

Ministry of Defence
Major Repair and Overhaul of Land Equipment



REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
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executive summary

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- 1 The major repair and overhaul of the Ministry of Defence's (the Department's) land equipment is a complex business. The Department owns a large and diverse range of land equipment worth around £5.6 billion and there are over 15,000 different repairable items in the inventory. Each year, the Department spends some £290 million on a wide range of repair and overhaul work. A mixture of private sector providers and in-house agencies, principally the Army Base Repair Organisation (ABRO), conduct the repairs on the Department's behalf.
- 2 The Department's 1998 Strategic Defence Review outlined the need for major savings in order to fund force restructuring and future equipment programmes. The Department therefore is seeking to reduce the cost of major repair and overhaul. In doing so, the Department is keeping in view the need to retain repair capacity for strategically vital equipment, to "surge" repair provision prior to hostilities, and to ensure value for money in a highly monopolistic sector. At present, the Department allocates rather than competes much of its repair work.
- 3 This Report examines the effectiveness of the Department's management of the major repair and overhaul of land equipment. In addition to documentary review and interviews with Departmental staff, our methodology (detailed in Appendix 1) centred on a survey of land Integrated Project Teams (IPTs) within the Defence Logistics Organisation and detailed examination of a sample of 14 equipments and sub-assemblies. We also visited a number of industrial repair providers.
- 4 We found that the Department has done much to improve the management of major repair and overhaul and recognises that there is more to do, including the need to address the future role and shape of ABRO. It has reorganised its supply organisation and is introducing many business improvements, including new information technology to support better logistics management. Industry is taking a wider role in the support of equipment and there are a number of innovative projects underway as part of this. The Department has incomplete information on equipment usage, repair activities and costs, and some management practices could be improved. The Department also needs to address the future role and shape of its in-house provider, ABRO. Without resolving key issues - relating to the unclear military case for retaining ABRO, questions over the extent to which truly competitive procurement of repair and overhaul can be achieved, and uncertainty over the longer-term ownership of ABRO - there are wider risks, for example, that IPTs may not act in a fully co-ordinated way and that the Department's major repair and overhaul business will not be cost-effective.

The major repair and overhaul of land equipment is large and complex but there is scope for it to be more cost-effective

- 5 The major repair and overhaul of land equipment is a large and complex business. Using the existing performance measures, it appears that the Department's performance is good on the whole. But these performance measures are not comprehensive and the Department needs to continue to improve its performance measures - for example, demand fulfilment is not yet measured and there is only limited measurement of equipment reliability. And there appears to be scope for major repair and overhaul to be more cost-effective. For example, repair loop times are very long and compare unfavourably with some sectors of industry. Consequently, for some repair lines, the Department holds excessive stocks of repairables - the Department recently identified stock worth over £300 million for disposal.

The Department has made important changes to its supply organisation and to the way it conducts business

- 6 The Defence Logistics Organisation was launched in April 2000, creating a new unified logistics provider for the Armed Forces. It has a clear high level mission and vision for the Department's logistics activities, including for land equipment support. The Defence Logistics Organisation also has a key strategic goal to reduce output costs by 20 per cent by 2005 while maintaining or improving the quality of its outputs. The introduction of IPTs has created a single supplier within the Department for the support of each equipment in a cost-effective way.
- 7 The introduction of resource based accounting and whole life costing is focusing managers' attention on the costs of unserviceable equipments, spares and other assets and of the equipment support process generally. More specifically, the Beacon Initiative is designed to provide selected IPTs with consultancy support to help them to pursue innovative changes and to apply best practices while, for a number of equipments including AS90 and the Warrior Fighting Vehicle, the Department is reducing the amount of base overhaul work carried out in favour of more cost-effective approaches to scheduled repair.



- 8 Within the land environment, the Department has difficulty in predicting equipment usage. There are problems translating equipment usage into required repair activity and stock levels. In addition: IPTs do not yet have full visibility of repair costs; automatically generated demand figures in the Army's stores system can be inaccurate; there is no visibility of spares consumption at the point of delivery; failure reporting by users is inaccurate and incomplete; and repair providers cannot plan with any precision their repair and production schedules as the Department is not able fully to asset track equipments. Management practices could also be improved since repair turnaround times are not always monitored and repair providers' performance is rarely queried. Limitations in IT systems mean that many management processes are paper-based and are resource intensive.
- 9 The Department is using and developing new tools and major IT solutions to enhance its current information. For example, the Department is now developing a software tool to help to identify the resources required for peacetime training. And it expects that many of the above deficiencies should be rectified by the likely introduction of the Defence Stores Management Solution (DSMS), which is intended to replace the Army's current stores system, and of the Delivering the Requirement for Unit Materiel Management (DRUMM) project which will provide visibility of holdings of spares and repairables.

Industry is set to get a wider role in major repair and overhaul

- 10 The through life approach to equipment support, called Integrated Logistics Support, is driving the further involvement of industry for future equipments. The support solutions currently being developed for future land projects involve a high degree of contractor provision. For example, Public Private Partnership and Private Finance Initiative deals are proposed for the Heavy Equipment Transporter project and Field Electrical Power Supplies programme respectively. And other future land projects, such as those for fuel and water tankers and the Multi-Role Armoured Vehicle, are likely to involve at least some long-term contractor logistics support. Despite potential increases in operational risk, there are clear benefits to contracting with industry in such ways that may not be achievable through the use of in-house providers. These include:



- a reduced whole life costs through design improvements incorporated from the outset;
 - b the introduction of gainsharing arrangements relating to benefits from improved equipment reliability and capability due to subsequent design modifications proposed by industry; and
 - c the retention of industrial capabilities during gaps between main production contracts.
- 11** The Department lags behind best industrial practice in such areas as supply chain performance, inventory management and asset tracking. The Department is seeking to take advantage of industry's capabilities in such fields by operating direct exchange schemes for repairable spares in the support of the Rapier Field Standard B short range air defence system and the Phoenix target acquisition and surveillance system. And a cost saving modification proposed by industry is to be introduced into the repair programme to enhance the reliability of the TN-54 gearboxes used by the Challenger 2 main battle tank.
- 12** Despite trends towards contractor logistics support, however, parts of industry acknowledge that they do not have well developed repair and overhaul capabilities. Some manufacturers are therefore looking to ABRO to provide this expertise and capability. In addition, Alvis Vehicles Limited and Vickers Defence Systems both entered into partnering arrangements with ABRO in 2001. And ABRO intends to work more closely with other potential industrial partners on future equipment programmes.

ABRO is moving to Trading Fund status but important issues are unresolved

- 13** The Department is establishing ABRO as a Trading Fund on 1 April 2002. The Department's case for retaining ABRO in-house is not that it has a strategic role in a military sense, but that it is beneficial to the defence mission and to the effective management of logistics support. It is unclear, however, how the lack of a strong military strategic case for retaining ABRO in-house reconciles with the existing policy of retaining in-house repair and overhaul facilities for key operational equipments. The Department has not fully defined the need for either surge and flexibility or for dual sourcing and so it cannot be certain what level of ABRO capacity is needed. And we found that IPTs' views on the strategic importance of ABRO varied. The Department has still to determine what minimum in-house logistics capability is required to support military operations, including in-house repair and overhaul. And, while it has decided to keep ABRO in-house for the present time, it has still not decided the longer-term future ownership of ABRO.
- 14** To date, the Department has achieved very little competition in the major repair and overhaul of land equipment - around 20 per cent of repair lines included in our sample cases. And in cases of dual sourcing, the Department had not conducted full competitions but had allocated work on the basis of repairers' costings for a single item. The Department has now set a target for competing 30 per cent of ABRO's workload, by value, within three years of moving to Trading Fund. This is a significant reduction from the 80 per cent target that the Department initially intended to set because of constraints on IPTs to compete many of the repair programmes quickly. To be effective, competition must be on a level playing field, in terms of the competitive process, and equivalent pricing conditions and risks placed on bidders. It has not always been easy to demonstrate that these conditions applied in the past but this is now improving.



- 15** One significant constraint on increased competition is the ownership of intellectual property rights. Most intellectual property is owned by the original equipment manufacturer. A large proportion of repair work requires the use of intellectual property and is allocated non-competitively for this reason. This constraint could be overcome by negotiating additional rights for the Department, but it is likely to be costly.
- 16** While there are a number of clear benefits from ABRO's move to Trading Fund status, including efficiency gains and better information on the costs of repair by ABRO, there are also risks. The lack of clarity about strategic military requirements for ABRO, and the extent of dual sourcing and surge required from it, is a barrier to reaching a clear and optimal balance between industry and in-house repair and overhaul. Although IPTs have to pursue objectives that are consistent with the wider corporate frameworks within which they are located and although there is planned guidance, there is a risk that they may make individual decisions on repair sourcing that will erode ABRO's capabilities or capacity to provide effective competition - a situation that may not satisfy IPTs' ultimate customer, the Army. ABRO may also take decisions that constrain the Department's future options, although the Department has put in place arrangements to mitigate this risk. Finally, industry may continue to have concerns about the conduct of future competitions.

Recommendations

17 The Department should:

- move ahead with innovative repair arrangements involving industry, ensuring that any successes are identified and promoted widely;
- ensure that lessons learned, particularly those relating to supply chain improvements and management practices, are captured consistently and disseminated;
- press ahead with initiatives to improve the management information and IT support available to IPTs;
- take stock of how sensible competition for repair and overhaul work can be enhanced, particularly as regards ensuring that project teams have suitable specifications on which to base competition, have the resources to conduct the competitions and that there is a level playing field between industry and the in-house provider - ABRO;
- more clearly define how much flexibility (the ability to switch resources between different repair programmes), surge capacity and dual sourcing it needs because this would better inform the allocation of repair and overhaul work;
- think through the implications of such definition for the size, shape and ownership arrangements of its in-house repairer (ABRO) and establish clear policy guidelines for informing decisions on whether repairs should be conducted in-house or be outsourced; and
- review whether it needs to negotiate additional intellectual property rights in order to enable greater competition and to allow greater flexibility when determining the future role and ownership of ABRO.