

Ministry of Defence
Helicopter Logistics



REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
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executive summary

- 1 The Ministry of Defence's (the Department's) 1998 Strategic Defence Review emphasised the need for flexibility, adaptability and responsiveness in undertaking military tasks, including expeditionary operations. Helicopters are a key component of defence capability as they make a unique contribution to a wide range of operations. Keeping them available to fly is therefore critical to the success of future defence capability.
- 2 This study focuses on the Department's six main established helicopter fleets, comprising 470 helicopters at the front line, whose logistics support costs some £260 million a year. Seventy per cent of these helicopters are operated by the Joint Helicopter Command which was established to facilitate the deployment of all battlefield helicopters on joint operations and which draws on helicopters owned by the Royal Navy, the Army and the Royal Air Force. In addition the Royal Navy (Commodore Naval Aviation) and Royal Air Force (Strike Command) operate smaller numbers of ship-borne and search and rescue helicopters which are not part of the Joint Helicopter Command.
- 3 Many of the current helicopter fleets will reach the end of their operational lives in the next ten to fifteen years, but are likely to be required to perform at a high operational tempo until then. They will therefore need careful management if they are to contribute to the expected military tasks. The formation of the Defence Logistics Organisation in April 2000 has provided the Department with the means of addressing logistics support issues coherently on a tri-service basis and the Defence Logistics Organisation is working hard to converge the various single service systems and practices.



- 4 This report examines the Department's performance in providing logistics support to its helicopters and the initiatives being taken to improve logistics management. It follows up the Committee of Public Accounts' past work on helicopters (Appendix 1). The methodology we adopted is set out in Appendix 2.
- 5 We found that the Defence Logistics Organisation has not yet been able to deliver fully the levels of logistics support that it had agreed to supply. This is partly due to unforeseen one-off events that have had wide impacts on helicopter fleet maintenance. The Defence Logistics Organisation has also had to manage its business utilising the legacy systems from the three predecessor Service areas and resource constraints have also played a part. The Defence

Logistics Organisation has a comprehensive programme designed to improve the quality of the logistics support it provides. This includes the development of modern, integrated IT systems and processes, adopting innovative support arrangements with industry using Smart Acquisition principles, and the identification of best practice and its application across the organisation. But there remains scope to improve performance and so increase helicopter numbers. Our recommendations complement the Defence Logistics Organisation's various initiatives, highlighting areas for management action that should result in increased availability of helicopters at the front line.

In this difficult area the Defence Logistics Organisation has not yet been able to deliver all the required logistics support (Part 1)

- 6 Providing helicopter logistics support is a complicated task and has proved a major challenge. The Defence Logistics Organisation has had to address a number of 'legacy' issues including the different procedures and ways of operating in the three Services and disparate information systems. And it has had to do this against the background of severe pressure on resources. Military helicopter logistics is also intrinsically complicated. For example a number of organisations combine to produce a helicopter that is ready to fly:
 - The Defence Logistics Organisation is responsible for ensuring that helicopters are 'available' - that is the provision of airworthy helicopters that can be readily maintained by front line units.
 - Maintenance at the front line is carried out by the units themselves with the Defence Logistics Organisation setting maintenance policy and providing spares and expertise. 'Serviceability', having a helicopter ready to fly a mission, is therefore the product of both the Defence Logistics Organisation and the front line units, together with the Service personnel organisations responsible for recruitment and training.
 - The performance of the Defence Logistics Organisation and the front line units is also critically dependent on industry for the provision of replacement spares and in helping to investigate problems and identify solutions.
- 7 Against this background, the Defence Logistics Organisation is striving to meet the required level of service. Service levels are set out in Customer Supplier Agreements with its three helicopter customers - the Joint Helicopter Command, Commodore Naval Aviation and Strike Command. The Defence



Logistics Organisation has not yet been able to deliver all the required logistics support. As regards making helicopters available, performance has been patchy. For example, for Joint Helicopter Command the Defence Logistics Organisation achieved its targets more often than not. Where targets have been missed, performance has generally been marginally below target.

- 8 Many logistics problems have arisen because of one-off events. For example following the major failure of a Dutch Lynx main rotor head, many United Kingdom Lynx helicopters were grounded. The Defence Logistics Organisation responded promptly, consulting its front line customers, Commodore Naval Aviation and the Joint Helicopter Command, and agreeing revised targets for Lynx availability, typically involving a 20 per cent reduction. The Lynx main rotor head is highly complex and has a total lead time of more than two years. The Department and Westland Helicopters worked closely together to resolve the problem, with Westland Helicopters delivering the first replacement main rotor heads within a few months of the Department placing a contract. A robust fleet wide recovery programme is on target for completion in June 2002, when Lynx availability is to be restored to previous levels, and replenishment of all spares is scheduled for March 2003. This case illustrates the importance of developing innovative logistics solutions in partnership with industry.

- 9 Front line units are fundamentally concerned with the number of helicopters that are serviceable, that is having a helicopter ready to fly a mission. Analysis of the numbers of serviceable helicopters shows shortcomings in performance, with Joint Helicopter Command serviceability targets achieved on average for two of the six helicopter fleets in the twelve months to September 2001. Customer Supplier Agreements between front line commands and the Defence Logistics Organisation are still evolving and there are differences in terminology and content. For example, the Agreement for Commodore Naval Aviation includes serviceability targets whilst these are not incorporated in Agreements with other customers. Analysis of D states, where helicopters are grounded as a result of a lack of spares, and 'robberies', where a spare is taken from one helicopter to put on another, can highlight logistics weaknesses. However, the reasons for any shortcomings in logistics outputs need careful examination and the Defence Logistics Organisation is not yet able easily to interpret information regarding the level of D states and robberies, or to identify clear trends in performance. Greater consistency in definition and collection of data on performance aspects such as D states would facilitate comparison between the helicopter fleets and the development of a performance management regime that focuses on logistics outputs.




- 10 Weaknesses in logistics support can have severe operational impacts. Recent operations and exercises have highlighted shortcomings in helicopter logistics. The main rotor head problem reduced the number of available Lynx aircraft and the Royal Navy protected front line operations and the flying training programme, resulting in some ships going to sea without an embarked Lynx helicopter. The same problem contributed to the Joint Helicopter Command having to review its helicopter deployments. Thus the Lynx helicopters in the rapid reaction forces not currently deployed on operations are at lower levels of readiness. During an exercise in Oman in Autumn 2001 numbers of serviceable helicopters averaged 55 per cent. For European exercises the target is 75 per cent although the Department considered that this was ambitious for environmental conditions in Oman.

The Defence Logistics Organisation is tackling helicopter logistics problems but there is scope to improve performance and so increase helicopter outputs (Part 2)

- 11 The Defence Logistics Organisation has many initiatives in place to improve performance. It has identified key areas for change by which it might transform logistics support and is introducing the European Foundation for Quality Management Excellence model. It is driving forward Resource Accounting and Budgeting and the Smart Acquisition initiative. Many of these changes have direct implications for the current and future success of helicopter logistics.
- 12 Following a structure implemented across the Department's acquisition organisations, the Defence Logistics Organisation has established Integrated Project Teams to manage helicopter logistics. Feedback from front line customer organisations suggests that they broadly welcome the new structure. The establishment of a single focus for helicopter logistics support within the Defence Logistics Organisation has been highlighted by the Joint Helicopter Command as having a particularly positive effect on the way in which support is managed. The numbers of teams all contracting with a small number of industry players can, however, lead to some confusion between the Department and industry. Many teams are dealing with the same industrial suppliers and potentially there are competing demands between the teams working unilaterally to drive better performance from industry and an overarching industrial strategy. Aware of this, the Defence Logistics Organisation has developed a strategy to provide a set of resilient guidelines to enable coherent and integrated support across the logistics and acquisition community. For example, the Defence Logistics Organisation brings together Integrated Project Team leaders and industry directors to ensure that business is jointly taken forward and requirements prioritised. However, not all project teams yet have fully developed or effective business plans to achieve this. There are also complaints of initiative overload as teams are faced with implementing their own improvement programmes whilst preparing for Defence Logistics Organisation initiatives.



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- 13** Our previous work on helicopter logistics pointed to weaknesses in management information and the Department gave assurances to the Committee of Public Accounts in 1992 that progress was being made. However, it will take some years before the Defence Logistics Organisation has established a fully converged management information system bringing together data from the Sea, Land and Air environments. Meanwhile legacy single Service information systems and practices remain. Integrated Project Teams are developing cost data in line with Resource Accounting and Budgeting and establishing cost of ownership models but these are immature. Project teams also have to develop new approaches to forecasting demand for spares. Traditionally forecast demand has been based very much on historic consumption but there is a need to look at future demands and the implications of reliability. On both these aspects there is a need for better quality data.
- 14** There are many examples of good practice, particularly as regards contracting and business planning, which have wider application across the Defence Logistics Organisation. Several Integrated Project Teams have developed innovative partnering or contractual arrangements, either on their own initiative or with the help of support and advice from the Defence Logistics Organisation Centre. Others, such as the Helicopter Engines Integrated Project Team, have increased their management grip of their assets and resources, enabling them to dispose of unnecessary assets and deliver better outputs to their front line customers. The Defence Logistics Organisation is also taking steps to improve its relationship with industry and ensure that industry is better able to deliver its part in logistics support. For example project teams are contracting for the guaranteed delivery of spares.
- 15** While recognising the Department's particular operational circumstances, international comparators and private sector organisations are using practices which are of direct relevance. Improved analysis of stock holding and forecast demand has led to higher levels of equipment availability for the United States Army. British Airways has comprehensive asset tracking and performance indicator data for its aircraft fleets and is able to make informed management decisions and achieve high availability percentages. Bristow Helicopters Limited achieves similarly high availability rates and both companies have a range of contracts which allow them to minimise their asset holdings and maximise performance. Whilst there are clear differences between the commercial sector and military logistics, the quality of management information and the lessons of innovative contracting are recognised by the Defence Logistics Organisation and are being addressed.

Recommendations

16 The Defence Logistics Organisation is making progress in tackling helicopter logistics and has many initiatives in train to improve logistics management and efficiency in the use of logistics assets. By building on these initiatives, our recommendations should help improve support to helicopters at the front line, directly contributing to military outputs. The possible effects on logistics outputs are summarised in **Figure 1**. Such is the importance of helicopters in the Department's defence tasks that even a small percentage increase in the numbers of helicopters will have a noticeable impact on exercises and operations. Our recommendations are applicable to both existing helicopter fleets and to the new Merlin and Apache fleets being brought into service over the next few years. The new fleets present major technical challenges with much of the procurement pre-dating Smart Acquisition. The existing fleets will continue to provide an essential component of defence capability during the next decade.

- 1 The Defence Logistics Organisation and its front line customers should aim to develop a consistent regime for measuring outputs and performance, and this should include mechanisms for analysing and addressing the reasons for any shortfalls in serviceability and trends in the numbers of D states and robberies.
- 2 For more effective business management the Defence Logistics Organisation needs to obtain better data, covering assets (the numbers of stocks, their condition and where they are located), financial data and reliability of equipments.
- 3 With more responsibilities being given to Integrated Project Teams, including negotiation of contractual arrangements, management of relations with industry needs to be better co-ordinated to drive better performance from contractors.
- 4 The Defence Logistics Organisation should look to benchmark the quality and timeliness of its management information and the robustness of its contractual arrangements with best practice in industry.
- 5 More needs to be done to disseminate the many good practices that are being implemented and the lessons that are available from external best practice.
- 6 There is a need to prioritise the various management initiatives, focusing on those that most directly contribute to improving logistics performance and increasing helicopter availability.

1 Summary of the Department's initiatives to improve helicopter logistics

Logistics Initiative	Effect on Outputs
<p>1 Establishment of Integrated Project Teams (para 2.3)</p> <ul style="list-style-type: none"> ■ Guidelines for Integrated Project Teams (para 2.7) ■ Business plans (para 2.22) ■ Working with other operators (para 2.23) 	<ul style="list-style-type: none"> ■ Project teams have improved communication, allowing greater focus on customers' concerns ■ Guidelines aim to balance a project team's autonomy with a strategic approach designed to maximise industry and internal resources ■ Better planning should result in improved business performance as demonstrated by the Helicopter Engines Team ■ Cooperative working with others and exchange of ideas can drive down costs with suppliers as achieved by the Chinook Team in its relations with the United States Army
<p>2 Improving performance measurement (Part 1 and para 2.14 - 2.17)</p> <ul style="list-style-type: none"> ■ Customer Supplier Agreements (para 1.8 - 1.11) ■ Improving analysis of reliability and forecast demand (para 2.20) 	<ul style="list-style-type: none"> ■ Consistent measures of performance will highlight problems more effectively to all stakeholders and promote more efficient use of resources ■ Agreements are evolving and there is a need for greater consistency and focus on logistics outputs ■ Reliability work carried out by the Support Chain Integrated Business Team and project teams should provide better demand forecasts
<p>3 E-commerce and management information projects (para 2.10)</p>	<ul style="list-style-type: none"> ■ New management, IT and asset tracking packages should provide a clear picture of the condition and location of assets, and promote better use of existing assets
<p>4 Full application of Resource Accounting and Budgeting, Whole Life Costing (para 2.8-2.9)</p>	<ul style="list-style-type: none"> ■ Better information on the full cost of activities should help project teams deliver their business aims and promote wider efficiency
<p>5 Innovative contracting (para 2.24 - 2.25)</p>	<ul style="list-style-type: none"> ■ New arrangements should allow the Department to contract more efficiently for spares and repairs and help reduce stock holdings
<p>6 Best practice dissemination (para 2.13)</p> <ul style="list-style-type: none"> ■ Heads of Specialisation (para 2.9) ■ Drawing on best practice from industry and other countries' defence departments (para 2.28-2.37) 	<ul style="list-style-type: none"> ■ Targeted benchmarking and further best practice dissemination should help the Department make better use of its resources and expertise by enabling and equipping project teams ■ More effective sweating of assets should increase outputs

Source: National Audit Office