceed 50°C). The dusty environment which the Field Electrical Power Supplies project works in and the condition of roads used by the Heavy Equipment Transporters have also been outside contractual parameters. These factors could impact performance and, in certain situations, the change in use may mean the Department has to bear the risk of performance lapses or the cost of repairs.

12 Usage of the Medium Support Helicopter Aircrew Training Facility compared to expected and guaranteed levels



Source: Ministry of Defence

RISK 2: Delivery of a PFI solution

Definition

Failure to deliver a PFI solution in the procurement phase or, after a contract has been let, failure to deliver the implementation of the required service in terms of the specification, the contractual timescales or the expected Department budget.

	Procurement phase	Construction or service implementation phase
Overall assessment of this risk category in the eight case study projects	Some risks to value for money	Low level of current risk to value for money
Heavy Equipment Transporter		
Field Electrical Power Supplies		
Medium Support Helicopter Aircrew Training Facility		
Armoured Vehicle Training Service[1]		
Main Building Refurbishment		
Defence Animal Centre		
Defence Fixed Telecommunications System		
Tidworth Water and Sewerage		

Reason for overall assessment of this risk category in the eight case study projects:

Procurement of these projects : Some risks to value for money

Although the Department has achieved a very good delivery record from PFI procurement times can be lengthy. In one project, the Armoured Vehicle Training Service project, it took the Department six years from advertising the project to potential suppliers to conclude that it was not possible to achieve a value for money outcome using PFI. Reaching a prompt decision on the appropriate form of procurement, and executing it efficiently, are important aspects of delivering services on time and on terms which are value for money, particularly as the private sector will, over time, seek to recover bid costs in their pricing of contracts.

Construction or service implementation phase of these projects: Low level of current risk to value for money

The projects examined were mostly delivered on time and to budget following contract signature, which has been a positive feature of the Department's use of private finance. The exceptions, although significant at the time, did not cause any long term service delivery problems for the Department. The contract generally served to protect the Department from delivery failure.

On one project, the Defence Animal Centre, the contract procured has not produced the clarity of performance requirements that would be expected from a PFI contract.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

2.8 The Department's 2005 review of its PFI projects in operation found that its PFI projects delivered substantially to time and budget. Our census in 2007 found that the majority of projects continued to report good experience in the delivery of the projects into service. **(Figure 13)**. One case study project, Heavy Equipment Transporter, was delivered early by the contractor in order to allow the equipment to be used on front line operations in Iraq. The refurbishment of the Main Building was also completed ahead of schedule. Other projects were generally delivered on time. In four cases the current members of the project team did not know whether the project has been delivered on time and to budget. This partially reflects the fact that many project teams are now managing mature projects, so service management, rather than asset delivery, is their current focus. But it also reflects a lack of staff continuity. If staff with knowledge of procurement or early operations are not retained, it is harder to retrieve routine, but important, information such as performance on asset delivery.

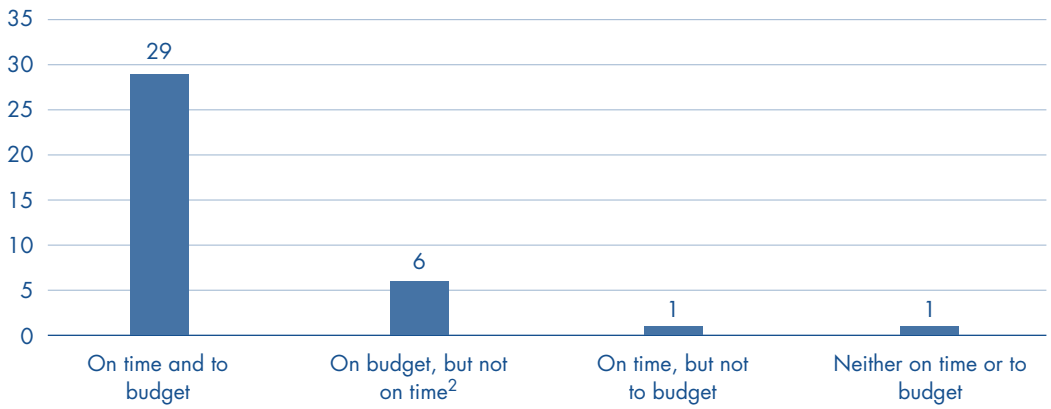
2.9 In the Medium Support Helicopter Aircrew Training Facility and Defence Animal Centre projects there were some delays to the implementation of the required services. In both cases the delays did not cause any serious disruption to training and the following appropriate contractual financial penalties were imposed on the private sector providers:

- Although the Medium Support Helicopter Aircrew Training Facility project was delivered on time, individual delivery milestones were missed because the contractor experienced difficulties in delivering the agreed visual system. Although the realism of the simulator was affected, the simulator was able to be used for training the Department's staff. In line with the contract, the Department charged the PFI contractor liquidated damages of £2.98 million for the late achievement of those milestones. Despite the initial difficulties the early problems were subsequently fully overcome.
- The accommodation element of the Defence Animal Centre was delivered 11 weeks late. As a result the contractor incurred penalties of £29,000.

Procurement times

2.10 The average procurement time of the seven case study projects which reached contract letting was 43 months. **(Figure 14 overleaf)**. For example, the Field Electrical Power Supplies Project took over 68 months from the initial advertisement to financial close and the Defence Animal Centre, a less complicated project, took almost 44 months. By comparison, our 2007 report on Improving the PFI Tendering Process[4] found that the average procurement time for all the PFI deals across government with a capital value of over £20 million and that closed between 2004 and 2006, was 34 months. For earlier deals, closed between 2000 and 2003, the comparable figure was 33 months.

13 Delivery to time and budget[1]



Source: National Audit Office census of the Department's PFI projects

NOTES

1 In four projects the current members of the project team did not know whether their project was delivered to time and/or budget.

2 One of the six projects (Heavy Equipment Transporter) was delivered early by the contractor.

4 *Improving the PFI Tendering Process* HC 149 2006/07.

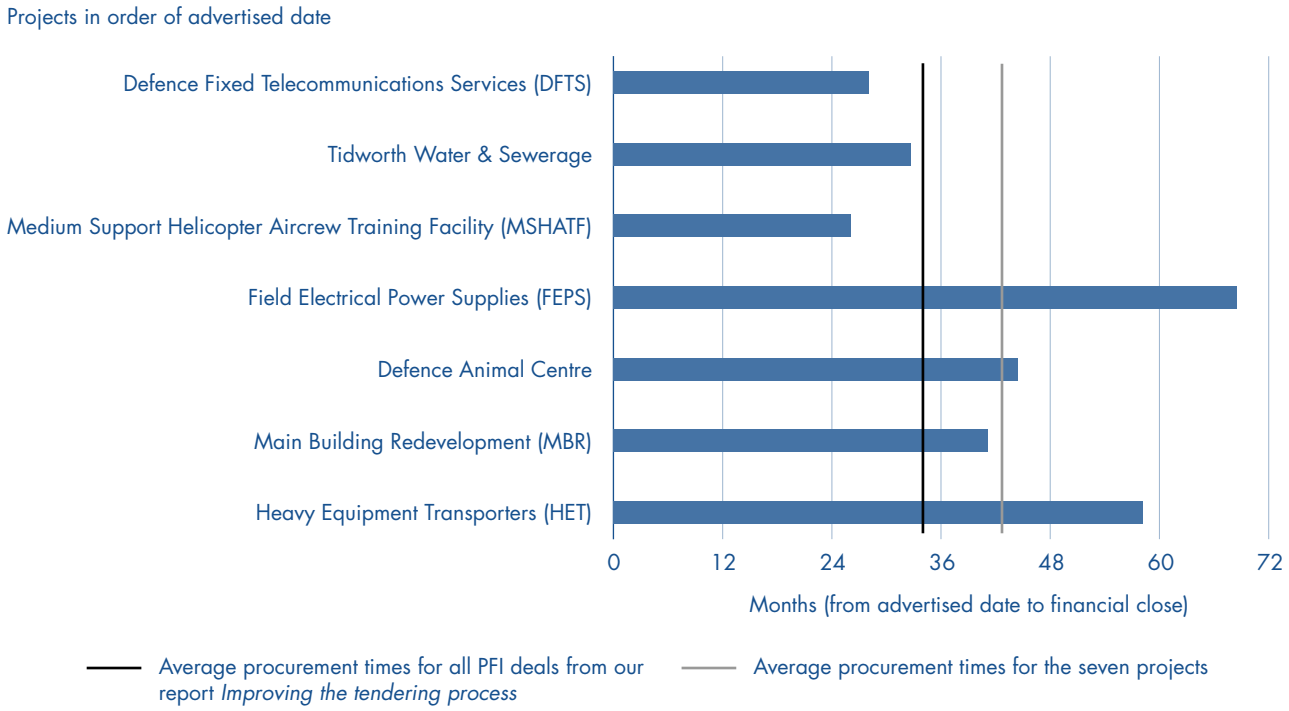
2.11 In the larger population of projects we surveyed, where data was available, the Department took on average 37 months to procure its PFI projects. In 77 per cent of the projects we surveyed (36 of the 47 projects) the Department held data on procurement times. In the other projects, mainly because of changes in project staff since the procurements, such data was not available. Larger projects often took longer to procure, the average for the Department's PFI projects with a capital value of over £50 million, where data was available, being 45 months. These larger projects were around half of the projects supplying data on procurement times.

2.12 Some of the Department's PFI projects, including some of the case study projects, are complex or deal with specialist equipment. These factors may add to the time needed in procurement compared with hospitals or schools, for which there is generally a fairly standard procurement approach based on many similar previous PFI projects. The range of the Department's in-house stakeholders who are involved in decisions about the projects and the assessment of the deals is also a factor. But some of the procurement time incurred on the Department's PFI projects is due to changes in the specification, or difficulties in obtaining data about service requirements, during the procurement period. It is in the Department's interest to be as efficient as possible in its procurement as the projects often need to be delivered promptly for operational purposes, and in the long run bidders are likely to build the cost of time spent on bidding into their pricing of PFI deals.

Decision that a PFI solution is not appropriate

2.13 The Department has established processes for determining the procurement method which it expects to deliver the best value for money, and for deciding whether the project should proceed to contract letting as an approved project. As a result of these processes the Department expects some projects to be abandoned or the form of procurement to be changed. In some cases however, a long period of time elapsed before these decisions were taken on projects which the Department had advertised to the market as potential PFI projects. Further time may be needed if alternative procurement options are then to be pursued. These delays can result in significant costs for both the Department and private sector bidders. They may also affect bidders' strategies for bidding for and pricing future PFI contracts.

14 Average procurement times for the seven operational case study projects



Source: National Audit Office analysis of case studies

Abandoning one of the case study projects after six years

2.14 The Department acknowledges that it was unsatisfactory for it to have taken six years to reach a decision in 2005 to cancel the Armoured Vehicle Training Service project which it had commenced in 1999. The project was, however, cancelled prior to an investment decision and approval to proceed to contract award, in line with its process for ensuring only projects offering value for money proceed. The six years to reach a decision to terminate the procurement was despite substantial effort by the Department and the initial private sector bidders. The Department had also advanced the project to the appointment of a provisional preferred bidder. However the critical lack of project management and management information contributed to the length of time before the Department decided to cancel the project.

2.15 The Department subsequently proceeded with an alternative conventional procurement, the Enhanced Capability Armoured Training System (ECATS). Achievements so far under this project include the delivery of a new device for Challenger II gunnery training, which has been in service since June 2006 and an improved Warrior gunnery turret trainer which entered service in May 2007. Together the Department estimates these will produce savings of some £3 million per year in live ammunition.

2.16 The Department is not able to identify the total cost incurred on the abortive Armoured Vehicle Training Service procurement as relevant records were not retained. The Department spent £5 million on advisers in the bid evaluation assessment phase, but has not retained records showing spending on advisers for the early phase of the procurement prior to 2000. Furthermore, although the Department now expects internal costs such as staff time to be recorded, at the time this intended project was being developed, internal staff cost recording for each project was not a requirement.

2.17 Following the cancellation of this PFI procurement, the Department paid a total of £10.6 million to bidders. Of this, £7.7 million was paid to secure intellectual property rights for material produced during the procurement. The intellectual property rights have not been utilised to date, although the Department remains confident that it will use these in due course. The Department also paid an additional sum of £2.9 million to one of the bidders as an ex-gratia payment in full and final settlement of its involvement with the cancelled project.

Other decisions not to proceed with a PFI solution

2.18 The Department drew attention to at least six other PFI projects that have been advertised to industry and abandoned prior to contract signature. These include the Airfield Support Service Project which was cancelled three and a half years after it was advertised to industry. In addition, the Department has recently announced it will not be pursuing a PFI solution for one of the two packages of the Defence Training Rationalisation Project, five and a half years after the project was advertised to industry. Other projects may also have been abandoned in the early phase of development or have been put on hold.

Fluctuations in financing costs prior to contract letting

2.19 A risk that may affect the delivery of a PFI solution within the Department's expected budget is that financing costs may fluctuate prior to contract letting. The current uncertainties in the financing markets have also led to increases in the financing costs of some of the Department's recent private finance projects in procurement. In some cases the scope of the PFI solution may need to be adjusted so that the project cost remains within the Department's original budget.

RISK 3: Delivery of the ongoing service

Definition

Failure to deliver the ongoing service to the required standards as set out in the contract.

Overall assessment of this risk category in the eight case study projects	Low level of current risk to value for money
Heavy Equipment Transporter	●
Field Electrical Power Supplies	●
Medium Support Helicopter Aircrew Training Facility	●
Armoured Vehicle Training Service[1]	N/A
Main Building Refurbishment	●
Defence Animal Centre	●
Defence Fixed Telecommunications System	●
Tidworth Water and Sewerage	●

Reason for overall assessment of this risk category in the eight case study projects:

Low level of current risk to value for money

We found that of our case studies only the Defence Animal Centre has suffered serious performance limitations to date, and this was on an early private finance contract of a type which is unlikely to be replicated. However any performance failures need to be addressed promptly and the Department was still addressing this particular issue at the time of our audit.

The overall view that specified services were being delivered is corroborated by the results of our census of all projects.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

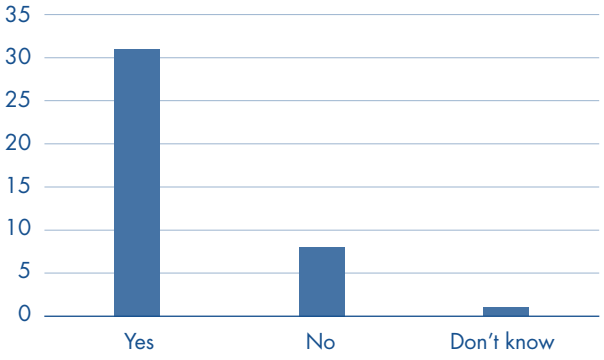
2.20 Once contracts reach their full in-service capability, we found that project managers mostly consider that contractors deliver the service specified in the contract **(Figure 15)**. 31 out of 39 project managers who responded to our census stated that the contractor had delivered the specified service as specified in the contract.

2.21 In the eight projects where the project managers reported some shortfall in service delivery, in all but one project, the Defence Animal Centre, project teams confirmed that the service is currently being delivered satisfactorily. We confirmed with the project managers that the other negative responses referred to either performance lapses that were not considered to be serious, or early problems such as late delivery of the asset.

In the Defence Animal Centre case study, the Department considers that the PFI contractor Realm has performed badly on estate management and the animal husbandry service. A particular problem has been the Indoor Riding School facilities which were deemed unsuitable and not fit for purpose by the British Equine Association, despite the contractor's attempts to repair it. The Department then asked Realm to replace the existing Indoor Riding School with a much larger one that meets the modern training best practice and safety needs at a cost to the Department of £705,000. As a result of the historic problems with the indoor riding school facilities and other problems with the service delivery the Department's employees at the facility have not been satisfied with the contractor's performance. These problems have arisen from a poorly drafted contract, which is not sufficiently precise in specifying the contractor's responsibilities. It has an ineffective payment and performance mechanism, which does not provide effective incentive. The Department has concluded that this project requires renegotiation.

15 The majority of the Department's PFI projects reported that they are delivering the specified service

One of the projects who returned a survey response did not respond to this particular question



Source: National Audit Office census of all the Department's PFI projects in operation

RISK 4: Service user and stakeholder satisfaction with delivery

Definition

Users are not satisfied, or satisfaction is not assessed in order to ensure that value for money is being achieved from a user perspective.

Overall assessment of this risk category in the eight case study projects	Low level of current risk to value for money
Heavy Equipment Transporter	●
Field Electrical Power Supplies	●
Medium Support Helicopter Aircrew Training Facility	●
Armoured Vehicle Training Service[1]	N/A
Main Building Refurbishment	●
Defence Animal Centre	●
Defence Fixed Telecommunications System	●
Tidworth Water and Sewerage	●

Reason for overall assessment of this risk category in the eight case study projects:

Low level of current risk to value for money

User satisfaction with services was generally good both in the case studies and in our census and therefore there is a low level of current risk to value for money. There were some exceptions, for example the ongoing problems at the Defence Animal Centre and some initial user dissatisfaction with the late delivery of part of the Medium Support Helicopter Aircrew Training Facility. We also found that because of the diverse nature of the projects, approaches to assessing user satisfaction varied in both the method used and the regularity of assessment.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

2.22 The users of the PFI services which the Department has procured include both its military and civilian personnel. In some cases users may be from outside the Department. For example, the Medium Support Helicopter Aircrew Training Facility provides training services for aircrew from allied countries as well as the RAF. The Tidworth Water and Sewerage project provides services to both the Department's personnel and the residents of Tidworth.

2.23 User satisfaction with service delivery has generally been good in the case study projects. A particular example is the Defence Fixed Telecommunications System project which has consistently recorded user satisfaction in excess of target levels. An exception was the Defence Animal Centre where, because of the problems with service delivery, users have not been satisfied.

2.24 In some projects initial issues over user satisfaction were overcome:

- The late delivery of the agreed visual system on the Medium Support Helicopter Aircrew Training Facility initially impacted adversely on user satisfaction but this problem has been resolved and users are now satisfied with the service.
- On the Heavy Equipment Transporter project some of the Department's stakeholders were opposed to the use of Sponsored Reserves.[5] Though there were some initial problems, the Department considers that these have been overcome and that Sponsored Reserves have been a success.

The formal assessment of user satisfaction

2.25 Assessment of user satisfaction is an important part of assessing overall performance. Twenty five per cent of the projects responding to our census (10 out of 40 projects) had not undertaken a formal assessment of user satisfaction. In other projects we found that the approach of the Department's project teams to assessing user satisfaction varied in both the method used and the regularity of assessment. In addition, user satisfaction was not always formally built into the performance management system for the project.

2.26 There were some good examples in the case study projects of obtaining regular and systematic user satisfaction feedback.

- The Defence Fixed Telecommunications Service project uses a regular questionnaire to assess user satisfaction.
- The Medium Support Helicopter Aircrew Training Facility uses a Balanced Scorecard as part of the overall assessment of contractor performance. User satisfaction is regularly assessed and translated into formal measures, which feed into the Balanced Scorecard.[6]

5 Sponsored reserves are individuals whose employers are contractually committed to provide specific operational capability to the Services. During front line operations these personnel are called up and serve as Army Reservists alongside regular Army personnel.

6 A Balanced Scorecard is an integrated framework for describing strategy through the use of linked performance measures in four, balanced perspectives - Financial, Customer, Internal Process, and Employee Learning and Growth.

RISK 5: Technology and latent defects

Definition

The technology being used to provide the asset or service may not be fit for purpose throughout the life of the contract, perhaps because of inadequate design or unexpected use or misuse by the user. There is also the risk of whether value for money will be achieved where changes are required.

Latent defects (inherent faults in the operation of an asset which come to light after the asset is in use) may also impact services. Changing the use of an asset may impact on the ability to identify that latent defects have occurred.

Overall assessment of this risk category in the eight case study projects	Some risks to value for money
Heavy Equipment Transporter	●
Field Electrical Power Supplies	●
Medium Support Helicopter Aircrew Training Facility	●
Armoured Vehicle Training Service[1]	N/A
Main Building Refurbishment	●
Defence Animal Centre	●
Defence Fixed Telecommunications System	●
Tidworth Water and Sewerage	●

Reason for overall assessment of this risk category in the eight case study projects:

Some risks to value for money

The Department relies on specialist technology on a number of its projects, for example in equipment, training and communications. There are risks that the technology might fail or, given the fast changing environment in which the Department operates, it might need updating in a situation where competition might not be possible because of reliance on the original supplier.

There is also evidence from the projects we examined that if the Department has changed the way an asset is being used, it may be difficult for the Department to prove whether a defect is a latent defect (for which the contractor is liable) as opposed to a defect which has arisen from the change of use.

Whilst these are issues that could arise under any form of procurement project teams need to be alert to the risk that the value for money expected when letting a PFI contract is eroded as projects are adapted to changing needs.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

2.27 The Department operates in a fast moving and often unpredictable environment. What it needs from its projects may, therefore, change more rapidly than other government Departments. Many defence projects, including PFI deals such as Heavy Equipment Transporter, Field Electrical Power Supplies and the Strategic Sea Lift Roll-on Roll-off Ferries (RORO) project, are used to support the front line operations. The usage of equipment may, therefore, need to change and adapt to operational circumstances at short notice.

2.28 The Department relies on specialist technology on a number of its projects, for example in equipment, training (including flight simulation) and communications. The Department faces general risks that the technology might fail or, given the fast changing environment in which the Department operates, it might need updating in a situation where competition might not be possible because of reliance on the original supplier. These are risks that would arise in any form of procurement. The following issues arose in the case study projects.

- **Medium Support Helicopter Aircrew Training Facility project:** A number of changes have been made to reflect alterations to the aircraft which the training simulator seeks to replicate. Changes of this type are a risk of using training simulators, whether they are procured conventionally or through PFI. Further changes to the simulators may be needed, but for the foreseeable future, these changes should be mostly capable of being replicated on the simulators without the need for a full technological update. Users will however expect the simulator to be kept up to date over the life of a contract that may run until 2037.

- **Defence Fixed Telecommunications Service:** The services being delivered by this contract have been successfully changed over time, in response to the Department's requirements for enhanced methods of communication through new technology since the contract was let in 1997. The Department's project team has used benchmarking procedures to test the value for money of additional services and has achieved some price reductions as a result.

2.29 As noted in the findings relating to Risk One on the development of projects the **Field Electrical Power Generators** and **Heavy Equipment Transporters** have been used in conditions outside those envisaged by the contract specification. If there are subsequently faults with these projects where there has been a change in use the Department may find it difficult to show whether the fault is a latent defect relating to the original provision of the equipment. The contractor is liable for latent defects whereas remedying a fault arising from the Department's change in the use of the equipment is likely to be a cost to the Department. The Department guidance expects project teams to take account of the risk of any additional costs in remedying defects in their value for money case for making changes to a project.

RISK 6: Environment and safety

Definition

Security of physical assets and information may be compromised by inadequate project design or management. Expected or unexpected environmental issues (such as military contamination like fuel spillages or contamination from the use of certain weapons) may affect the safe and effective delivery of the service.

Overall assessment of this risk category in the eight case study projects	Low level of current risk to value for money
Heavy Equipment Transporter	●
Field Electrical Power Supplies	●
Medium Support Helicopter Aircrew Training Facility	●
Armoured Vehicle Training Service[1]	N/A
Main Building Refurbishment	●
Defence Animal Centre	●
Defence Fixed Telecommunications System	●
Tidworth Water and Sewerage	●

Reason for overall assessment of this risk category in the eight case study projects:

Low level of current risk to value for money

Overall there is a low level of current risk to value for money in the case study projects from environment and safety issues. These are, however, risks the Department needs to continue to be aware of in its projects. Some of these risks may be best managed by the contractor, others by the Department, for example depending on who can most effectively control the risk.

Only in the Field Electrical Power Supplies project have environment and safety issues arisen that affected risk management. There have been some instances of the generators catching fire. The Department's use of the asset and the design of the generators were both possible factors. After taking legal advice, the Department agreed that, since it specified the design of the generators and had tested and fully accepted them, there should be no liability to the contractor.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

2.30 There was a low level of current risk to value for money from environment and safety issues in the eight case study projects. An underlying factor was that these risks have been generally allocated to the party best able to manage them. Sometimes this party was the contractor, but in other cases the Department was better able to manage these risks. For example in the Tidworth Water and Sewerage project, the Department was best placed to manage risks arising from its previous actions, which had included World War II bullets being placed in the drains. The Department's explosive ordnance disposal teams are able to deal with any incidents and the Department can educate its personnel to avoid inappropriate use of the water and sewerage system.

RISK 7: Performance monitoring and management regimes

Definition

Inadequate performance mechanisms may not provide sufficient incentive to the contractor to deliver the service specified in the contract.

Overall assessment of this risk category in the eight case study projects	Some risks to value for money
Heavy Equipment Transporter	●
Field Electrical Power Supplies	●
Medium Support Helicopter Aircrew Training Facility	●
Armoured Vehicle Training Service[1]	N/A
Main Building Refurbishment	●
Defence Animal Centre	●
Defence Fixed Telecommunications System	●
Tidworth Water and Sewerage	●

Reason for overall assessment of this risk category in the eight case study projects:

Some risks to value for money

In the case studies examined performance mechanisms were mixed in terms of their effectiveness. On four projects the payment mechanisms appeared effective. In one case, Defence Fixed Telecommunications System, the risk of incorrect performance recording materialised so that the Department had to subsequently recover £1.3 million from the contractor BT. In the Defence Animal Centre and Main Building Refurbishment projects the Department has been addressing specific issues about the payment mechanism. In these projects previous disagreements on the operation of the mechanisms had adversely affected the quality of the working relationships.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

2.31 All of the case study projects we examined had performance management arrangements that set out mandatory standards of performance and detailed what deductions can be made if those standards are not met. We also found through our census that all 41 of the projects who responded had performance management arrangements in place as part of their contracts.

2.32 Our census found that 36 of the 41 project teams strongly agreed or agreed that the performance mechanism incentivised the contractor to deliver the specified service **(Figure 16 overleaf)**.[7] Only two project teams disagreed and one strongly disagreed that the performance mechanisms incentivised the contractor to provide the service required by the contract. In these cases, project teams felt that the performance mechanisms were not proportionate. Project teams felt that penalties were not sufficient, or the burden of performance monitoring outweighed the benefit.

7 Out of 39 responses to this specific part of our survey.

2.33 Our case studies showed that project teams felt that a partnering ethos and good working relationships were a key part of the overall incentivisation of the contractor to perform at levels above the standard required by the contract.

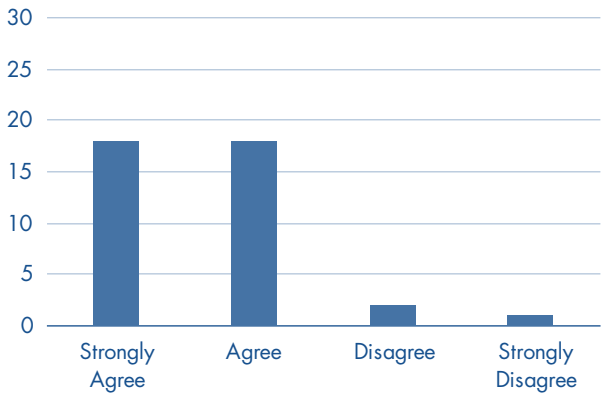
2.34 Performance mechanisms in the case study projects varied, however, in their consistency and quality **(Figure 17)**.

The risk of incorrect performance

2.35 In PFI projects the recording of performance is usually undertaken by the contractor's staff to enable them to remedy service problems and to reduce the burden of performance recording on the public sector. As a control, the public sector should normally obtain user feedback, and discuss this and the contractor's performance data with the contractor on a regular basis. These methods of monitoring performance normally work well. In the case of the Main Building Redevelopment project the Department and the contractor have not yet found the right balance between self-reporting by the contractor and audit by the Department and are working on a solution. As we noted in our earlier report on this project (Ministry of Defence – Redevelopment of MOD Main Building, HC 748 2001-02) it is appropriate for the Department to keep performance reporting systems under review to ensure the integrity of the performance information they receive.

16 Performance mechanisms' effectiveness at incentivising the contractor

The performance mechanisms we have in place incentivises the contractor to provide the service required by the contract.



Source: National Audit Office census of all Ministry of Defence PFI projects

2.36 These methods of reporting performance also carry a risk that private sector staff might not record lapses in performance where the lapse is unlikely to be detected by the public sector but, if recorded, would result in payment deductions.

2.37 In the Defence Fixed Telecommunications System project, we found a specific instance of the private sector fraudulently recording performance in such circumstances. The contractor, BT, was required to meet targets for the percentage of calls answered within specified time limits and they would be liable for payment deductions if the targets were not met. BT staff at a call centre in Kettering, now closed, artificially inflated the number of calls being answered within the required time limit by calling each other.

2.38 This fraudulent recording of performance was not detected through the performance management system and only came to light subsequently within BT. BT senior management have informed us that they were not initially aware of the error in performance reporting which they consider arose from the misconduct of a small number of staff working at the call centre. As the inflation of calls being answered did not result in an adverse experience for the Department's users of the telecommunication services there were no complaints or adverse comments in customer feedback surveys to trigger an investigation. This type of fraud can only be identified by audits of the performance monitoring systems and spot checks.

2.39 The Department and BT reviewed the problems and have agreed the compensation due to the Department. As a result BT has made retrospective service payments to the Department of £1,021,000 and has reimbursed the Department for the external cost incurred by the investigation totalling £122,000 excluding VAT and for the value of the overstated calls totalling £197,000 excluding VAT.

2.40 Following the fraud the Department and BT have imposed a new management structure to the Defence Fixed Telecommunications project including new governance arrangements. BT is now required to provide more detailed reporting and the Department will carry out regular detailed audits of the new BT reporting system to ensure its integrity. This will be supplemented by regular service audits by the Department. Certain BT staff involved in the activities of Kettering call centre have been released by BT.

17 Case study projects' performance mechanisms

Project	Comment
Medium Support Helicopter Aircrew Training Facility Field Electrical Power Supplies	The payment regime appears effective but the performance and payment mechanisms are very complex.
Defence Fixed Telecommunications System	There were specific problems regarding the reporting of performance on the Defence Fixed Telecommunications System project with the private sector fraudulently recording performance.
Main Building Redevelopment	The payment regime generally appears effective. However the Department believes that the penalties incurred by the contractor to date for the occasional service lapses that have occurred were too small. The Department also recognised that its involvement in service monitoring caused antagonism between the public and private sector. The Department therefore suspended its service audits in September 2006. Both the contractor and the Department are determined to maintain and improve performance standards and to introduce a more effective audit methodology. This had not been implemented by the time of our audit in autumn 2007 although the Department and the contractor are continuing to work together on this issue.
Heavy Equipment Transporter Tidworth Water and Sewerage	Few performance deductions, if any, have been necessary to date. Payment mechanisms have some indicators, such as those governing reliability and availability of the asset, which will become more challenging as the contract progresses and the assets age.
Defence Animal Centre	The performance mechanism was poorly designed. There are a large number of potential performance indicators, not all of which are relevant to the delivery of the core service. In addition, deductions for the asset not being available are set at a low level and are much less than the financial cost to the authority of service failure. As a result, the payment and performance mechanism lacks credibility and has been the cause of dispute between the authority and the contractor.

Source: National Audit Office analysis of case study projects

RISK 8: Relationships with contractors

Definition

Poor relationships between the contractor and the public sector can impact the service being delivered and thereby reduce value for money.

Overall assessment of this risk category in the eight case study projects	Low level of current risk to value for money
Heavy Equipment Transporter	●
Field Electrical Power Supplies	●
Medium Support Helicopter Aircrew Training Facility	●
Armoured Vehicle Training Service[1]	N/A
Main Building Refurbishment	●
Defence Animal Centre	●
Defence Fixed Telecommunications System	●
Tidworth Water and Sewerage	●

Reason for overall assessment of this risk category in the eight case study projects:

Low level of current risk to value for money

Good working relationships are recognised as an important factor in securing good overall performance. We found that, although there had been problems in some projects over the operation of payment mechanisms, working relationships were generally good between the Department and its PFI providers. Poor relations did however contribute to overall poor performance on the Defence Animal Centre project.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

2.41 We found that the relationships between the Department and the contractors delivering services are generally good and were making a positive contribution to contract management. Only at the Defence Animal Centre, where there have been major changes in the staffing both on the Department and contractor side, were there poor relationships. These have arisen because of the Department's frustration with the ineffective payment mechanism and ambiguous contract terms and dissatisfaction with contractor performance. Disagreements over service monitoring had led to relationship problems on the Main Building Refurbishment project but these problems have now been resolved.

RISK 9: Resources and skills

Definition

Insufficient resources, including human resources (staff capacity, skills, recruitment and retention) or financial capacity is insufficient to manage or procure the contract effectively.

Overall assessment of this risk category in the eight case study projects	Some risks to value for money
Heavy Equipment Transporter	
Field Electrical Power Supplies	
Medium Support Helicopter Aircrew Training Facility	
Armoured Vehicle Training Service[1]	
Main Building Refurbishment	
Defence Animal Centre	
Defence Fixed Telecommunications System	
Tidworth Water and Sewerage	

Reason for overall assessment of this risk category in the eight case study projects:

Some risks to value for money

Lack of skill was identified as a barrier to success in two projects and shortages were reported in two others. We also found that there was sometimes a lack of continuity of staffing from the procurement to operational phases meaning that new staff who were not involved in negotiating the contract had to take over the management of the project.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

2.42 We found that, whilst project teams had dealt with the procurement process well in general, the level of staff skills and confidence in areas such as budgeting, forecasting and risk allocation varied from team to team. In two of the eight case studies, a lack of skill in the procurement phase was identified by project teams as a factor that had contributed to value for money risks:

- Despite the use of legal advisers, elements of the Defence Animal Centre contract are vague and it has an ineffective payment mechanism that has led to the service delivery problems. If the project teams had had the right skills and had made proper use of advisers the problems might have been identified prior to the letting of the contract.
- The Department has also identified lack of procurement and project management skills as a major factor in the failure of the cancelled Armoured Vehicle Training Service PFI project. The Department's post project evaluation concluded that the project team was not originally adequately resourced, or sufficiently experienced in dealing with PFI procurements.

Staff continuity

2.43 Staff continuity is an issue that affects all PFI projects. Staff involved in negotiating a PFI project may not necessarily stay with the project once the contract has been let. They may move on to negotiate other PFI projects or be transferred to other duties. Also, some staff have particular skills in contract management and will join the project to carry out that function. Some element of staff continuity after the letting of the contract is, however, desirable to ensure that knowledge of the contract and the project's aims is transferred to staff engaged in managing the contract.

2.44 On the Heavy Equipment Transporter and Tidworth Water and Sewerage projects staff continuity was identified by the Department's project teams as a key driver of performance. In the MOD Main Building Refurbishment the Department's project director for the procurement remained in post for a year after the contract had been let to ensure the smooth handover to the contract management team.

2.45 Lack of continuity in core areas was, however, identified as an area of potential risk on the Defence Fixed Telecommunications System project. There has also been lack of continuity on the Field Electrical Power Supplies project, where better transfer of knowledge between the procurement and in-service phases may have been useful in managing the subsequent issues with the design and specification of the asset.

RISK 10: Risk management processes

Definition

Failure to put in place robust systems to monitor and manage ongoing risks to the delivery of the service.

Overall assessment of this risk category in the eight case study projects	Some risks to value for money
Heavy Equipment Transporter	●
Field Electrical Power Supplies	●
Medium Support Helicopter Aircrew Training Facility	●
Armoured Vehicle Training Service[1]	N/A
Main Building Refurbishment	●
Defence Animal Centre	●
Defence Fixed Telecommunications System	●
Tidworth Water and Sewerage	●

Reason for overall assessment of this risk category in the eight case study projects:

Some risks to value for money

Effective risk management is important in delivering value for money in private finance projects which are long term and often complex projects. We found some examples of good practice in adopting a risk-based approach to procurement in the case studies and our census identified that most of the Department's PFI projects also made some use of processes designed to help monitor and manage risks. There were, however, shortcomings on four case study projects. In our census some project managers did not know their risk management process, and processes in some instances were insufficient.

NOTE

1 This project did not proceed to contract and is not part of the current Department portfolio.

2.46 We found some examples of good practice in adopting a risk-based approach to potential threats to value for money during procurement.

- On the Tidworth Water and Sewerage project the initial preferred bidder, Wessex Water, was replaced because risk allocation could not be agreed, particularly around the extent of contractor liabilities and potential payments to the contractor in the event of breach or termination. The Department's project team was unwilling to retreat from its intended risk position and approached the reserve bidder, Thames Water, to replace Wessex Water.
- The Heavy Equipment Transporter project was a pathfinder for the use of Sponsored Reserves employed as drivers and mechanics. This practice was identified as an area of potential risk and three standard bid options were developed, with differing proportions of the service delivered by Army personnel and Sponsored Reserves. The bidders addressed all three options separately in their bids. By including different options, the project team could assess the impact of this risk on the eventual contract price. It decided that a workforce made up of one third Sponsored Reserves offered best value for money.

Risk processes in the in-service phase

2.47 We found that the Department's PFI projects made some use of processes designed to help monitor and manage risks. Twenty-nine out of 41projects responding to this section of our census stated that they had a risk register in place during the in-service phase of the project. For one of our case study projects, the Tidworth Water and Sewerage project, the Department's project team did not have a risk register.

The consistency and robustness of risk processes

2.48 Although our census found that most of the Department's PFI project teams had some risk management processes, eight of the Department's project managers acknowledged that there was not a clear process outlining how to manage risks on their project. Five of the 29 projects who stated that a risk register was in place did not consider that the risk register was a useful document for managing the contract.

2.49 In our case study projects formal risk registers were not well utilised during the procurement phase of the Field Electrical Power Supplies project. We also found that the main risk registers currently used in the Field Electrical Power Supplies and Heavy Equipment Transporter projects did not have named owners, as they only identified whether the risk lay with the Department or the contractor.

2.50 Communication with contractors and stakeholders is a key part of a robust risk management process. Our census found that, of the 29 projects who stated that they had a risk register in the in-service phase, 24 were shared with the contractor.

Managing risks: summary

2.53 The Department has generally managed risks well in the PFI projects we examined. Our analysis above shows that risk has also been managed well in six out of the eight case study projects evaluated and that out of ten risk categories nine show either a low or some potential risks to value for money (moderate risk). **Figure 18 below** summarises our assessment:

18 Assessment of Risk Performance for the Eight Case Studies

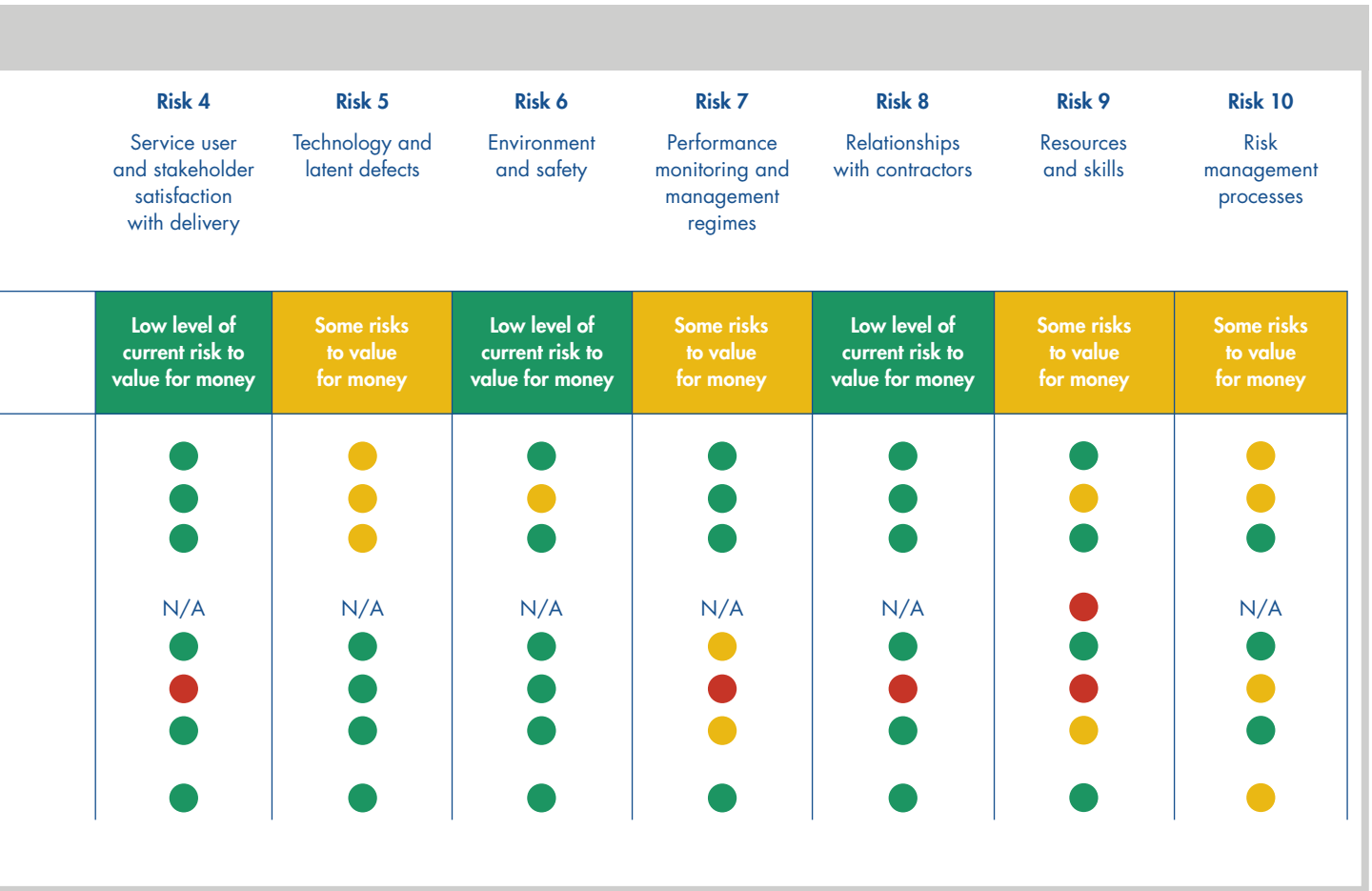
	Risk 1		Risk 2		Risk 3
	Specification of the asset or service		Delivery of a PFI solution		Delivery of the ongoing service
	Procurement phase	Management of the contracts	Procurement phase	Construction or service implementation phase	
Overall assessment of current risk to the Department:	Significant risks to value for money	Some risks to value for money	Some risks to value for money	Low level of current risk to value for money	Low level of current risk to value for money
Heavy Equipment Transporter		●		●	●
Field Electrical Power Supplies		●		●	●
Medium Support Helicopter Aircrew Training Facility		●		●	●
Armoured Vehicle Training Service		●		●	N/A
Main Building Refurbishment		●		●	●
Defence Animal Centre		●		●	●
Defence Fixed Telecommunications System		●		●	●
Tidworth Water and Sewerage		●		●	●

Source: NAO review of case studies

The Department's oversight of the PFI portfolio.

2.51 Although the Department's Private Finance Unit keeps abreast of issues affecting the development and performance of the Department's PFI projects, there is no central risk register that summarises risks across the Department's PFI portfolio. Such a register would enable the Private Finance Unit to identify common risks and ensure that appropriate mitigations are in place. For example a risk register could identify common risks, such as difficulties with obtaining robust data about the service required, the risk of insufficient skills in the project team or problems with staff retention.

2.52 Other aspects of contract management were not implemented consistently across projects: we found that post-project evaluations had taken place on many, but not all projects. Post-project evaluations are commissioned by the project's Senior Responsible Owner and the Private Finance Unit provides input as the sector specialist. These reviews are important in understanding how issues have arisen and how risks can be managed more effectively in the future. In one case we examined, Field Electrical Power Supplies, a formal evaluation had not been undertaken. In other cases, such as the Defence Animal Centre, a formal evaluation of the project might have been more valuable if it had been undertaken earlier.



APPENDIX ONE

The case studies

This part provides more information about each of the eight case study projects that we examined and explains how they were selected.

1 As part of our review of PFI in the Ministry of Defence, we examined a selection of eight case study projects, which illustrate the diverse nature of the Department's portfolio and provide an insight into the types of challenges presented by their PFI projects. We chose two projects from each category of service: equipment, training, accommodation and other support projects.

2 As shown in **Figure 20**, we also selected the eight projects to give variety according to maturity (how long the project has been operational), the type of service provided, the proximity of the service to the front line of operations and also the size of deal (based on the capital value of the project).

3 The eight case study projects also spent varying amounts of time in procurement. All the operational contracts will run until at least 2012 and, in the case of the Medium Support Helicopter Aircrew Training facility may run until 2037.

19 The eight case study projects

Type of service	Project
Equipment	Heavy Equipment Transporter
	Field Electrical Power Supplies
Training	Medium Support Helicopter Aircrew Training Facility
	Armoured Vehicle Training Service
Accommodation	Ministry of Defence Main Building Refurbishment
	Defence Animal Centre
Other Support	Defence Fixed Telecommunications System
	Tidworth Water and Sewerage

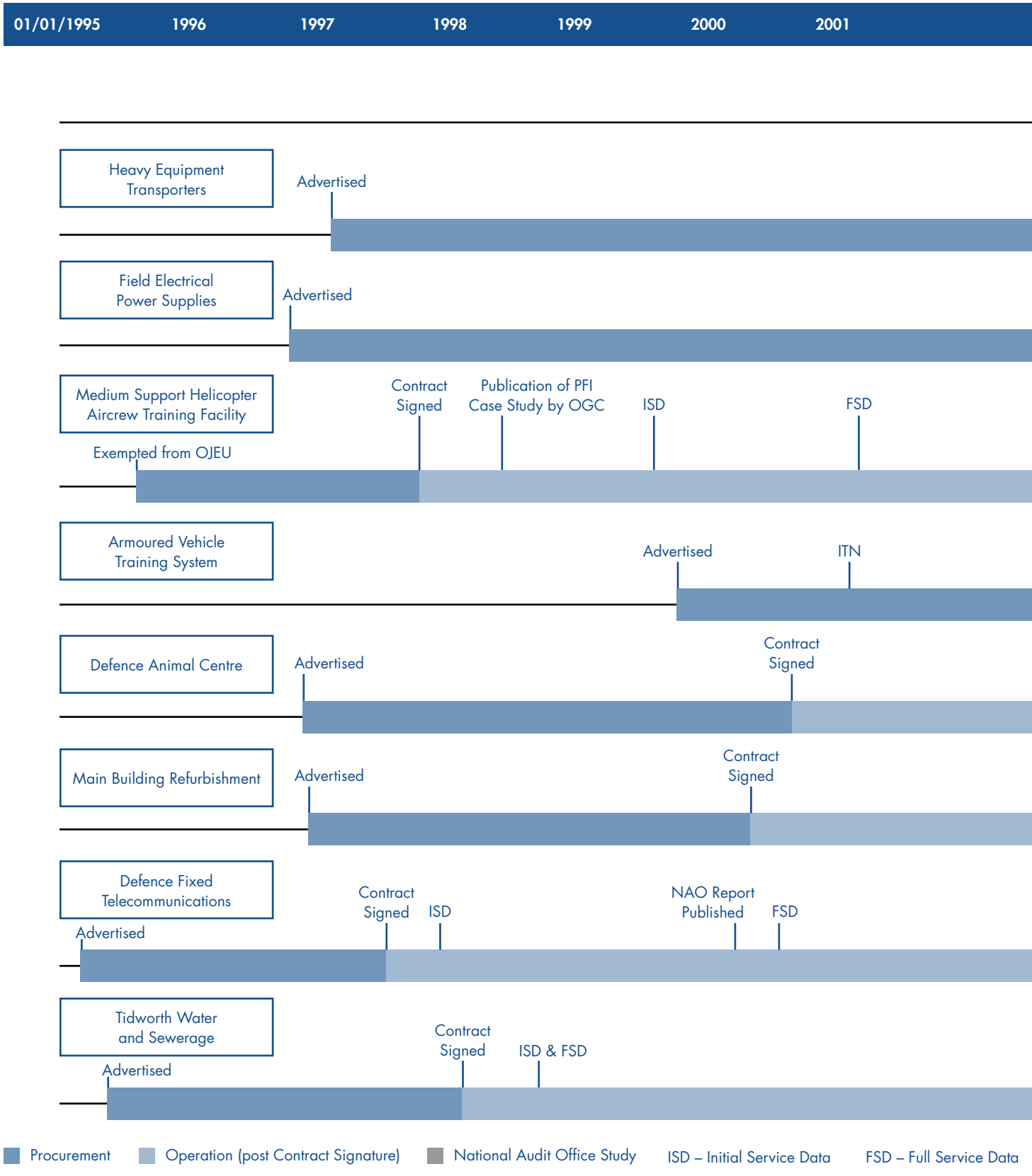
Source: National Audit Office analysis of case study projects

20 The eight case study projects illustrate the diverse nature of the Department's PFI project portfolio, based on size, project maturity and the proximity of the service to the front line

Project	Type	Maturity	Support vs. Front Line	Size of capital value
Heavy Equipment Transporter	Equipment	Early Operation	Close to the front line	Medium
Field Electrical Power Supplies Service	Equipment	Early Operation	Close to the front line	Medium
Medium Support Helicopters Aircrew Training Facility	Training	Mature operation	Support – but influential on the front line	Medium
Armoured Vehicles Training Service	Training	Recently cancelled PFI procurement	Support – but influential on the front line	Medium
Defence Animal Centre	Accommodation	Mature operation	Support	Small
Main Building Redevelopment	Accommodation	Mature operation	Support	Large
Tidworth Water and Sewerage	Other support	Mature operation	Support	Small
Defence Fixed Telecommunications Systems	Other support	Mature operation	Support	Large

Source: National Audit Office analysis of case study projects

21 Timeline showing the indicative procurement and operational phases of the eight case studies

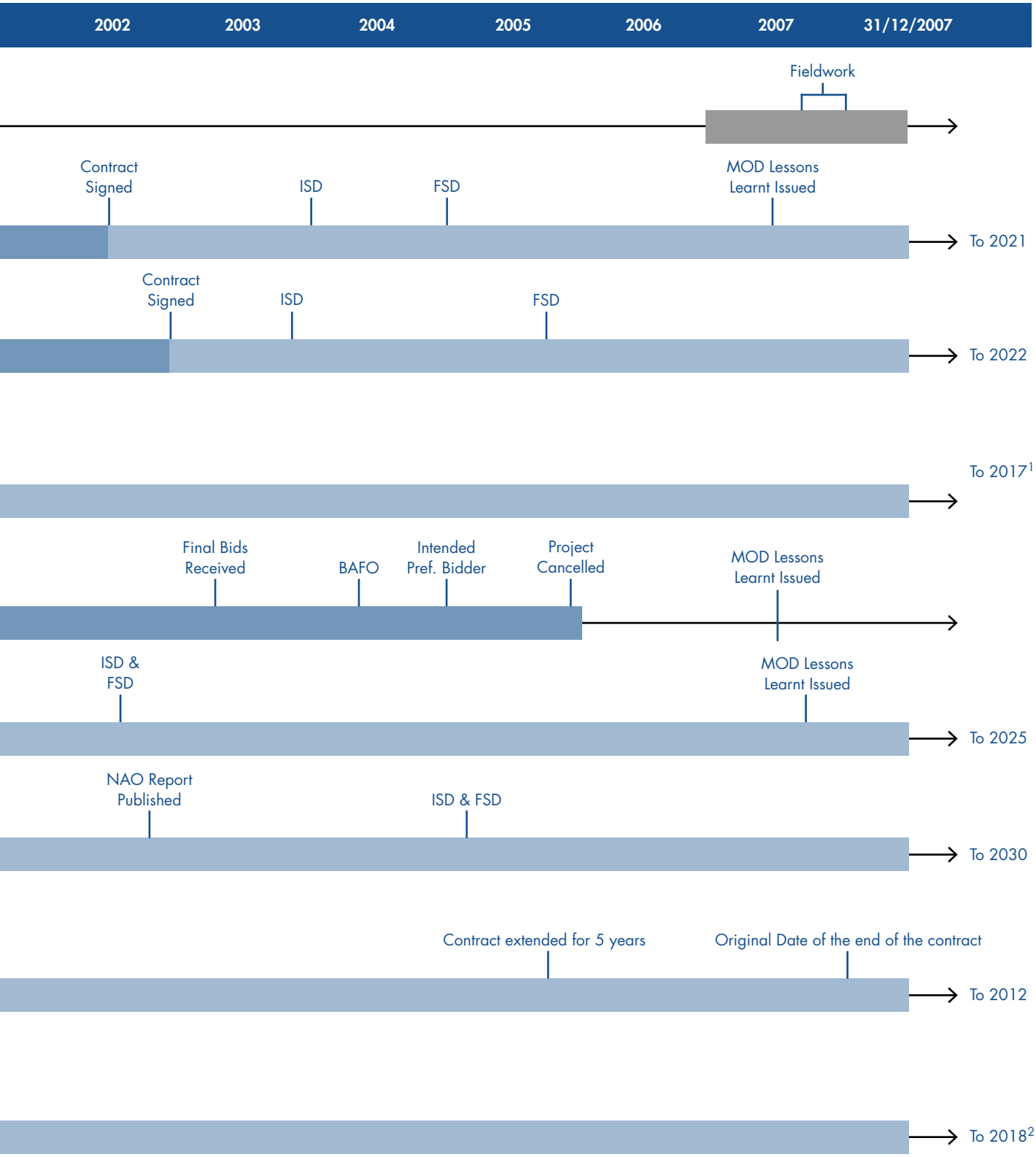


Source: National Audit Office analysis of case studies.

NOTES

1 Option to extend to 2037.

2 Option to extend to 2023.


2002
2003
2004
2005
2006
2007
31/12/2007
Fieldwork
Contract Signed
ISD
FSD
MOD Lessons Learnt Issued
To 2021
Contract Signed
ISD
FSD
To 2022
To 2017[1]
Final Bids Received
BAFO
Intended Pref. Bidder
Project Cancelled
MOD Lessons Learnt Issued
ISD & FSD
MOD Lessons Learnt Issued
To 2025
NAO Report Published
ISD & FSD
To 2030
Contract extended for 5 years
Original Date of the end of the contract
To 2012
To 2018[2]

CASE STUDY 1

Heavy Equipment Transporter (HET)

The UK Heavy Equipment Transporter fleet comprises 89 Oshkosh 1070F Heavy Equipment Transporter vehicles (pictured) and 3 Hitch Recovery Systems.

Fact Box

Category	Equipment
Signed	December 2001
Term	20 years
Initial service date	July 2003
Full service date	July 2004
Capital value	c£65.0 million
Annual Unitary Charge (07/08)	c£15.1 million
Balance sheet treatment	On Balance Sheet
Contractor	FASTTRAX Ltd
Objective	Service to move battle tanks and other heavy equipment during peacetime and on operations. Sponsored reserves make up one third of the manpower required to deliver the service

The contract is delivering the specified service and the equipment has provided a front line capability

4 The contract for the Heavy Equipment Transporter project was signed in December 2001. The service was subsequently delivered ahead of schedule in order to meet operational deadlines for usage in Iraq. The Heavy Equipment Transporter and its operators have also served in front line operations in Afghanistan.

5 The Heavy Equipment Transporter project was a pathfinder for the use of Sponsored Reserves. Sponsored Reserves are individuals whose employers are contractually committed to provide specific operational capability to the Services. During front line operations these personnel are called up and serve as Army Reservists alongside regular Army personnel. This was identified as an area of potential risk and three standard bid options were developed, with differing proportions of the service delivered by Army personnel and Sponsored Reserves in each. The bidders addressed all three options separately in their bids. By including different options, the project team could better assess the impact of this risk on the eventual contract price and decide which offered best value for money.

6 There are currently 85 Sponsored Reserves employed (68 Heavy Equipment Transporter operators, nine maintainers and an additional eight in reserve). Although there were some initial misgivings about the use of Sponsored Reserves and problems with their integration into regular squadrons, it is felt that these have been overcome and that Sponsored Reserves have been a success.

The Department has had some difficulties meeting its contractual obligations and the scope of the contract may need to change to meet future need.

7 In some instances the Department has used the equipment in a manner that has led to it accepting additional risk

- In the current operational theatres, temperatures fall outside of the design specification and the roads are not always of the condition specified in the contract. When the Heavy Equipment Transporter is used outside of contractual specifications, the Department is liable for any damage incurred, or repairs required.
- Future heavy vehicles that were not in the original scope of the project such as Trojan, Titan and the up-armoured Challenger II may fall outside of the contractual weight limit of 72 tonnes if carried by the Heavy Equipment Transporter. Although the Heavy Equipment Transporter is likely to be capable of handling such loads, the impact on the vehicle will need to be assessed and risks considered.
- The weight capacity is also restricted at the lower end with a minimum weight limit of 25 tonnes. This is because light vehicles are currently carried by a separate fleet of Light Equipment Transporters. This does not mean that risk will be transferred back to the Department but it does reduce flexibility. It would not be cost effective or beneficial to the environment for using Heavy Equipment Transporter to move small loads but there are some at the margins of the 25 tonne limit that would be practical to be moved in such a way.

8 It is not possible to say in these cases that the contract should have included provision for this uncertainty, since this would have increased the price of the contract. In the case of usage in operational theatres, it is appropriate that the Department should retain complete control over how the asset is used. However this does illustrate that the Department needs to be aware as far as possible of future developments when selecting the most appropriate procurement route – although these can be difficult to predict. It also illustrates the need for effective change mechanisms within PFI contracts.

Risk transfer is successful but the Department needs to continue to manage future threats to value for money

9 Risk management is undertaken on a joint basis, although the current risk register originated from the contractor and was added to by the Department's project team. The project team should regularly review these risks to ensure that they accurately reflect their assessment of the current risk profile and that mitigations are in place to protect the Department's interest.

10 One specific risk that will need to be managed is the impact of latent defects arising as a result of usage outside the contract specification. These may not materialise until a later stage in the contract. At the current time latent defect risks lie with the contractor, however disputes may arise if the contractor can show that defects were directly caused by usage outside of the original contractual constraints. In any event, any factor that affects the ability of the contractor to provide the service will impact on the user, regardless of who bears financial responsibility. The project team and contractor will need to work together to ensure that this risk does not impact on the provision of the service as the contract matures.

11 The project teams will also have to maintain the current effective working relationships when the Department's team managing the project moves from Andover to Abbey Wood near Bristol. This has occurred as part of the formation of the Defence Equipment and Support organisation (DE&S) from the Defence Logistic Organisation (DLO) and Defence Procurement Agency (DPA).

CASE STUDY 2

Field Electrical Power Supplies (FEPS)

One of the 1347 generator sets provided by Genistics.

Fact Box

Category	Equipment
Signed	June 2002
Term	20 years
Initial service date	May 2003
Full service date	April 2005
Capital value	c£73.4 million
Annual Unitary Charge (07/08)	c£12.1 million
Balance sheet treatment	On Balance Sheet
Contractor	Genistics, a special purpose company established by Vickers Specialist engineering who in turn are owned by Rolls Royce
Objective	Provision of 1347 generator sets to support operational electrical requirements in the field

The contract was necessary as the existing equipment was approaching the end of its useful life and did not meet health and safety legislative requirements

12 The Field Electrical Power Supplies contract was let to provide generator sets to support operational electrical requirements in the field. The contract was necessary as the existing equipment was approaching the end of its useful life and did not meet health and safety legislative requirements. In addition the existing system was outdated. Its thermal (heat) and acoustic (sound) signatures were high compared to more modern military equipment, making it more liable to detection by enemy forces. It was also unreliable and had poor mobility.

13 The project started in 1996. Two bidders were short listed at the prequalification stage in April 1997 and Genistics was selected as preferred bidder in July 2000.

14 Unlike other PFI projects the Department specified the technical requirement in detail in a manner similar to a conventional procurement. They produced a detailed requirements specification indicating exactly how many generator sets were required and the standard that they were to be built to. Typically in PFI the customer specifies the outputs and the suppliers then choose the best solution to meet the specified criteria. By specifying the inputs the opportunity for innovation is reduced, which could impede value for money.

A preferred bidder was appointed while the commercial arrangements had not been fully agreed

15 Genistics was appointed preferred bidder before the commercial arrangements had been fully agreed and subsequently the commercial agreement had to be negotiated. As a result, the preferred bidder stage took 23 months to reach an acceptable agreement. These negotiations were made without the benefit of competition. PFI projects should have a mature commercial solution agreed in principle before a preferred bidder is appointed. Under the new system of competitive dialogue this will be an even more important consideration.

16 During the preferred bidder stage, Aggreko, the subcontractor who was proposed to provide the fleet management services of the contract, withdrew from the contest. ABRO, who are part of the Ministry of Defence, but are a trading fund, stepped in and a sub-contract was agreed with Genistics.

Problems with the design were identified two years after the prototype had been accepted by the Department

17 Once the contract was signed a prototype was made available to the Department for trials. Validation testing and user trials took place in 2002 and 2003. After acceptance Genistics started the mass production of the 1347 Generator sets. The deployment of the generators began in May 2003 however in October 2003 it was identified that, for certain Ministry of Defence vehicles, there was an interface issue that made them incompatible. This made the vehicles unsafe when turning corners. The solution was to extend the 'A' frame connecting the generator to the towing hitch at the expense of mobility. As these particular vehicles are widely used by the Department this was a problem which needed to be resolved, particularly as the generators were needed on front line operations.

18 The contractor in a gesture of goodwill agreed to waive their exclusivity clause to allow the Department to use their existing stock of generators whilst the whole fleet of generators was modified. An acceptable design had been obtained by extending the 'A' frame by 650mm. Once the modification was agreed the generators were rectified. Between April 05 and March 2006, 80 per cent of the fleet were modified with the last 20 per cent being modified by March 2007. The cost of the modification was £7.3 million.

19 Although the modification solved the majority of the Department's problems with the interface with the existing fleet of vehicles, the Department are currently replacing many of its vehicles. The project to replace the 16,000 fleet of four, eight and 14 tonne cargo and recovery vehicles is well underway with the first shipment of 1285 vehicles entering service for training in Autumn 2007 with full service being achieved in 2008. Further deliveries will be made between 2008 and 2014. These vehicles are not fully compatible with the Field Electrical Power Supplies as the height of the towing eye could impede safety and the wiring will need modification. It is therefore possible that the Field Electrical Power Supplies fleet will have to be further modified to address this issue.

The equipment is being used outside of its defined operational parameters

20 The Field Electrical Power Supplies equipment is being used outside of its defined operational parameters. In Iraq temperatures are above the level specified in the contract (45^{0}C was specified but actual temperatures exceed 50^{0}C). The dusty environment is also outside of the specified parameters. These factors may impact performance indicators and may mean that the supplier will be able to claim that latent defects have arisen from the assets' use outside of the specified environment. The Department will have to bear the cost of the additional wear and tear.

21 There are other costs that have been incurred by the Department arising from damage caused to the generators. These range from traffic accidents to minor incidents such as losses of tools and keys. The cost to the Department approximates to £0.5 million per annum. These incidents would have arisen in the past – and would also likely arise under a conventional procurement – however under PFI the costs are more visible. Under the contract, the Department only has the option to ensure that the generators are fully repaired because the generators always have to be in the condition specified in the

contract. This has the benefit of ensuring capability is maintained but reduces the ability of the Department to defer expenditure.

22 In addition to the repairable damage to the generator, seven sets have been destroyed – some due to hostile action in Afghanistan. When a generator is destroyed the Department has to pay the contractor for that generator until the end of the contract or until the Department purchases a replacement generator. As it is inefficient to replace the generators on a piecemeal basis, the Department has decided to delay the replacement until 2008/09 (five years into the contract) and then purchase 15 sets. This will ensure that the Department has a stock of generators to call on when and if other generators are lost.

Both sides have had to bear further unexpected risks

23 The generators have, in a number of isolated cases, caught fire. The cause of the fire is partly down to misuse and not following documented procedures, exacerbated in the view of the Department, by the design of the generators. This was an area for dispute with the contractor. However, having taken legal advice, it was agreed that since the Department specified the design of the generator and had tested and fully accepted the generators there would be no liability to the contractor.

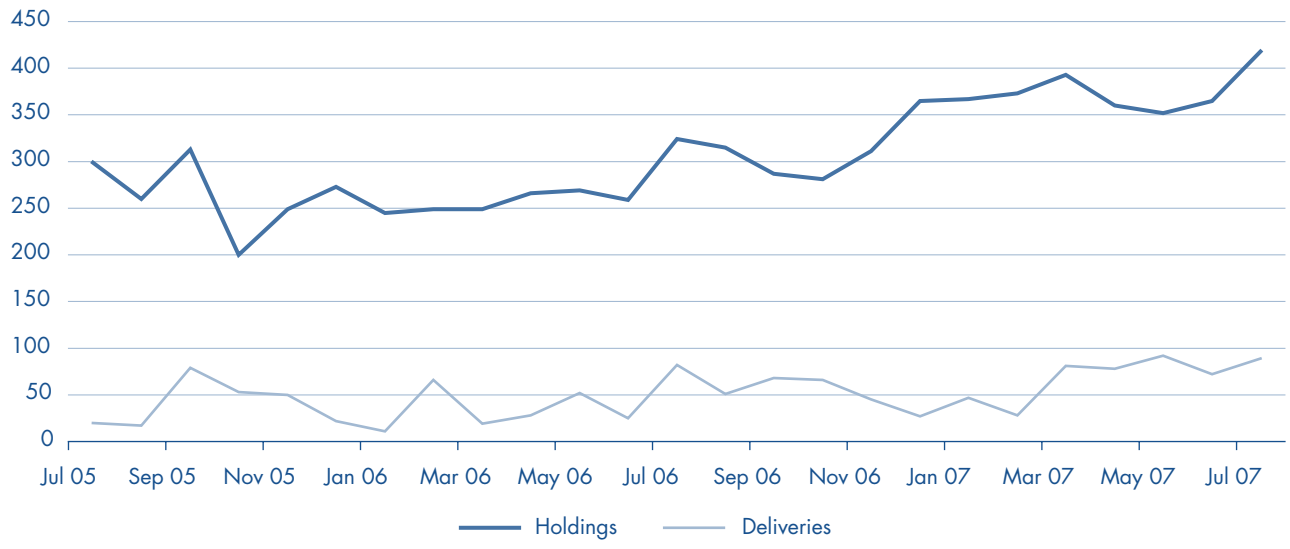
24 Some risks have remained with the contractor: a fire at one of the premises used to store spares resulted in a payment deduction of £41,000. In addition there have been other payment deductions for not meeting Key Performance Indicators (KPIs), however the reliability KPIs have not been triggered and the number of call-outs are lower than anticipated. However reliability may become more important in the later stages of the contract.

25 The contractor has also had to bear the cost of storing generators, as the usage has been lower than the expected level of 1189 (just under 90 per cent of the total 1347). In addition, the number of moves – where ABRO collects or delivers generators – is higher than planned, which may indicate that the equipment is being used differently than expected by Army units. Both moves and holdings have also increased since the contract became fully operational.

Risk management procedures are in place

26 The Department did not use formal risk procedures in the procurement phase of the contract. However in the operational phase the contractor and the Department use a joint risk approach to managing the contract. Risk is tabled at regular project review meetings and considered an important way of managing the contract. ABRO also maintains its own risk register.

22 Both the number of moves and the number of generators held in store have increased



Source: Ministry of Defence

CASE STUDY 3

Medium Support Helicopter Aircrew Training Facility

The Medium Support Helicopter Training project includes the provision of a number of flight simulators based at RAF Benson. Pictured above is one of the Chinook simulators.

Fact Box

Category	Training
Signed	October 1997
Term	20 years plus option to extend 20 years
Initial service date	August 1999
Full service date	March 2001
Capital value	c£114.0 million
Annual Unitary Charge (07/08)	c£20.1 million
Balance sheet treatment	Off balance sheet
Contractor	CAE Aircrew Training Services plc
Objective	Helicopter aircrew training facilities for Chinook Mk2/2A and Mk3, Merlin Mk3 and Puma Mk1 aircraft. Training includes conversion to type training, continuation training, and mission rehearsal

The project is delivering its intended service to users, overcoming some early problems

27 The Medium Support Helicopter Aircrew Training contract, signed in October 1997, was one of the first operational Ministry of Defence PFI projects. The project has been fully operational since March 2001 and is still recognised as a leading facility of its type. It is used not only by RAF aircrew but also by aircrew from allies including the Dutch, Australian and Singaporean air forces. The contract could run for 40 years but the Department has the right to break, without compensation to the contractor, at the 20 year point in 2017.

28 The Medium Support Helicopter Aircrew Training Facility project experienced some problems with the delivery of the PFI project. Overall the project was delivered on time, but individual delivery milestones were missed, due to the contractor experiencing difficulties in delivering the agreed visual system. In line with the contract the Department charged the PFI delivery company liquidated damages of £2.98 million on the missed milestones. These costs were passed down to the company's subcontractor.

29 The difficulties meant that an interim visual system had to be put in place with limited capability to reproduce special effects. This impacted on the realism of the simulator and as a result user satisfaction was reduced. The early problems with the Medium Support Helicopter Aircrew Training Facility project were subsequently fully overcome; however, it involved a lot of effort to manage the expectations of the users during this difficult period.

Overall usage of the facility is not as high as expected

30 A level of usage, equivalent to 80 per cent of the facility's capacity, is guaranteed to the contractor across the first 20 years of the contract. Actual usage of the facility has been, and is currently, lower than the level that is guaranteed to the contractor. Overall usage over the in-service phase to December 2007 has been 64 per cent of the level guaranteed in the contract, with 34,000 unused hours. The Department has contracted and therefore paid for capacity that it has not subsequently needed. Expected usage included Chinook Mk3 training, but that aircraft has still to be introduced to service. However usage is increasing; in 2007 usage was 84 per cent of the guaranteed level and in the later stages of the contract it may exceed the guaranteed level. This would result in the Department having to buy additional hours' usage at a cost of at least £250 per hour. In such cases, the Department will need to ensure that usage of the service is optimised in the remaining period of the contract and that the project team is working actively with the contractor to ensure that this happens.

31 The Department originally anticipated that the facility would be in use at least at the guaranteed level for much of the time. Usage of the facility as a whole has steadily increased throughout the contract term. However to date it has, generally, been lower than the guaranteed level. As a result of this, the Department may have retained a greater level of risk on the usage of the facility than it expected. Whilst the Department may sometimes require spare capacity to cope with surges in demand, the Department has contracted for capacity that it has not subsequently needed. Overall value for money will be dependent on ensuring that the usage of the facility is

optimised; in the longer term there may be additional cost to the Department if the usage goes above the guaranteed level. If a conventional solution had been used it is likely that the same number of simulators would have been provided and therefore its value for money would have been similarly affected by lower than expected utilisation.

32 It is difficult to identify a single cause for the lower than expected usage. Factors that may have caused a discrepancy between the expected and actual usage of the facility may include:

- the Chinook Mk3 aircraft has not been introduced into service;
- changes to the timing and numbers of Chinook, Puma and Merlin helicopters procured by the Department; and
- higher than expected operational deployment during the contract period, which means that aircrew are not available for training.

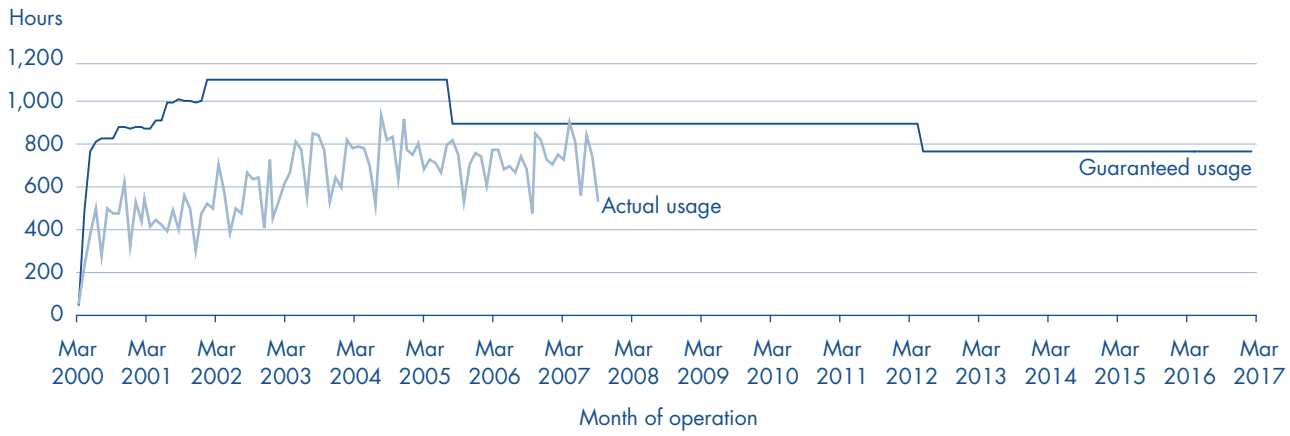
The structure of the contract is working well but there are ongoing risks that need careful management

33 In training programmes such as the Medium Support Helicopter Aircrew Training Facility, the quality and relevance of the training to users depends significantly on whether the training environment is faithful to the aircraft or other platform that is being simulated. The Department is responsible for funding this type of modification and, whilst there has been investment in the facility, it has not always been possible to match updates to the aircraft on a like-for-like basis. This is an issue on the Chinook simulator, which is now divergent from the actual machine, particularly on the version of the Chinook used by Special Forces.

34 A dedicated, senior user representative is based on site and is working with the project team who manage the contract, the private sector contractor and the user community in order to promote use of the facility. The project team monitor user satisfaction formally as part of its performance monitoring, via the project's own balanced scorecard.

35 The contractor has also made some investment in the facility, from which the Department and other third party customers should benefit. A contractual value for money review due in 2008 will provide an opportunity to discuss the long term strategy for the facility, particularly in view of the potential no compensation break-point due in 2017.

23 Usage of the facility has been below the expected level and the level at which payment to the contractor is guaranteed



Source: Ministry of Defence

CASE STUDY 4

Armoured Vehicle Training Service (AVTS)

The Armoured Vehicle Training Service was designed to provide a balance of live and synthetic training for a number of Armoured Fighting Vehicles including the Challenger II tank pictured above.

Fact Box

Category	Training
Signed	Cancelled in June 2005
Term	Potentially 30 years
Initial service date	N/A
Full service date	N/A
Capital value	N/A
Annual Unitary Charge (07/08)	N/A
Balance sheet treatment	N/A
Contractor	N/A
Objective	Provision of live and synthetic training of gunnery and specialist driving for Armoured Fighting Vehicles. To provide crew training for a wide range of Armoured Fighting Vehicles, including Challenger II tanks, Warrior Infantry Fighting Vehicles and Combat Reconnaissance vehicles

The project was ambitious and had the potential to use PFI to improve value for money

36 The Armoured Vehicle Training Service was a procurement project that was intended to deliver a PFI contract to train the army's armoured vehicle crews. The proposed service included the provision of instructors, training services, training equipment and buildings, design of the course syllabus and development of training devices. This project had a total contract value of over £1 billion and the training would have taken place across multiple sites and trained Army personnel on a variety o f armoured vehicles, including the Challenger II Main Battle tank. Similarly to the Medium Support Helicopter Aircrew Training Facility project, the rationale was to use simulation and other measures to produce efficiencies. These efficiencies would arise out of reducing the number of miles that vehicles were used in the field for basic training and out of reducing the amount of live firings.

The deal was cancelled in June 2005 and the Department made payments to the bidders of £10.6m. An additional £5m had been spent on the Department's advisers

37 The OJEU was issued in October 1999 and the Outline Business Case was approved in December 2000. Three consortia were bidding for the project and in July 2004 the Department appointed an intended preferred bidder. After further negotiation the parties were unable to reach an acceptable agreement resulting in the announcement in June 2005 that the PFI project would not go ahead.

38 The cost of the abandoned PFI project included £5 million spent by the Department on advisers in the bid evaluation phase, though the spend on advisers prior to 2000 in the early phase of the procurement is unknown as records were not retained. The Department's own internal cost of resourcing this major procurement over the six years of the project was not recorded, as this was not a requirement. In addition, the bidders are likely to have incurred substantial costs, both in terms of direct costs and the opportunity cost of not being able to use their bid resources on other projects. The experience of the cancellation may also have affected market confidence with bidders not willing to bid on other projects.

39 The Department's procurement team were redeployed with many of them working on an alternative to Armoured Vehicle Training Service through a conventional procurement programme. The project (re-named ECATS) has delivered capability in the form of the Live Fire Crew Training System (LFCTS) for Challenger II gunnery (a removable barrel insert with a smaller bore). The Department decided to secure the intellectual property rights produced by the bidders for Armoured Vehicle Training Service for possible use in this new programme.

40 Following the cancellation of the deal a total of £10.6 million was paid to bidders by the Department. Of this £7.7 million was paid to secure intellectual property rights (IPR) for material produced during the procurement. The IPR has not been utilised to date, although the Department is confident that it will add value to the ECATS programme in due course. In addition to the IPRs, a sum of £2.9 million was paid to one of the bidders as an ex-gratia payment in full and final settlement of the cancelled project.

The procurement was not well managed

41 The Department has identified lack of procurement and project management skills as a major factor in the failure of the cancelled Armoured Vehicle Training deal. The Department's post project evaluation concluded that the project team was not adequately resourced, or sufficiently experienced in dealing with PFI procurements. The team was also not well supported, since it was based in a different physical location, Bovington, from the main Defence Procurement Agency (DPA) base at Abbey Wood. The project did not have a Senior Responsible Owner, though this was not a requirement at the time. Later on in the deal, a new experienced team was put in place. The appointment of the new team led to the reanalysis of the project and the decision to abandon the PFI strategy.

42 As a result of the problems identified the procurement process took a long time; requirements were not adequately specified and had to be developed as the team gained an understanding of the project. This was achieved by having a number of bidding rounds.

The intended transfer of risks was not supported by adequate management information, and additional information was not collected

43 In addition to the issue of defining the requirement the project team were driven by the desire to ensure that the asset would be off balance sheet to address the Department's affordability concerns. This meant that there had to be sufficient risk transfer to the private sector and one of the key risks was the amount of live resources (such as ammunition and hours spent in armoured vehicles) required by candidates to pass the various tests they would face during their training.

44 A key part of the deal structure was the transfer of course pass rate risk and this influenced the amount of live resources to be managed and used. However, historical data on live resource use and student pass and failure rates were neither reliable nor complete. The project team decided to proceed in the absence of this data; however they did not seek to collect the data during the course of the procurement. This led to fundamental misunderstandings between the public and private sector about the scale of the risk being transferred.

45 At the time when bidders were submitting their Best and Final Offers (BAFO), a new team, based in Abbey Wood, were put in place together with new legal advisers. Although the Ministry of Defence and its advisers had misgivings they decided to press ahead with the BAFO round to ensure that the project did not suffer any further slippage.

46 After the BAFO round there were still concerns and the Ministry of Defence decided to appoint a provisional preferred bidder for a risk reduction exercise. Further problems and concerns over the value for money led to the decision being made to abandon the PFI strategy and to seek a conventional procurement, which will provide improvements to existing capability over a number of years.

CASE STUDY 5

Main Building Redevelopment (MBR)

The refurbished Ministry of Defence Main Building as seen from the air.

Fact Box

Category	Accommodation
Signed	May 2000
Term	30 years
Initial service date	September 2004
Full service date	September 2004
Capital value	c£439.0 million
Annual Unitary Charge (07/08)	c£79.0 million
Balance sheet treatment	On balance sheet
Contractor	Modus Service Limited
Objective	Development and refurbishment of the Ministry of Defence Main Building, and temporary accommodation to other buildings, as well as upkeep of Old War Office building

The existing building in Whitehall required improvements to the accommodation and working environment

47 The Department requires secure, modern and efficient working accommodation in central London from which to direct defence operations. The existing building in Whitehall required improvements to the accommodation and working environment. To this end the Department signed a PFI contract with Modus – a consortium comprised of Innisfree, Laing and Amey[10] – in May 2000 to redevelop the Ministry of Defence Main Building. The redevelopment also enabled the Department to rationalise staff in London and dispose of five of its sites resulting in estimated savings of up to £18 million a year.

48 The contract covered the redevelopment of Main Building and limited refurbishment and provision of support to other buildings where staff would be accommodated during the redevelopment. It also included the provision to 2030 of maintenance and facilities management at Main Building and the Old War Office following completion of the redevelopment. The project was complicated by the need to decant 3,000 staff into other central London accommodation during refurbishment.

49 The contract allocated the majority of the risks associated with the project to the consortium, with only the risks relating to delivery of Department operational objectives and the information technology systems remaining with the Department.

The decision to pursue the PFI solution was based on the assessment of additional benefits that would flow from PFI

50 The Department estimated that the cost of the PFI deal would be similar to conventional procurement. The decision to pursue the PFI solution was based on the assessment of additional benefits that would flow from PFI. The Department considered these to be the following:

- Greater price certainty.
- Incentives to complete on time – under the contract, Modus would lose £1 million for each month of delay after the 30 November 2004 deadline for reoccupation. It would also have to meet the cost of maintaining alternative accommodation.
- Incentives to deliver the service to the required standard – under the contract, Modus only receive the full annual fee once the accommodation has been provided to the specified standards, even if the Department chooses to use the accommodation. Furthermore, up to 20 per cent of Modus' facilities management charges are at risk if the standard of service provision is not satisfactory.
- A single contract for the design, maintenance and operation of the building encouraging whole-life costing.

51 The Modus bid was selected as preferred bidder in January 1999 as its bid was £42 million lower than that from its competitor and it more closely matched the Department's output specification and commercial requirements.

10 Amey were subsequently bought out by other members of the consortium.

The price of the deal increased during the preferred bidder stage

52 The deal was closed 16 months after Modus became preferred bidder. During this period the price increased by £99 million (at 2000 price levels). This was due to interest rate increases, identification of additional capital expenditure and other movements in the financial markets.

The project was the subject of an NAO value for money report

53 The Main Building project was the subject of an NAO value for money report (HC 748) in April 2002. The report concluded that:

- the contract gives the Department what it set out to procure – specifically, it requires Modus to deliver the Department's physical requirements and it has the appropriate features of a PFI deal including risk transfer;
- the costs under the contract will be similar to the forecast cost of conventional procurement but the balance was tipped in favour of PFI by other factors;
- the procurement was effective – specifically, the deal was selected only after a wide range of options had been considered and the cost of the deal increased mainly due to survey work and increased financing cost including increased interest rates, the risk of which normally rests with the public sector until contract signature; and
- the management of the contract has been good – specifically, the Department has conducted partnering workshops, adopted a joint mission statement with Modus, maintained the continuity of well-trained, appropriately skilled staff and adopted appropriate change procedures.

The refurbishment was completed ahead of schedule

54 Since the NAO report was published the refurbishment was completed ahead of schedule and staff were moved back. Generally the project has been a success with only minor issues arising. These issues have largely related to poor performance in the delivery of soft services. The problems were also exacerbated by changes in the contractor's management but since then the management team has been strengthened.

The Department is resurrecting its risk management procedures

55 Risk management had been particularly thorough during the procurement phase but had lapsed in its thoroughness during the in-service phase. The Department's contract management team was in the process of re-establishing its full risk management processes. In November 2006, Modus introduced a shared risk register to cover the generic risks shared by both parties. The Department were in the process of updating their risks into this register during the course of our study. We were told that the risk register will be formally reviewed by the Facilities Board that meets on a monthly basis.

There have been issues with the payment mechanism

56 Many PFI projects require the contractor to carry out performance monitoring. However in the case of the Main Building Redevelopment project, this task fell to the Department contract team. The annual cost of carrying out the service audits in 2002 was some £75,000 a year. Service delivery deductions between August 2000 and August 2006 totalled £221,000, an average of £37,000 per annum.

57 The contract's performance management mechanism generates low value financial deductions in respect of minor shortfalls in performance delivery; larger deductions would arise in respect of any part or aspect of the buildings or their services that are unavailable for use by the Ministry of Defence. As there have been no "unavailability deductions" levied to date and only relatively minor weaknesses in performance delivery, the penalties incurred to date have been small. The service audits have not addressed the minor shortfalls in performance.

58 The contract management team decided to suspend the service audits in September 2006. Both Modus and the Department state that they are determined to maintain and improve performance standards and are working together to introduce a more effective audit methodology. This had not been implemented at the time of our audit.

CASE STUDY 6

Defence Animal Centre (DAC)

Eighteen Dogs and eighteen horses paraded before they were marched off to their new home at the Defence Animal Centre at Melton Mowbray.

Fact Box

Category	Accommodation
Signed	August 2000
Term	25 years
Initial service date	January 2002
Full service date	January 2002
Capital value	c£11.2 million
Annual Unitary Charge (07/08)	c£3.6 million
Balance sheet treatment	On balance sheet
Contractor	Realm Services (DAC) Ltd
Objective	Redevelopment of new office and residential accommodation, animal husbandry and training support

The Defence Animal Centre (DAC) is a mixed military and civilian agency responsible for training ceremonial horses and dogs for search and security duties

59 The Defence Animal Centre is a mixed military and civilian agency responsible for training ceremonial horses and dogs for search and security duties. It also trains service personnel in equitation, dog handling and animal welfare. Training of Military Working Animals and associated service personnel is Defence Animal Centre's core business and is undertaken by the Army and the Royal Air Force.

60 The Defence Animal Centre estate incorporates indoor and outdoor canine and equine training facilities, kennels and stabling, grazing land, forge facilities, a veterinary hospital, offices, messes, leisure facilities and single living accommodation. Until January 2002, the headquarters facilities and the living accommodation were wooden buildings constructed in 1936 and intended as temporary accommodation. By the early 1990's these facilities were in very poor repair requiring heavy maintenance expenditure. In 1995, the Department decided to explore the PFI option for private sector involvement in the delivery of accommodation and services to the Defence Animal Centre.

61 The project required a new headquarters facility comprising office, messing and single living accommodation, stores, motor transport garaging and leisure facilities to be constructed on Defence Animal Centre land. The vacated headquarters site was to be demolished for the private sector partner to sell for redevelopment. The services to be delivered covered all non-core activities except physical security duties which the Department would continue to provide. The Department would retain responsibility for the training of Ministry of Defence personnel and animals.

62 The competitive process started in late 1996 with a contract being signed in August 2000 with Realm Services (DAC) Ltd. However when the contract was signed it was considered to offer only marginal value for money. The deal would be considered too small for a PFI project today (as its capital value is less than £20 million). It is generally thought that the cost of procurement and setting up the deal structure outweighs any potential benefits to be gained from such projects.

The facilities were delivered 11 weeks late

63 Realm delivered the new facilities 11 weeks after the Scheduled Commissioning Date for which it paid a performance deduction of £29,000. Realm also took over responsibility for the existing facilities and equipment. However they did not agree with the Department the condition of those assets to set the base line to determine whether the asset was fit for purpose and deemed available in the future.

Aspects of the contract are vague and the payment mechanism is ineffective at transferring risk to the contractor

64 With respect to the support services the contract specifications were loosely drafted and open to interpretation. For example, the cleaning output specifications for furniture and fittings are that they are to be free from dirt or dust which in the reasonable opinion of the monitor has been in place for an unacceptable period of time. The requirement is subjective and difficult to measure and the monitor is the contractor.

65 The contractor is responsible for measuring performance. It does this through generating a random sample of Support Service Events from around some 56,000 events. The random sample is 0.7 per cent of the total, which means that the contractor needs to check some 390 support service events on one day each month. As checks only have to be made once a month only a small number of performance indicators are tested. In addition, certain key aspects of the service are not subject to inspection in the monthly monitoring process whilst the relevance of others is questionable. For example, one measure is to ensure that the sanitary ware in the veterinary hospital X-ray viewing/developing room was regularly cleaned. There is no sanitary ware in that room and so the service is automatically deemed to have been delivered.

66 In addition to the service deductions there are penalties for when assets are not deemed available. To date availability deductions have totalled c£14k. However the penalties are small, for example if one of the Junior Ranks' Accommodation units failed to meet the availability criteria for a whole month, then Realm would face a deduction of only £88. More critically the penalty for not making the Riding School available is only c£800 per month. This is disproportionate to the cost of providing an alternative facility.

67 In practice the Department accepted the deficiencies of the Riding School and made use of the facilities. However, by using the facilities the Department loses its right to impose the penalties. Realm had made some attempt to repair the existing Indoor Riding School facilities but it had been deemed unsuitable and not fit for purpose by the British Equine Association. In the event the Department replaced the existing Indoor Riding School with a much larger one that meets modern training best practice and safety needs. The total cost of the new facility to the Department was £0.705 million.

Relationships have historically been poor and the contract weaknesses need to be addressed

68 At the Defence Animal Centre, there have been major changes in the staffing both on the Department and contractor side. Combined with the problems in determining the service levels this has contributed to relationships which have historically been poor. However the Department have made some progress by carrying out a post project evaluation of the project which was completed during the course of our study. The NAO agrees with the Department's conclusion that the contract needs to be renegotiated. If agreement cannot be reached the Department should consider the option of terminating the contract.

CASE STUDY 7

Defence Fixed Telecommunications System (DFTS)

Fact Box

Category	Other – Telecommunications
Signed	July 1997
Term	15 years (Originally 10 years, extended in April 2005 for 5 additional years until 2012)
Initial service date	December 1997
Full service date	July 2000
Capital value	c£200.0 million
Annual Unitary Charge (07/08)	c£240.0 million at 07/08 prices
Balance sheet treatment	Off balance sheet
Contractor	BT
Objective	Provision of secure and survivable Wide Area Network voice, data and video telecommunication services across the Ministry of Defence to users based in the United Kingdom and Overseas

The main aim of the contract was to improve efficiency

69 The Defence Fixed Telecommunications System contract with BT was initially signed for 10 years in July 1997. This was extended by five years in April 2005, securing the services until July 2012. The contract with BT is managed by the Defence Fixed Networks (DFN) Integrated Project Team. The project is based in Corsham in Wiltshire.

70 The main aim of the contract was to rationalise and improve the efficiency of existing fixed telecommunications services, to ensure continued provision of fixed telecommunications services and to deliver financial savings of around £30 million a year. A review in November 2002 identified further estimated savings of £400 million over the life of the project.

The scope of the project has grown considerably

71 The Defence Fixed Telecommunications System is a fully managed telecommunications service. It is designed to serve 200,000 plus telephone users, making over 2.5 million telephone calls daily, across 2,445 UK sites. A range of managed facilities includes voice, with data switching, wide area network connectivity, internet and intranet, video conferencing and ISDN. Mobile communication services providers (Vodafone) have also been brought into the Defence Fixed Telecommunications System contract to explore the benefits from emerging mobile capabilities.

72 The services provided under the contract are vital to the daily operations of the Ministry of Defence and the armed forces. The contract change rate is high and the contract has grown considerably.

The service was obtained at a good price and a renegotiation and benchmarking has generated benefits to the Department

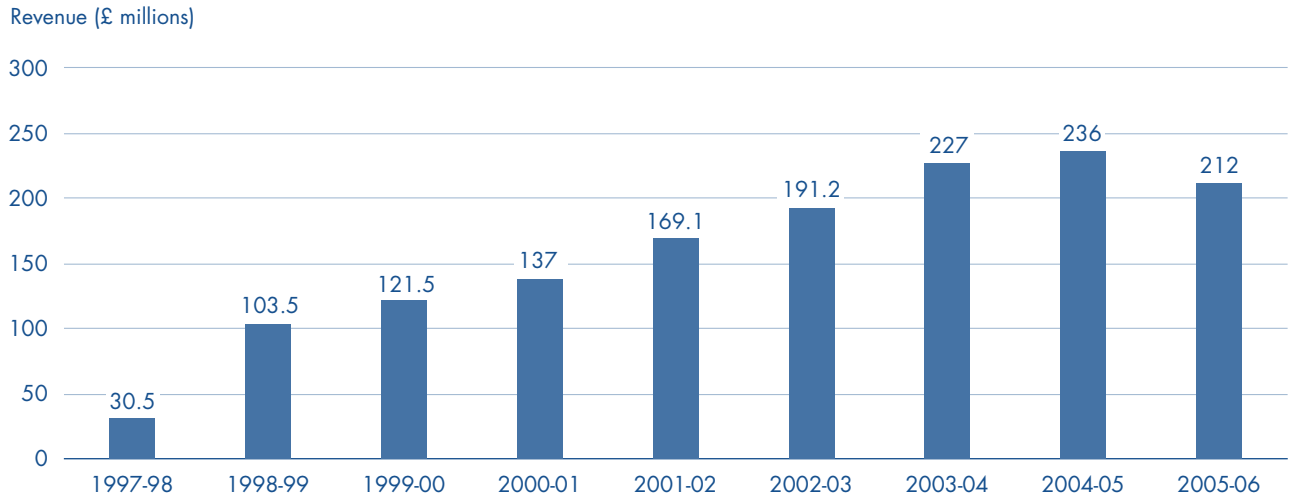
73 The Defence Fixed Telecommunications System contract was the subject of an NAO report (HC 328) in 2000. The report concluded generally that the Department obtained the contract at a good price although the scope of the project may not have maximised value for money. This is because there are interrelationships between the Department's various communication systems, and rapidly changing technology requires fast and frequent reassessment of the most effective form of service delivery.

74 Having decided to procure a new fixed telecommunications system, the Department did not assess the potential advantages and disadvantages of expanding or reducing the scope of the project. In addition, although the Department were generally protected by the contract, they could have made better use of external advice.

75 The contract allows for new services and technology to be incorporated during the contract period and prices for services are adjusted periodically in line with movements in agreed price indices. But the original contract mechanism limited the opportunities for the Department to challenge the service prices. In fact the Department have only made one challenge to date on the Restricted Local Area Network Interconnect (RLI) Service which was costing the Department £40 million per annum.

76 The benchmarking exercise identified that the cost was 30 to 40 per cent above the expected cost. BT initially rejected the proposed decrease. However, in 2003, after two years of negotiation, an agreement was reached with a price reduction in exchange for extra service growth to be supplied by BT. A saving of 37.3 per cent of the annual cost of the RLI service, representing £15 million per

24 The actual revenue generated by BT on the Defence Fixed Telecommunications System contract has increased



Source: Ministry of Defence

annum, was achieved. The Defence Fixed Telecommunications System benchmarking was examined in more detail in the NAO Report: *Benchmarking and market testing the ongoing services component of PFI projects* (HC 453) which was published in June 2007.

77 During the contract extension discussions the Department took the opportunity to change the contract terms so that they were more favourable to them. They also secured additional savings of c£200 million and improved the visibility of the costs and revenues that BT expects to make through the provision of a contractual financial model. The Department also included additional measures for the parties to examine the prices for services if it moved beyond agreed thresholds.

Risk management is generally good but the project has experienced a significant lapse in service performance reporting

78 The contract is working well, with the business objectives of the Department and BT aligned. As previously stated in our earlier report on this project, BT will be in a strong position to win future contracts and extensions to Defence Fixed Telecommunications System due to its experience on the project and the relationship that has been established.

79 A sophisticated joint risk management approach is in place and risk management is integrated into the contract. However, one of the major risks identified by the project team was the issue of skills and staff continuity. In particular, it was noted that there were difficulties in retaining specialist staff in post due to limited opportunities for promotion within post. In addition, there was reliance by the Department on full time external consultants. A number of these have been in post since the contract was procured in 1997 and have provided essential continuity of knowledge and expertise.

80 Recently, a significant lapse in service performance reporting occurred, when it transpired that staff in call centres operated under the contract were artificially inflating call numbers in order to meet targets for successfully completed calls. This matter was subject to investigation by the Ministry of Defence Police and has now been concluded. BT has made retrospective service credit payments to the Department of £1,021,000 and has reimbursed the Department for the external cost incurred by the investigation totalling £122,000 excluding VAT and for the value of the overstated calls totalling £197,000 excluding VAT.

The management of this project has been changed following the lapse in service performance reporting

81 Following the fraud the Department and BT have imposed a new management structure to the Defence Fixed Telecommunications project including new governance arrangements. BT is now required to provide more detailed reporting and the Department will carry out regular detailed audits of the new BT reporting system to ensure its integrity. This will be supplemented by regular service audits by the Department. Certain BT staff involved in the activities of Kettering call centre have been released by BT.

82 Despite this incident, the Department's team running the contract are confident that the current good working relationships can be maintained and that it has been resolved in a professional manner by senior staff.

CASE STUDY 8

Tidworth Water & Sewerage

Views of the Tidworth Sewerage works.

Fact Box

Category	Other – Utilities
Signed	February 1998
Term	20 years plus the option to extend 5 years
Initial service date	September 1998
Full service date	September 1998
Capital value	£Nil – there were no new major capital works
Annual Unitary Charge (2007-08)	c£0.7 million
Balance sheet treatment	Off balance sheet
Contractor	Thames Water
Objective	Provision of water and sewerage services in Tidworth Garrison

The Department needed to transfer the service provision to the private sector

83 The Tidworth Water and Sewerage contract provides services to the Tidworth Garrison including civilian residents of the town. The system consisted of departmentally owned and operated water and sewage systems. By 1993, the system was unreliable and in poor repair. At this time the Department was losing crown immunity and the facilities would not have been legally compliant.

84 Prior to the initiation of the project, the Property Manager's technical consultants advised that capital works to the value of around £7 million would be required to make it compliant. This would be achieved by closing one of the two sewage treatment works, rebuilding the other and installing a pumping main to link the sites. At this stage a project team was established to consider all the options open. The scope was widened to include the sewage treatment works and also sewers, water abstraction, treatment, distribution and billing of non-MOD customers. This option was used as the Public Sector Comparator, retaining the facilities within MOD ownership. This was a live option.

Negotiations with the Preferred Bidder failed and the Department called on the reserve bidder

85 The project was advertised in May 1995. Wessex Water was selected as preferred bidder in July 1996. However, during the preferred bidder negotiations agreement could not be reached on the transfer of risk, particularly around the extent of contractor liabilities and potential payments to the contractor in the event of breach or termination. As a result, the Department terminated its negotiations with Wessex and brought in the reserve bidder, Thames Water. Agreement was reached with Thames in March 1998.

The Department retained some risks

86 It was agreed that the Department would retain risks for treating poly-aromatic hydrocarbons originating from the linings of the old MOD water mains. EU legislation was subsequently changed and the particular substance found at Tidworth was removed from the standard following the evidence that there were no health effects at the levels found in drinking water. Therefore the Department incurred no additional costs with respect to this risk.

87 Whilst Thames Water were willing to accept risks found in their systems elsewhere, they were unwilling to accept risks arising from MOD contamination which they could not evaluate. The project team were unaware that there had historically been inappropriate use of the sewers – including bullets dating from World War II – being placed in drains. As the extent of the contamination was unknown, the risk premium that Thames Water would have charged the Department would not have been value for money. The Department was also best placed to mitigate this risk and the Department's Explosive Ordnance Disposal teams are called out whenever incidents arise. The Department can also stop any future misuse by educating personnel and ensuring that appropriate disciplinary measures are in place. Thames Water accepted the risk of all other forms of contamination.

The contract has been a success but a new facility was not delivered

88 The service has been a success with high levels of performance by the contractor. Both sides attribute this level of performance to the contractor's desire to maintain its corporate reputation and the good relationships that have been established. The relationship has also been helped by the fact that there has been staff continuity on both sides.

89 The negotiated contract was in the form of an output specification; however, unlike the public sector comparator, there was no explicit requirement that the contractor should combine the sewage treatment works and build a new facility. Instead Thames Water uses risk processes and a condition based approach to repair and maintain the existing assets that provide the services.

90 Despite the lack of a new facility, the water output has increased and Thames Water have been able to export water to neighbouring areas, generating third party revenue which has been shared with the Department. However, leakage rates remain high at between 40 - 60 per cent. The contract does not specify leakage targets at all since the water regulator, Ofwat, sets leakage targets[11] for the water industry, and this now applies to Tidworth. If at the end of the Thames Water contract leakage levels are above those permitted this may be a consideration for bidders when the current contract comes to an end and is re-let. The assets will not be transferred back to the Ministry of Defence as under Ofwat rules the facilities can only be transferred to another statutory undertaker, who will then bill the Department for the service.

91 The performance regime is not an important driver of good service delivery by the contractor. This is because the penalties are not a strong incentive as they are of relatively small value. For example foul sewage flooding to the indoors of premises would cause ten performance points to be awarded, which would incur a penalty of £150. However, performance failures have been rare and deductions through the life of the contract have totalled only approximately £200. This is because the contractor's corporate reputation and good relationship with the Department have driven performance and not the potential imposition of contractual penalties.

The project may benefit from greater use of risk management processes

92 There are risks to the project that will have to be managed and mitigated against. These include:

- Thames Water are looking at selling their Services Division. This would include the Tidworth Water and Sewerage contract. This, together with any change in staffing may affect future service delivery; and
- There are some difficulties over the interfaces with the project and Ministry of Defence properties in the Tidworth area. When Defence Estates Housing Directorate let a contract covering Service Families accommodation in 2006 there were minor omissions in the contract documentation. This potentially meant that there was no contractual cover to part of the water piping for any necessary repairs that arise. To date this has not been a practical problem as Thames Water have been willing to carry out any repairs necessary.

93 Although Thames Water utilise a risk-based approach to operational management of the contract, the Department manages its own risks informally. Use is not currently made of risk registers and mitigation plans. Formal risk procedures may increase the Department's ability to identify and mitigate risks effectively.

11 Leakage targets apply to the company as a whole, and not to specific locations. It is up to the contractor to decide how best to allocate its resources to meet those targets.

APPENDIX TWO

Methodology

1 We focused on examining projects in the in-service phase, although we did also examine some procurements, using previous NAO reports (for Defence Fixed Telecommunications System and Main Building), other published research and primary data from interviews and document review.

Case studies

2 We looked in depth at a sample of eight PFI projects, which were chosen to reflect the diversity of the Department's PFI portfolio. We selected two training projects, two equipment projects, two accommodation projects and two other support projects. The total number selected allowed reasonable coverage in terms of cost, project maturity (procurement to service delivery) and the divide between operational and support projects.

3 We reviewed key documentation for each of the projects, primarily in order to ascertain the type and nature of risk processes employed by that project, but also to gather core information such as key dates and also to scrutinise contractual features such as the payment and performance regimes. Examples of the types of documents reviewed from the procurement phase of projects include:

- Invitation to Negotiate
- Bidder Submissions
- Bid Evaluations
- Contract
- Project Meeting Minutes
- Public Sector Comparator
- Advisers' Reports
- Project Approval Documents
- Risk Register
- Proposed Risk Matrix
- Financial Models
- Post Project Evaluation

We also reviewed the following types of document from the in-service phase of projects:

- Risk Procedures
- Risk Register
- Risk Matrix
- Monthly Meeting Minutes – Operational and Steering
- Contract Monitoring Reports
- Payment Reports
- Post Project Evaluations

4 In addition, we held a series of semi-structured interviews, both with individuals and small groups of key personnel from the public and private sector on all eight projects. Interviews tended to last around two hours. In total across the eight case studies we conducted interviews with 46 representatives from the public sector and 16 from the private sector. These representatives from the public sector included project managers, business managers, user representatives, technical staff, financial and commercial staff. We also observed the facilities and demonstrations of the equipment.

Census

5 We conducted a census of all of the Department's PFI projects that are currently running, in order to place findings from the case studies in a wider context and to gather further data on the PFI portfolio as a whole, in addition to information available via the Department's own database of PFI projects and also Treasury and Partnerships UK databases. The questionnaire, which was agreed with the Private Finance Unit, sought factual information about the projects and project teams' views on a number of issues related to the management of PFI projects. These included:

- Project management
- Relationships and partnership working
- Performance management
- Risk allocation and management
- Value for money

6 In order to define the population, a list of operational projects was agreed with the Private Finance Unit. The population was defined as:

- all contracts that had reached financial close at the time the census was conducted; and
- were currently operational (e.g. had not been subsumed under another contract, or reached the end of the contract term).

7 This approach led to the identification of a population of 47 projects. Given the relatively small size and heterogeneous nature of the population, a census was appropriate. Questionnaires were issued to all projects in April 2007.

8 In total, 41 out of 47 projects provided a valid response, giving a total achieved response rate of 87 per cent. Some projects said they faced problems in responding to part or all of the census as staff who had developed the projects were no longer in post and this made it difficult to answer questions relating to earlier periods. Results in this report are the actual total of responses from the achieved sample of 41 respondents.

9 The census was closed after consultation with the Private Finance Unit in July 2007. Where a response was received, we also carried out a short survey of private sector contractors, with 22 contractors responding. The details of the private and public sector projects teams who responded are identified in the data table in figure 6.

Consultation with stakeholders

10 An expert panel meeting was held on the 5th July 2007. The objective of the meeting was to gain, from the defence, financial and advisory community, a wider perspective on the issues covered by the study and to help put these in context. The issues discussed were:

- the Department's attitude to risk in PFI procurement projects
- success in risk transfer in PFI projects; and
- management of risks in the operational phase of projects

11 The format consisted of the NAO introducing a series of issues, based on previous NAO and PAC findings and established good practice. The Panel were invited to discuss these issues in the context of their experiences of working with the Department on PFI projects. Members of the NAO study team and a representative of the Private Finance Unit were in attendance as observers.

25 Expert Panel attendees

Attendee	Organisation
David Finlay (Chair)	National Audit Office (NAO)
Andreas Crede	Serco
Caroline Baetz	Thales
Chris Nicholson	KPMG
Darryl Murphy	HSBC
Duncan Dickinson	Carillion
Libby Johnson	PWC
Michael Codner	RUSI
Nicholas Bliss	Freshfields
Nick Wright	BAE Systems
Simon Allan	Berwin Leighton Paisner
Simon Young	Willis

APPENDIX THREE

Timeline of Ministry of Defence PFI Projects

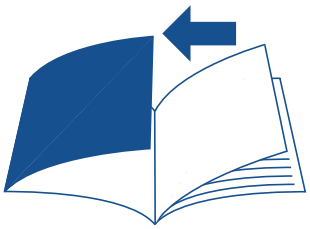
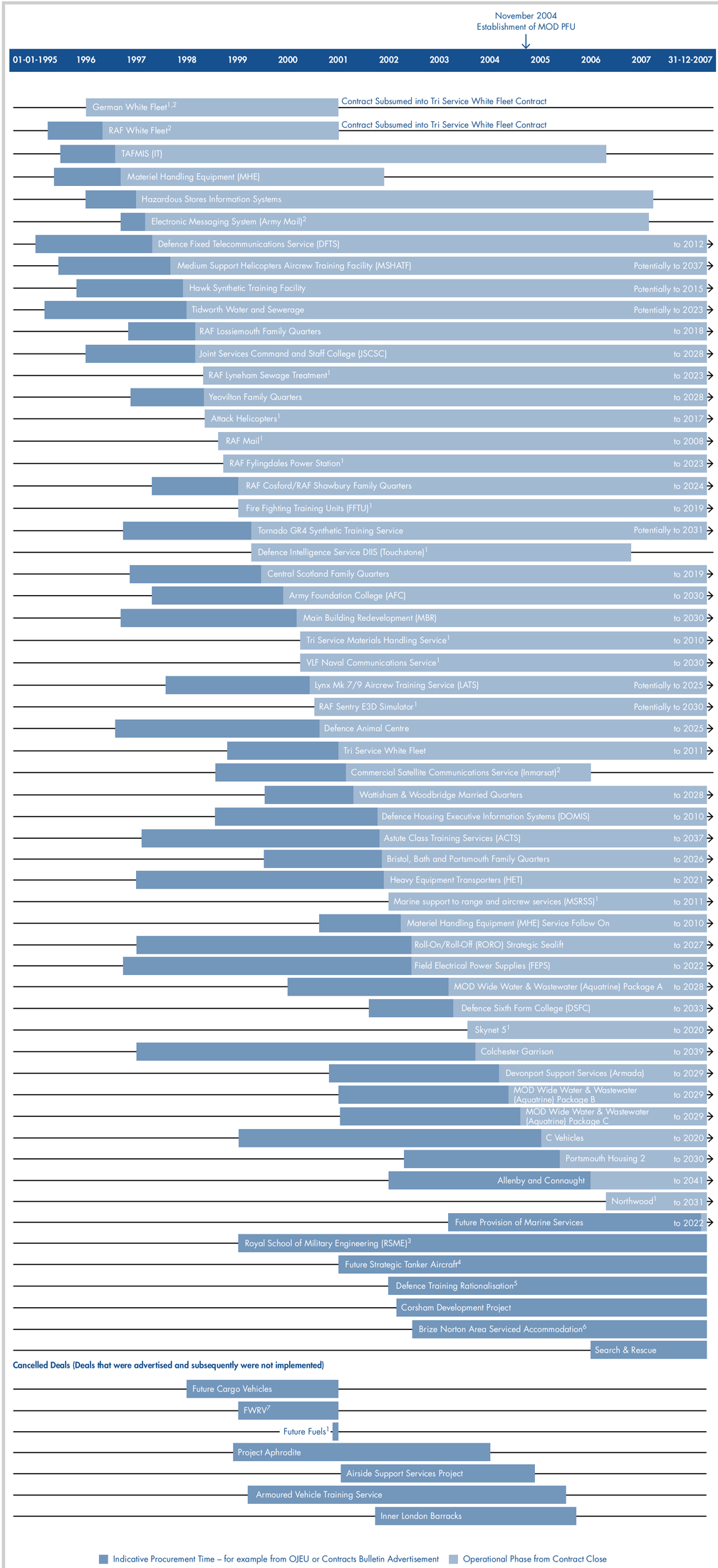


Figure overleaf



NOTES

1 The date of advertisement in the OJEU or the Contracts Bulletin could not be provided by the Ministry of Defence.

2 These projects were novated to other contracts.

3 Now being procured as a PPP contract.

4 Signed in March 2008.

5 One of the two PFI training packages of the Defence Training Rationalisation Project has been cancelled and alternative procurement options are being considered.

6 This project has been re-started.

7 Future Wheeled Recovery Vehicle.

APPENDIX FOUR

Allocation of risks between the contractual parties in PFI contracts

During the procurement of PFI projects the parties will agree how the risks of delivering the project will be shared

1 Through our previous work in the area of PFI we have established that allocating contractual risks, such as insurable or non-insurable events, or the risk that demand for the service is not at the anticipated level, is a key contributor to achieving value for money. Allocating these risks to the party best able to manage them is fundamental to achieving value for money in PFI. Value for money will be optimised as the parties best able to manage a risk will be able to deal with the circumstances surrounding the risk efficiently and cost-effectively.

2 Identifying risks to the successful delivery of the project is a key part of the PFI procurement process. Once risks are identified, the parties must agree which risks will be retained, which ones will be transferred and which ones will be shared. The process to agree the risk allocation will often involve a number of techniques including financial analysis, negotiation and the following of best practice and guidance. Guidance includes the Treasury's Standardisation of PFI contracts (SoPC) Version 4 which is the latest version of standard wording and guidance to be used by public sector bodies and their advisers when drafting PFI contracts. Once agreed the risks can then be managed effectively in the in-service phase of the project.

3 We found that in the Ministry of Defence, the process for arriving at the allocation of risk is similar to that seen in other departments. This often involves both analysis and negotiation between bidders and Authorities to ensure that the risk transfer is optimised to the satisfaction of all parties.

4 In addition to negotiation between the parties, the risk process typically also involves significant specialist input from technical, financial and legal advisers. The appropriateness of the risk transfer will be evaluated throughout the process both by the public sector, for example via the approvals process, and by the bidders and their funders. The use of private finance means that those intending to provide the finance will be concerned to ensure the risks will be managed well, so that there will be confidence that debt finance will be repaid and that the equity investors earn their expected returns. The evaluation of risks undertaken by lenders and investors is known as due diligence.

5 The decision regarding who is best placed to manage a risk may be based on an assessment of competence, or the track records of either party in managing particular risks. It may also be based on an assessment of who can best control the factors that make up the risk. For example, the risk of constructing assets is usually passed to the private sector contractor as they are in the best position to manage factors such as performance of sub-contractors.

If risks are transferred to the private sector inappropriately, value for money may be put at risk

6 We have found that inappropriate risk allocation, for example seeking to transfer too much risk to the private sector, can lead to reduced value for money. For example the private sector will charge a higher price to manage risks where it is not confident in its ability to manage and mitigate those risks. The private sector will also take the overall level of risk into account when pricing the contract, in order to protect itself from the cost of increased risk mitigation measures, and the potential additional costs (for example performance deductions) should that risk occur.

7 The importance of risk transfer and the impact on value for money decisions is highlighted in the case study below.

Procurement Case Study – an example of risk allocation in the Field Electrical Power Supplies project

8 The overall level of requirement for field electrical power was determined in a power study conducted by SEA in 1998. The Department determined that under a conventional procurement, 1531 generators would be required. This formed the basis of the public sector comparator.

Risk allocation

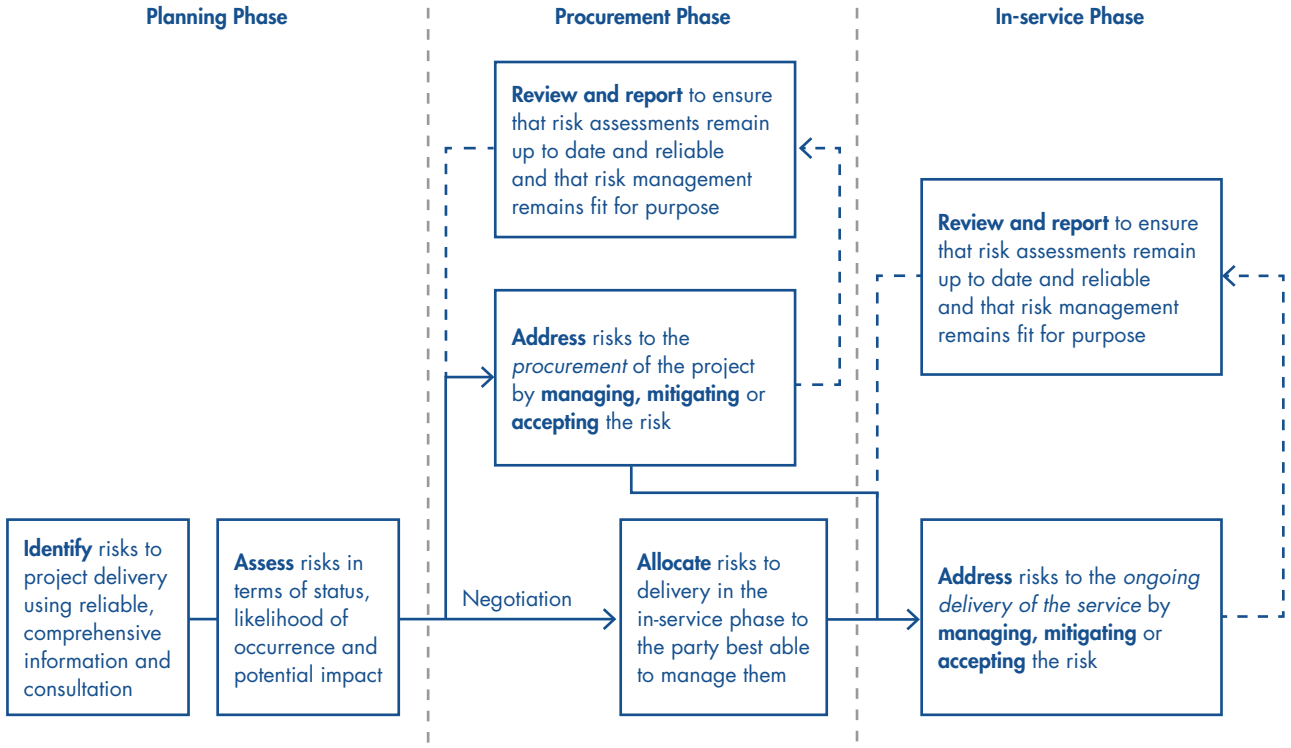
9 Under the PFI solution the contractor, Vickers Specialist Engines, accepted the risk of being able to provide the maximum number of generators required to provide the overall level of service required. This was equivalent to 1400 generators. However, due to affordability reasons, 1347 units were eventually commissioned.

10 Key risks transferred to the contractor under the PFI arrangement, compared to those retained by the Department were:

- Availability and performance risk
- Late delivery
- Through life operating costs
- Scheduled maintenance costs
- Availability and delivery of spares (to distribution centres)
- Demand in excess of minimum requirements
- Residual value (of the asset)

This meant that the contractor took the risk of being able to provide, on demand, a fleet of up to 1347 generators within the specified timeframes.

26 Risk allocation and management are key parts of all stages of the PFI process



Source: National Audit Office

11 The key risks retained by the Department were:

- Specification of the asset – the risk of the asset not being fit for purpose was ultimately retained by the Department; after the point at which it confirmed that it was satisfied with the demonstration and testing of prototypes. The Department has subsequently had to pay £7.3m to modify the design it had accepted and further costs may be incurred in the future.
- Specification of the level of service and usage of the asset – this was retained by the Department because it had specified the overall level of capability to be provided (i.e. the number of generators of each type). The Department is also responsible for the risk that the expected level and maximum levels of service available are a true representation of the actual need for the service. The ultimate risk of this being too much, or too little, remains with the Department. Current usage is well below the expected level.

12 In an example such as this where the margin between the public sector comparator and the PFI option is relatively low, the valuation of risks allocated to either party is an important factor in determining whether PFI offers the best value for money option. The value of the risks transferred under the PFI option was assessed by the Department as being equivalent to approximately £10 million. This risk adjustment was added to the public sector comparator. In net present value terms, using the discount rates at the time, the PFI solution was assessed as being £98.3 million, £5m less than the public sector comparator using the expected demand level. However using the current discount rate of 3.5 per cent the PFI option would have been more expensive.

27 The net present value of the PFI project and the public sector comparator

Based on 1189 systems:	Net Present Value at 6 per cent	Net Present Value at 3.5 per cent
PFI	98.3 million	161.9 million
Public Sector Comparator	103.3 million	157.6 million
Comparing PFI to the Public Sector Comparator	£5 million cheaper	£4.3 million more expensive
	4.9 per cent cheaper	2.7 per cent more expensive

Source: Ministry of Defence

13 Although the costs and financial risks of the various options are a very important consideration in ensuring value for money, other more qualitative factors should also be considered. In the case of the Field Electrical Power Supplies project, it was considered that a conventional procurement would have led to a two year delay to the in service date of the equipment. This was a contributing factor to the decision to select PFI as the procurement route.

GLOSSARY

Authority	A public sector body that lets a PFI contract. This may be Government Department, Agency or Local Authority.
BAFO	Best and Final Offer: the bid containing final pricing and deliverables submitted by bidding contractors based on the outcome of the negotiations conducted during the initial bid stage.
Balance Sheet Treatment	Whether the asset is recorded on or off the balance sheet of the Government Department.
Benchmarking	The process of comparing performance against one or more other relevant comparators. In PFI this refers to the process by which the PFI contractor compares either its own costs or the costs of its subcontractors providing services against the market cost of such services.
Capital Value	The cost of building the asset as opposed to delivering the service.
Competitive Dialogue	The competitive dialogue procedure is a new procedure introduced in the public sector procurement directive, which has been implemented in the Public Contracts Regulations with effect from 31 January 2006. It is for use in the award of complex contracts, where there is a need for the contracting authorities to discuss all aspects of the proposed contract with candidates.
Contract Management	Ongoing monitoring and management of the provision of services in line with the agreed terms and conditions.
Conventional Procurement	A construction contract in which the customer pays the contractor as the works are progressed. Such projects are fully paid for on completion. Maintenance is dealt with in separate contracts.
Financial Close	The time when the credit agreement is signed by all parties concerned. First drawdown of funds follows financial close and the satisfaction of any conditions precedent specified in the credit agreement.
FSD	Full Service Date: The date when the new PFI asset is completed and the contractor delivers all the services.
In-Service Period	The phase of the contract when services are being delivered.
ITN	Invitation to Negotiate: a formal invitation, from a procuring public body to prospective contractors, to present bids (including pricing) for a contract.

ISD	Initial Service Date: The date the service delivery begins. This may be prior to the delivery of the new PFI asset if the contractor is taking over existing services. When the asset is completed there will be a full service date when the contractor delivers all the services.
IPR	Intellectual Property Rights: The rights of an inventor or assignee to develop and commercialise an invention and license it, usually for a fee, to other manufacturers.
Issue	In risk management terms, used to refer to a risk that has already occurred.
Latent Defect	A defect on the property/equipment that is not readily apparent but which may impact the future fair market value or service.
Mitigation	A process or procedure for averting a risk, or reducing the possibility of its occurrence.
OJEU	Official Journal of the European Union: The publication in which contract notices appear, to which interested suppliers respond – previously the Official Journal of the European Community (OJEC). OJEU is commonly used as an abbreviation of the official notice that appears in the Supplement to the Official Journal of the EU.
Partnering Arrangement	The situation where a public organisation and a private one work together to provide a service with some sharing of risk and reward, usually over a period of time.
Pathfinder	A PFI project that is unique or innovative which may be followed by future similar deals.
Payment Mechanism	The contractual mechanism that quantifies the payment due to the contractor for the service provided.
Performance Deduction	Contractual penalties which may be imposed by the authority if the contractor does not perform the level of services specified.
PFI	A policy introduced by the Government in 1992 to harness private sector management and expertise in the delivery of public services, while reducing the impact of public borrowing.
Private Finance Unit	Each major department has a unit set aside to provide advice and assistance to PFI project teams, to act as a central PFI project information resource, and develop departmental PFI policy and guidance.

Post Project Evaluation	A formal lessons learned exercise.
Preferred Bidder	The bidder that the Authority has selected and with whom they intend to negotiate a contract.
Reserve Bidder	Second place short-listed bidder after the final bid stage. Reserve bidders may be invited to keep bids on the table in order to maintain competitive pressure on the provisional preferred bidder.
Risk	A hazard, or factor likely to cause loss or danger (such as a chance of loss or injury; the degree of probability of loss) that may occur in the future.
Risk Allocation	The allocation of responsibility for dealing with the consequences of each risk to one of the parties to the contract, or agreeing to deal with the risk through a specified mechanism which may involve sharing the risk.
Risk Management	The systematic application of management policies, procedures and practices to the tasks of identifying, analysing, evaluating, treating and monitoring risk. The culture, processes and structures that are directed towards the effective management of potential opportunities and adverse effects.
Risk Premium	Additional sum the contractor allows in its pricing or return to compensate a party for adopting a particular risk.
Risk Register	A file that holds all information on identifying and managing a risk, such as the owner and manager of the risk, and the mitigation procedure.
Risk Transfer	The passing of risk normally borne by the customer to the service provider.
Sponsored Reserves	Sponsored reserves are individuals whose employers are contractually committed to provide specific operational capability to the Services. During front line operations these personnel are called up and serve as Army Reservists alongside regular Army personnel.
Third Party Income	Additional income generated by third parties such as commercial organisations and the public.
Trading Fund	A self accounting unit which, while remaining under the control and management of a Minister, has greater freedom to manage its financial and other affairs. In particular, it is able to use its income to settle its liabilities and retain any cash balances at the year end.
Unitary Charge	The PFI unitary charge is an annual payment made throughout the lifetime of the contract, which covers the cost of capital expenditure, private finance and the services needed to run and maintain that asset.
Value for Money	The achievement of the optimum combination of whole life cost and quality to meet the user's requirements.
Whole Life Costing	Whole life costing is a systematic approach of balancing capital costs with revenue costs to achieve an optimum solution over a projects whole life.

Printed in the UK for the Stationery Office Limited
on behalf of the Controller of Her Majesty's Stationery Office
5738291 10/08 65536

Design and Production by
NAO Marketing & Communications Team
DP Ref: 008755

This report has been printed on Consort Royal Silk and is produced from a combination of ECF (Elemental Chlorine Free) and TCF (Totally Chlorine Free) wood pulp that is fully recyclable and sourced from carefully managed and renewed commercial forests. The range is manufactured within a mill which is registered under the BS EN ISO 9001 accreditation, which provides the highest standard of quality assurance.

Published by TSO (The Stationery Office) and available from:

Online
www.tso.co.uk/bookshop

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ISBN 978-0-10-295312-1

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