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Ministry of Defence

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# Managing the defence inventory

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# Summary

**1** The UK's armed forces are deployed across the globe on operations, such as in Afghanistan and on standing commitments, such as defending the UK's air space. To conduct these activities, the armed forces require a wide range of supplies and spares for immediate and potential use. These supplies and spares are described collectively as 'inventory'.

**2** The inventory comprises more than 900,000 different types and more than 710 million items. The Ministry of Defence (the Department) splits its inventory into two categories:

- explosive, which is ammunition and missiles; and
- non-explosive, which ranges from clothing and medical supplies to spares for vehicles, ships and aircraft.

**3** The Department's inventory is of significant value. At the end of December 2011, the Department held inventory with a value of £40.3 billion (the gross value without adjustment for depreciation). In 2010-11 the Department spent £2.9 billion on inventory and it forecasts that it will spend between £1.5 billion and £2 billion each year for the next five years. The forecast spend equates to around an additional 3 per cent of the Department's annual spending for those future years.

**4** Inventory management is a recognised professional skill. The objective of inventory management is to minimise the risk of having insufficient stock while also minimising the cost of holding stock, and reducing the amount of money tied up in stock holdings. With a decreasing defence budget, it is increasingly important that the Department manages its inventory effectively and efficiently to achieve this objective.

**5** In 2011 we reported on the supply chain to operations in *Ministry of Defence: the use of information to manage the logistics supply chain* and we qualified the Department's accounts. Both pieces of work raised concerns about the Department's ability to manage its inventory efficiently because of a lack of reliable information about stocks, the risk of failure in the base inventory IT systems in the central depots, and whether the Department was holding inventory that it no longer needed.

**6** During the course of our study, the Department provided data for our analyses from a number of its inventory systems. However, problems in obtaining reliable information have limited the scope of our analysis, for example volumetric data held on the Department's systems are incomplete and inaccurate. The Department is continuing its work to improve the quality of its data and has committed significant funds to improving its IT systems. These limitations, however, further highlight that the Department's ability to manage its inventory is compromised by its current information systems and the data those systems hold.

7 This report examines the Department's approach to managing its inventory. It considers whether:

- the Department is buying and holding the right quantity (Part One);
- the Department has appropriate strategies and structures in place to manage its inventory efficiently and effectively (Part Two); and
- the Department's improvement plans will be successful (Part Three).

8 This report covers non-explosive and explosive items, held by the armed forces and in central depots. The report does not cover inventory managed on IT systems for the nuclear weapons inventory or loan items and war reserves.

## Key findings

On whether the Department is buying and holding the right quantity

9 **Inventory holdings are increasing.** Our examination showed that the inventory held by the armed forces and the non-explosive inventory held in central depots increased in value by 13 per cent from £17.2 billion to £19.5 billion (gross) between the end of March 2009 and December 2011. The quantity of items held by the armed forces and the number of different types of stock have also increased.

10 There are a number of reasons for the increase:

- **There has been increase in operational activity over the last decade.** The Department seeks to ensure adequate support for troops deployed to Afghanistan and to retain sufficient inventory to support operations rapidly such as in Libya in spring 2011. Overall, the Department considers that there are sufficient quantities of non-explosive inventory held in central depots to meet its target levels for meeting demands from the armed forces.
- **The Department has brought in new equipment across the armed forces, for use now and for a range of operational scenarios. However, it has not consistently disposed of inventory it no longer requires.** We found that as of March 2011 significant amounts of non-explosive inventory held in central depots were not being issued and consumed regularly. For example, £4.2 billion (gross) of non-explosive inventory has not moved for at least two years. This represents 10 per cent of the total inventory value as at March 2011. A further £2.4 billion (gross) of non-explosive inventory already held is sufficient to last for five years or more, based on the rate of usage since April 2009. The Department has had to set up central projects to dispose of inventory as a result of inconsistent disposals by project teams. During 2010 and 2011, these central projects identified £1.4 billion (gross) of inventory that could be sold or destroyed.

- **The Department is buying more inventory than it uses.** Between April 2009 and March 2011 the Department spent £4 billion on raw material and consumables, such as clothing or ammunition, but it has not used £1.5 billion (38 per cent). We estimate that the Department spent £12.5 million (gross) in 2010-11 on non-explosive inventory where it already had more than five years' worth of stock in its central depots. These findings indicate that the Department is spending money on unnecessary levels of stock, which could be spent elsewhere in government.
- **The Department is recording more inventory on its IT systems.** This is in preparation for new IT systems and also in response to the qualification of its annual accounts. The Department has not been able to identify the proportion of the increase related to better recording of data.

#### **11 Holding inventory that may not be used imposes a cost on the Department.**

We estimated the costs of storing and managing inventory borne by Defence Equipment and Support, the body within the Department responsible for procurement and support. These were at least £277 million in 2010-11. There is an opportunity cost for the Department if it stores inventory that will never be used. For example the Department may have to pay to create additional storage capacity to house new inventory items.

**12 Future withdrawals from overseas bases will place more pressure on the Department's central depot capacity.** Overall the Department's central depot space is under pressure and has little room for additional inventory. The planned return of the armed forces from Afghanistan by 2015 and from Germany by 2020 will exacerbate this situation when inventory from those locations is returned to the UK.

The Department's strategies and structures to manage inventory

**13 The Department's logistics strategy does not fully address the causes of unnecessary inventory holdings.** The Department's strategy is focused upon providing logistics support for current and future requirements. It does not, however, discourage over-ordering and therefore risks inventory levels increasing despite actions to reduce levels of unnecessary inventory.

**14 The Department has set few efficiency targets for project teams to encourage them to buy and hold inventory in the right quantities.** In line with the strategy, targets are focused on ensuring that there is sufficient inventory to meet requirements, rather than minimising over-ordering or managing inventory already being stored.

**15 The Department has not successfully created incentives for project teams and the armed forces to consider the full impact of their decision-making.**

Inventory management is devolved to a number of teams with different responsibilities, each of which bears only a proportion of the overall costs. Despite departmental projects aimed at changing ordering behaviour there remain no incentives for teams to consider the impact on the Department overall. For example, the armed forces do not incur the cost of purchasing inventory until it is used and are not responsible for the consequences if they over-order. Similarly project teams do not incur the cost of storing the inventory they purchase. From April 2012, the Department has introduced separate budgets on consumable purchases to minimise over-ordering. It has also required project teams to obtain separate approval from the Director of Resources in Defence Equipment and Support for all purchases more than £0.5 million.

**16 The Department does not understand the full cost of holding and managing inventory and does not use known costs as part of its day-to-day decision-making.**

There is no comprehensive analysis of the costs of inventory management available, which makes it difficult for teams to make value for money judgements on whether to buy, retain or dispose of inventory.

**17 The summary management and financial information on inventory that is provided to senior staff within Defence Equipment and Support is not sufficient for them to challenge and hold to account the project teams.**

Within Defence Equipment and Support, the gross and net values of the inventory holding are reported monthly to senior management. The reports do not currently highlight the reasons for changes or include information on the quantity or value of the flows in and out of the stores. In addition the performance management systems do not allow senior managers to review the fluctuations in the level or value of inventory stored and reveal the underlying reasons.

**18 A lack of suitably qualified staff in post may undermine the Department's efforts to improve its inventory management.**

At the end of November 2011, 20 per cent of inventory management posts were vacant, and of those staff in post, 13 per cent had not obtained the appropriate qualifications.

### The Department's plans for improvement

**19 The Department acknowledges that it needs to improve its inventory management and has introduced several initiatives and changes to how teams manage inventory.**

These projects include introducing software to forecast likely demand more accurately and help reduce over- and under-buying. The Department is making considerable efforts to improve and the success of these projects should increase effectiveness and savings. However, most of these projects have not been operating for long enough to realise their benefits.

**20 The Department has not yet put in place an accountability framework to encourage teams to manage their inventory efficiently as well as effectively.**

The Department's strategy and performance reporting do not focus on efficient inventory management. As a result, the Department's improvement initiatives have not yet addressed the lack of efficiency measurements or incentives for teams to consider the full implications of their decisions. Following a critical report by the Department's Internal Audit and our discussions of informal findings from this report, in February 2012 the Department commissioned a review to try to establish and sustain more cost-effective inventory management. By May 2012 the review had made recommendations to improve inventory management and suggested further work necessary to deliver those improvements. With the exception of previously planned changes to the IT systems, the Department plans to implement those recommendations by March 2013.

**21 The Department is making significant changes more widely to how it operates, the results of which may improve its management of inventory.** Following the Strategic Defence and Security Review in October 2010 and Lord Levene's review in June 2011, the Department plans to introduce a new operating model in April 2013. This will set out a customer-supplier relationship between the armed forces and Defence Equipment and Support. The Department's objective is to strengthen decision-making and accountability for providing the armed forces required within budget, by holding the heads of the armed forces to account. The Department has yet to work through the implications for the organisations within it and determine how it will hold organisations to account for delivering to their targets.

**22 The Department is exploring ways to achieve savings by outsourcing its procurement of commodities, such as clothing, and its central warehousing and distribution for non-explosives.** It does not, however, yet have a strategic plan for inventory necessary to set robust requirements for outsourcing. It will only make significant savings if it stops buying more than it needs and disposes of inventory it no longer requires. As part of its internal approval process, the Department has recognised that it is not currently able to outsource and is addressing this in its work to develop the options for outsourcing.

## **Conclusion on value for money**

**23** The Department has a number of appropriate criteria to satisfy, such as supporting long-term operations, when setting inventory levels. However it is clear that, in a number of areas, these criteria have already been exceeded and the Department continues to add yet more inventory. This does not represent value for money.

**24** The Department recognises there are problems with its inventory management, and has introduced projects to improve its practices. However, the root cause of the excess stock is that management and accountability structures fail to provide the incentives to drive cost-effective inventory management. The Department will need to address these weaknesses comprehensively to deliver value for money.

## Recommendations

**25** Our recommendations are aimed at helping the Department achieve value for money from its inventory management.

- a** **The Department should develop a coherent and comprehensive strategy for the size, value and composition of the inventory that it needs to retain, and use this as a basis for setting coherent targets and management approaches.** The Department has made improvements to better manage inventory, but does not yet have a coherent and comprehensive view of the size and value of the inventory it needs to retain. Consequently the Department cannot manage its inventory as a strategic asset or set coherent targets and management approaches. Its strategy should embed good inventory management behaviours as standard business practices, for example ensuring that project teams do regularly review their inventory to identify items for disposal.
- b** **The Department should expand its financial information and use it to improve cost-effective decision-making.** The Department does not collect all the information needed to understand the full cost of managing inventory, nor does it centrally collate and report its cost information. The Department cannot, therefore, make informed decisions and evaluate whether it is achieving value for money from these decisions. The information should be collated in a manner that allows the full cost to be estimated for individual types of stock. Costs should include that of holding and managing stock by the armed forces.
- c** **The Department should reduce the amount it spends each year on inventory where it already holds sufficient stocks.** The Department holds £4.2 billion of inventory that has not moved in over two years and a further £2.4 billion of holdings sufficient to cover five years of use. However it spent £1.5 billion in 2009-10 and 2010-11 on consumable inventory that it has not used.
- d** **The Department should set up management and accountability structures that incentivise good inventory management.** The Department will be introducing a number of significant reforms over the next few years, including new operating models for the Department overall, and for Defence Equipment and Support. The Department should use the opportunity presented by these reforms to set up management and accountability structures that encourage teams to manage inventory efficiently as well as effectively.
- e** **The Department should address its problems in managing inventory before it outsources some of its warehousing, distribution and commodity procurement functions.** The Department is exploring options for outsourcing but there are risks to achieving value for money owing to a lack of a comprehensive top-down strategy, robust information and skilled staff. The Department will need to successfully address these to avoid paying a premium for outsourcing.