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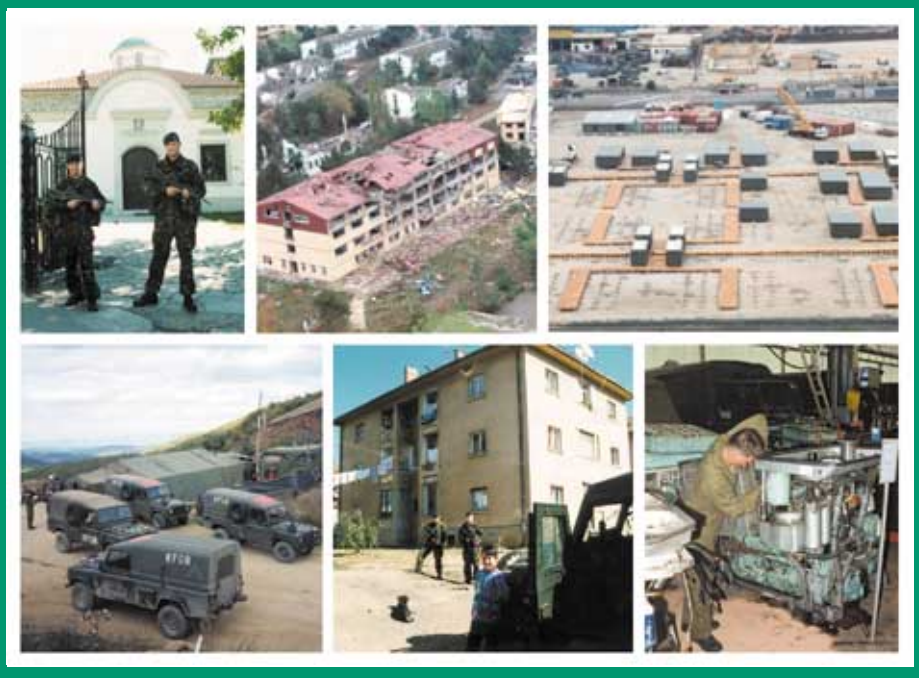
Report by the
Comptroller and Auditor General

Ministry of Defence

Kosovo: The Financial Management of Military Operations



HC 530 Session 1999-2000
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John Bourn
Comptroller and Auditor General

National Audit Office
30 May 2000

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Executive summary

1 The Armed Services of the United Kingdom made a major and successful contribution to the NATO operation in Kosovo. They were not only successful in the direct security remit - they provided 48 aircraft for the air campaign, and had up to 10,500 personnel in the region at the peak of activity in June 1999 - they also made a major contribution in the wider sense of helping to rebuild infrastructure and relationships. All this is an oustanding testament to the professionalism and commitment of our armed forces. And it should also be noted that the complex, multinational operation had to be planned and, initially, conducted in circumstances where there was considerable uncertainty about the behaviour of Yugoslav/Serbian forces and militia, and of the returning Kosovan refugees. Once engaged on peacekeeping, facilities for our soldiers in Kosovo have been basic, and they have been exposed to summer temperatures in excess of 40° centigrade, and winter temperatures below minus 15° centigrade.

2 This Report looks at the financial management of the United Kingdom element of the operation, within that overall context. It sets out the assessment and reporting of additional costs, and then follows the main areas of additional cost - air campaign and initial deployment, accommodation and staff support, and equipment and logistics, before closing with an overview of financial management controls in-theatre. It follows-up our similar Report on the operation in the former Yugoslavia (Bosnia).

Costs

3 The approach to costing deployments – agreed by the Committee of Public Accounts following their inquiry on the Bosnia operation – is based on the identification of costs additional to those that would have been incurred without the deployment. On that basis the Department estimated, in late November 1999, additional costs at £398 million for 1999-00 and these monies were voted to the Department as part of the Spring Supplementary Estimate. In February 2000, however, the Department revised their cost estimate to £342 million, largely as a result of slippage in provision of accommodation and replenishment of munitions. Estimates of additional expenditure actually incurred have been provided to Parliament at approximately monthly intervals since April 1999. But forecasts of the additional costs were provided to Parliament, in the form of evidence to the House of Commons Defence Committee, only in January 2000 and only for 1999-00 (paragraphs 2.2 to 2.10).

4 In examining the Department's cost figures, we found that they had applied the costing convention as accurately as their costing systems would allow, but that the convention itself produced some anomalies, and did not fully capture the value of extra resources applied to our participation in the Kosovo Force (KFOR). Differences related mainly to assets lost or damaged – such as the loss of a Hercules on take-off, with a net book value of £1.3 million - and munitions dropped. Such items only become assessed as an additional cost when and if they are replaced. Expenditure on campaign accommodation was correctly assessed as 'additional' for the year in question. Nevertheless, there were potential overlaps between additional funds provided for Urgent Operational Requirements and programme funding for pre-existing planned procurements. The Department have told us that they will take account of the enhanced capabilities provided by the additional funds when assessing future funding requirements (paragraphs 2.11 to 2.16 and 2.18).

5 As well as additional costs, the Department require budget holders to identify any offsetting savings. These may arise if training exercises are cancelled or if personal allowances are lower during operational deployments. For the Kosovo operations savings amounted to £3.4 million despite over 30 exercises being cancelled. This contrasts with recent experience in Mozambique where there were savings of £0.6 million and when one exercise was cancelled (paragraph 2.17).

6 A proportion of the Department's additional costs relate to provision of general services to NATO - such as our support to the Headquarters Allied Command Europe Rapid Reaction Corps, the command of KFOR for the first six months - or to other nations, Government Departments or humanitarian organisations. Some or all of those costs can be recovered. We examined the Department's systems for identifying and recovering such costs. We found that they had identified costs for recovery of £10.6 million, of which £5.7 million had been recovered by January 2000, and the largest outstanding amount was for £3.7 million payable by NATO expected to be recovered in 1999-00. At lower levels, the Department had not collated or raised invoices on all food, fuel and other services provided to other nations in Kosovo (paragraph 2.19).

7 The Department should:

- report the forecast costs of the deployment to Parliament at the earliest opportunity - in line with their undertaking to the Committee of Public Accounts, following the Committee's scrutiny of operations in Bosnia;

- consider preparation of a 'resources consumed' costing, drawing on Resource Accounting and Budgeting developments, to supplement their 'additional costs' statements. For some purposes, the former provides a more complete view of the United Kingdom's additional contribution to operations;

- make clear any 'additional costs' which are already planned for years outside the report period, and therefore do not represent additional funding over the longer term;

- ensure that all savings resulting from the operations are identified and the cost figure put forward for additional funding is the net cost; and

- ensure that all outstanding debts and liabilities are swiftly identified, and cost recovery action initiated.

The air campaign and initial deployment

8 The United Kingdom made a significant contribution to the air campaign, flying 10 per cent of NATO strike sorties and dropping over 1,000 bombs. The extra costs relating to the air campaign centre on the replacement of munitions, and the additional flying undertaken by support aircraft for refuelling and transport activities. These additional flying costs were for extra fuel and spares consumed but do not include any estimates for additional wear and tear on the actual aircraft (paragraphs 2.13 to 2.14 and 3.3).

9 The Department judged the air campaign to be a success - in that NATO secured Serb agreement to its objectives, and an unopposed entry for KFOR into Kosovo. The main lessons emerging from the Department's review have centred on gaps in capability - particularly the inability to strike targets accurately from medium altitude in adverse weather conditions. On the support side, there were shortages of spares for some aircraft, and of skilled ground crew. The rate of consumption of precision guided munitions was at times a cause of concern and required urgent procurement action. In the event when the air campaign was suspended, stocks were sufficient to continue the campaign for some time but experience in Kosovo has reinforced the need to keep stockpiles of precision guided munitions under close review. The number of bases at which RAF assets were deployed also caused some difficulties and extra cost (paragraphs 3.2 and 3.4 to 3.5).

10 While planning the air campaign, military staff were also analysing options for the land phase of the operation. Having defined the precise United Kingdom forces needed, following a series of NATO planning iterations to sort out overall needs and the contributions of the various allies, deployment began - initially to holding camps in The Former Yugoslav Republic of Madeconia and Albania. In forming units to deploy, the Department had to 'top-up' personnel in the chosen units to take them to a full complement. That action reflects the strain put on Service personnel by the number of operations underway, while being below planned manning levels. And some of the more specialist staff, such as those in signals or logistics, are particularly heavily engaged on deployments (paragraphs 3.6 to 3.8).

11 Deployment highlighted the lack of heavy lift capability already identified in the Strategic Defence Review. On this occasion, however, the Department managed the chartering of the vessels quickly and effectively - making sure that they secured the necessary charters before similar action by allies forced up charter prices. Heavy air lift presented more problems since, given Russian criticism of the NATO air campaign, the Department faced difficulties during the campaign in chartering the Russian-registered aircraft operated by commercial firms - the Russian registration meant that certification could be withdrawn, grounding the aircraft. Nevertheless the Department made use of commercial heavy air lift before and after the air campaign, supplemented by some use of American military aircraft - although those aircraft were in great demand to support the American deployment (paragraphs 3.10 to 3.12).

12 Military staff played a full part in providing assistance to refugees in Albania and Macedonia, despite the need to finalise plans for the expected military deployment into Kosovo. For example, United Kingdom forces assisted in the establishment of refugee camps, food supply, and the provision of utilities (paragraphs 3.16).

13 The Department should:

- press ahead with their plans to change their balance of equipment and weaponry to reflect the needs of deployment actions such as Kosovo; and

- build on recent experiences of humanitarian support activity in framing military training for deployment, and in maintaining relationships with other stakeholders in this field.

Infrastructure and services

14 Following the advance into Kosovo, United Kingdom forces had to select suitable bases from which to command their sector and deliver the objectives required of them. They were able to secure suitable offices and workshops, largely occupying former state buildings on which they would pay no rent or compensation, under the terms of the Military Technical Agreement signed with the Yugoslav/ Serbian authorities. In most cases, they had undertaken initial building conditions surveys, to protect them from the risk of unsubstantiated claims for compensation for damage. The Department now require such surveys to be undertaken of all occupied buildings (paragraphs 4.7 to 4.8).

15 Accommodation for military personnel was not so readily available. While some troops were accommodated initially in former hotels and similar buildings, most lived in tents. At the outset, these tents were the same as those used in Bosnia - and which afforded accommodation that was too hot in summer, and too cold in a Balkan winter. The planned response to these problems - the development of an Expeditionary Campaign Infrastructure - had not advanced sufficiently by the start of the Kosovo campaign to provide a solution. The Department therefore set in train two urgent procurements: one, Improved Tented Camps, designed to provide a quick improvement in tented accommodation; and the other, Temporary Field Accommodation, to provide modular hard-walled accommodation for the expected duration of the deployment (paragraphs 3.13 and 4.10 to 4.12).

16 There have, however, been problems with both projects:

- some shower units for Improved Tented Camps were damaged in transit, as some of the units were lifted from the top rather than from the floor as specified (paragraph 4.15);

- there has been substantial delay in the Temporary Field Accommodation project, with the result that troops were only in Improved Tentage in the depths of winter – the first camp was handed over in February and the last camps are not expected to be handed over until the end of May when they were all contracted to be handed over before the end of December (paragraph 4.17);

- the required number and configuration of Temporary Field Accommodation camps changed after contract signature. The changes may make it more difficult for the Department to recover liquidated damages for the full period of late delivery - even though the operational cause of much of the delay rests with the contractor (paragraph 4.18); and

- on both projects, not all equipments were in the event deployed in theatre. Surplus equipments are being held in the United Kingdom and provide an expeditionary accommodation reserve (paragraphs 4.14 and 4.19 to 4.20).

17 Despite these problems, the standard of field accommodation will be substantially improved by the combination of these projects when completed – and the Improved Tented Camps may be used on other deployments in the future. We note, however, that the earlier equivalents of Temporary Field Accommodation used in Bosnia, while nominally mobile, were in an insufficiently sound condition after three years to permit redeployment to Kosovo. And given the likely costs, the Department do not intend to recover the mobile shower and washbasin units deployed in Kosovo as part of the Improved Tented Camps. It may be, therefore, that not all elements of Temporary Field Accommodation will be redeployable in practice (paragraphs 4.10 and 4.20).

18 The Department have to provide medical support for their troops which consists of field units with limited facilities, and a more advanced facility which can treat some injuries and stabilise more serious cases before passing them back to the United Kingdom for further treatment. The latter facility was based initially at Lipljan, some 10 miles from Pristina, the main concentration of United Kingdom forces. Facilities in Lipljan were basic, with tents being erected within damaged buildings. Given the need to set up improved medical facilities urgently, local staff let a contract for converting an existing building in Pristina. After studying the plans, London medical staff concluded that the facilities would be inadequate. The contract was cancelled and the Department paid £228,000 to the contractor in respect of materials provided and work done. In the meantime, the Department have deployed a modular field hospital unit located in Pristina which provides most, if not all, of the benefits the converted building would have provided. Full facilities will likely await a decision between the main nations in the peacekeeping force about the possibility of a joint, new-build hospital (paragraphs 4.34 to 4.38).

19 The provision of good quality food, and associated catering, is another important element in the support of the operation. Food supply has been contracted out to Supreme, who have performed well in delivering food responsively, and in difficult circumstances. An enabling agreement provides a framework for food supply rather than a full contractual commitment: that will change when formal contracts for food supply in both Kosovo and Bosnia are put in place in mid 2000. On the catering side, we noted that units deployed with too few chefs, putting great strain on chefs who were deployed. The food produced has been, nonetheless, of high quality and good variety (paragraphs 4.21 to 4.26).

20 We found that soldiers were pleased with the quality of their new combat uniform - 'Combat Soldier 95' - and with the relatively rapid deployment of leisure facilities such as gym equipment. They were less content with the provision of communications home, which took some time to be put in place in all units (although there were limited communications for some units within 48 hours of deployment into Kosovo), were initially unreliable, and despite an increase in the length of free phone calls to 20 minutes a week, compared poorly with the facilities afforded some international colleagues. The Department sought to learn lessons from Kosovo and made improvements for the subsequent East Timor operation, deploying welfare satellite communications along with units (paragraphs 4.27 and 4.29 to 4.31).

21 Senior officers told us that the quality of accommodation, ablutions, food and welfare were crucial factors influencing the morale of deployed troops, and hence their performance. In the course of time, they would also affect recruitment and retention. While there have been improvements in the quality of these services since the Bosnia deployment, the Department were not able to achieve the quality they desired in the early phases of the deployment.

22 The Department should:

- press ahead quickly with their Expeditionary Campaign Infrastructure project, taking full account of the Improved Tented Camp and Temporary Field Accommodation components to be held as a reserve, to ensure that any future deployment does not suffer from further delays in securing suitable troop accommodation;

- ensure that they contract for accommodation in a way that recognises and protects against the inevitable uncertainties of deployments – integrated project teams should ensure a closer relationship between commercial and engineering staff both in the Department and with the prime contractor; and pursue vigorously their rights under the current contracts;

- consider the merits of securing deployable, modular medical facilities capable of providing adequate facilities until any new build or conversion can provide permanent facilities, and which easily integrate with the rest of the Expeditionary Campaign Infrastructure;

- build on the successful enabling arrangements for food supply in negotiating a firm contract for future supply;

- ensure the quality and speed of provision of welfare communications meets standards defined in advance; and

- consider more generally the lessons arising from the use of contractors during operations where there have been a number of major successes, identifying those factors that contributed to the major successes as well as analysing areas for improvement.

Vehicles and equipment support

23 The Department deployed a range of vehicles and equipments to Kosovo, including armoured vehicles, utility vehicles, communications equipments and support equipments - but not civilian vehicles, which were left in home bases. For fighting vehicles, the key operational measure is of availability of vehicles to commit to operations. On this measure, the vehicle fleet performed very well, meeting or beating targets for all fleets, bar some small fleets of specialised vehicles. The reliability of vehicles, the factor that drives the cost of vehicle maintenance, could not be discerned from the Department's records, save for specific attention the engineering personnel deployed in Kosovo had paid to recording the reasons for failures of selected powerpack and other high value items. This lack of information is unchanged from that revealed in our report on Bosnian operations, and compares poorly with other fleet-managing organisations (paragraphs 5.1 to 5.12).

24 Support for equipment was well organised, with impressive depot maintenance facilities, and a clear desire to minimise maintenance staff and spares holdings once a pattern of usage had been established. Good equipment availability was achieved despite the spares supply system struggling to meet priority related supply time targets - the time taken to supply the main depot in Pristina - with local distribution to units taking up to a further three days. The Department's logistics IT systems cannot as yet monitor the overall time taken for individual items to arrive in Pristina. In the absence of firm data, the best evidence on supply performance was provided by deployed units in theatre whose experience was that average pipeline times exceeded targets, although extended pipeline times did not cause them operational problems. That failure arose partly from the time taken for land or sea re-supply of Kosovo, and partly because of lengthy turnaround times for items sourced from United Kingdom depots. Delays occurred both as a result of reprovisioning of stocks and depot processing – in part because the Department did not have an effective IT-based warehouse management system until November 1999. When measuring depot performance, the Department monitor the time taken to process demands only when the depot

holds stock – if stock has to be reprovisioned then the time taken to reprovision stock plays no part in the assessment of depot performance (paragraphs 5.13 to 5.16 and 5.29 to 5.34).

25 The quality and availability of communications was another area of major importance. The Department's own lessons learned work has identified problems with brigade communications failing when on the move, and with the poor security of tactical radio systems at all times. We found the latter problem still evident when we visited Kosovo, although the availability of other communications systems had been good, if not fully at the levels desired. We also found that local purchase of a large number of commercial mobile phones had been necessary, partly because the Kosovan land line system was less reliable than expected, and partly because contact with civilians was an essential part of the peacekeeping process (paragraphs 5.38 to 5.43).

26 The Department should:

- build on the success of their equipment support arrangements, by working on the remaining problem areas such as the support of small numbers of specialist, but important, vehicles;

- rectify the poor quality of data available on reliability, which is crucial to both minimising the cost and logistics burden of high volumes of spares, and to the improvement of fleet reliability over time. Better data are also required on the usage of equipments and the reasons for failure of equipments;

- make clear the basis for setting targets for the turnaround of spares requests and ensure that they have effective systems for measuring performance on the same basis as the target, focusing on those factors which are important to the customer - such as overall supply time;

- investigate the reasons for extended turnaround of spares requests in the logistics chain in the United Kingdom, and consider whether the system for prioritising requests and assigning target resupply times should be made more theatre-specific;

- look to solve quickly their problems with the security of tactical communications; and

- factor in the need not only for secure military communications, but ready communication with civil authorities, to future deployment planning.

Control of materiel and finances

27 In our earlier report on operations in Bosnia, we found that the information on assets held in theatre, and the controls exerted over stock held, were flawed. When we visited Kosovo, we found that substantial improvements had been made. The Department had introduced an asset tracking system, designed to capture equipments when first deployed, confirm their existence at six monthly intervals, and then check them out when they were returned to home bases. That system had helped obtain a £75 million cost recovery from the United Nations when it was introduced in Bosnia. The quality of stocks and stores management had improved dramatically, with the full range of normal stores management controls operating effectively, and with no major losses or discrepancies arising (paragraphs 6.2 to 6.4 and 6.8 to 6.10).

28 There were, however, some areas capable of further improvement:

- the asset tracking system, while valuable, is not yet fully accurate, and information collected for this purpose is not integrated with other equipment management data – the Department's planned developments in asset tracking systems should help (paragraphs 6.5 to 6.7);

- ammunition was stored in a site which did not meet normal safety requirements; and during the initial deployment ammunition deliveries could not readily be reconciled to supporting documentation, although that problem was resolved quickly (paragraphs 6.12 to 6.15);

- fuel stores can be estimated only by dipping the tanks - an inaccurate method - while those in charge of fuel stocks must account in detail for fuel (paragraph 6.20); and

- medical stores were not as tightly controlled, nor as well protected, as other stores, although we found no evidence of losses or unnecessary deterioration of supplies. We did note, however, a substantial volume of medical stores which may have to be written-off in theatre because they have a finite shelf-life, and given current levels of demand in theatre are unlikely to be used nor can they be taken back into main stores because of the lesser standards of storage in local stores (paragraph 6.17).

29 Financial control was of a high standard. Civilian finance and contracts staff had been deployed into Kosovo alongside the military force, and had helped set up sound financial systems and provided ready support to military staff. The "cash" nature of the local economy posed special risks to propriety, but sensible controls had been put in place to ensure, for example, separation of duties between expenditure authorisation and payment authorisation, and reconciliations of cash holdings (paragraphs 6.22 to 6.32). Our main observations were:

- the absence of specialised stationery for documentation such as completion certificates in support of invoices from contractors and, in some instances, of authorised signatory lists, could have undermined otherwise sound control systems (paragraph 6.31);

- arrangements for paying locally employed staff were over-bureaucratic, with some processes adding no discernible value (paragraph 6.29 to 6.30);

- in letting contracts, it was not always clear that opportunities were taken to aggregate unit requests and achieve economies of scale once operational circumstances permitted (paragraph 6.27); and

- the system for reviewing the level of overall write-offs in-theatre did not function well - although the level of actual write-off was relatively low (paragraphs 6.33 to 6.34).

30 In learning administrative lessons from the Kosovo operation, the Department should:

- look to integrate the asset tracking system with broader equipment management information initiatives, and make use of unit staff to ensure records are accurate and complete;

- make sure that the quality of stores management is consistent across storage areas, and that when dispensing stock, such as fuel, measuring equipment can meet the standards of accounting demanded;

- view the deployment of civilian expertise in much the same way as they do for military capability, maintaining a rapidly deployable corps of experienced and/or suitably trained staff, and of any supporting infrastructure - such as deployable office equipment or specialised stationery - as may be appropriate; and

- provide a mechanism for local review of the balance of central control and delegation of financial powers to military units, in the light of demonstrated unit competence to control and account for expenditure.

31 Overall, the quality of financial and materiel management in Kosovo represents a clear improvement over that demonstrated in Bosnia, and in many areas achieves the Department's objectives to reach peacetime accounting and stewardship standards in operations such as Kosovo. In some cases, however, notably in that of information and communication, failings in current equipment or systems limit the Department's ability to act cost-effectively. And in other areas, such as transport and accommodation, equipment is not yet fully suited to the type of deployment represented by Kosovo. Nonetheless, the quality of management on the ground was such that the impact of any systematic weakness was minimised, and the operation a notable success. That professionalism was reflected in informal comment to us from soldiers in other nations' peacekeeping contingents in the British sector - that the British were their 'partners of choice'.

Part 1: Background to the United Kingdom's military involvement in Kosovo and scope of report

1.1 In June 1999 the Ministry of Defence (the Department) had some 10,500 Service personnel and 24 civilians deployed in Kosovo and the Former Yugoslav Republic of Macedonia (Macedonia) in support of the NATO-led Kosovo Force (KFOR). This deployment followed a 78 day air campaign when the Department contributed 48 aircraft and undertook some 10 per cent of NATO's attack sorties. By April 2000 the Department reduced the numbers of Service personnel deployed to 3,500 and they expect to maintain their contribution at around this level during the next three years. The Department estimate that the additional costs of their military contribution, that is those extra costs which are incurred as a direct result of United Kingdom military operations in Kosovo, will be some £866 million during the five years 1998-99 to 2002-03. This Part describes the background to NATO's operations in Kosovo and the Department's contributions. It also sets out the scope of this Report and methods used.

The background to the conflict

1.2 Despite having an ethnic Albanian majority, Kosovo in the 20th Century was part of Serbia and, after the Second World War, Yugoslavia. Under the 1974 Yugoslav Constitution, Kosovo became an autonomous province within Serbia (Figure 1). In 1990 the Milosevic Government in Belgrade revoked this autonomy and dissolved the Kosovo Provincial Assembly and Government. They withdrew rights from Albanian Kosovans, including mass dismissal from jobs, withdrawal of rights to education, and they closed down Albanian print and broadcast media. During the 1990s Kosovo Albanian resistance to Belgrade rule grew and the Kosovan Liberation Army (KLA) emerged, undertaking a campaign of attacks against Serbian security forces.

Figure 1

Map of Kosovo and Europe

Kosovo is a province of Serbia, which remains within Yugoslavia.

Source: National Audit Office

1.3 Figure 2 sets out the key events in the recent conflict over Kosovo, together with NATO action and the United Kingdom's contribution to NATO. Appendix 2 gives a more detailed chronology.

Figure 2

Key dates, events and actions during the Kosovo crisis

Date	Event	NATO Action	United Kingdom Contribution
1998			
23 September	UN Security Council Resolution 1199 adopted.	NATO issue ultimatum to Serbs.	
15 October	Serbs agree to withdraw troops, and to allow international monitoring.	Kosovo Verification Mission established.	110 personnel provided as verifiers.
24 October	UN Security Council welcome the settlement.	8 NATO aircraft for aerial verification.	2 UK aircraft provided.
1999			
15 January	Racak massacre. 45 Kosovars killed.		
29 January	Talks in Rambouillet.		
19 March	Paris talks adjourned with no agreement.		
24 March	Air campaign begins.	Air campaign lasts 78 days comprising 38,000 sorties involving 900 aircraft.	UK contribute 48 aircraft and several ships, including HMS Invincible and HMS Splendid.
3 June	Serbs agree to withdraw forces.		
9 June	Military Technical Agreement signed.		
10 June	Air campaign suspended. UN Security Council Resolution 1244, establishes international presence in Kosovo.		
12 June	KFOR enter Kosovo.	KFOR comprises 55,000 troops at peak (8,000 in Greece and Macedonia).	UK initially contribute some 10,500 troops, falling to 3,500 following establishment of peace keeping.
20 June	Serb withdrawal complete.		
20 September	KFOR confirm demilitarisation of the KLA complete.		

Source: National Audit Office

1.4 International efforts to resolve the crisis were based on seven general principles which were adopted by the G8 Foreign Ministers, including Russia, on 6 May 1999:

- immediate and verifiable end of violence and repression in Kosovo;
- withdrawal from Kosovo of military, police and paramilitary forces;

- deployment in Kosovo of effective international civil and security presences, endorsed and adopted by United Nations, capable of guaranteeing the achievement of the common objectives;

- establishment of an interim administration for Kosovo to be decided by the Security Council of the United Nations to ensure conditions for a peaceful and normal life for all inhabitants in Kosovo;

- the safe and free return of all refugees and displaced persons and unimpeded access to Kosovo by humanitarian aid organisations;

- a political process towards the establishment of an interim political framework agreement providing for a substantial self-government for Kosovo, taking full account of the Rambouillet accords and the principles of sovereignty and territorial integrity of the Federal Republic of Yugoslavia and the other countries of the region, and the demilitarisation of the KLA; and

- comprehensive approach to the economic development and stabilisation of the crisis region.

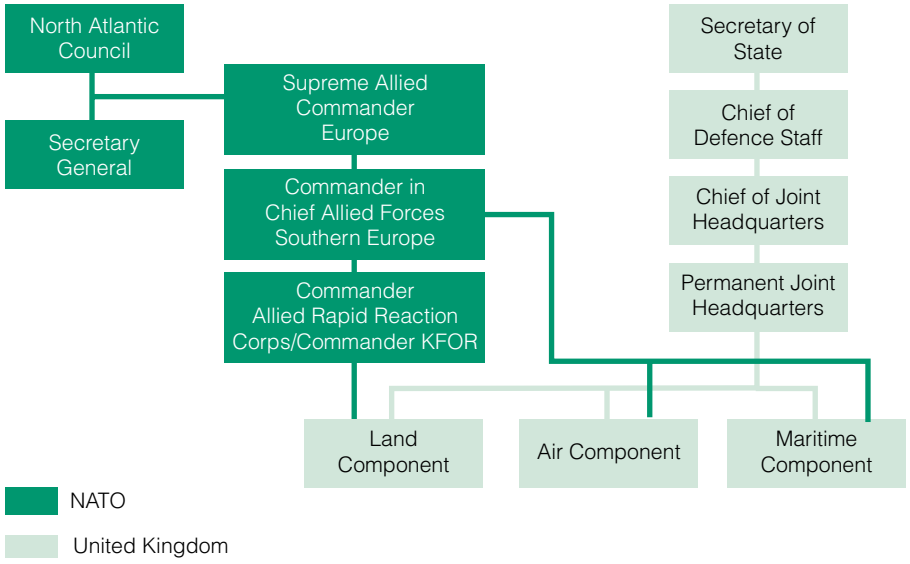
These principles were finally accepted by the Serbs in early June 1999, and resulted in a Military Technical Agreement being signed, designed to allow practical implementation of the principles.

1.5 NATO deployed the Headquarters Allied Command Europe Rapid Reaction Corps (HQARRC) to command KFOR. The United Kingdom are the framework nation for HQARRC and provided the initial command group under Lt Gen Sir Michael Jackson (COMKFOR), together with support functions, including a signals brigade. In addition the United Kingdom provided the largest contingent of Service personnel for the initial peace enforcement operations in Kosovo – an armoured brigade, and a logistics brigade for six months and an airborne brigade for the first month. Figures 3 and 4 show the NATO command chain together with the United Kingdom forces deployed in support of Kosovo operations.

NATO and United Kingdom chains of command

Figure 3

While United Kingdom force elements deployed in support of operations in Kosovo are under NATO command, they report also through the Department's chain of command.

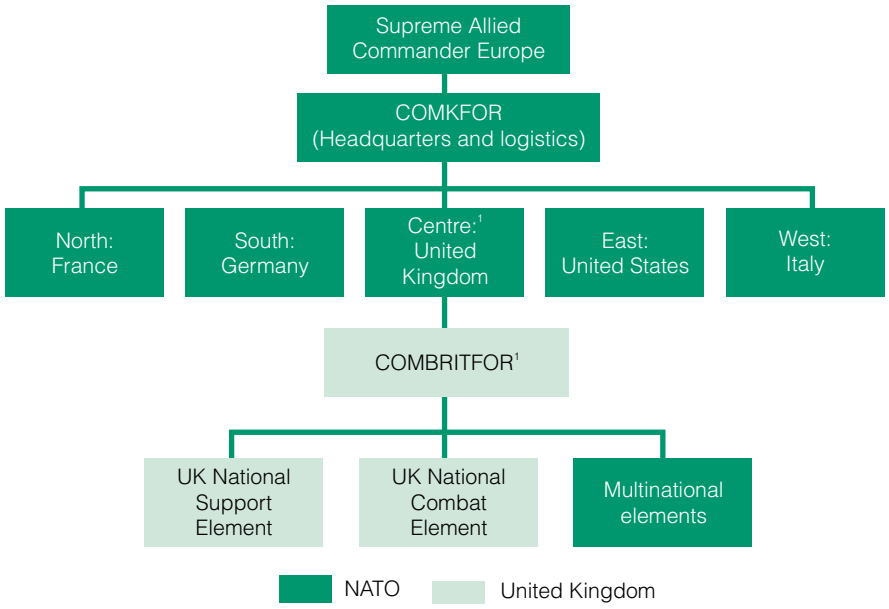


Source: National Audit Office

KFOR and the United Kingdom's contribution

Figure 4

KFOR under NATO command comprises five Multinational Brigades. Some of the United Kingdom troops under the command of Multinational Brigade (Centre) have been replaced by those of other nations.



1. At the time of our visit Commander Multinational Brigade (Centre) was also COMBRITFOR.

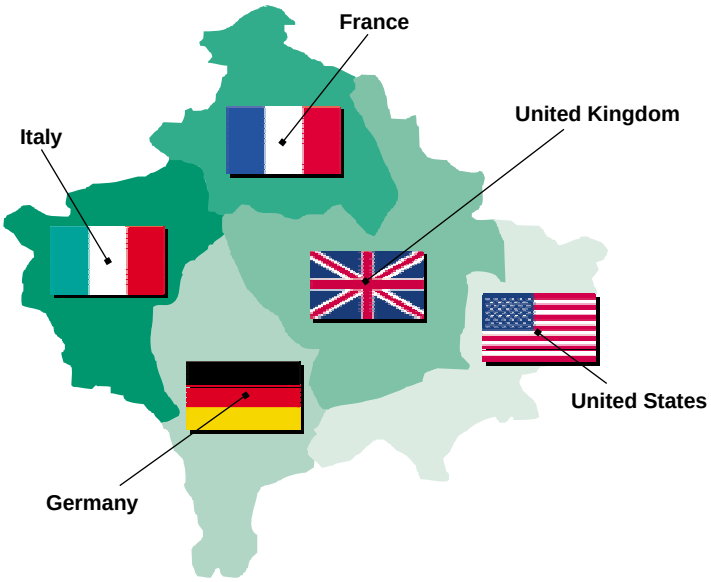
Source: National Audit Office

1.6 Following KFOR's deployment and the Serb withdrawal, Kosovo was divided into five sectors. Each sector is the responsibility of one of the main NATO nations contributing forces to KFOR – the United Kingdom, the United States, France, Germany and Italy (Figure 5). In addition there are four Russian areas of responsibility, including Pristina airport. The United Kingdom are responsible for the central sector, including Pristina. While the main contributing nations have lead responsibility for their sectors, they command multinational forces. For example, the multinational forces commanded by the United Kingdom have included Service personnel from Canada, Finland, Norway, Sweden, Latvia and the Czech Republic. Deployments are subject to change as a result of roulements (units are deployed for six months and are then replaced by other units) and the draw down of overall numbers following the achievement of stability. In October 1999 HQARRC were withdrawn with General Reinhardt taking over as COMKFOR and with a German led headquarters (LANDCENT) replacing HQARRC. In September 1999 the United Kingdom armoured and logistics brigades were replaced, and overall numbers of United Kingdom personnel have since reduced from 10,500 to 3,700 (of which 3,500 are in Kosovo).

Map of KFOR sectors in Kosovo

Figure 5

There are five lead nations in Kosovo: Italy, France, Germany, the United Kingdom and the United States - each with their own sector.



Source: Ministry of Defence

1.7 Within the United Kingdom, the Prime Minister, Foreign Secretary and Secretary of State for Defence exercised ministerial oversight over diplomatic negotiations and the NATO operations. As regards management arrangements within the Department, Kosovo was the first major military operation for which the Permanent Joint Headquarters (PJHQ) were fully involved from the outset and took responsibility for planning. PJHQ are responsible for the planning and execution of United Kingdom joint and multinational operations, and for exercising operational command of United Kingdom forces assigned to these operations. The Department's policy was provided by central staff, and the front line Top Level Budget holders (particularly Land Command and Strike Command) undertook the detailed work to support the implementation of PJHQ's plans. Front line Top Level Budget holders are responsible for delivering the required forces fully trained and equipped and at the agreed states of readiness.

Scope of report and methodology

1.8 We have a tradition of reviewing the financial management of military operations. We reported on the Gulf War (*The Costs and Receipts Arising from the Gulf Conflict HC 299 December 1992* and *Movements of Personnel, Equipment and Stores to the Gulf HC 693 June 1993*) and also on operations in Bosnia (*The Financial Management of the Military Operation in the Former Yugoslavia HC 132 December 1996*). These reports focused on the costs of the military operations and the adequacy of the financial arrangements. These issues were highly relevant as the United Kingdom were looking to recover the cost of activities from the Gulf States and Japan or, in the case of Bosnia, from the United Nations. There were also important lessons to learn as regards the financial management of operations, particularly logistics. In the Gulf there had been poor contracting for shipping, asset tracking was weak and stocks went missing. In Bosnia again there were problems with asset tracking and accounting for ammunition and missiles.

1.9 The Committee of Public Accounts took evidence on all three reports and Appendix 1 lists the Committee's key recommendations together with the Government's responses. In our work on the financial management of operations in Kosovo we paid particular attention to the Committee's recommendations and the actions promised by the Department. We therefore examined:

- the costs of the military operation and the arrangements among NATO partners for sharing costs (**Part 2**);
- the air campaign and the initial deployment of ground forces in Macedonia (**Part 3**);

- supporting United Kingdom forces undertaking peace-enforcement operations in Kosovo – personnel and their well-being (**Part 4**), and equipments deployed in Kosovo and logistics support (**Part 5**); and

- control of assets, stores and cash, and the arrangements for local contracting (**Part 6**).

Methods

1.10 In October 1999 we visited Kosovo and Macedonia, including headquarters and front line units – Appendix 3 gives details of our visit. In the United Kingdom we visited PJHQ and the front line Top Level Budget holders and examined papers and logistics databases. Broadly, in carrying out the examination, we:

- reviewed the basis for assessing the costs of military operations and analysed the costs reported to Parliament together with the arrangements for sharing costs with NATO partners;

- examined the Department's arrangements for the movement of personnel, equipments and stores in support of military operations;

- reviewed the Department's overall management of equipments and logistics in theatre – how well they were achieving their targets for the availability and reliability of equipments and for meeting demands for items from stores in theatre and re-supplying items from the United Kingdom;

- examined the Department's information systems and their visibility of assets and stores. We reviewed the Department's controls over equipments and stores and tested a sample of transactions. We also examined the Department's controls over cash, payments, recoveries and contracts; and

- we reviewed the Department's own analysis of lessons learned.

1.11 We discussed our work with the auditors of other partner nations. We are grateful to those organisations, including the Department, who assisted us with our work.

Part 2: The overall costs of the Kosovo operations

2.1 This Part examines the costs of the Department's operations in Kosovo, how the Department estimated future costs and recorded actual costs incurred, including how Parliament was informed, and the arrangements for recovering costs from other parties.

Costing procedures and the estimating and reporting of costs

2.2 When estimating the costs of recent operations in the Gulf and Bosnia, the Department looked to identify costs for two purposes:

- Costs which were incurred as a direct result of the operations and which would not have been incurred but for the operations. Such costs would support the Department's request for additional funding from the Treasury; and

- Those costs which might be shared with other nations or organisations.

2.3 Additional costs arise in many areas - logistics, personnel, and transport, for example - and will be spread across many of the Department's budget holders. Given the nature of these costs and their profile over time, it is important that the Department have effective systems in place to estimate the additional net costs, record these costs as they are incurred, and revise cost estimates in the light of experience. In April 1999 the Department therefore issued a financial instruction covering the identification and recording of the additional costs of supporting the various military operations in Kosovo. The instruction concentrated on the recording of cash costs but also required budget holders to maintain records on equipment, stores, fuels and other stock items as these items would need to be re-provisioned at a later date. Records were also to be maintained of any increased utilisation of equipments.

2.4 The Chief of Joint Operations through PJHQ was responsible for all in-theatre costs and some out of theatre costs and other Top Level Budget holders were responsible for the remaining out of theatre costs. Budget holders were also required to identify any consequential savings. Given the uncertainty of the situation – it was not clear how long the air campaign might last nor what sort of

land force would be required – budget holders were not required to forecast costs. The Department had, however, made broad estimates of the costs of various scenarios of deploying forces.

2.5 In June 1999 following the ending of the air campaign and the deployment of KFOR into Kosovo, the Department undertook a detailed exercise to estimate the outturn costs for the year to March 2000. The assumptions were that the United Kingdom would contribute some 13,000 personnel during June and that the force would draw down to some 5,000 personnel within five months. The Department estimated that the costs in 1999-00 would be some £620 million, although they considered that the estimate was likely to be high as it included some £180 million for possible Urgent Operational Requirements.

2.6 In July 1999 the Department revised their cost estimate downwards to £442 million for 1999-00, largely as a result of further scrutiny of possible Urgent Operational Requirements. In late November 1999, when preparing their Spring Supplementary Estimate, the Department again revised their estimate – to £398 million for 1999-00. These additional costs of the Kosovo operation, together with continuing costs for Bosnia, were included in the Supplementary Estimate. By February 2000, however, the Department reduced their estimate to £342 million – largely because of slippage in the payment profile for Urgent Operational Requirements, particularly for accommodation. Figure 6 shows the Department's various cost estimates together with the costs incurred through 1999-00. The profile of costs incurred shows that the Department expected to spend some £122 million of the £342 forecast costs in the last two months of the year.

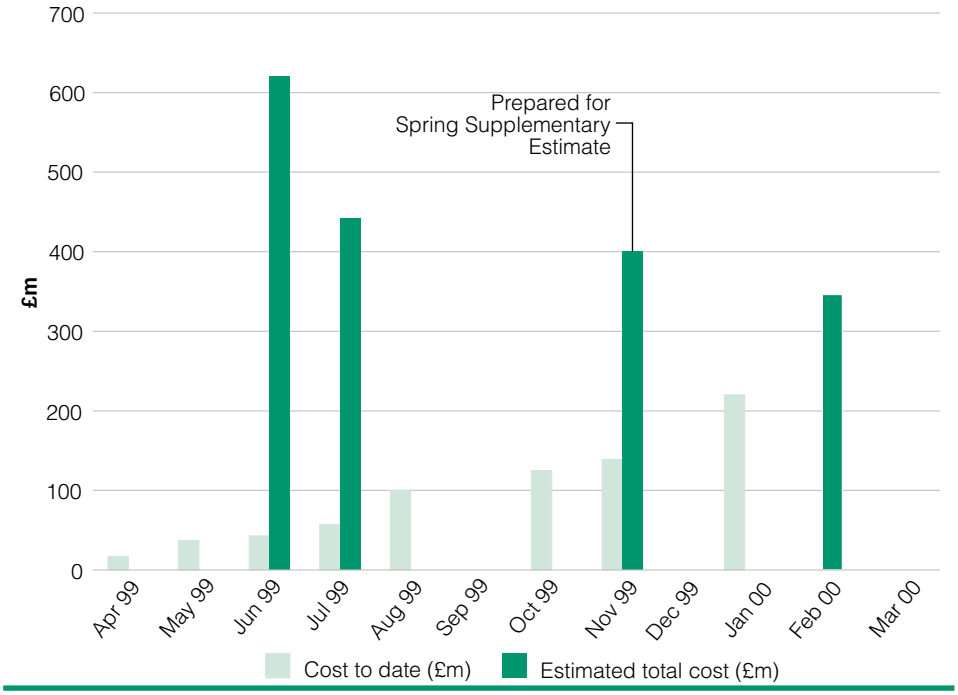
2.7 Figure 7 shows the Department's cost estimates for the five-year period 1998-99 to 2002-03. The total cost estimate for the five years is £866 million, with Urgent Operational Requirements accounting for £234 million (27 per cent). Some £100 million of payments related to Urgent Operational Requirements continue beyond the end of 1999-00, largely reflecting slippage in the provision of accommodation and the replenishment of munitions stocks.

2.8 The Department provided Parliament with information on the additional costs incurred on Kosovo through answers to a series of Parliamentary Questions, at approximately monthly intervals through 1999. Those figures excluded all the possible additional costs on replenishment of munitions, on the ground that no final decisions had been taken on replenishment. In November 1999, however, they disclosed that the value of ordnance consumed, at historical costs, was £45 million.

The Department's reported costs of the Kosovo operation through 1999-00, together with their estimates of forecast spend for the year

Figure 6

The Department's cost estimates for the full year have reduced by more than 40 per cent with £122 million forecast for the last two months for the year.

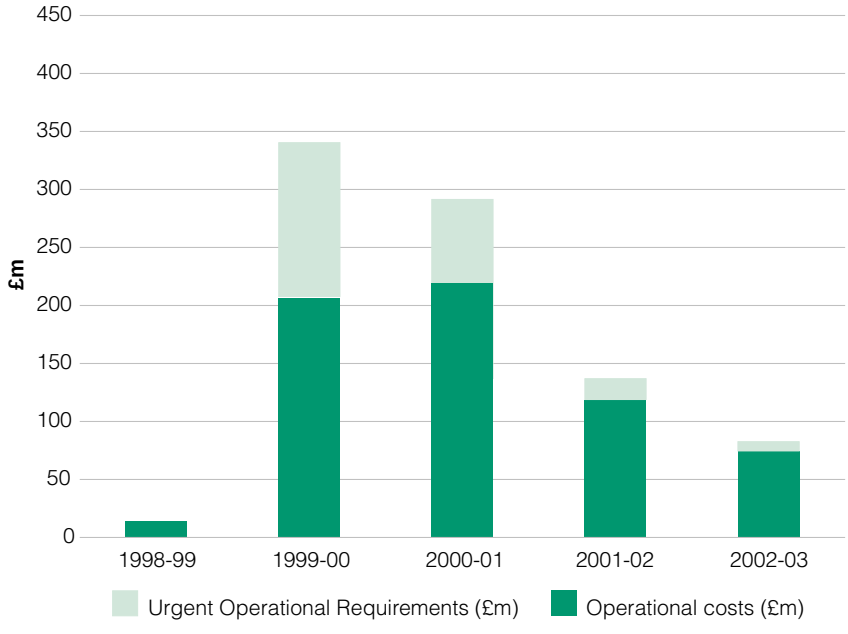


Source: Ministry of Defence

The Department's estimates of the additional costs of the Kosovo operation 1998-99 to 2002-03

Figure 7

Urgent Operational Requirements account for £234 million of the £866 million five-year forecast of the additional costs of the Kosovo operation.



Source: Ministry of Defence

2.9 Following their hearing on Bosnia the Committee of Public Accounts recommended that the Department should inform Parliament from the outset of all estimated additional costs. The Department accepted this recommendation (Appendix 1). The Department did not provide Parliament with forecasts of costs for the Kosovo operation until January 2000, in evidence to the House of Commons Defence Committee, and this covered costs only for 1999-00.

2.10 Given the scale of uncertainty regarding future costs, we concentrated our analysis on the Department's estimated costs for 1999-00. Figure 8 below sets out the main components of the additional costs of the Kosovo operation as at February 2000. Urgent Operational Requirements accounted for 40 per cent of the £342 million costs incurred or committed.

Functional analysis of the additional costs of the Kosovo operation for 1999-00

Figure 8

Urgent procurement accounts for 40 per cent of the additional costs for 1999-00, while extra personnel costs are the largest influence on operating costs.

Urgent Operational Requirements	**£m**	**£m**	**£m**
Accommodation	69		
Communications	24		
Aircraft enhancements	14		
Vehicle enhancements	12		
Munitions	8		
Others	9		
		136	
Other Operating Costs			
Personnel	46		
Flying	33		
Consumables	31		
Equipment Support	31		
Transport	30		
Other	35		
		206	
Total			**342**

Source: Ministry of Defence

2.11 We reviewed the Department's figures and examined the supporting information compiled by Top Level Budget holders - although this was not a full financial audit. We found that the cost estimates had been soundly collated in accordance with Departmental guidance, given the information available from the Department's costing systems. And the convention - of identifying additional costs of the operation - is useful within Government and in Parliament for assessing future defence and public expenditure funding. There are, however, elements of additional resource consumption that this costing approach does not capture, and some elements that could be valued differently. The following paragraphs discuss these points.

2.12 The 'additional costs' method does not value assets consumed, but not directly replaced - such as some categories of munitions. Such assets would include equipment damaged or lost - such as the Hercules, with a net book value of £1.3 million, which crashed on take off from a short Albanian runway; and the 12 unmanned reconnaissance aircraft, valued at £3.5 million, which were also lost. In addition, write-off action has been taken or is pending for assets lost in transit, or through road accidents, totalling some £0.6 million. These resources consumed do not feature in the 'additional costs' total because direct replacements will not be procured, or because such replacements were already planned.

2.13 A variant of that effect concerns assets such as aircraft, where the value of the asset relates directly to the extent and nature of its use, as much as its age. When estimating the additional costs of flying, the Department compared the actual hours flown with the planned hours for which Strike Command have received funding. For the air campaign strike aircraft flew a similar number of hours to those planned – in effect strike sorties replaced aircraft training flights. However, transport and refuelling aircraft undertook significantly more flying hours. While the number of hours can be readily calculated, the cost of those hours is more complex. In 1996 the Department undertook an exercise to identify the costs of a flying hour for a number of aircraft on two broad bases: on a marginal cost basis, covering the additional fuel, spares consumption and maintenance associated with extra flying; and on a full cost basis, taking account of the capital cost of the aircraft as well as the marginal costs. When estimating the additional costs of the Kosovo operation, the Department used the marginal costs figures indexed for inflation as the basis for their £33 million additional flying hours included in their estimates of the cost of the operation.

2.14 Two factors limit, however, the reliability of such estimates:

- The Department have no ready means of assessing whether the net effect of participating in the Kosovo operation was to reduce the value of their fleets beyond that resulting from originally planned activities. The costing process does not take account of the intensity with which aircraft were used. For example if strike aircraft were used on relatively straightforward missions – flying at 15,000 feet rather than low level – participation in Kosovo operations might actually present savings on fatigue and life cycle costs.

- The Department have not undertaken any detailed costing exercises since 1996 and cost estimates do not therefore take account of recent modifications and enhancements to aircraft.

2.15 On the consumption of stocks and materiel, the Department do not have a clear view of the additional costs of Kosovo operations, nor have they undertaken an analysis of how consumption in Kosovo might differ from typical patterns of consumption had forces not deployed to Kosovo. For general stocks and materiel, therefore, no additional costs have been identified or reported.

2.16 The difference between 'additional costs' and 'additional resources consumed' can be significant, and the respective cost estimates will usually have a different profile over time. On the basis of current knowledge, moving to a 'resources consumed' approach would inflate costs attributed to 1999-00 by some £50 million (munitions and write offs), while reducing later years' costs by some £20 million (the munitions expected to be replenished) - a net increase of some £30 million. Both sets of figures have value for Parliament: the 'additional costs' figure helps to inform debate on funding; 'additional resources consumed' is a more complete measure of the overall United Kingdom net contribution, and more closely related to operational performance. Better budgeting and monitoring systems, being introduced as part of Resource Accounting and Budgeting, will help provide better and quicker information on either basis.

2.17 The Department also require budget holders to assess whether there are any savings as a result of the deployment – for example there may be savings where training exercises are cancelled or where lower personal allowances are paid to Service personnel on deployment. The Department estimate that there have been savings of £3.4 million on their February 2000 estimate of costs of £342 million. However, we noted that 20 Army and 12 Royal Air Force military exercises were cancelled in 1999-00 with operations in Kosovo cited as the reasons for cancellation in all but one case; and savings would be expected from cancelling exercises. For example, when providing helicopter support in Mozambique, the Department cancelled an exercise resulting in savings of £610,000 against the costs of £1.8 million.

2.18 A further point concerns the potential overlap between Urgent Operational Requirements (which are funded as part of the additional costs of the Kosovo operations) and planned procurements. The Department have not deployed all of the components of the accommodation that required early procurement as part of their Urgent Operational Requirements because the size of force actually deployed was lower than initially planned. These spare equipments are being held as part of a reserve. As part of the Strategic Defence Review, the Department were already progressing the purchase of expeditionary accommodation equipments. In concluding this project, the Department will need to take full account of any

enhanced capabilities provided by the Kosovo accommodation projects, either through re-use of deployed equipments that could be cost effectively refurbished or through use of equipments held in reserve.

Whether the Department have recovered their costs

2.19 United Kingdom forces lead a multinational brigade in central Kosovo, and they have arrangements with other nations' armed forces to provide services such as food, medical attention, and some stores. The Department also undertake activities on behalf of other departments, for example providing emergency flights for the Department for International Development and undertaking humanitarian assistance. When the Department provide such services, they seek to recover the associated costs and they have established cost recording and recovery arrangements accordingly, Figure 9 details the £10.6 million recovery of costs for 1999-00, with £4.8 million expected to be recovered.

Payments to other nations

2.20 United Kingdom forces also use services provided by other nations. As regards their liability for costs to other nations, the Department have little visibility of what they owe until other nations present invoices. The Department rely on documentation supplied by invoicing nations to verify the appropriateness of costs. The most significant invoices are from France who have lead NATO responsibility for delivering fuel. Invoices total £8 million of which the Department have paid £5 million. Invoices are not necessarily timely – when we visited Kosovo in October 1999, the Department had not received any invoices for the fuel they had used.

Cost recovery

Figure 9

The Department have recovered £5.7 million as at January 2000, with a further £4.9 million forecast to be recovered.

Cost element	Recovered as at Jan 2000	To be recovered
From NATO for HQARRC		
The United Kingdom as framework nation for NATO's HQARRC provide most of the personnel and logistics support.	£0.766m	£3.687m
From other nations		
Providing key services to other nations participating in KFOR;		
Provision of fuel	£0.150m	£0.039m
Provision of food	£0.025m	£0.001m
From other Government departments		
Support to the Department for International Development in assisting with the refugee crisis.	£3.0m	£0.46m
Administering projects on behalf of the Department for International Development.	£0.4m	£0.6m
Support to the Foreign and Commonwealth Office as part of the Kosovo Verification Mission.	£0.092m	-
From non-governmental organisations		
Fuel supplied to the United Nations Mission in Kosovo and the High Commission for Refugees, the World Food Programme, and the International Organisation for Movements. Also includes fuel supplied to commercial airlines using Pristina airport.	£1.270m	£0.087m
TOTALS	**£5.703m**	**£4.874m**

Source: Ministry of Defence

Part 3: The air campaign and the initial deployment of ground forces in Macedonia

3.1 This Part examines the Department's contribution to NATO's air campaign and the initial deployment of ground forces to Macedonia during the air campaign.

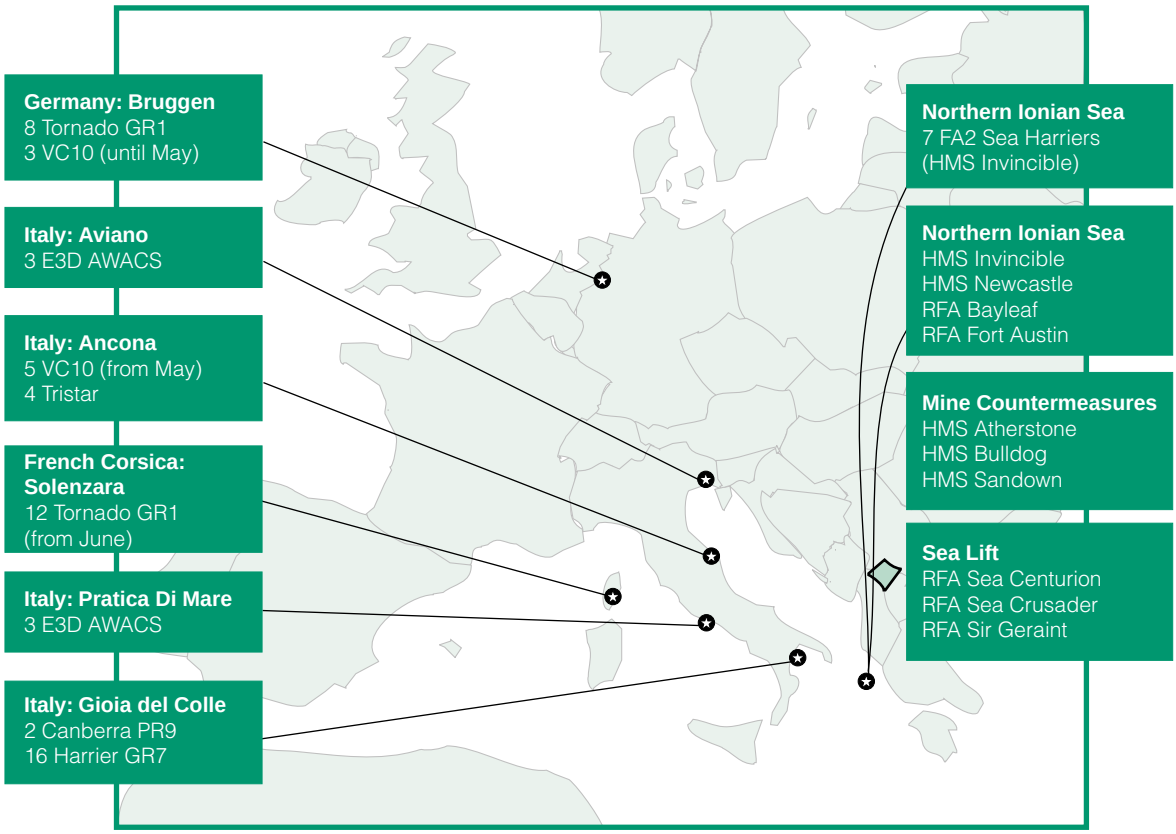
The air campaign

3.2 The air campaign began after a succession of talks and agreements on the government of Kosovo and an international presence there had broken down. But during the build up to the air campaign there was considerable uncertainty as to

Figure 10

United Kingdom air and maritime assets deployed during Kosovo operations

The United Kingdom's air and maritime assets were deployed across a number of locations



Source: National Audit Office

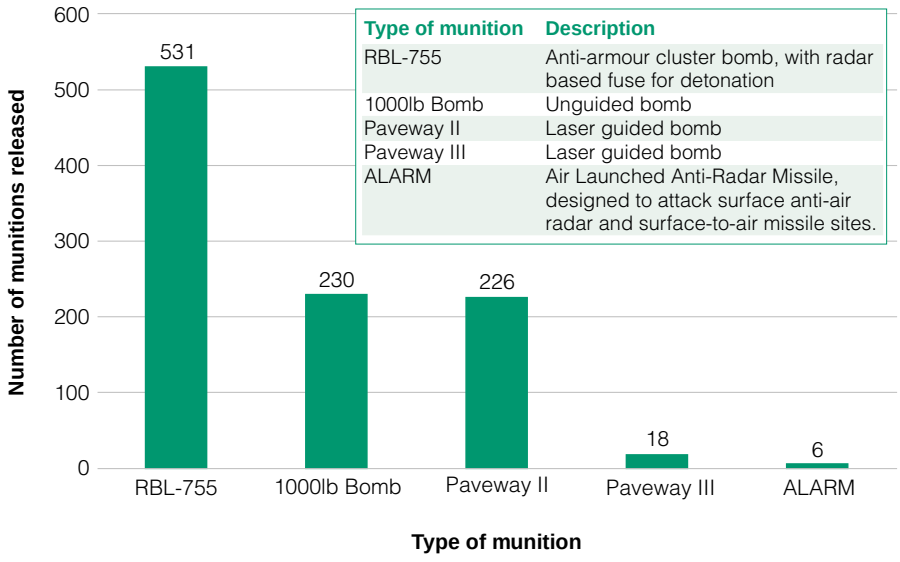
whether air power would actually be required and what its scope and duration might be. That uncertainty complicated planning for the air campaign, which had to co-ordinate contributions from several nations, all needing suitable bases from which to operate. In the United Kingdom's case, that led to a number of bases being employed (Figure 10).

3.3 The air campaign began on 24th March 1999 and lasted for 78 days. A total of 38,004 sorties were flown, of which 10,484 were strike sorties. United Kingdom aircraft flew a total of 1,618 sorties, of which 1,008 were strike sorties - some 10 per cent of all strike sorties. NATO aircraft released over 23,000 munitions, with the United Kingdom contributing over 1,000 munitions. This total excludes the Tomahawk Land Attack Missiles fired from HMS Splendid as the actual number is classified since it might provide information on stock holdings of missiles. The costs of missiles are included in the analysis in Part 2.

Figure 11

Munitions released by United Kingdom aircraft during air campaign

Twenty four per cent of munitions released by United Kingdom aircraft during the air campaign were laser guided 'smart' bombs.



Source: Ministry of Defence

3.4 The air campaign achieved NATO objectives (paragraph 1.4), and there were no NATO casualties. United Kingdom forces were very quickly able to play a full part in the operation – indeed the Department reduced the designated warning time to deploy forces on a number of occasions to bolster overall capability. But in reviewing their performance, the Department identified a number of lessons learned. Perhaps the most significant lesson was the lack of a United Kingdom capacity to conduct precision bombing in bad weather. That led to the cancellation

of United Kingdom operations on some days, and to one quarter of sorties overall (one third for Harriers) being aborted due to cloud cover in the target area. The position was exacerbated by the number of allied planes facing similar circumstances, so leading to a shortage of viable 'alternative targets' on days of mixed weather.

3.5 As earlier Parts have shown, the main additional costs from the air campaign related to munitions dropped and the additional flying hours undertaken by support aircraft for activities such as refuelling and transport. Among the lessons identified which fall in these areas, we noted the following:

- The prolonged air campaign highlighted the potential difficulties of sustaining a number of ongoing air operations with precision guided munitions. In April 1999 the Department initiated procurement action for such munitions as stocks were below the planned contingency levels and, had bombing at maximum levels been possible each day and night during the campaign, there was a real risk of exhausting stocks of precision guided munitions within a number of weeks. In the event, when the air campaign was suspended on 10 June, sufficient stocks remained which would have enabled the air campaign to continue for some time thereafter. In July as part of their initial assessment of lessons learned, the Department concluded that the prolonged air campaign highlighted the key issue of sustainability of deployed air forces. Experience in Kosovo has therefore reinforced the need to keep stockpiles of precision guided munitions under close review.

- A further munitions related issue was that Royal Navy Harrier aircraft flew with fuselage mounted missiles which, although not fired, nevertheless suffered from proximity to heat and vibration during take off and recovery. Within two months over half of these missile stocks were unserviceable. The Department told us that they have since conducted trials to identify the cause of the problem and new procedures have been put in place leading to a reduction in damage to missiles.

- The Royal Air Force faced critical shortages in a few airman trades and those with specialised skills such as targeteers and mission support system personnel. There were also shortages of Royal Navy trained aircrew.

- There were shortages of spares for some aircraft – for example Royal Navy Harriers and the E-3D fleet. That situation gave rise to the fact that just under half of all Royal Navy Harrier flying hours (including training hours) were achieved as a result of 'robbing' other aircraft. The Department are reviewing spares provision across all aircraft fleets.

- There is an ongoing requirement to establish and maintain robust tracking systems for critical spares from operating bases to the major maintenance facilities so as to optimise use of key equipments.

- Basing of aircraft was determined to a large extent by host nations and, in the United Kingdom's case, there was a consequent dispersion of aircraft. Logistic support would have been greatly eased had our aircraft been co-located. The United States' lessons learned report makes a similar point about the need for better planning and basing, and associated air movements.

Deploying land forces in Macedonia

3.6 During the air campaign, NATO and the United Kingdom continued to deploy land forces as part of the military and political pressure on the Serb Government. The build-up of NATO forces on the ground began in December 1998, with the establishment in Macedonia of a small force to provide for the safe withdrawal of the Kosovo Verification Mission verifiers if this proved necessary. The deployment of KFOR itself began in February 1999 and by the start of the air campaign NATO had already deployed several thousand personnel in the Balkans, mainly Macedonia, with the United Kingdom deploying or preparing to deploy some 4,500 personnel to Greece and Macedonia. By June 1999 NATO had deployed some 27,000 troops in Macedonia, Albania and Greece, including 10,500 personnel from the United Kingdom with a further 3,000 committed to be deployed. KFOR included contributions from NATO members: United States, Italy, Germany, France, United Kingdom, The Netherlands, Canada, Norway, Spain, Greece, Belgium, Turkey, Poland, Denmark, Portugal, Hungary, Czech Republic, Iceland and Luxembourg. In addition, contributions were made by: Russia, United Arab Emirates, Sweden, Finland, Austria, Morocco, Ukraine, Switzerland, Argentina, Jordan, Ireland, Bulgaria, Slovakia, Azerbaijan, Georgia, Lithuania, Estonia, Latvia and Slovenia.

3.7 Planning for the deployment was a complex process. At the NATO level, there were many iterations of planning to resolve the scenarios to be addressed, the precise military requirements, and the scale and nature of each nation's contributions. Within the United Kingdom, planning centred on the PJHQ, who drew contributions from the various Service commands as well as the Department's policy decisions. PJHQ's role was to define the overall force capability, and to coordinate the planning effort, while the Support Commands - particularly Strike Command and Land Command - undertook the detailed planning necessary to furnish their required contribution.

3.8 In putting together the United Kingdom land forces – an armoured brigade and an airborne brigade together with a logistics support brigade and a signals brigade supporting HQARRC – it was apparent that individual units were not fully up to strength. For example Royal Signals were 23 per cent under strength and there were shortages of medical staff and logistics experts. To ensure that they deployed at full strength, units had to draw from other Regular units not participating in the KFOR deployment. Some personnel had to undertake back to back operational deployments, and personnel shortages in provider units were compounded. While these factors can adversely affect morale and retention for some personnel, particularly for those with families, deployments such as Kosovo can also be a positive factor on retention. To supplement the regular forces, the Department called up 460 Territorial Army and 199 Regular Reservists.

3.9 Deploying to the Balkans presented logistic and geographical challenges. The main KFOR personnel were initially based in Macedonia. Skopje in Macedonia provided an air base for urgent transportation requirements and for most personnel. Most equipment arrived in theatre by sea via Thessaloniki (Greece) before road travel through Greece and Macedonia. Local populations were not necessarily sympathetic to NATO personnel – indeed there were a number of instances of KFOR vehicles being stoned.

3.10 The Department's in-house heavy lift capability consisted of two roll on roll off ships and the Royal Air Force Hercules fleet. Given the scale of the operation and the numbers of personnel and amount of freight to be moved, the Department required additional capacity. They therefore contracted commercial operators to provide additional sea and air transportation. When reporting on the Gulf and Bosnia we had identified weaknesses in the Department's arrangements for contracting transportation – they had not maintained records to support major financial decisions on contractors for the Gulf and they had had to pay significant premiums for charter shipping for Bosnia (Appendix 1).

3.11 We found that for Kosovo the Department had quickly entered the market, initially through The Baltic Exchange. They chartered 23 vessels over a six month period, eight vessels of which were on 'time charter'. Time charter vessels can be directed to any destination within the trading zones allowed by the charter and are hired for a specific period of time, often with options to extend for a further smaller period of time. 'Voyage charter' vessels proceed to pre-arranged destinations. The time charter vessels therefore provided greater flexibility and choice of embarkation and disembarkation ports and ensured the Department's required lift capability. There is a cost penalty as, on a similar voyage, time charter is likely to be more expensive than voyage charter. From April 1999, the Department used a panel of brokers instead of The Baltic Exchange who had been the sole broker for the Department since 1993, and had dealt with some of their needs for many years previously. The Department had maintained full records supporting their contracting arrangements.

3.12 As regards heavy air lift capacity, the Department had limited options. The United States Air Force have the capability but their own requirements took priority. As for commercial options, two firms in the United Kingdom have the capability using Russian built and registered aircraft. But given Russian criticism of the NATO air campaign, there were difficulties in chartering Antonov aircraft to fly to Macedonia once the air campaign had started – given the Russian registration, certification could be withdrawn, grounding the aircraft. The Department contracted the commercial firms to provide 50 flights during February to September but the majority (84 per cent) of these took place either before the start of the air campaign or once the Serbs had agreed to withdraw their forces from Kosovo. The Department's lessons learned have highlighted the shortcomings in the United Kingdom's strategic lift capability and echoed the Strategic Defence Review's conclusions that heavy lift capability should be enhanced.

3.13 For major expeditionary deployments the Department use their own tentage to meet the immediate accommodation needs of large numbers of personnel. In Macedonia, United Kingdom personnel quickly established tented camps using their existing tents. They also deployed equipment for ablutions – showers, toilets and laundry facilities. There were performance shortfalls - some mobile shower and laundry units did not work in theatre and engineers cannibalised parts from the worst units to repair others. And there was a serious shortage of portable toilets - the ratio of personnel to toilets exceeded 50 and compared poorly with other nations' armed forces, the Canadians for example were able to maintain a ratio of 20 personnel for one toilet. The Department told us

that funding approval was granted only two weeks prior to deployment whereas the delivery time was six weeks for the portable toilets which were supplied from the United States. A number of personnel, however, were accommodated in hotels.

3.14 The Department rely on a mix of self-sufficiency and contractor support in supplying food in theatre. When units initially deploy they take operational ration packs with them to support them before local supply arrangements can be set up. When deployed in Macedonia, the Department used a local food supply company (who already had a contract with the United Nations) to supply them with food, commodities and bottled water. The Department considered that the company's performance was slow and that the range of products offered was too limited. They drew on previous knowledge of Supreme Food Services and put in plan an enabling agreement under which Supreme would supply food. Supreme offered faster delivery times and a greater variety of products and were able to deliver direct to British units in Kosovo within four days of the deployment from Macedonia.

3.15 The Department's initial analysis, undertaken in July 1999, of the overall management and organisation aspects of the initial deployment highlighted a continuing overlap regarding the division of responsibilities between the Department's headquarters and PJHQ. Their review stated that headquarters staff tended to stray into operational level business - the domain of PJHQ - often at the expense of providing the more strategic guidance. As a consequence decisions made often lagged behind planning and deployment time-scales. From the perspective of the two Brigades initially deployed (4th Armoured Brigade and 101 Logistics Brigade), forces to be deployed were changed without reference to all parties; and there were overlaps between the headquarters of each Brigade, leading to initial problems with co-ordination. The Department recognised, however, that PJHQ and the Supporting Commands had worked well togther – and senior staff in theatre we spoke to confirmed the value of a co-ordinating headquarters in the United Kingdom to act as a focus for support and decisions.

Humanitarian support

3.16 KFOR played a full part in assisting with the growing refugee crisis. By March 1999 some 50,000 refugees had already left Kosovo and gone to Macedonia and Albania. Following the start of the air campaign, the refugee crises worsened and over 700,000 Kosovars sought safety in neighbouring countries. NATO and United Kingdom Service personnel deployed in the Balkans undertook a range of activities to support the efforts of humanitarian agencies, assisting with the building of camps, food and medical support. United Kingdom forces transported

freight to Macedonia - three emergency flights were undertaken - and provided engineering and logistics support. Service personnel helped construct 16,500 metres of fencing, dug 130 trench latrines, laid 1,600 metres of water pipes and erected two large general-purpose shelters and some 1,300 tents. The Department also managed Supreme's delivery of food supplies costing £2.5 million to the refugee camps. Overall United Kingdom forces made a valued contribution to the humanitarian efforts, assisting in the establishment of refugee camps, food supply and provision of utilities.

Part 4: Deployment into Kosovo – supporting United Kingdom forces and their well-being

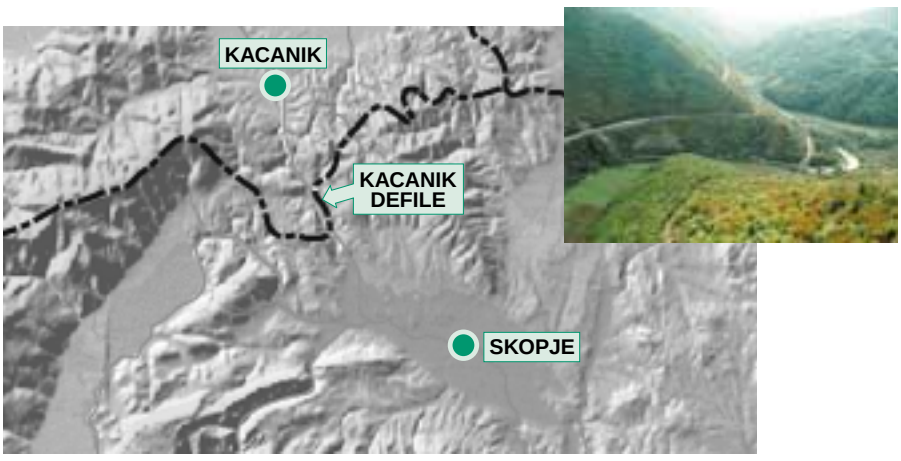
4.1 Following the air campaign and the Serbs' agreement to withdraw from Kosovo, NATO deployed peace-enforcement land forces into Kosovo. This Part examines the steps the Department have taken to ensure the physical well-being of United Kingdom personnel deployed into Kosovo – arrangements for accommodation, food, medical services and welfare support. It begins by setting out the challenges KFOR faced when first entering Kosovo.

Deployment of KFOR into Kosovo

4.2 NATO faced considerable uncertainty when deploying land forces into Kosovo. Despite the Military Technical Agreement (paragraph 1.4), NATO could not be certain what reception they would receive from withdrawing Serb personnel. The initial point of entry for KFOR from Macedonia was along the Kacanik defile – an eight-mile valley surrounded by difficult mountainous country occupied by Serb forces and artillery. The road along the defile bottom passes through a number of tunnels and over bridges (Figure 12). KFOR did not know what condition the road was in - as a result of either the air campaign or possible Serb sabotage - and were unsure as to the weight and capacity limits for the tunnels and bridges. Hence KFOR required light forces to picket the high ground as

Figure 12 The Kacanik Defile

NATO land forces entered Kosovo through the mountainous area around the Kacanik Defile.



Source: Relief map - Tom Rabenhorst, University of Maryland and Ray Sterner, John Hopkins Applied Physics Laboratory © 1999. Labels added by National Audit Office

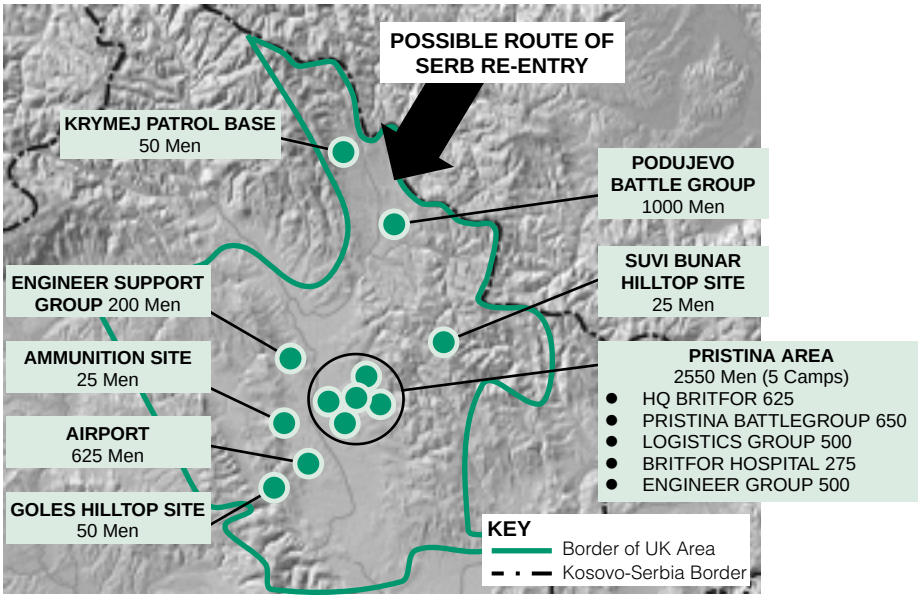
well as heavy armour and logistics support to guarantee their safe entry into Kosovo. In the event, the entry into Kosovo was unopposed - indeed the Serb withdrawal was completed ahead of the agreed timetable.

4.3 Following implementation of the Serb withdrawal, KFOR's main tasks were to ensure that they could deter or repel Serbian aggression, demilitarise the Kosovo Liberation Army and establish a secure environment in which refugees and displaced persons could return home in safety. The United Kingdom were assigned a critical sector, comprising the provincial capital, Pristina, and one of the main routes by which Serbian/Yugoslav forces might attempt to re-enter Kosovo - through relatively low ground to the north of the sector, centred on Podujevo (Figure 13). In contrast to Bosnia, ground communications within the sector are good, and the sector as a whole is small, only some 60 km by 40 km. Although the population are now overwhelmingly Albanian Kosovar, there are Serb towns, such as Kosovo Polje and Gracanica, which represent potential trouble spots. All these factors, together with the availability of suitable infrastructure, governed decisions on the precise siting of United Kingdom forces.

Figure 13

Map of United Kingdom sector and Serb border showing main Serb route to Pristina and the main United Kingdom camps

United Kingdom camps are located in key strategic areas[1].



Source: Relief map - Tom Rabenhorst, University of Maryland and Ray Sterner, John Hopkins Applied Physics Laboratory © 1999. Details of main Serb route and United Kingdom camps added by National Audit Office

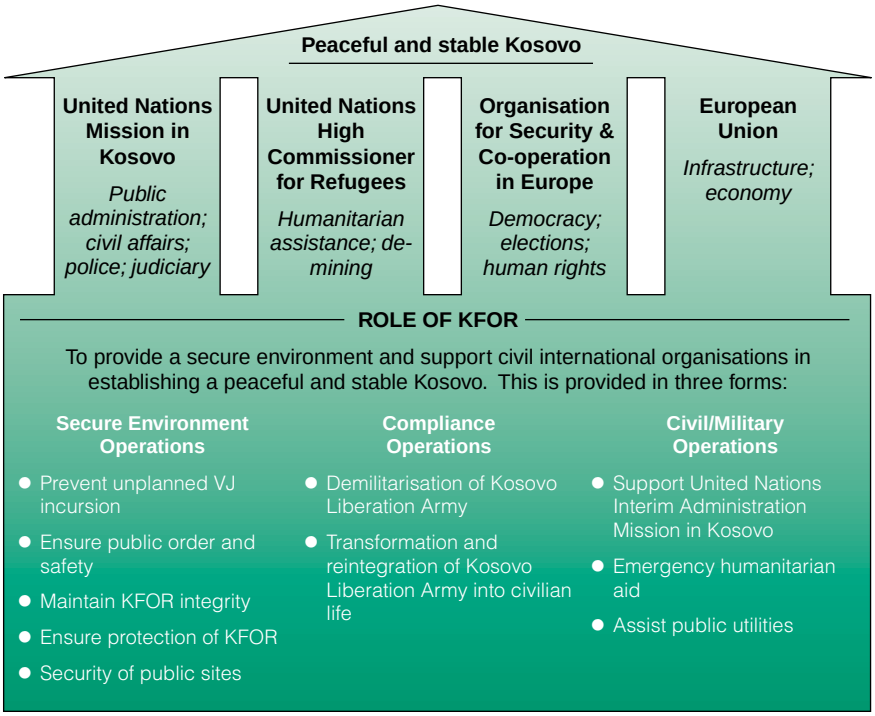
Note: 1. Sizes, locations and occupancy of camps shown are those being planned for Temporary Field Accommodation at the time of our visit (October 1999).

4.4 Over the longer term the aim is to ensure that conditions are in place to enable reconstruction of Kosovo's economic, political and legal systems. Figure 14 sets out the wider objectives for establishing a stable Kosovo.

KFOR's role in establishing a stable Kosovo

Figure 14

KFOR's military and peace-enforcement objectives support the wider aims of the multinational organisations in promoting a stable Kosovo.



Source: Multinational Brigade (Centre), KFOR

4.5 Many of these objectives for KFOR have been met - in whole or part - including sensitive issues surrounding, for example, the demilitarisation of the Kosovo Liberation Army. British forces have played a major role in helping to establish a more normal environment - the power stations and water treatment plants, for example, fall within the British sector, and British Engineers have helped to keep them running.

4.6 Following the establishment of more stable conditions, although attacks on and violence between ethnic groups have continued and there remain considerable friction points, United Kingdom forces have reduced the amount of heavy armour on patrol and Land Rovers have replaced Warriors for many such duties. Heavy armour has been positioned at key strategic points – to meet any threat from Serbia and to guard Serb historic buildings and populations in Kosovo. Figure 15 overleaf describes in more detail KFOR's peace-keeping activities in Pristina. United Kingdom forces have also conducted operations outside their

sector - for example, a company of British armoured infantry formed part of KFOR's reinforcement of Multinational Brigade North, following violent clashes between Kosovar Serbs and Albanians in the city of Mitrovica from February 2000 onwards.

Figure 15

Peace-keeping in Pristina: The Role of the Pristina Battlegroup

United Kingdom Service personnel as part of KFOR are undertaking a range of peace-keeping activities:

1. Protecting those in the local population who are threatened

United Kingdom forces protect threatened local populations and their property. The majority of people requiring protection are Serbs. Soldiers undertaking such guarding are often based in cramped conditions in nearby rented houses. After six days of guard duty, they rotate with other members of their company.

The soldiers in photograph 1 are guarding a Serbian church. Photograph 2 shows soldiers (with their armoured Land Rover) who are watching over a Serbian old lady and a Bosnian-Muslim family. Photograph 3 shows soldiers from an engineer squadron building a sandbagged guard emplacement in south-east Pristina.

1

2

2. Ensuring compliance with demilitarisation and the Military Technical Agreement

Service personnel carry out intelligence-led operations in Pristina to ensure that members of the KLA and their associates comply with their undertaking to demilitarise. The Pristina Battlegroup would also support the Podujevo Battlegroup should the Yugoslav Army make an incursion into Kosovo territory in contradiction of the Military Technical Agreement.

Photograph 4 shows Warrior Armoured Fighting Vehicles based at the former Yugoslav Army barracks in Pristina. These are used in operations in Pristina and in support of the Podujevo Battlegroup.

3

4

3. Supporting United Nations Mission in Kosovo (UNMIK) activities

United Kingdom forces are actively supporting United Nations activities to:

- rename the streets of Pristina on an alpha-numeric basis to reduce tensions over Serbian street names and so that the security forces and emergency services have common maps;
- re-introduce schemes for identity cards and for driving licences and vehicle registration;
- introduce community police stations; and
- carry out joint operations with UNMIK police.

Accommodation

4.7 KFOR's strategic objectives on deployment into Kosovo set the scene for our examination of the Department's management of accommodation requirements. United Kingdom forces clearly had to establish their headquarters buildings in Pristina, commanding KFOR and the central sector of Kosovo. Given the scale of damage to buildings in Pristina and Kosovo and the demand from so many organisations for offices, accommodation was at a premium. COMKFOR and COMBRITFOR were, however, able to establish their headquarters in buildings in Pristina and also find buildings for their key logistics support – stores and repair facilities.

4.8 When we reported on the Department's management arrangements in Bosnia we noted that when taking over property the Department had not undertaken condition surveys and that this had left them exposed to claims from owners when buildings were handed back. We looked to see whether the Department had learned these lessons in Kosovo. We found that in most cases the Department had conducted a condition survey of the building - even though many buildings appropriated were state buildings, use of which, under the Military Technical Agreement could not give rise to claims for compensation. They had also included utilities meter readings as part of their preliminary site condition surveys, where meters existed. Where the Department have already vacated buildings, exit surveys included final meter readings. The Department now require such condition surveys to be undertaken when forces occupy buildings.

4.9 The Department also use the civilian telephone network, part of the former Yugoslavian state telecommunications company, for routine communications. By February 2000 the Department paid some £190,000, with the company supplying itemised billing for 62 per cent of the telephone lines. Where itemised bills are not available, the Department are charged a fixed fee for line rental and calls. At the time of our visit, however, we noted that only one of the units we visited had kept any records of telephone usage and the Department therefore were not in a position to challenge invoices.

4.10 While United Kingdom forces found suitable office and industrial accommodation, there was a lack of suitable accommodation for military staff. This is not a new problem for the Department. In Bosnia the Department experienced similar difficulties in providing appropriate accommodation for troops, which we highlighted in our previous report. The Department had procured modular accommodation units for some 4,250 personnel at a cost of £30 million (for supply only – the Department were responsible for site

preparation, transportation, construction and maintenance). We reported that the units were delayed – they were not completed until some seven months into the operation as a result of a shortage of engineers and changes to the configuration of the camps. The Committee of Public Accounts noted that the accommodation units were also expected to be available for other operations (Appendix 1). When deploying forces for the Kosovo operation, there were some 3,000 personnel in Bosnia, and forces from other nations were also occupying some accommodation. Because of the heavy use made of the accommodation units in Bosnia and the consequent need for refurbishment, together with transportation costs, the Department concluded that it was not feasible to utilise spare capacity for Kosovo.

4.11 The Department have sought to learn lessons from Bosnia and since 1995 they have been examining procurement options for **Expeditionary Campaign Infrastructure** for rapid deployments – a priority confirmed in the Strategic Defence Review. At the time of the Kosovo deployment the Department were exploring a possible 'Public Private Partnership' solution in which a contractor undertakes to meet all accommodation requirements, ranging from tented camps to the establishment of semi-permanent prefabricated facilities. However, the procurement is not expected to be completed until 2002 and the Department did not consider that the procurement could be accelerated to meet requirements in Kosovo as the Public Private Partnership process was not sufficiently advanced.

4.12 Given the need for substantially improved accommodation, the Department raised an Urgent Operational Requirement to provide **Temporary Field Accommodation**. This package was intended to provide prefabricated living and working accommodation for 5,000 personnel based at a number of sites. During discussions with potential contractors, however, it became clear that there was a high risk that it would not be possible to complete the project until after the onset of winter. The Department therefore raised a second Urgent Operational Requirement to provide **Improved Tented Camps** as an interim measure. This package was originally intended to provide improved tented accommodation and utilities for between 10,000 and 14,000 personnel, although accommodation for 6,000 personnel was in fact ordered (see below).

Improved Tented Camps

4.13 The Department managed their procurement of Improved Tented Camps separately from the procurement of Temporary Field Accommodation. They considered that there would have been risks of delays to both projects if they had attempted to integrate the two. For the Improved Tented Camps, the requirement was for standard equipment (some already in service) which could be deployed with a minimum of specialist personnel. The Department concluded, however, that the requirement was too fragmented to provide for effective risk transfer to a prime contractor and that they had the expertise to manage without one. Some 36 suppliers have been involved in the project, mainly from the United Kingdom, but also from abroad – for example the shower and wash basin units were supplied by an Italian contractor, and material for the tents was supplied from sub-contractors in Canada, South Africa and the Czech Republic. This in part, reflects difficulties in placing orders when military and humanitarian aid missions world wide have increased the demand for such equipments.

An improved tented camp - this one was occupied by the 1 (UK) Logistics Regiment at the time of our visit

4.14 The Department's initial estimate of cost for Improved Tented Camps was £75 million based on the maximum requirement of 14,000 places. The Department revised their requirements prior to placing contracts and reduced the package to 6,000 places at a cost of £22 million (originally estimated at £34 million). Given the speed of draw down from theatre, the Department further refined their estimate of the numbers of equipments required in theatre, and they did not send all of the last tranche to Kosovo. And some shower and washbasin units sent from Italy to Kosovo have been returned to the United Kingdom unused. These equipments have been put in storage. Figure 16 overleaf shows the principal equipments procured, and the numbers deployed in theatre.

The principal equipments procured to meet the Improved Tented Camp Urgent Operational Requirement

Figure 16

Three quarters of the principal components of the Improved Tented Camps were actually deployed in theatre.

Equipment[1]	Quantity	
	Procured	Deployed in theatre
Insulated tents with hard floors and heating systems	1,344[2]	912
Large 6m x 24m shelters	85	85
Water storage and distribution systems	39	39
Water pumps	32	32
Generating sets	46[3]	46
Lighting and power distribution systems	23	23
Laundry units	10	10
Temperature controlled containers (for food storage)	30	30
Shower units	97	75 [4]
Washbasin units	77	61 [4]
Portable field feeding and sanitation systems	32	32

Notes:
1. In addition to the equipment above, a large number of camp beds, footlockers, walkway boards, spares and tools were also procured.
2. The number of individual tent components procured was based on the forecast requirement, including spares.
3. This number refers to the total number of generating sets leased by the Department, and not the number in theatre at any one time.
4. Some units were returned to the United Kingdom unused.

Source: National Audit Office analysis

4.15 While the Improved Tented Camps have been warmly welcomed by Service personnel in Kosovo, the urgent nature of the procurement has led to some minor problems:

- The various sub-systems were not all immediately fully compatible. While the Department gave contractors interface standards as part of their technical specifications, in a number of cases contractors substituted alternative connectors – often of a superior standard. Contractors have rectified the mistakes but there have been delays in utilising the equipment in theatre.

- Some shower units were damaged in transit. The contract did not adequately specify the robustness of shower units. Units were not strong enough to be lifted by the roof but this was the only method available for unloading in Thessaloniki. The units were designed to be lifted from the floor, and clearly marked as such. However some were lifted by the steel eyes on the top corner of the containers.

Two of the shower units damaged in transit

- There were some instances of minor communications difficulties. In one case keys for the shower and wash basin units were left in Thessaloniki, while the locked units were sent to Kosovo. The locks were drilled out and replaced - only for the keys to arrive the following day.

- There were minor mis-specifications and quality shortfalls. The specification for the shower units for example requires two drainage points – to ensure drainage even when units are located on a slope. The units only have one drainage point and this could result in poor drainage and faster degradation of the units. In addition some of the units have sharp edges on internal surfaces, which could result in accidents to users and compensation claims if locally employed cleaners injure themselves.

4.16 The target for delivery of the Improved Tented Camp project as a whole was 1st September 1999 and this was used in setting priorities and determining the logistics of delivering the various elements in theatre. There has been some slippage and the Department were not able to contract for the delivery of all equipments by 1st September. We noted however that most elements were delivered on time according to individual contracts. Elements such as electrical equipments, shower units and washbasins were sent to theatre in September and October. Some elements of equipment were delivered direct to theatre, to save time and money, but that exposed a lack of expertise in theatre staff in accepting equipment off-contract. The problem was quickly solved by the despatch to theatre of procurement staff from the United Kingdom. Overall, the project was successful in delivering improved accommodation to troops in theatre at short notice, and the

Department went to great lengths to source the various elements of that project satisfactorily. The problems and shortfalls identified above need to be placed in that context.

Temporary Field Accommodation

4.17 When contracting for the Temporary Field Accommodation project, the Department considered tenders from four contractors, three of whom are potential bidders for the Expeditionary Campaign Infrastructure contract. Following assessment of the bids, the Department awarded the contract to Hunting Engineering Ltd (Hunting) – the cheapest compliant bidder. The accommodation for 5,000 personnel over three years includes living and administrative space; cooking, dining, ablution and latrine facilities; and integral heating, power, purified water and waste disposal. The contract specified that accommodation should be provided in stages through the last quarter of 1999 with hand over of the first camps in mid October, 40 per cent by end October and all camps by mid December. The timetable for handing over the completed Temporary Field Accommodation sites has slipped. The first camp was handed over in early February 2000 with the last camps not expected to be handed over until May, some five months late – hence no Service personnel will have had the benefit of the accommodation units during the first winter of the deployment.

A Temporary Field Accommodation camp under construction at the time of our visit

4.18 The contract covers the supply, construction, operation and maintenance for three years of accommodation, and is firm priced to a value of £109 million (including VAT). In addition the Department have agreed to pay the contractor's transport costs in theatre, given uncertainty at contract award over the precise location of camps – costs which the contractor estimated would be of the order of £4 million. The contract includes a provision for liquidated damages for late delivery of completed camps up to a maximum of six per cent of the equipment and construction elements of the contract. This provision, however, related to the requirements in the original contract, and there have been a number of adjustments to the requirement – to the number and configuration of the camps. Given the slippage in delivery of completed camps and the changed requirement, the Department and contractor expect to negotiate over the final cost.

4.19 The Department retain a number of risks under the Temporary Field Accommodation contract:

- *Clearing and preparing sites*. This included munitions clearance and the provision of hardcore – which was quarried locally by the Royal Engineers using equipment procured under a further Urgent Operational Requirement at a cost of £2.3 million. Furthermore if the Department were late in providing Hunting with cleared sites, the contract required them to pay Hunting delay costs of, on average, £25,000 a day. The Department consider that, given the operational uncertainty, they were best placed to accept this risk. The Department delivered all prepared sites to Hunting on time.

- *Additional work*. The Department have negotiated firm labour rates for further minor work within the scope of the contract. None has been authorised.

- *Fixed capacity*. Originally the Department contracted for the operation and maintenance of camps for 5,000 personnel for three years. Their requirement has reduced – draw down from Kosovo has proceeded more quickly with some 4,500 personnel in Kosovo in October 1999 before the first camp was to be handed over. As the contract did not provide any mechanism for reducing the requirement, in August 1999 the Department issued a contract amendment to Hunting tasking them to deploy camps for 4,525 personnel, with the balance being held by the contractor in store in the United Kingdom. However, numbers of personnel, are reducing further – to some 3,500 in Kosovo – and not all personnel require Temporary Field Accommodation, although there is a need for some spare capacity for surge and roulements. The Department are looking to sell or lease spare capacity to other nations' armed forces.

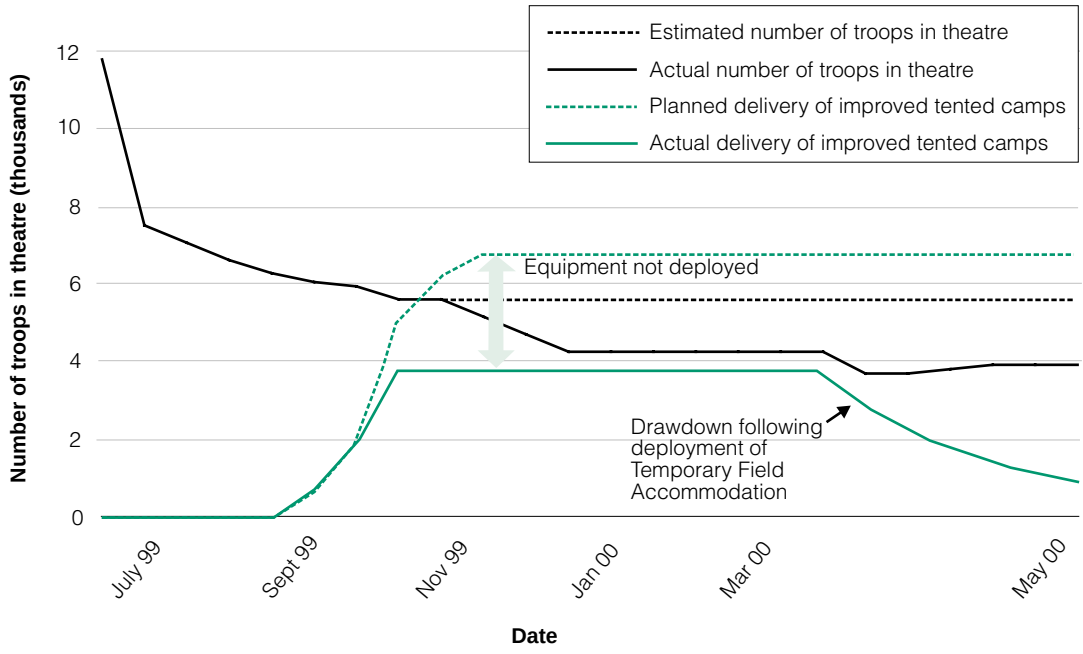
- The Department are also responsible for the provision of raw water and fuel, local taxation, and the relocation of equipments, disposal and site restoration.

4.20 Figures 17 and 18 analyse the Department's requirements for both Improved Tented Camps and Temporary Field Accommodation together with actual performance delivery. Because draw down was much more rapid than expected, the Department's original forecast requirements for both types of accommodation proved too generous. They were able to divert a small part of the Improved Tented Camps from going to theatre but there was less flexibility in the contract for Temporary Field Accommodation, although some elements are not being deployed to Kosovo but are being stored by the contractor. Following the hand over of the completed Temporary Field Accommodation camps, the Department will be able to draw down much of the Improved Tented Camps equipment. Shower and wash units deployed in theatre will not be recovered but tentage and other equipments recovered from theatre, together with the equipments which were not sent to theatre, will form part of a reserve available to support future expeditionary campaigns. But given the delays in delivery of Temporary Field Accommodation, the Improved Tented Camp equipment will have been more intensively used and there will be additional costs for preparing equipments to hold in reserve.

Figure 17

Delivery of Improved Tented Camps

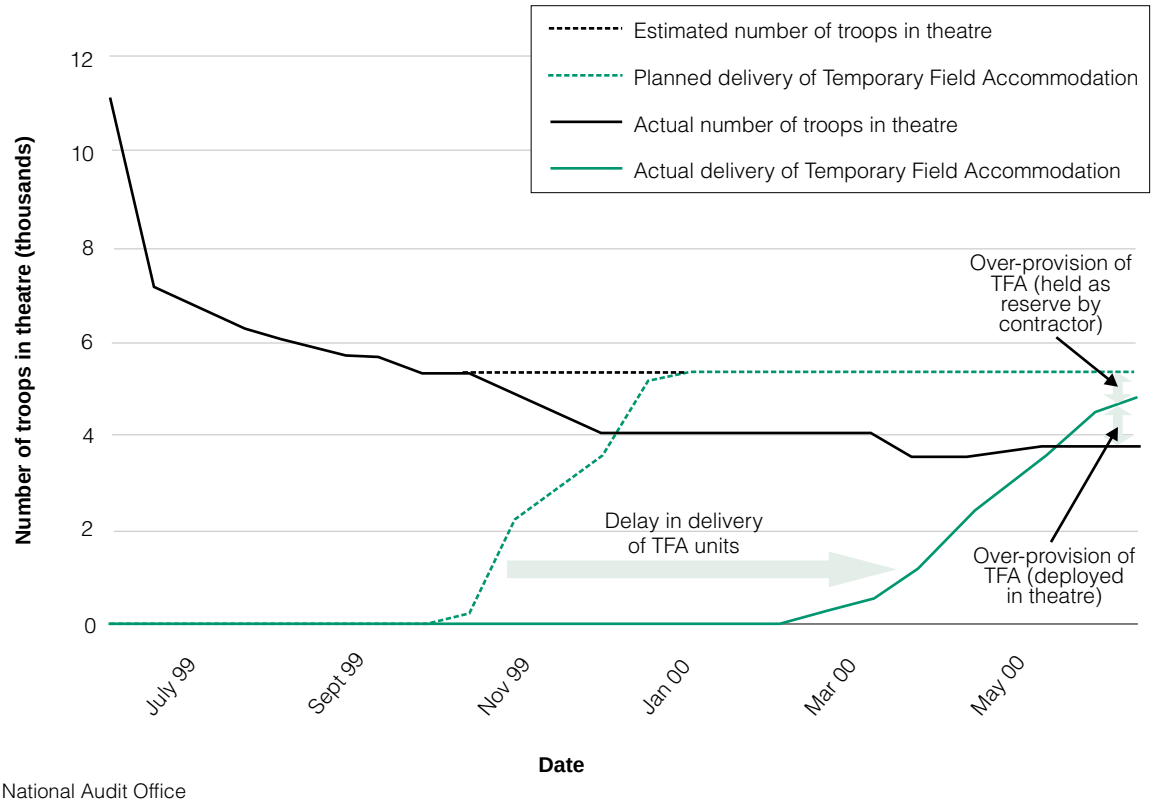
Some equipments were not deployed in Kosovo which, together with equipments recovered, will form a reserve for future deployments.



Source: National Audit Office

Figure 18 **Delivery of Temporary Field Accommodation**

There has been significant slippage in the delivery of the project. Not all of the equipment is to be deployed and there is likely to be overcapacity in theatre.



Source: National Audit Office

Food, personal equipment, welfare provision and medical facilities

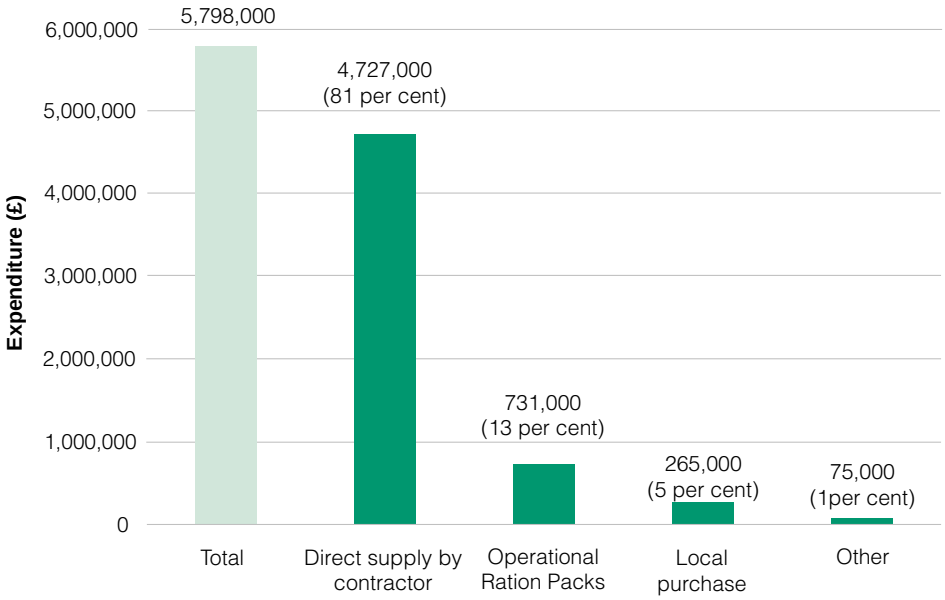
Supply of food and catering

4.21 By the time land forces deployed into Kosovo, the Department had already established robust arrangements for the supply of food to personnel in Macedonia using Supreme (paragraph 3.14). Service personnel moving into Kosovo took supplies of ration packs with them but within four days of deployment, Supreme were delivering food direct to units in Kosovo. The rapid extension of direct delivery of food by contractors into Kosovo meant that the Department were left with significant numbers of unused ration packs, some of which had a use-by date of December 1999. Chefs in theatre have therefore used ration packs as part of their menus to avoid wastage and all ration packs were consumed by their use-by date. Nevertheless, direct food supply still accounted for over 80 per cent of the Department's expenditure on food, household commodities and bottled water between March and August 1999 (Figure 19).

Figure 19

Expenditure on food, household commodities and bottled water in Kosovo and Macedonia between March and August 1999

Direct supply accounts for over 80 per cent of the Department's expenditure on food, commodities and bottled water.



Source: National Audit Office analysis of the Department's data

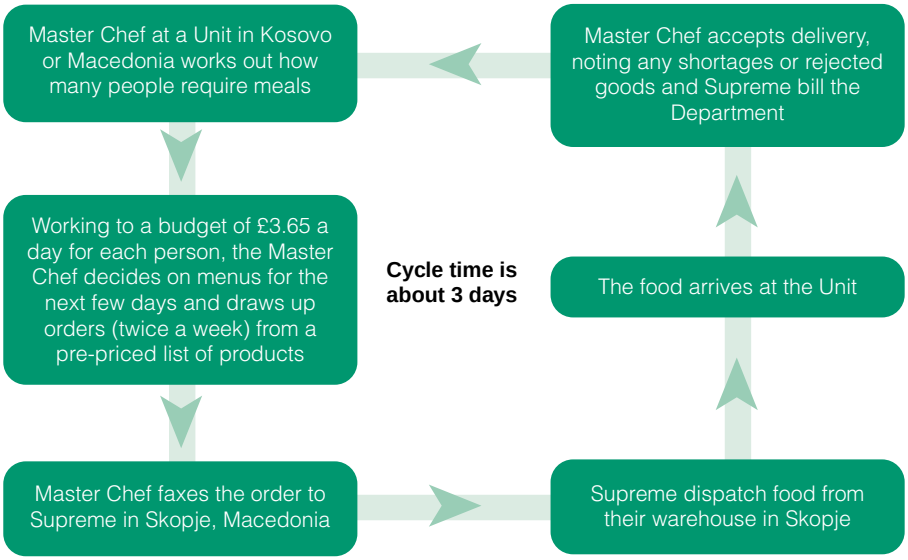
4.22 The Department told us that Supreme had performed well. Despite some difficulties with lorries being held up at the border between Kosovo and Macedonia, Supreme have delivered orders mostly within three days of an order being placed (Figure 20 overleaf). On a number of occasions, when Units' orders have not reached Supreme with sufficient notice because of unreliable communications in-theatre, Supreme have been able to deliver food within 24 hours of a replacement request and also operated a 'cash and carry' service for Units with urgent requirements.

4.23 The Department have not yet formally contracted Supreme and the arrangements for food supply are governed by an enabling agreement. The Department do not therefore have the protection that would be provided by a contract if Supreme were to perform poorly or if they were unable to handle a substantial change in the operating environment and in the Department's requirements. The Department expect to place a formal food supply contract by mid 2000 about a year after Supreme commenced food supply.

The food ordering process

Figure 20

The food ordering process takes about three days between the Master Chef working out how many people require meals and accepting delivery of an order by Supreme.



Source: National Audit Office

4.24 During the six months to August 1999 Army chefs prepared nearly four million meals for British troops at Units in Kosovo and Macedonia. They also provided a further 250,000 meals for other nations' personnel and other visitors to those Units. The Department operate systems to recover the costs of these meals. At the time of our visit, food was prepared and served at 41 locations – 19 field kitchens deployed in tents, 9 field kitchens deployed in buildings and 13 facilities based in existing kitchens.

Army chefs and locally employed civilians preparing food in a field kitchen

4.25 We found that the quality of food was high and there was an impressive variety of dishes on offer. Despite these achievements, the Department have noted a number of concerns:

- While the Department planned on the basis of one chef preparing meals for 35 Service personnel, units deployed with insufficient chefs – chefs were preparing meals for some 50 soldiers and for a short period during

the deployment into Kosovo some chefs prepared meals for up to 90 soldiers. This high ratio resulted from the many small units that deployed without chefs on the understanding that they would be consuming individual ration packs for the first 30 days of the operation. In the event, however, fresh rations were available within four days of deployment. The shortage of chefs was also exacerbated by the request from HQARRC for additional chefs, of which one third were provided by the Department.

- Insufficient catering equipment was deployed. This meant that soldiers had to be transported to centralised facilities, and some kitchen equipment had to be improvised. The initial dispersal of units and the quicker than expected provision of fresh rations exacerbated the problem but the Department provided additional catering equipment within a number of weeks.

- Numerous problems have occurred with refrigerated containers used for the storage of fresh and chilled food. The equipments have experienced high failure rates and have required frequent servicing. The Department have recorded only two losses of food, but this has been achieved by keeping a civilian contractor on call in Macedonia and maintaining a small pool of replacement equipment.

4.26 In addition to food, the Department also provide bottled water for soldiers because of the unreliable treatment of local water supplies and its high mineral content. While each soldier has a daily allowance of five litres, in Kosovo the Department issued water on demand rather than provide the maximum entitlement as they had done in previous operations. In July and August 1999 the Department saved over 1.6 million litres of water, around half the entitlement, by issuing water on demand.

Personal equipment and welfare

4.27 All United Kingdom soldiers deployed in Macedonia and Kosovo have been issued with the new 'Combat Soldier 95' clothing – a system of layered camouflaged clothing with trousers, T-shirt, shirt/jacket, fleece jacket and waterproof jacket. The comfort and versatility of this clothing have proved to be popular with Service personnel - an important achievement, given the extended time troops spend in their combat clothing, and the exposed nature of their peacekeeping duties.

4.28 By contrast, the Department's efforts to provide troops with suitable beds - again, very important given the intensive nature of the work - were less successful. They bought 11,000 new camp beds at a cost of £24 each, after upgraded camp beds were requested by local commanders as a key morale raiser. The Department deployed the new beds across the force within four weeks. A number of the soldiers we spoke to complained about the short length of the beds and we found that the legs of many of the beds had collapsed. At one unit we visited, 24 per cent of the beds issued (168 out of 689) had broken within one month of the unit arriving in-theatre. The Department have since confirmed that some 18 per cent (2,000) of the 11,000 beds deployed have been broken, although they told us that defect reporting from theatre had been inadequate – they received only one defect report covering 600 broken beds. They acknowledge the problems with manufacturing quality and specification of the beds – which they intend to rectify in future procurement – but told us that this was the only product that could be obtained in sufficient quantity within the required timescale.

Bags containing broken camp beds in store in Kosovo.
Inset above: Camp bed open with sleeping bag.
Inset below: Broken camp bed leg

4.29 The ability to keep in touch with families in the United Kingdom and Germany has a crucial impact on the morale of Service personnel deployed on operations. When first deployed into Macedonia, Service personnel obtained terrestrial phone cards within a month, but the demand for phone cards subsequently overwhelmed the local infrastructure. Two months later (in May 1999), the Department contracted a private sector company to provide satellite telephone communications. While this resulted in an improvement in overall facilities, there were still some problems with the performance of the equipment and 16 telephone lines only were available.

4.30 Within two weeks of initial deployment into Kosovo, the Department's contractor installed satellite telephone systems at the major units. Many soldiers serving in units based in dispersed locations were not readily able to make welfare calls but within six weeks the contractor had achieved coverage of 60 per cent of British troops and by August 1999 all smaller units had satellite communications. In September, the Department increased the soldiers' welfare telephone allowance from 10 minutes a week to 20 minutes a week. The Department's civilian staff do

not receive this telephone allowance. The Department have told us that they made improvements for the subsequent East Timor operations. For example British troops deployed with their own welfare satellite communications equipment.

4.31 In June 1999 the Department supplemented the Forces Free Airletter (the traditional 'bluey') with an internet post delivery system (or 'e-bluey'). Both services are provided free to all those serving on an operational tour. The e-bluey allows family and friends to send a letter electronically by accessing an internet website. The message is automatically printed out and put in envelopes by sophisticated equipment operated in-theatre by the British Forces Post Office, who then distribute the messages. A significant advantage of the e-bluey is that it can be received in a fraction of the delivery time of a standard letter. The Department told us that this facility has been well received and that take up has been encouraging. Some soldiers we spoke to prefer to use standard internet e-mail because it is quicker, allows two-way communication, and because their families can send digitised photographs. The internet e-mail facility has been provided at some units using non-public welfare funds.

4.32 United Kingdom Service personnel in-theatre work for 12 hours or more each day for seven days a week, often in difficult conditions. The majority of soldiers serve in Macedonia and Kosovo for a six-month tour and many deployed at short notice without pre-tour leave. During tours personnel are entitled to two-weeks of rest and recuperation leave back in the United Kingdom or Germany. Initially flights were provided by the Royal Air Force but these were subject to delay and cancellation – in part as a result of aircraft unreliability. Following the establishment of more stable conditions, the Department contracted civil carriers to operate rest and recuperation flights – initially from Skopje and Thessaloniki. In October 1999 the Department contracted a civil carrier to operate rest and recuperation flights direct from Pristina airport and at the time of our visit these arrangements were working well. However, after the crash of a United Nations World Food Programme chartered flight in November 1999 on approach to Pristina, the Department re-routed their civilian charter to Skopje. These arrangements made the task of moving personnel in and out of Kosovo more difficult particularly given road conditions during the severe Balkan winter. The Department's direct charter flights to Pristina resumed in April 2000.

4.33 The availability of other welfare facilities is also important. During our visit Service personnel told us that the overall picture was good with the larger sites providing gymnasiums, small shops (selling drinks, snacks and personal items), radios and televisions receiving programmes from the British Forces Broadcasting Service (including the key games of the Rugby World Cup). Many of these facilities took up to two months to be deployed in Macedonia but provision in Kosovo was

generally rapid – within a few days of troops first crossing the border. Some soldiers at smaller locations told us that they still found it difficult to get access to these welfare facilities.

Medical support

4.34 The Department deployed medical personnel and equipment initially to Macedonia to support the build up of KFOR. Following deployment into Kosovo, the medical commander based his main facilities in Lipljan (Figure 21).

Figure 21

The medical facility at Lipljan

Medical support to British troops in the sector is provided by an Armoured Field Ambulance Group and a Field Hospital Squadron. They deliver primary healthcare, dental care and emergency response services (including air and road ambulances). Although their primary role is to support British Forces and KFOR, they also provide emergency "life, limb and eye" care for other nations' forces, United Nations or Non-Governmental Organisation personnel and the local population.

From July to December 1999, their main base of operations was a field hospital located at Lipljan which:

- was some 10 miles south-south-west of Pristina;
- was based in a former psychiatric detention centre (photograph 1);
- had a ward of 25 beds including 1 intensive care and 1 high dependency bed - these are under canvas to keep in heat and prevent debris from the detention centre's heating ducts falling on patients (photograph 2);
- could be quickly expanded to 50 bed capacity in an emergency;
- had an operating theatre and resuscitation room (photograph 3); and
- was supported by 45 medical specialists including 2 surgical teams.

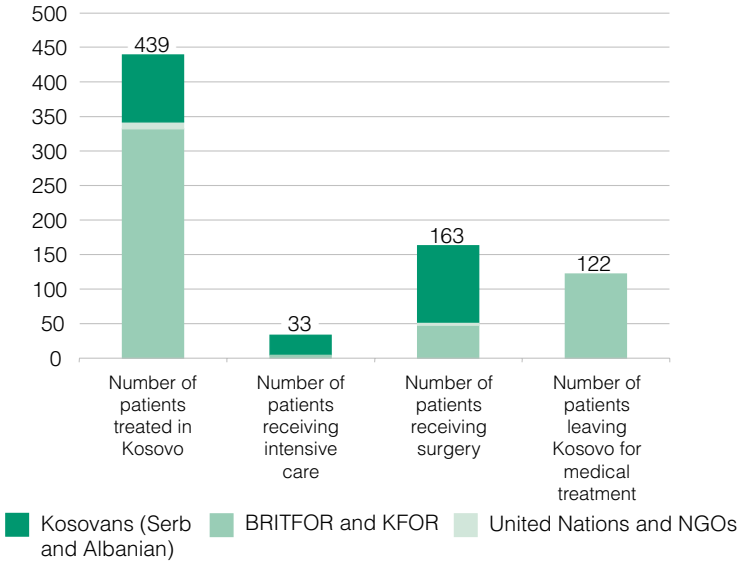
Although the facility was contained within a building, the unreliable electricity and water supplies and poor heating and sewerage meant that standards were broadly similar to a tented field hospital.

1. The hospital entrance

2. A ward

3. The resuscitation room

4. A field ambulance



Source: National Audit Office analysis

4.35 The building at Lipljan was chosen because it was the best infrastructure available at the time. However, it is not appropriate for a long term deployment:

- Lipljan is 10 miles from the main concentration of British troops in Pristina and almost the same distance (by road) from the airport which may be needed to transport casualties out of theatre. These problems are exacerbated with the onset of winter conditions which makes travel by road difficult and prevents air evacuation of casualties.

- The poor state of the local infrastructure meant that the standards of medical care were broadly similar to a tented field hospital. And the standard of accommodation was worse than the living accommodation provided by either the Department's Improved Tented Camps or Temporary Field Accommodation.

4.36 In exploring options for a longer-term hospital facility, the Department drew on recent experience in Bosnia where they had built a hospital in collaboration with the Dutch, Belgians and Canadians and drawn up specifications for any future medical facilities. Local commanders assured the Permanent Joint Headquarters that the proposed facility in Pristina would meet these specifications and let a contract valued at over 1.3 million Deutsche Marks (about £440,000) with a Turkish contractor. In August 1999, following roulement, the new local commanders questioned whether the in-theatre design did in fact meet the Department's specifications. The Department's review team concluded that the design would not support high enough standards of medical care. The Department therefore cancelled the contract, after the contractor had been working on site for about a week. The Department made a payment of £228,000, over half of the contract value, to the contractor in respect of materials provided and work done. Figure 22 summarises the main points.

4.37 The Department have now put in place an interim medical facility in Pristina to support British troops through the winter using a deployable theatre procured for another operation. The theatre was procured at a cost of £300,000 in October 1998 and was delivered in November 1999. It comes unequipped so the field hospital have re-deployed their operating theatre equipment from Lipljan.

Figure 22

Relative standards of medical facilities used or planned in Kosovo

Location	Type of facility and infrastructutre	Date used or planned to be used	Relative standards achievable[1]				
			Accessibility	Protection against poor weather	Hygiene	Type of equipment	Overall
Lipljan	**Field hospital** ■ Field hospital tents erected inside existing building ■ Field hospital equipment ■ Poor standard of infrastructure with unreliable electricity and water supplies, and poor heating and sewerage.	**Used from July to December 1999**	**Acceptable:** 10 miles away from main concentration of British troops	**Acceptable:** Permanent structure but in poor condition	**Acceptable:** Field standards of hygiene	**Acceptable:** Field hospital equipment	**ACCEPTABLE FOR SHORT TERM:** Standards allow emergency medical care, stabilisation of patients prior to repatriation and some outpatients support. Aim is to defer the majority of treatment until casualties reach the UK.
Pristina	**Permanent facility (British)** ■ New construction to convert existing building plus Temporary Field Accommodation units ■ Field hospital equipment ■ Reasonable standard of infrastructure	**Originally planned for use from December 1999, then plans were scrapped**	**Ideal:** Near main concentration of British troops	**Improved:** Permanent and semi-permanent structures	**Improved:** Better standards of hygiene than field hospital but not up to standards in the UK	**Improved:** Field hospital equipment and some peacetime equipment deployed from UK	**IMPROVED FOR SHORT TERM:** If the Department had proceeded with the project, this facility would probably have supported improved emergency medical care but majority of treatment would still be deferred until casualties reach the UK.
Pristina	**Field hospital** ■ Deployable operating theatre plus improved standard of tentage ■ Some field hospital equipment and some permanent equipment ■ Reasonable standard of infrastructure	**In use from December 1999 until a permanent facility can be put in place**	**Ideal:** Near main concentration of British troops	**Improved:** Semi-permanent structures and improved standard of tentage	**Acceptable:** Field standards of hygiene	**Improved:** Field hospital equipment and some peacetime equipment deployed from UK	**IMPROVED FOR SHORT TERM:** Standards more easily support emergency medical care and stabilisation of patients prior to repatriation. Also have some outpatients support. Aim is still to defer majority of treatment until casualties reach the UK.
Not decided - possibly Pristina	**Permanent facility (Multinational)** ■ Type of facility not decided - will probably be based on a new permanent structure with permanent equipment ■ Aim will be to provide the best infrastructure possible in Kosovo	**Currently being considered/planned**	**Adequate:** Location will be adequate for British troops but may not be ideal given that it will also have to support other nations' troops	**Ideal:** If a permanent structure is chosen, weather protection will be ideal	**Ideal:** Facilities will probably include a controlled environment operating theatre to achieve hygiene standards approaching those of the UK	**Ideal:** Potentially, the quality of the infrastructure will allow more capable peacetime equipment to be deployed from the UK	**IDEAL:** Will seek to attain standards approaching those available in the UK. Aim is to provide much more of the care that can be provided in the UK, so that casualties can be returned to work without first being repatriated for surgery and/or recuperation.

Note: 1. Refers to the standard of the physical facilities, not to the capability of the medical staff.

Source: National Audit Office analysis

4.38 In the longer-term, the Department are looking to share responsibility for providing the main medical facility – as in Bosnia (paragraph 4.35). The proportion of troops from other nations deployed as part of the multinational force commanded by the United Kingdom is increasing, and the Department are exploring the deployment of a multinational hospital facility.

Part 5: The performance of major equipments and logistic support

5.1 The Department require a number of major equipments such as armoured vehicles, support helicopters, communications equipment and container handling equipment to carry out their operations. The majority of these equipments were deployed from the United Kingdom and Germany, although some support vehicles were hired in theatre. This Part examines the availability and reliability of equipments, and the operation of the logistic supply chain to support equipments in theatre.

Vehicles and container handling equipment

5.2 During the Kosovo operations the Department deployed some 3,000 vehicles which covered 4 million kilometres each month at the peak of the deployment on roads that are worse than the United Kingdom but better than the roads in Bosnia. Supporting the range of vehicles involved in a task of this scale clearly represents a significant logistic challenge.

Availability of equipments

5.3 Availability of key equipments during operations in Kosovo has, generally, been good. The Department set availability targets for all equipments which are expressed as a proportion of the whole fleet that are fit for use. For example, the availability target for the Challenger 1 tank fleet is that 80 per cent, or 15 of the 18 tanks in theatre, should be available at any time. Units report performance against these targets daily to HQ BRITFOR.

5.4 To assess availability over a longer time period we examined the monthly average availability of eight major equipments - three armoured combat vehicles (known as 'A' vehicles), three utility vehicles (or 'B' vehicles) and two specialised container handling vehicles. The vehicles and their roles in Kosovo are described in Figure 23. These equipments were selected because they cover key battle-winning equipments, utility vehicles that would be expected to have high usage rates, and container handling equipment which is crucial to the functioning of the logistic supply chain. They also cover large and small fleets.

Figure 23 **The eight equipments for which we gathered availability data**

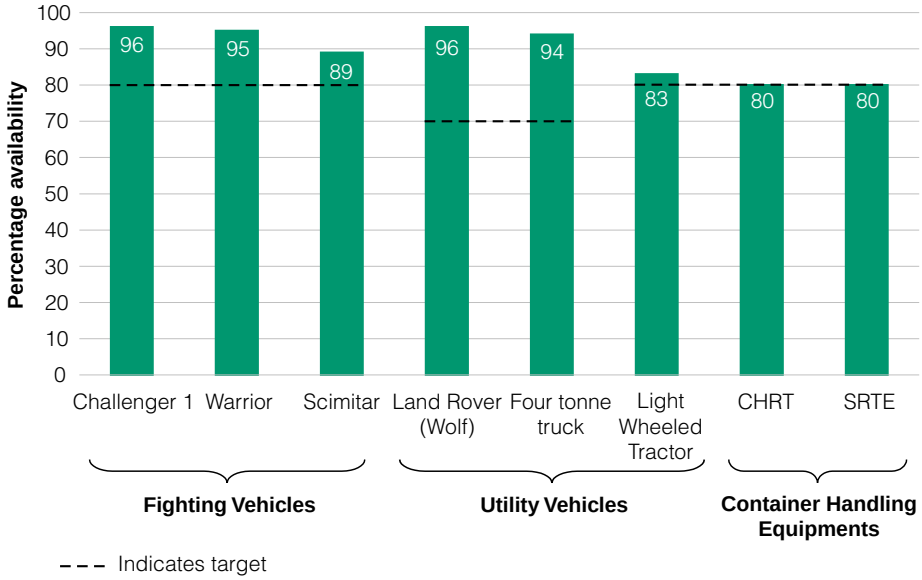
Equipment	Role in Kosovo	Photograph
Challenger 1 Main Battle Tank	Deployed along the Podujevo section of the border with Serbia to deter or counter future Yugoslav/Serbian Army incursions into Kosovo. There were 18 Challenger tanks in theatre during our visit.	
Warrior Armoured Fighting Vehicle (AFV)	Deployed mainly in and around Pristina. Used for armoured patrols and protection of Serb patrimonial sites. Carries a rifle section of 10 infantrymen. Some 65 of these vehicles were deployed in theatre.	
Scimitar (Combat Vehicle Reconnaissance (Tracked)) (CVR(T))	Armoured reconnaissance vehicle used for armoured patrols and information gathering. Over 20 of these vehicles have been deployed in and around Pristina.	
Land Rover "Wolf"	Utility vehicle for troop or light load carrying deployed with every unit in Kosovo. There are a number of different variants for slightly different roles with a total of nearly 700 in theatre.	
Four Tonne Truck	Utility truck used for load carrying, although not containers. Used in Kosovo by almost every unit, with over 350 in theatre.	
Light Wheeled Tractor	A forklift type vehicle for moving palletised loads, such as ammunition, from vehicles into storage. Over 20 vehicles have been deployed in Kosovo.	
Simple Rail Transfer Equipment (SRTE)	Equipment for transferring containers from rail flatbeds onto DROPS trucks for road movement. Two SRTEs were deployed in Pristina.	
Container Handling Rough Terrain (CHRT)	Vehicles used to move containers from rail flatbeds to road transporters or within depots and stores. Four CHRTs were deployed to theatre.	

5.5 Figure 24 shows the average availability of all eight fleets from May to October 1999 against their targets. All equipments achieved their targets – 80 per cent availability for all vehicle fleets save for the Land Rover and four tonne truck fleets where the target was 70 per cent.

Figure 24

Average availability for eight vehicle fleets from May to October 1999

All eight vehicle fleets in Kosovo met or exceeded their availability targets.



Source: National Audit Office analysis of the Department's data

5.6 We looked in more detail at the two container handling equipments where availability achieved just met the target (Figure 25). The average figures mask significant variations between the average availability in each month. The best performance was in June 1999 when CHRT achieved average availability of 94 per cent and SRTE 87 per cent. Availability has since reduced - in October CHRT availability was 66 per cent, and SRTE 65 per cent, both below the 80 per cent target. However, the variations in availability are exaggerated for the container handling equipments because they are small fleets – there are four CHRTs and two SRTEs in theatre - and the breakdown of an individual equipment has a major impact on fleet availability.

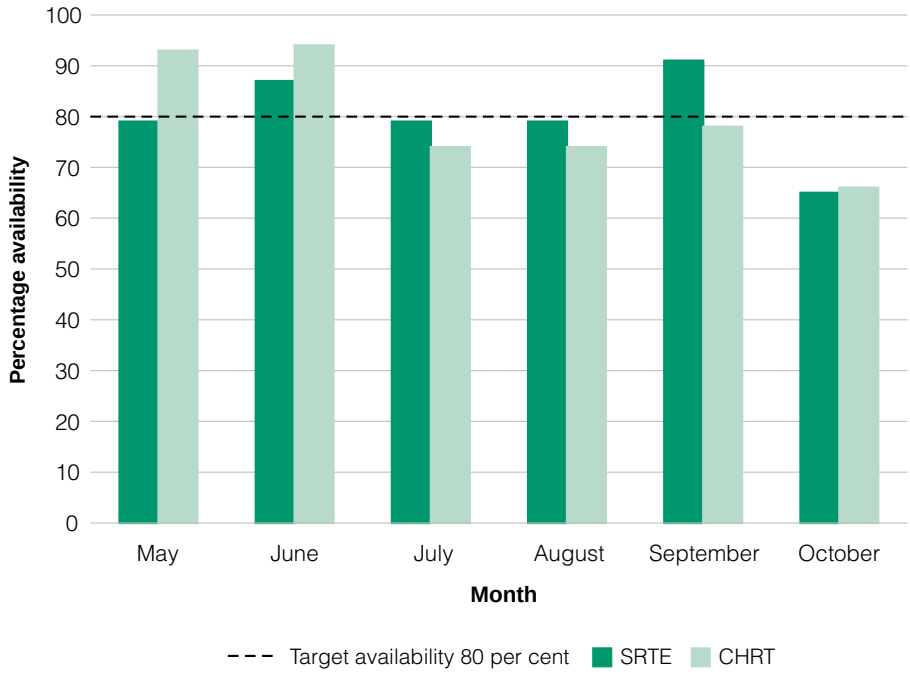
5.7 These small fleets of container-handling equipments are, nevertheless, important elements of the inventory, given that container-based transport is increasingly common. While the Department operate maintenance courses for such equipments, logistics staff told us that there were a number of related problems:

- because the equipments were rare, and rarely used at home bases, few staff were used to dealing with their maintenance;
- sometimes the equipments had to be used in circumstances not fully reflected in the design of the equipment, so leading to extra stress; and
- manufacturer support for these equipments was not as developed as for the larger and more modern vehicle fleets.

Figure 25

Monthly availability for Simple Rail Transfer Equipment and Container Handling Rough Terrain from May to October 1999

The two container handling equipments met their target in two months out of six.



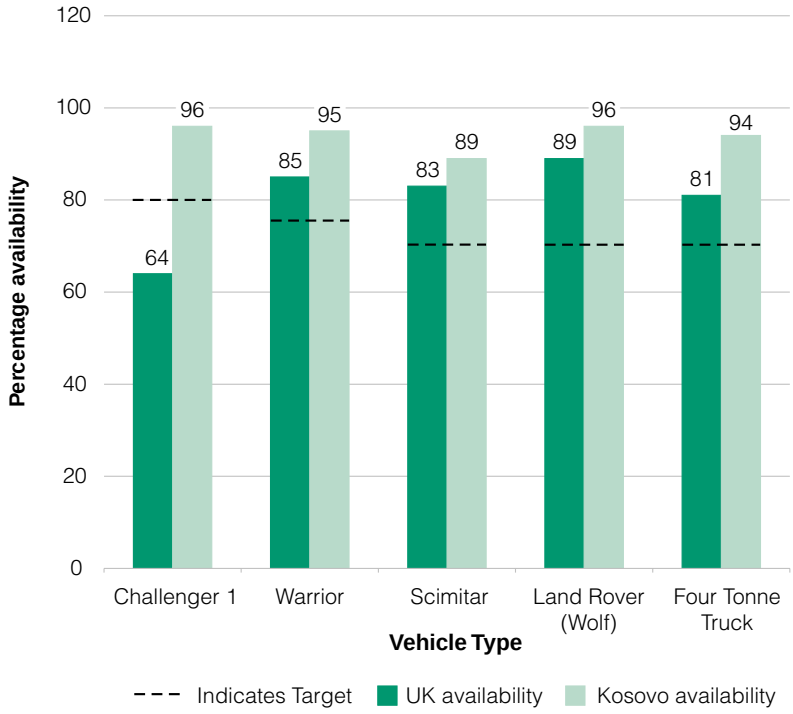
Source: National Audit Office analysis of the Department's data

5.8 Given the high levels of availability of equipments in theatre, we looked to see if there were adverse affects on equipment fleets in the United Kingdom. We found that availability in the United Kingdom, although generally some 5 to 10 percentage points below the availability reported in Kosovo, was generally in line with United Kingdom targets. The exception was Challenger 1, for which there was a 32 percentage point difference. The low availability of Challenger 1 reflects its substitution by Challenger 2, now ongoing. Figure 26 shows the availability in the United Kingdom of five equipments at the end of July 1999 – after the main deployment of land forces into Kosovo.

Figure 26

Availability of five equipments in the United Kingdom and Kosovo as at the end of July 1999

Availability of equipment in the United Kingdom was generally good despite the deployment in Kosovo, but was poor for Challenger 1.



Source: Ministry of Defence

5.9 Availability is the prime concern of a field commander, but the main cost driver in delivering availability is reliability. High availability of equipment does not necessarily mean that equipment is reliable – and unreliable equipment could be repaired quickly by committing extra resources to spares holdings and maintenance staffing. Measuring reliability requires specific data on:

- usage – distance travelled and usage profile, for example road conditions and rounds fired by artillery pieces;
- failure rates – frequency and types of failure;
- the manpower and facilities committed to the repair and maintenance of equipments; and
- spares provision and consumption.

5.10 We asked the Department for data on the reliability of equipments, including our sample of eight vehicles, in Kosovo. The Department do not, however, collect sufficient data to measure reliability with precision nor do they collate data by specific theatre. Their broad assessments on the overall reliability of equipments in Kosovo was that reliability has been similar to that experienced on other operations and on exercises. They considered that the high availability achieved for equipments has resulted from a number of factors:

- **More active routine management and servicing of equipments**. Equipment support managers for both Warrior and Scimitar fleets considered that these were the key factors in high availability.

- **High stocks of spares and availability of manpower resources has ensured that equipments are fixed rapidly**. The Department told us that some spares packages could not readily be broken down and hence there was a minimum level of spares support irrespective of the number of equipments deployed. This meant, for example, that spares holdings for the High Velocity Missile systems were sufficient to support 36 systems whereas only 13 were deployed - three times the normal number of spares were therefore available.

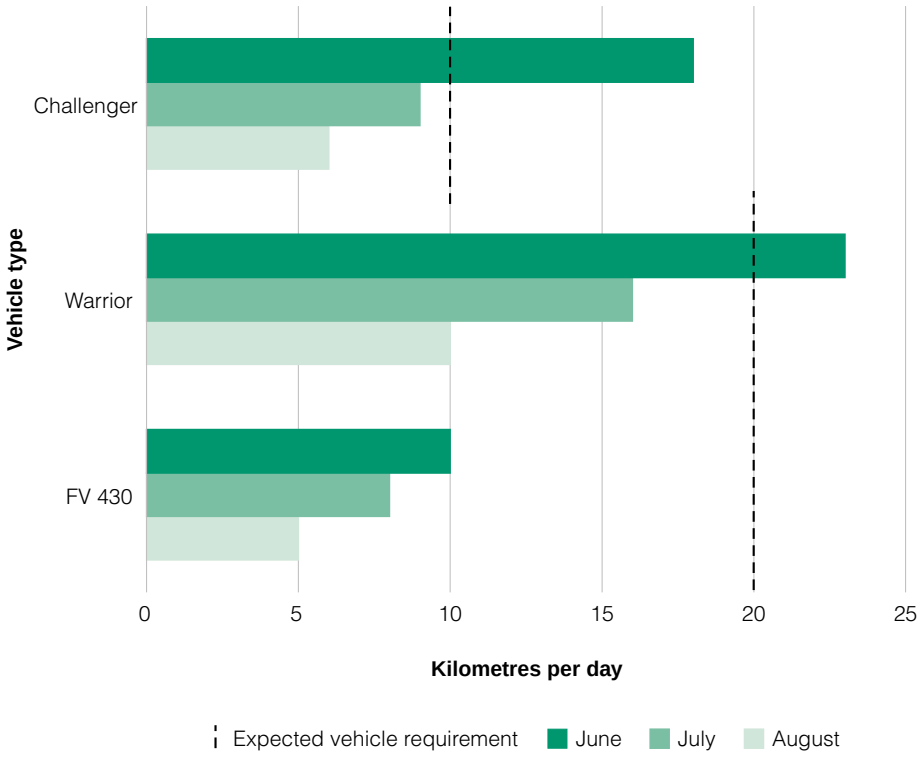
- **Lower usage levels than anticipated**. The expected daily usage rates for Challenger, Warrior and Fighting Vehicle 430 (FV 430) were 10, 20 and 8 kilometres respectively. Units were required to maintain resources – manpower, spares, and repair and maintenance equipments – to ensure that vehicle operations could be sustained for these specified distances. Figure 27 shows that, for the vehicles sampled, vehicle usage has been, on average, lower than that expected. Availability has therefore benefited from the generous level of spares and manpower support relative to vehicle usage.

5.11 Units are required to complete equipment failure reports but the system is paper based and the Department acknowledge that there is considerable variation in the quality of reports and that many equipment failures are not reported. The Department have data on the quantity of spares supplied from the United Kingdom but do not know how many have actually been used, so they have no accurate view of the rate of consumption of components. The limited departmental data contrasts markedly with the performance data that industry collect and which they rely on for ensuring effective management of equipment fleets and monitoring through life costs.

Actual usage against the expected requirements for three vehicle fleets in Kosovo

Figure 27

Two equipments exceeded their expected usage in June 1999 but since then usage has been substantially less than expected.



Source: Ministry of Defence

5.12 The lack of firm data on reliability measurement hampers the Department in their logistic support operations because it reduces their ability to forecast the level of spares and manpower resources that are required to produce required availability on operations. This can lead either to inadequate resourcing resulting in failure to achieve availability targets, or to excessive scaling of resources which is inefficient and may impact adversely on logistic support in other theatres.

5.13 The maintenance of equipment is conducted at two levels in Kosovo:

- first line – routine maintenance, such as replenishing engine oil, changing vehicle tyres and batteries, and simple repairs. These are carried out by vehicle crews with support from Royal Electrical and Mechanical Engineers at front line units; and

- second line – more complicated maintenance and repair tasks such as replacing and servicing Challenger power packs, and bodywork repairs following minor accidents. This is carried out by personnel from the Royal Electrical and Mechanical Engineers at a maintenance workshop in Obilic.

Spares awaiting return to the United Kingdom

More complex maintenance is undertaken in the United Kingdom.

5.14 We visited Obilic to see what facilities were available, what level of performance had been achieved and how the facilities and associated resources were managed. The site occupied was an engineering facility, the main activity of which was to support the two local power stations. The Royal Electrical and Mechanical Engineers occupied part of the site, which provided them with suitable workshop and office facilities, while the former business was being re-established in the remainder of the facility – under temporary Royal Electrical and Mechanical Engineer guidance.

REME Engineer repairing a powerpack

5.15 The Royal Electrical and Mechanical Engineers had brought with them a variety of spares and equipment, to add to the local engineering facilities. Most of their equipment had been successfully deployed, although we noted that some sensitive and complex equipment – such as Challenger thermal imaging and 'DIANA' electronic test equipment – had not functioned well since being brought in when there had been a change-over of engineering staff, some six weeks previously. We were told that such equipment was notoriously susceptible to failure when moved, and that engineering staff had debated retaining the outgoing regiment's test equipment – but that they had decided to stick to their normal practice of travelling with their own equipment. The rest of their equipment was functioning well, however, and the premises provided a good base for both engineering and staff facilities.

5.16 We examined performance indicators for maintenance work at Obilic. One of the main indicators was of turnaround time against targets agreed with front-line customers. Since the battalion arrived, 155 out of 184 jobs (84 percent) had been completed within the agreed timetable, and of the remaining jobs the majority were awaiting spares. Other management information tracked the backlog of work outstanding, which had fallen to some 1300 hours

from 1550 hours at the start of the period – equivalent to two or three days work if spares were available. These and other management statistics, such as the number of repairs of major assemblies (powerpack, gearboxes and the like) for the most significant vehicle fleets were collated not only for local management purposes, but charted and displayed in the main reception area to give a view of the performance of the site as a whole. At the time of our visit, management were analysing recent equipment failure rates to determine the scope for sending back unneeded spares.

Vehicles under warranty

5.17 When reporting on Bosnia, the Committee of Public Accounts noted that the large number of Land Rover variants deployed in theatre complicated logistic support (Appendix 1). Since then the Department have accepted into service a new fleet of Land Rovers, the 'Wolf' variant. The vast majority of Land Rovers deployed in Kosovo are of this type, the principal exception to this being the armoured 'Snatch' Land Rover.

5.18 The new 'Wolf' Land Rovers are still under warranty, which requires second line maintenance and repair to be undertaken by Land Rover agents. This was not possible in Kosovo until November 1999, since the Land Rover dealer in Macedonia did not have the facilities to handle base repair for a fleet of some 700 vehicles. Instead the Royal Electrical and Mechanical Engineers at Obilic contacted Land Rover in the United Kingdom for authorisation to undertake the work on their behalf, with the Department recovering the cost from Land Rover. Despite complicating the repair process, the engineers in Kosovo had not experienced any serious problems – availability was 96 per cent (Figure 24 page 58). In November 1999, the Department contracted for the repair of Wolf Land Rovers under warranty in theatre.

Hired vehicles

5.19 The Department decided not to deploy any 'white vehicles' (ordinary cars and minibuses) given the continuing need for the vehicles in the United Kingdom, the road conditions in Kosovo, and the difficulties in supporting such fleets in theatre. During deployment, however, units raised requirements for white vehicles for a range of tasks – for headquarters staff, for transporting troops between bases, and for visitors. At the time of our visit, the Department had some 50 cars, four wheel drive vehicles and minibuses on hire from the Macedonian branch of an international rental company and two local Macedonian companies. The

Department estimated that the cost of self-drive white vehicle hire had been some £340,000 in total. We examined the Department's arrangements for providing self-drive white vehicles and reviewed a sample of requirements raised:

- Many of the requirements raised by units for white vehicles did not clearly explain why Land Rovers and other green vehicles could not carry out the task.

- At the time of our visit, headquarters staff were reviewing white vehicle usage and formed two white vehicle 'pools' – in Skopje and Pristina. They expected to reduce the number of white vehicles from 50 to less than 20 vehicles. As part of the review, civilian staff were considering whether long term hire or the local purchase of vehicles by the Department would provide better value for at least 10 vehicles.

- Civilian staff had negotiated charge rates for extended hire periods, although there were no discounts to reflect overall volume of business.

- Units requested vehicles for short periods, without identifying their long term requirements, and civilian staff were unable to take an overview of vehicle hire such that extended hire period discounts could be fully exploited.

5.20 In addition to hiring self-drive white vehicles, the Department have also hired coaches with drivers to transport troops from their unit locations to the airports at Pristina and Skopje and to the port at Thessaloniki in Greece. There are no suitable coaches available for hire in Kosovo, so coaches are hired in Macedonia even when they are needed for transporting troops between locations in Kosovo. The Department spent over £410,000 on coach hire for the six month period April to September 1999.

Logistic support

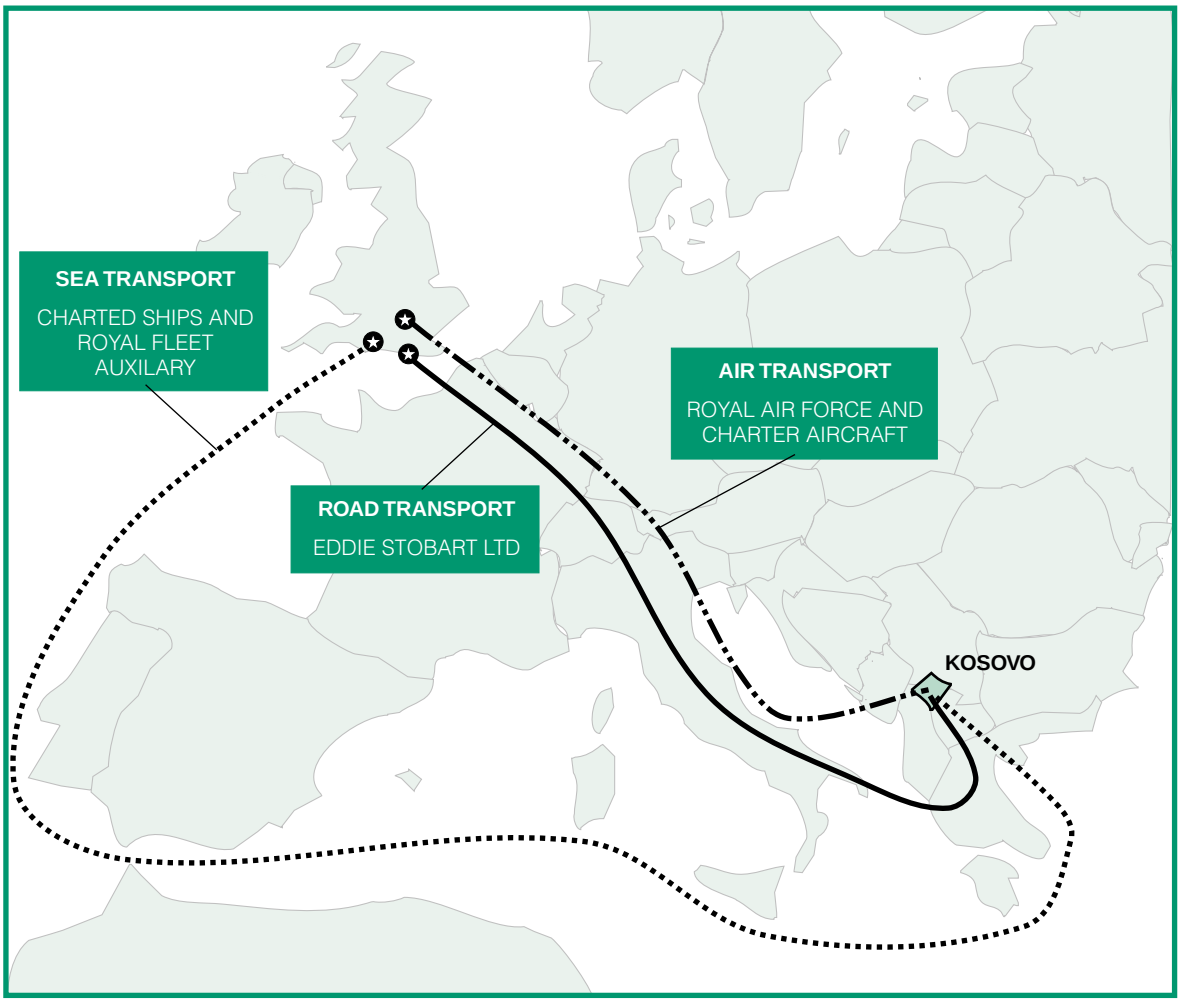
5.21 Effective logistic support for equipment on deployment is critical to mission success because it can determine the availability of key assets such as armoured vehicles and utility vehicles, without which military operations cannot be conducted effectively.

The supply chain

5.22 When undertaking operational deployments, the Department determine an initial level of spares needed for the equipments deployed, based on their general knowledge of the operation of these equipments, and any knowledge of the environment and likely use. During deployment units consume these stocks and need to be re-supplied through the logistic support chain. The precise method of support, in terms of who supplies the spares, the route by which they are delivered to Kosovo, the speed of delivery, and who carries out the maintenance work in theatre will vary from equipment to equipment. There are three main supply chains from the United Kingdom to Kosovo – by air, overland or by sea - and these are shown in Figure 28.

Figure 28 **The three supply routes from the United Kingdom to Kosovo**

There are three main supply routes from the United Kingdom to Kosovo - by air, overland, or by sea.



Source: National Audit Office

5.23 The choice of route is influenced by the priority attached to the request and the cost of transport. A standard coding system is employed, where '01' demands are for items to be delivered by the fastest possible means, '02' is used for items required within 7.5 days (later revised to 8.5 days), and '03' and other codes are for less urgent items. High priority demands must be justified in light of, for example, deficits against equipment availability targets. The quickest and costliest route, used for high priority supplies to support mission critical equipments, is by air direct from the United Kingdom (or Germany) to airports in Pristina or Skopje. Using this route will, typically, ensure that the requested item is in theatre in less than 48 hours. These tasks are either flown by the Royal Air Force transport fleet or by charter aircraft.

5.24 Re-supply overland is lower cost than transport by air, but usually takes four to five days. The Department have contracted out operation of the overland supply route to Eddie Stobart Ltd, a commercial freight haulage firm. Precise delivery times will vary because of uncertainties en-route - for example it can take road freight up to three days simply to cross the border into Kosovo. The slowest route used for low priority and bulk transport is by sea from the military port at Marchwood in the United Kingdom to the Greek port of Thessaloniki and then transfer into Macedonia or Kosovo by rail or road. The supply time by sea is nine days by ship plus road transport times in the United Kingdom and in Greece, Macedonia and Kosovo.

5.25 Once in theatre the Services operate a hub distribution system whereby deliveries are made to a central depot – initially in Skopje but following deployment into Kosovo the Theatre Distribution Centre in Pristina – and units who have requested the spares collect them from the central depots. In addition there are separate supply chains for in theatre repair and maintenance, for the Royal Air Force supporting Pristina airport, and medical stores.

Performance of logistics support

5.26 Logistics support in Kosovo is handled principally through the Theatre Distribution Centre in Pristina. Units demand spares and consumables as they require them, or to replenish their limited stocks, from the Theatre Distribution Centre. If the item is not held there, then a demand is placed on the depot back in the United Kingdom using GLOBAL, the Army's stores ordering IT system. At the time of our visit, the Theatre Distribution Centre held some 4,700 different items, with a total value of some £2.9 million. The single largest category was spares for fighting vehicles and other operationally critical equipments, which came to some

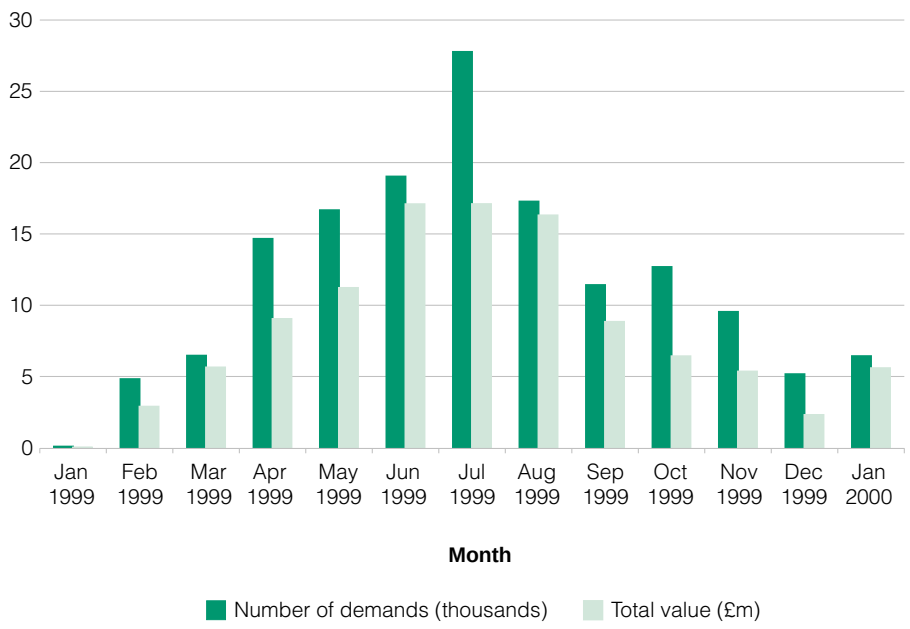
£2.6 million, with a further £0.2 million of Land Rover and other standard vehicle spares. In addition, the Royal Air Force held £2 million of spares for Puma helicopters and other spares to support operations at Pristina airport.

5.27 The total cost of spares and consumables sent to Kosovo up to the end of January 2000 was some £108 million. The value of material peaked over the summer, with £50 million between June and August (Figure 29). Since May the Department have returned some £14 million of stores to the United Kingdom.

Figure 29

The volume and value of spares and consumables sent to Kosovo

The demand for spares and consumables reached a peak in July 1999, with over 27,000 orders worth some £17 million despatched to Kosovo.



Source: National Audit Office analysis of the Department's data

5.28 There are two key aspects to logistics performance in theatre:

- the availability of items held in local depots; and
- the time it takes to supply items from the United Kingdom when items are not available in local depots – the pipeline time.

5.29 At the time of our visit, the Theatre Distribution Centre, the main depot, were achieving 81 per cent availability for scaled items (those items which the unit were instructed to hold to meet the Department's original estimates of likely

demand patterns) against a target of 80 per cent. They were not, however, meeting their target for overall availability, achieving 25 per cent against a target of 40 per cent. Since our visit, the Department told us that overall availability had on occasions exceeded 50 per cent but in February 2000 was down to 34 per cent.

5.30 At the workshop in Obilic, the Royal Electrical and Mechanical Engineers met their availability targets for scaled items (80 per cent) in the first two months of the deployment but not in the five months May to September. They met or exceeded their overall target (40 per cent) in all but the first month (Figure 30).

Figure 30

Stores availability for the Royal Electrical and Mechanical Engineers unit in Obilic

The Royal Electrical and Mechanical Engineers were able to meet their target for overall availability - 40 per cent - in every month except March. However, they only met their target for scaled items in the first two months of the deployment.

Source: Ministry of Defence

5.31 The bulk of items requested from theatre, some 96 per cent, are supplied under '02', '03' and '04' priority requests, the target times for which were 7.5 days (later 8.5 days), 15 days and 28 days respectively. These times are for delivery of the requested item to the depot in Kosovo rather than to the unit requesting an item, and local transport in theatre can take three days. The Department's logistic IT systems do not yet measure performance against target nor the time taken between units requesting items and the delivery of the items to the unit – a comprehensive measure of overall supply time. We therefore looked at post-operational reports to see what front line units thought of supply chain performance.

5.32 In their post-operational reports 4th Armoured Brigade stated that the average pipeline times achieved were 14 days (though their reporting would be more meaningful if broken down by priority of request) and 101 Logistics Brigade reported that significant quantities of spares did not meet pipeline times. In one instance, replacement track for Scimitars took 25 days as opposed to the planned 8.5 days. Military staff told us that the extended pipeline times caused them no operational problems, in view of the high levels of equipment availability. Indeed, it would cost money to improve pipeline times, without any direct military benefit. We noted from our visit, however, that the delays caused problems for depot staff in scheduling work, and in chasing up outstanding spares, and that the standard priority categories, and attendant time targets, mapped poorly onto the available choices of supply route to Kosovo. In addition, it is possible that persistent failure to meet pipeline times will provide a perverse incentive for demanders to increase the apparent urgency of their request.

5.33 The reasons for delays do not relate solely to transit problems. We analysed the overall time it took to process demands from Kosovo by the Department's logistic staff in the United Kingdom – on which data were available - covering both depot processing time and the reprovisioning of items if the depot had insufficient stock. Figure 31 overleaf shows that 38 per cent of all orders were despatched to theatre within the specified target time, but 62 per cent were delayed – a factor in preventing the Department from meeting targets for getting material to Kosovo.

5.34 We looked in more detail at the reasons for overall delays in the logistics organisation in the United Kingdom (Figure 32 overleaf). Reprovisioning of stock accounted for just over half of the time taken to process demands from Kosovo, with depot processing making up the balance. One reason for the delay in depot processing was that the Department did not have an effective IT-based warehouse management system until November 1999. In monitoring depot performance, the Department measure the time taken to process orders only when the depot holds stock. Hence if items have to be reprovisioned, the time taken to process an order begins only when the reprovisioned stock is delivered to the depot. While this might be useful for monitoring depot performance, it is an incomplete measure of the performance of the supply chain.

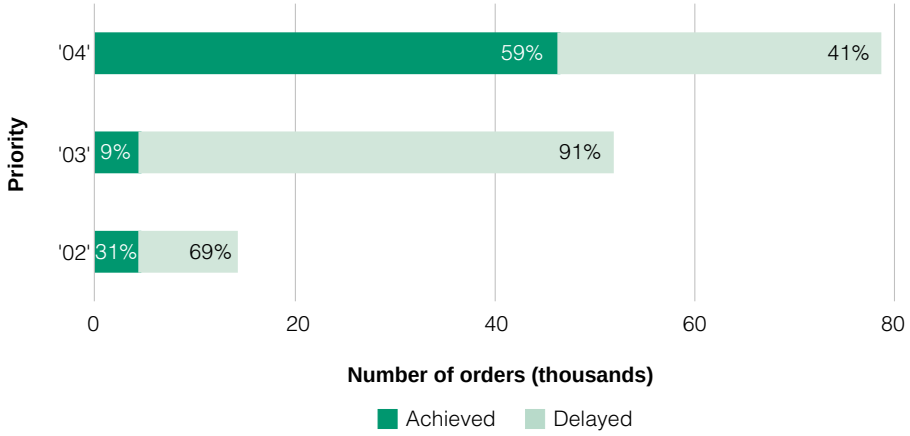
Containerisation

5.35 Since their initial deployment into Bosnia the Department have greatly increased their use of ISO standard containers for transporting materiel. While this practice has generally been a success, there were insufficient numbers of specialist container handling equipments in the Kosovo theatre, making them operationally critical and second only to the Challenger 1 as a repair priority. Some

The number of orders despatched from the depot within target times

Figure 31

The Department did not meet their targets for despatching orders irrespective of the priority of the order.

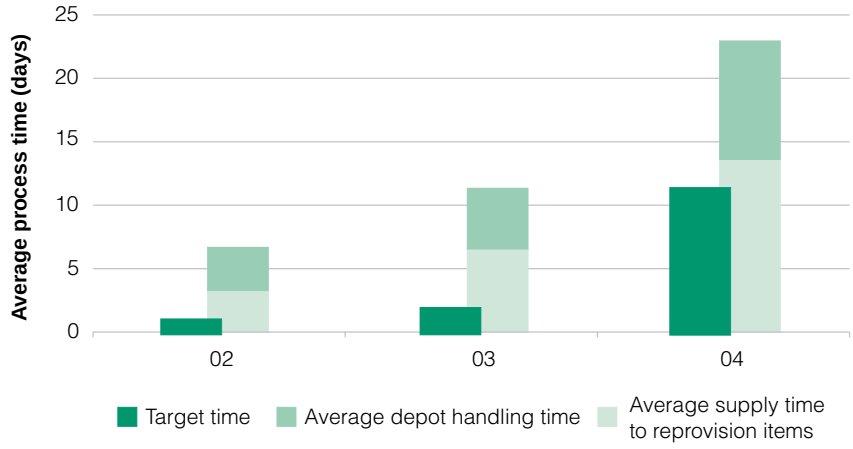


Source: National Audit Office analysis of the Department's data

The average time taken to process delayed orders

Figure 32

For those orders which missed the target time for despatch to theatre, there were delays in both reprovisioning and depot processing.



Source: National Audit Office analysis of the Department's data

units did not deploy with sufficient mechanical handling equipment, and while one unit deployed with their standard forklift (Hyster), another unit raised requirements in-theatre.

5.36 In addition to the short supply of mechanical handling equipment, there were a limited number of Demountable Rack Offloading and Pickup System (DROPS) equipments in theatre. DROPS vehicles are used to transport heavy loads mounted on special flat racks which are loaded onto the vehicle using an integral

hydraulic arm. The system was designed primarily for transporting ammunition pallets, and ISO containers cannot be carried without modification to the flat racks. While there are some modified flat racks in theatre, the containers have to be removed from the racks on reaching their destination so that the racks can be reused. This requires mechanical handling equipment which is in short supply. The Department told us that they are exploring the possibility of forming a multinational mechanical handling unit with other nations' forces. The Department are also modifying most of the remaining ammunition flat racks so that they can carry containers.

DROPS vehicle with a normal flat rack load. Inset: DROPS lifting a fuel tank.

5.37 From our analysis of the Department's post operations reports, we noted that a number of units had commented on the limited capability as regards container handling equipment. For example 1 Para used containers for most of their stores but DROPS vehicles were often not available resulting in considerable delays in moving stores and equipments.

Communication equipments

5.38 Effective military communications are essential at all levels – strategic, operational and tactical. At the strategic level communications were required for all force elements – sea, land and air and with NATO. The Department considered that strategic communications were effective but they were stretched and had to operate at full capacity as a result of resource constraints in the past.

5.39 Given the United Kingdom's lead in HQARRC, there was a significant requirement for operational communications and 1st Signals Brigade deployed with the headquarters. Ptarmigan was introduced during the Cold War and provides secure voice communications of a good quality, but it does not have sufficient capacity for the data communications that are an essential part of modern military operations. At times during the move into Kosovo communications broke down for short periods. To provide better mobility, the Department approved a number of Urgent Operational Requirements for the purchase of commercial satellite telephones.

5.40 At the tactical level communications using the ageing Clansman system were insecure and the Serbs, KLA and the media regularly monitored local communications. Clansman is to be replaced by Bowman but this project has slipped by 75 months from 1995 to 2002 – as reported in our Major Projects Report 1998. Unit commanders used mobile telephones to provide additional communications but again these were not secure.

5.41 On logistics support, we noted that more IT was deployed than in Bosnia, and that investment in dedicated satellite links for the main logistics systems had improved the quality and quantity of logistics information flows between Kosovo and the United Kingdom. Within Kosovo GLOBAL and DUSAS, respectively the Army and Royal Air Force stores ordering systems, enabled quartermasters directly to place demands on the depots in the United Kingdom, removing the need for manual demand processing at the depot. DUSAS additionally gives users visibility of stock held by other units, so reducing stock having to be ordered from the main depot and making better utilisation of stocks at units.

5.42 We examined the Department's post operational reports on communications. All highlighted the problems posed by insufficient and out-dated communications equipments:

- Headquarters 3 Division – in command of the three United Kingdom brigades during the initial deployment into Kosovo – commented that the Department had not learned lessons from Bosnia. The need for secure radio could have been anticipated and commercially available systems procured during the build up in Macedonia. Indeed staff work had been undertaken to replace military communications but this was not implemented after entry into Kosovo as the Department considered that it was no longer relevant – despite the lack of secure communications and the widespread use of electronic scanners by many groups within the Balkans. The need to respond quickly to events was incompatible with use of cumbersome paper based codes.

- 4th Armoured Brigade pointed to the lack of communications systems and the need for secure voice and data communications back to the United Kingdom. At times the only functioning communications were civilian bearer systems and the brigade had to compete with others for their use. During heightened media interest, it was sometimes impossible to get 'on air'.

- 5th Airborne Brigade highlighted the lack of secure real time communications. 1 Para, part of the Brigade, reported that many transmissions were made without any security and up to 35 per cent of Clansman radios required repair at any one time, many having to be sent back to the United Kingdom.

5.43 When undertaking peacekeeping duties in Kosovo, soldiers have to be able to communicate with civil authorities and the local population, as well as with other military units. Civilian staff in theatre who are not provided with military communications equipment use civilian communications to communicate between their offices in Skopje and Pristina, with local contractors, and with Permanent Joint Headquarters in the United Kingdom. The Department have used mobile telephones and landlines extensively for these tasks, as well as for general military administration and for data communications with some of their IT systems. We therefore examined the Department's management of civil communications:

- There has been a high demand for mobile telephones and some 150 telephones were in use but the Department did not seek a bulk order. Most telephones are Macedonian and have been bought on individual 12 month contracts. All calls made within Kosovo are therefore charged as international roaming calls. In September, the Department conducted a review of their communications and reduced the number of mobile telephones in use in theatre from 150 to less than 90. The reliability of the mobile telephone network in theatre, especially in Kosovo, has been poor. Handsets and "SIM cards" (the card which is inserted into a handset to enable it to connect to a particular network) were difficult to obtain.

- Landlines are operated in Macedonia by the national public telephone company and in Kosovo by the local branch of the Serbian public telephone company. The poor reliability of Kosovo infrastructure means that civil communications are frequently disrupted. The Department have used some 200 telephone lines in Kosovo and another 100 in Macedonia. They reduced their requirement to about 100 lines in Kosovo and less than 40 lines in Macedonia as part of their recent communications review.

Part 6: Control of assets, stores and cash

6.1 This Part examines the Department's financial management in theatre and their stewardship of assets. It reviews the Department's arrangements for keeping track of assets, for controlling and safeguarding stores, and for controlling local payments and cash.

Effectiveness of the Department's asset tracking systems

6.2 When reporting on previous operations in the Gulf and Bosnia, we highlighted weaknesses in the Department's ability to track assets. On Bosnia the Committee of Public Accounts concluded that keeping track of high-value and operationally important equipment again proved to be a problem and that the Department's systems were unsuitable to cope with the operational conditions. The Department assured the Committee that they would introduce a single system for tracking all key equipments (the Theatre Equipment Database Yugoslavia project – TEDY) and that their intention was to provide complete visibility of spares and assets both in units holding stores and in transit. We therefore examined how well the Department's asset tracking systems were working for the Kosovo operation.

6.3 Asset tracking involves the recording of information about the movements and status in theatre of equipment and other assets. An asset tracking system provides a register of items, together with other pertinent information such as an item's location, status, condition and owner. The information can be used to promote stewardship, by increasing control over assets and preventing them from being mislaid. But information can also feed into the operational planning process. For example, information about equipment status and activity levels can be used to model the requirements for spares, allowing supply chain managers to predict which parts will be needed, when and where. This both improves the performance of the supply chain, in terms of speed and accuracy of delivery, and allows lower levels of stockholding, reducing costs. The value of improved asset tracking is demonstrated by experience in Bosnia when, following initial implementation of the Committee of Public Accounts' recommendations on asset tracking, the Department recovered £75 million from the United Nations for the United Kingdom contribution to Bosnia peace-keeping activities.

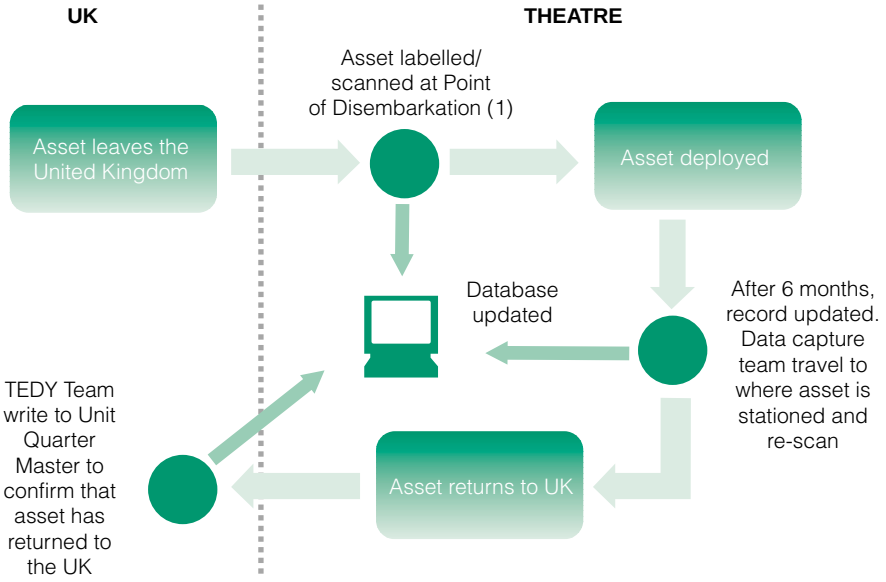
6.4 TEDY has been operational since 1996 and forms part of a wider system - the Theatre Information and General Equipment Register (TIGER). TEDY-TIGER is designed to register 'Key Assets', defined as all complete equipments or materiel

with a value of over £2,500 and other mission critical items. In the Balkans, the system is run by a team of 31 who cover equipments deployed for operations in both Bosnia and Kosovo. The team are responsible for fixing barcodes to equipment and capturing data as the asset enters theatre and then verifying this record at least once every six months (Figure 33) before booking the equipment out when it is removed from action.

How the Theatre Equipment Database Yugoslavia works

Figure 33

Data are captured for equipments deployed in theatre at a number of points. The Department plan to update records at least every six months.



Source: National Audit Office

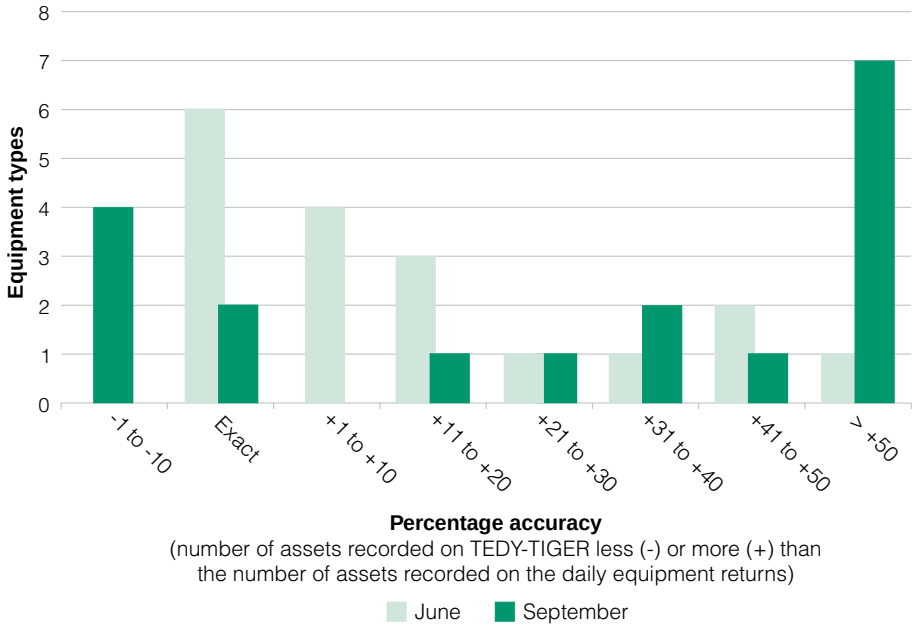
(1) The point of disembarkation may be the Greek port of Thessaloniki

6.5 The TEDY-TIGER database has improved the Department's ability to track assets, but there are still some problems with the information captured. The Department expect the TEDY-TIGER database to be compatible with the daily equipment availability paper returns completed by units - although such returns do not cover all items on the TEDY-TIGER database. We therefore compared TEDY-TIGER records for 18 equipments with daily equipment availability returns submitted by units in June and September 1999 (Figure 34 overleaf). Overall, we found that the TEDY-TIGER database tended to overstate the number of assets in theatre and that the database has become less accurate over time.

Figure 34

Accuracy of TEDY-TIGER database compared with the daily equipment availability returns for 18 equipments, June and September

Between June and September the TEDY-TIGER database became significantly less accurate.



Source: National Audit Office analysis

6.6 Inaccuracies in the database arise in a number of ways:

- the use of a dedicated team to capture data improves the operation of the mechanics of the system, but means that there are extended periods, between data updates, during which equipment may be moved without a corresponding change to the database;
- bar coding of equipments is via a paper label, which can be torn off, or painted over, leading to potential double-counting at the next inspection;
- it is possible for the team to miss out or double-count equipments when making their inspections, particularly for large fleets, or when the fleet is partly operational at the time of inspection; and
- assets leaving theatre have proved more difficult to capture than those entering, and units who have returned to their base following the end of their tour must validate the TEDY database records to ensure all equipments have been "booked out".

6.7 The Department recognise the limitations of their existing systems and are implementing a new system. Project DRUMM (Delivering the Requirement for Unit Materiel Management) is expected to provide better asset tracking and management information. As well as aiming to integrate a number of IT systems, the Department intend that data capture will be carried out by units themselves – electronic daily equipment availability returns should therefore supply some of the data required. The ultimate goal is to provide 'total asset visibility' (defined by the Department as asset location, ownership and condition reporting) to field commanders and planners.

Effectiveness of the Department's stewardship procedures for stores

6.8 When undertaking operational deployments, the Department require normal accounting, contracting and financial principles to be followed. The general procedures for financial scrutiny, ensuring propriety and securing value for money and economy continue to apply. As regards the control of assets and stores, it is important that proper records are maintained and that stores are accounted for correctly when moved from one location to another. Regular stocktaking should also be carried out. Figure 35 overleaf shows the main stock controls and why they should be undertaken. We examined the Department's controls over a range of stores including ammunition, general stores and medical stores.

Spares and general stores

6.9 We carried out checks at a number of units holding equipment spares and general stores, as well as the main depot in Pristina. We found that:

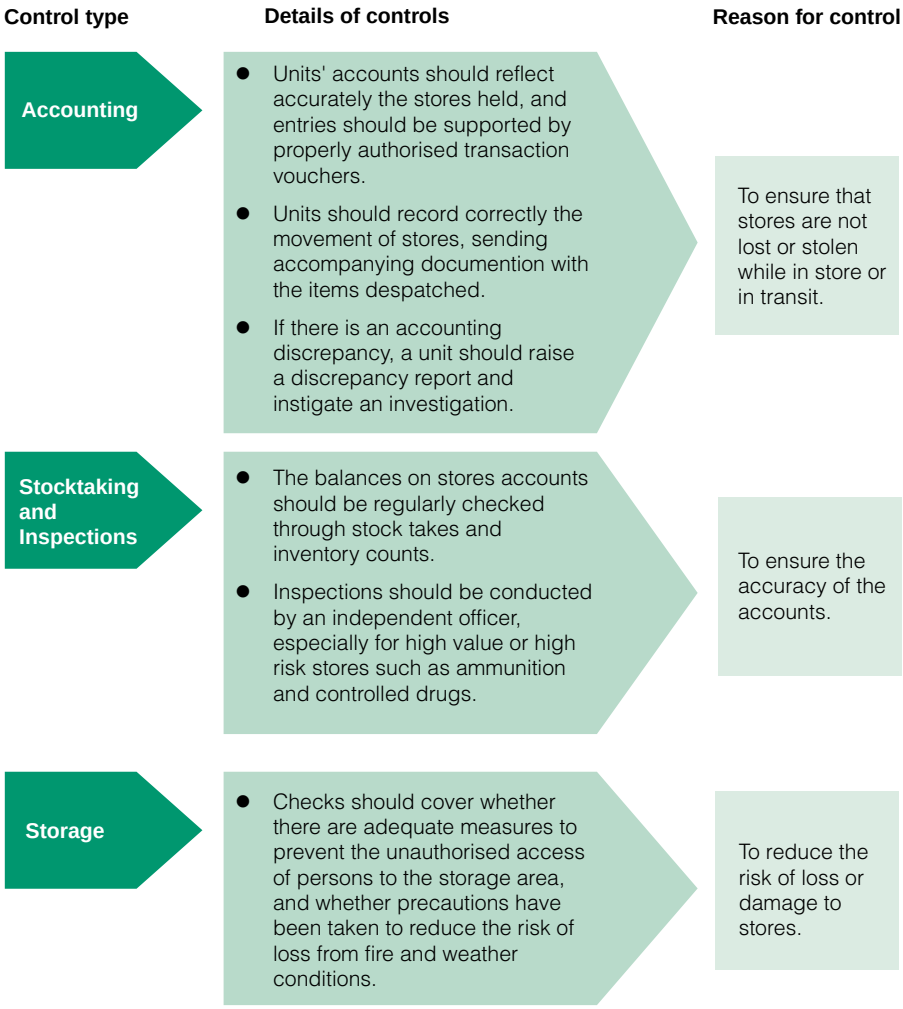
- there was clear accounting and a good standard of record keeping;
- where stores personnel identified discrepancies, appropriate follow-up action was being taken;
- there were regular inventory counts, with plans in place to cover all stock;
- there were appropriate managerial checks and a variety of inspections by independent officers (including technical inspections and fire inspections); and
- stores were generally well-organised in acceptable storage conditions.

Officers from 1 (UK) Logistics Regiment carry out a stock check

Key stock controls

Figure 35

Key stock controls include accounting controls, stocktaking and inspections, and security of physical storage.



Note: The level of control over stores (for example the frequency of inventory counts) depends upon the risk attached to a particular type of store

Source: National Audit Office

6.10 The majority of general stores were therefore well-controlled, and this standard of stewardship represented a significant improvement on the situation we found in Bosnia in 1996. We noted only a few problems in the control of general stores and materiel, centred on accommodation items:

- Shower and washing units costing £350,000, part of the Improved Tented Camp project, were received but proved difficult to reconcile to supporting documentation. Consignments arrive direct into theatre from the contractor in Italy without passing through the Department's normal

supply chain and were then broken up for local transportation. The documentation, however, covered the full consignment and individual items did not have accompanying paperwork.

- As improved tentage arrived, the old tents were sent to Skopje for return to the United Kingdom. Again, documentation was often absent, and at the time of our visit staff were not certain of the stock of old tentage still in theatre, the amount returned, or the amount deemed unserviceable or given to third parties in support of humanitarian efforts. The Department are receipting and inspecting stocks of old tentage received in the United Kingdom from theatre to determine an accurate stock figure.

6.11 We looked in more detail at the storage of ammunitions, medical supplies and fuel, which need special storage arrangements.

Ammunition

6.12 Deployment into theatre occurred rapidly and operational imperatives meant that formal accounting procedures for ammunition were not fully implemented from day one:

- 101 Logistics Brigade reported that the first ammunition ship arrived in theatre before the ammunition troop and hence unqualified personnel had to receipt the ammunition into theatre. This situation resulted in ammunition being issued direct to some units before it could be properly accounted for.

- When ammunition was flown into theatre, the paperwork did not arrive with the first load, and loads did not always match the paperwork. The problems were in part caused by personnel at RAF Brize Norton breaking down pallets of ammunition to ensure safe stowage on the aircraft and the pallets were not always correctly reconstituted upon arrival in Kosovo.

6.13 By the time of our visit the Department had taken steps to ensure that all ammunition was properly accounted for. The Department have also taken on board the lessons learned in Bosnia, and they have sent out specialist inspection teams to look at ammunition storage and handling, and where recommendations have been made, they have been acted upon.

6.14 The majority of the ammunition in theatre was being stored at a former Yugoslav Army ammunition and fuel depot. The facility was bombed during the air campaign, destroying the hardened bunkers and the fuel installation. One bunker received two direct hits from Paveway laser guided bombs, earning the facility its name "Paveway Camp". United Kingdom ammunition is now stored in the one remaining hardened bunker, and in containers located around the site.

6.15 Paveway Camp is not ideal as an ammunition store. It is too close to local populations and the site does not comply with United Kingdom health and safety regulations. COMBRITFOR has acknowledged this risk, and on grounds of operational expediency, has authorised 12 months use of Paveway Camp. At that time the Department will have to consider their longer-term requirements. Given the draw down in troop numbers, some ammunition will also be returned to the United Kingdom, bringing the volume stored at Paveway Camp to a more manageable level. Nevertheless there is likely to be a need for longer-term ammunition storage. This was the case in Bosnia where a purpose built facility is to be constructed with the costs being shared by participating forces – but these arrangements took seven years to finalise. The Department recognise that they should aim to address safety considerations as quickly as possible.

Medical stores

6.16 At the time of our visit medical stores in theatre were held in a central medical store in Pristina and in the hospital facility in Lipljan. Individual units also hold limited medical stores. We concentrated our examination on the main stores in Pristina and Lipljan (see Figure 36).

6.17 The Pristina depot deployed with sufficient supplies to be able to support a warfighting operation. After deployment and a lower than anticipated casualty rate, they conducted a review and found high levels of stock on a range of items compared to the actual average monthly demand. They are taking appropriate action to return some stock to the United Kingdom. There are, however, a wide range of items which the Medical Supplies Agency will not accept after they have been outside a controlled environment, as the Agency operate to the standards set by the civilian regulator, the Medicines Control Agency. Some of these items – such as pharmaceuticals (see Figure 37 on page 86) – have a limited shelf-life (typically 24 to 60 months) and may have to be written off in theatre. The Department do not yet know how much this will cost. At Lipljan, staff told us that there were similarly high levels of stock, although they had not conducted a formal stock review.

Over 4,200 morphine autojects with an extended shelf life in a case awaiting return to the UK. Inset: A single morphine autoject.

6.18 We noted some problems with medical stores that were being held by the units at Lipljan:

- The Medical Supplies Agency held stocks of morphine autojects which were due to be replaced in April 1999 when their shelf life expired. As part of their ongoing replacement programme, in February 1999, the Medical Supplies Agency received a replacement batch of morphine autojects which they rejected because the labelling did not conform to regulatory standards. In March, a second batch failed routine quality tests. Faced with a potential gap in supply, the Agency arranged for their existing stock

Figure 36

Results of our examination of medical stores in Pristina and Lipljan

Some key stock controls are in place at the medical stores in Pristina and Lipljan, but there is room for improvement.

Key Stock Control	Pristina	Lipljan
Did accounting records at the stores match physical stocks?	**Yes** (for the sample of items tested)	**Yes** (for the sample of items tested)
Have all stocks issued to the store been accompanied by supporting documentation?	**No** Some 900 items were originally issued by the Medical Supplies Agency without documentation. The unit deployed with only 5 days notice and had to procure large quantities of supplies at short notice. At the time of our visit, most of the documentation had been obtained but documentation for 30 items was still outstanding.	**Yes**
Have IT accounting systems worked well?	**No** Problems have been identified with the software and the Department have asked the manufacturer to solve them.	**Not applicable** (manual accounting methods are being used).
Has a stock-take counting all items been performed?	**No**	**No** However, at the time of our visit, the units had only been in theatre for three weeks.
Are inspections of controlled drugs carried out by an independent officer at the unit?	**No**	**Yes**
Have independent managerial inspections been carried out by officers outside the unit?	**Yes**	**No**
Are storage conditions satisfactory?	**No** A large proportion of stock is at risk of damage from poor weather conditions.	**Yes**

Source: National Audit Office

Figure 37

Example of high levels of pharmaceutical stores held at the Field Medical Equipment Depot which cannot be returned to the Medical Supplies Agency

Some of the items for which there are high levels of stock holding are shown below along with the value of the surplus stocks.

Item	Quantity (packets)	Average monthly issue rate (packets)	Item cost (£ per packet)	Number of months' supply	Value of surplus (above 6 months)[1]
Polygeline	3,942	29	2.92	137	£11,002
Silver 500g	597	1.5	13.43	398	£7,897
Sodium Lactate	3,840	80	1.60	48	£5,376
Ciprofloxacin tablets	88	4	61.87	22	£3,960
Amoxycillin injectors	449	Less than 1	6.14	449	£2,720
Ciprofloxacin injectors	300	Less than 1	9.16	300	£2,693
Ampicillin injectors	2,836	5	0.72	567	£2,020
Amoxycillin capsules	545	3	2.96	182	£1,560
Sodium Chloride 3L	480	Less than 1	3.07	480	£1,455
Calcium Carbonate tablets	623	10	Not available	62	-
Aspirin 300mg tablets	201	Less than 1	Not available	201	-
Total:					**£38,683**

1. We have defined surplus stock as that which will not be required within six months, given current levels of demand in theatre.

Source: National Audit Office analysis of the Department's data

to be independently assessed so that the shelf life could be extended by six months. In the event delivery of 6,000 autojects of the re-labelled new batch was made to theatre by the end of April. In addition, 6,000 autojects with an extended shelf life were also delivered to theatre to provide a reserve. The units at Lipljan were holding over 4,200 of these autojects at the time of our visit. Further deliveries of new stock commenced in June 1999 and the shelf life extended morphine autojects are being returned to the United Kingdom for disposal.

- Staff at Lipljan also told us that they had been provided with 5,000 disposable bedpan liners but did not have any reusable plastic bedpan supports which are needed to prevent the liners being crushed when used.

Fuel stores

6.19 The French Army store and dispense fuel on behalf of NATO and are the main source of fuel for United Kingdom forces. The one exception to this is the supply of aviation fuel at Pristina airfield, where the Royal Air Force hold supplies

for both military and civilian aircraft. We reviewed the storage arrangements at the airfield. Fuel is stored in deployable plastic tanks which sit in pits lined with an impermeable membrane and surrounded by earthworks to prevent spillage and damage to the environment. Fuel is dispensed onto small Royal Air Force road tankers for the ground refuelling of aircraft. These tankers are fitted with fuel gauges and meters, allowing fuel volumes dispensed to be measured accurately, and also facilitating accurate invoicing of third parties for any fuel supplied to them.

6.20 NATO forces retain the responsibility for in-theatre fuel distribution from the French facility to their own units. Logistics personnel undertake this task for United Kingdom forces. They also dispense fuel to third parties. However, this process takes place without using fuel gauges. Personnel measure fuel levels in the tanker with a dip stick before and after filling up the tanker and when dispensing fuel. This method can only give an approximate measure of fuel levels although staff are expected to account in detail for all fuel. Where the Department require accurate measurement of fuel transfers for their own internal accounting purposes or for invoicing third parties then they would need to fit fuel gauges - but there is a balance to be struck between the costs of these gauges and better management information. The Department are planning to build a new fuel installation at Pristina to replace the current facility, and 'kerbside refuelling' installations at unit locations. These will all be equipped with fuel meters. The Department have also deployed the new Intermediate Mobility Fuel Tanker to theatre to provide a small operational truck tanker fleet – all fitted with meters.

6.21 The Department conducted a technical inspection of their theatre fuel storage facilities in August 1999. They found that units were not complying with the appropriate health, safety and environmental regulations on the safe storage and handling of fuels and lubricants – in this case United Kingdom national regulations because they are more stringent than the local regulations. The most serious shortfall was the lack of suitable fire fighting equipment, especially as the storage conditions are far from ideal, increasing the risk from fire. At the time of our visit units had made some improvements, but the condition of local facilities and operational circumstances made it very difficult to achieve even broad compliance. The Department are in the process of improving storage conditions and have now provided appropriate fire fighting and first aid equipment.

The Department's control over local expenditure and cash

6.22 The Department forecast that during 1999-00 they will spend some £32 million on local contracting in Macedonia and Kosovo. The Department make use of the banking system in Macedonia, but there is no banking system in Kosovo and payments are made in cash, usually Deutschmarks. We therefore reviewed the Department's arrangements for managing local expenditure, including the control of cash.

Office accommodation for civil servants in theatre is basic and doubles as their living accommodation

6.23 Civil servants authorise and monitor the majority of the Department's expenditure in Macedonia and Kosovo. They arrived in Macedonia in February 1999 and entered Kosovo along with British troops. Their responsibilities are set out in Figure 38.

Financial authority

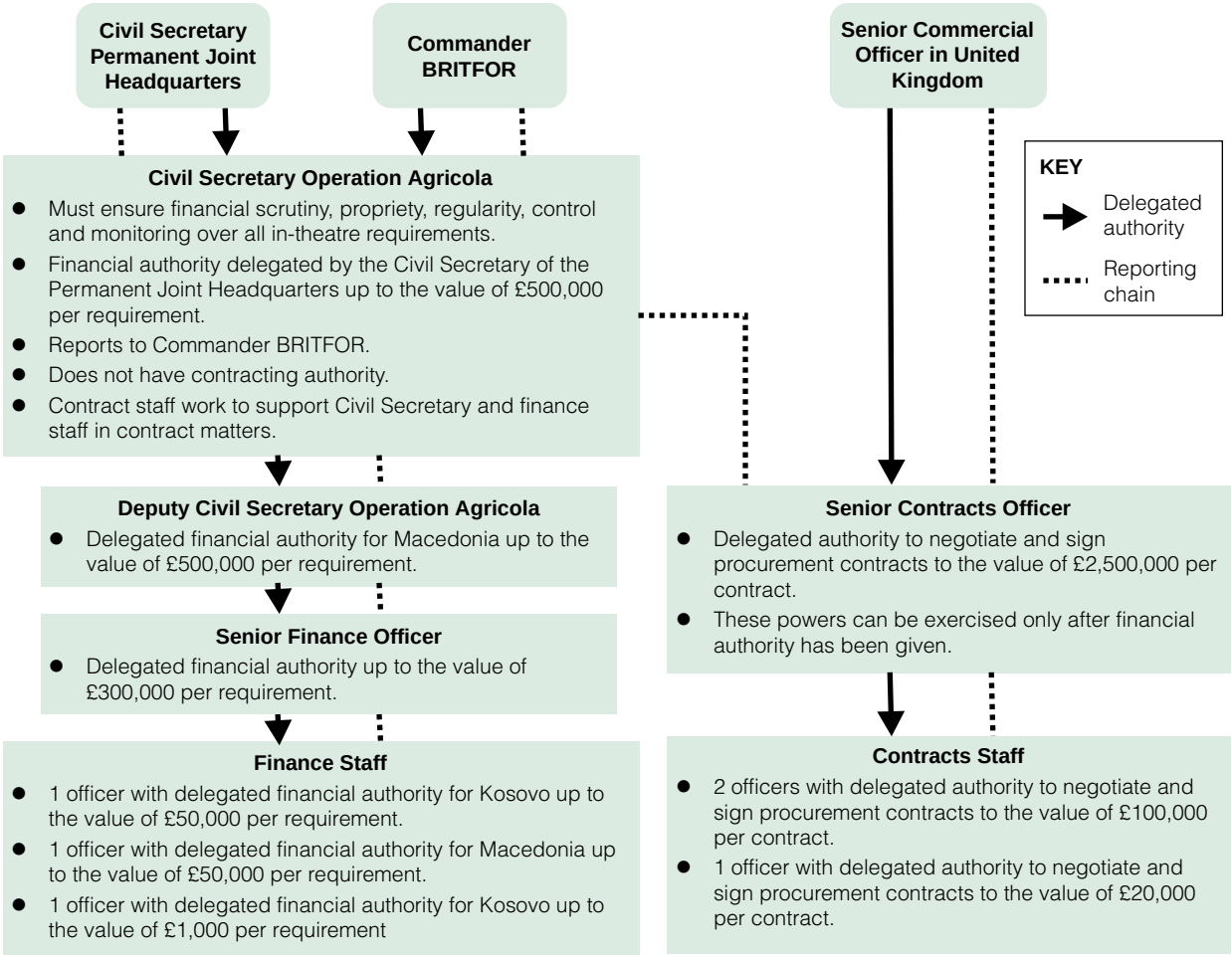
6.24 The separation of key functions minimises the scope for irregularity. The same person should not be responsible for identifying a requirement, giving financial approval for the expenditure and awarding a contract. When units need to purchase goods and services in theatre, they raise a statement of requirement for scrutiny by the civilian finance staff. The requirement is considered and then authorised or rejected by someone with the appropriate level of financial delegation. At the time of our visit, some 895 requirements had been raised, of which 92 per cent had been approved (Figure 39 overleaf). We found that requests were rejected when:

- a similar item or service was already available in theatre and could be shared with other units;
- when expenditure was for the benefit of third parties and should not legitimately be born by the Department; and
- where there was no reasonable operational justification for the item or service.

Figure 38

Financial and contracting responsibilities of civil servants in Macedonia and Kosovo

Financial and contractual authorities are mainly delegated to civilian staff in theatre and there is appropriate separation of duties.



Note: Should operational circumstances dictate COMBRITFOR has the power to circumvent the approval process but he must report his decision to PJHQ at the earliest opportunity.

Source: National Audit Office

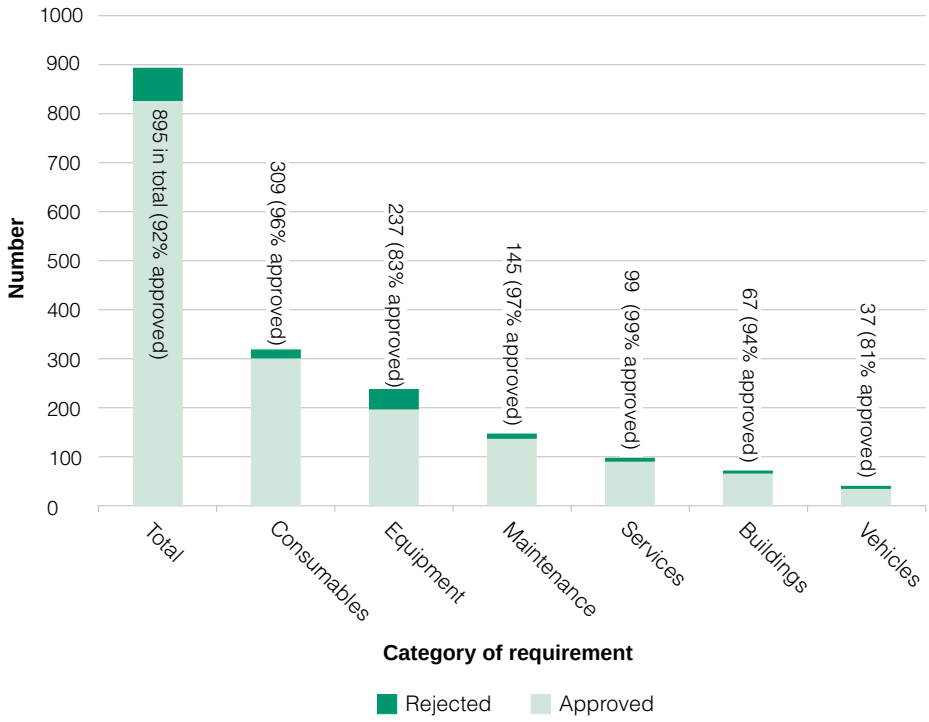
6.25 The system operating in theatre provides a good separation of duties and in general works well, but there is some room for improvement:

- For some categories of requirement, civilian staff find it difficult to judge whether there is an acceptable operational need – for example, for the large number of requirements raised for white vehicles (paragraph 5.19). It is important that staff use their judgement when scrutinising requirements to retain flexibility needed in an operational theatre. But for

Figure 39

Requirements raised by units in theatre for scrutiny by civilian staff in Pristina

Statements of requirement are raised by units in theatre for scrutiny by civilian staff before expenditure is incurred.



Source: National Audit Office analysis

key categories of requirement that can be foreseen prior to deployment, it would be helpful to develop criteria which set out the circumstances in which the expenditure is appropriate.

- The approval process can introduce delays which have an impact on operations. For example, a Quartermaster at one of the units we visited in Kosovo told us that it took several days for his requests for sand to be processed, and for the sand to be delivered from Macedonia. He needed the sand to fill sandbags being used to build semi-permanent guard posts to replace armoured Land Rovers, releasing the vehicles for other duties. The cost of the sand for one guard post was only £100.

Local contracting arrangements

6.26 Once a requirement has been approved by finance staff, it is passed to civilian contracts staff to arrange supply. They try to make use of local suppliers but suppliers simply do not exist in Kosovo for many goods and services or they do not have the capacity to support United Kingdom forces' needs. Where there is an

existing supplier or someone can be persuaded to build up a supply capability, there is often no competition against which to benchmark prices. Language presents a further contracting difficulty (particularly where there are technical aspects) and, in the absence of a local judicial system, contracts are let under English law. Where there is no local supplier, the civilian secretariat do not have authority to procure goods from outside theatre and so the procurement is handled in the United Kingdom through Land Command. This has resulted in delays and the Department have identified a need to review local purchase arrangements.

6.27 We examined a sample of contracts let in both Macedonia and Kosovo:

- In general, the Department's contract staff had performed their duties well and had paid due regard to maintaining propriety, and achieving value for money and quality of service, despite difficult conditions.

- The experience of contracts staff who had previously toured in Bosnia proved invaluable, since there is no guidance available to contracts staff new to work on a live deployment.

- For services such as provision of vehicle hire (paragraphs 5.19 to 5.20) and mobile telephones (paragraph 5.41) there were a large number of repeat requirements. Many of these requirements were met with new agreements, as well as with a number of suppliers. It is therefore not clear whether the Department achieved economies of scale.

Control of payments

6.28 The Department have maintained an appropriate separation of duties for the control of payments, with different people responsible for authorising an invoice for payment and for making the payment. Early in the deployment into Kosovo, there were a number of occasions where civilian finance staff had to make cash payments to contractors. Where they did so, they made efforts to ensure that two members of staff were present to minimise the risk of loss or impropriety. Payments are now authorised by civilian finance staff and made by force cashiers – through the banking system in Macedonia and in cash at force cashiers' offices in Kosovo.

6.29 Payments to locally-employed civilians represent one of the largest streams of cash payments, and associated controls take a variety of forms. First, a central labour support unit inspect sites requesting locally-employed civilians, set a complement and an associated limit to the paybill. Then unit cashiers must inform

the labour support unit of actual civilian employment, and the labour support unit raise the paybill on the basis of their employment lists, and pass the bill to finance for authorisation, who pass it to local units to action payment.

6.30 In practice, this system works poorly. The population of civilian employees has proved volatile, with the result that control lists have not been fully up-to-date. As a result, the paybills raised and authorised have been inaccurate, and local units have altered the authorisation (within unit paybill limits) to match reality. Military units found it unacceptable to withhold payments from local employees who were often poverty-stricken but supporting a number of dependants, and instead sought retrospective approval for payments. The setting and periodic monitoring of local unit complements and paybills, together with local cash accounting and review procedures, provided strong control over payments to civilians, but it is difficult to see what added value was provided by central bill raising and authorisation.

6.31 It is also important that the Department have controls in place to ensure that invoices presented by suppliers and contractors are correct and that the goods and services have been received. We examined the Department's monitoring and payment arrangements on a number of contracts. Although contracts staff had endeavoured to put in place a system of completion certificates for services such as waste removal and laundry, there were a number of weaknesses which increased the risk that contractors could apply for payment for services not provided, inflate their invoices or submit invoices more than once for the same service. Risks centred on the non-availability of serially-numbered authorisation forms which are difficult to photocopy, and of details of soldiers signing on behalf of the unit to say that the goods or services had been received. We also noted that approved signatory lists did not always exist - raising risks of improper authorisation.

Physical security and accounting for cash

6.32 It is important to keep cash holdings to the minimum required so as to reduce the risk of loss. Security precautions are also vital where large amounts of cash are held or transported. The total amount of cash held by United Kingdom forces in Kosovo is typically some £2 million, mostly in Deutsche Marks. About £1 million of this is held by the military cashier at BRITFOR Headquarters. We examined the Department's arrangements for accounting for cash and physical security at a number of locations:

- At one location we visited, the cashier had deployed to theatre during the September roulement with sufficient cash to sustain the unit for 12 days – about £30,000 – as instructed. But when he arrived, he took over a cash balance of nearly £50,000 from the departing unit.

- At each location visited, cash was held in a building where access to it, or to the site itself, was protected by armed guards. In the majority of locations, cash was held in a safe and the armed cashier slept in the same room. But in one location, the safe was situated in an open thoroughfare in the building and in another location, cash was held in cash box rather than a safe. None of the rooms where cash was held had been fitted with window bars or door grills.

- At each location, officers had carried out independent management checks on cash balances, with satisfactory results.

Write offs

6.33 Units in Macedonia and Kosovo have to seek authorisation to write off assets and expenditure. In theatre COMBRITFOR has authority to write off cash losses of up to £5,000 and stores losses of up to £50,000 in value. In cases of suspected theft or fraud, write off powers for both cash and stores are limited to £3,000. For higher value items, a request for write off must be sent to the headquarters of Land Command in the United Kingdom.

6.34 The instructions underpinning the deployment make clear that civilian financial staff in-theatre should monitor write offs - so that they can keep a grip on the overall quality of stewardship of assets. At the time of our visit, however, information on write offs in train was not copied to civilian financial staff, who were therefore poorly placed to monitor write off action. Such action was then ongoing in relation to equipment and expenditure totalling more than £100,000. Subsequently, we attempted to gain a full picture of write offs from central records. We found that there was no consolidated statement of write offs relating to Kosovo. Working from records held within the various budget areas involved, we established £100,000 had been written off, with write off action pending on a further £547,000.

Appendix 1: Previous Committee of Public Accounts recommendations and Treasury Minute responses

Recommendation (extracts)	Government Response (Treasury Minute) (extracts)	Reference
The Costs and Receipts Arising from the Gulf Conflict (55th Report 1992-3)	**CM2419**	
Overall Costs of the Operation We note that the Department . . . and the Treasury agreed that full cost calculations were not appropriate . . We recognise that the Department's need was to collect costs in order to support . . . their requests . . . for additional funding and the negotiations with other nations for contributions (conclusion iii).	MoD agrees with the Committee's observations on the types of cost that it is desirable to collect. Parliament will, so far as practicable, be informed of the costs of future operations on the basis identified by the Committee.	Paragraphs 2.2-2.3 and 2.11-2.20
We stress the importance of Parliament being informed of additional costs which indicate the funding Parliament will have to provide for such operations; and other sunk costs (conclusion iv).		Paragraphs 2.8-2.9
It is also important for the systems to enable the Department to forecast costs accurately as far as it is practicable to do so, to record accurately the costs actually incurred and provide accurate historical evidence of costs of past conflicts to assist future decision-making (conclusion vii).	MoD agrees the Committee's conclusions. Its systems will achieve the objectives identified by the Committee.	Paragraphs 2.4-2.10
The Financial Management of the Military Operations in the Former Yugoslavia (23rd Report, 1996-7)	**CM3714**	
Overall Costs of the Operation The Committee notes that the Department's estimate of the additional cost of the IFOR operation is now some £337m, compared with about £300m at the start of the operation, and that the revised figure excludes £25m for air and maritime operations not previously included in estimates to Parliament. We look to the Department to ensure that, in future, they inform Parliament from the outset of all estimated additional costs (conclusion i).	The Ministry of Defence (the Department) accepts the Committee's conclusion. The costs of the air operation (DECISIVE EDGE, formerly DENY FLIGHT) and of the maritime operation (SHARP GUARD) were not included in the Department's estimate of additional cost because, as existing operations, their costs were not incurred as a direct result of the decision to implement IFOR. The Department will in future ensure that all additional costs associated with an operational deployment are brought to the attention of Parliament.	Paragraph 2.9

continued…

Recommendation (extracts)	Government Response (Treasury Minute) (extracts)	Reference
Logistics Aspects We note that the Department experienced difficulties with their support vehicles, some of which were over-age and had to cover very high mileages over poor roads and in difficult conditions. We note that the Department's experiences in the former Yugoslavia have now focused their attention on the problems of managing their fleet of support vehicles, and that over the next three years they intend to replace a significant part of their Landrover fleet (conclusion vii).	The Department notes the Committee's comments. Management of the vehicle fleet has been simplified through the rationalisation of engine variants and over the next three years the Department's Landrover replacement programme will see over 6000 new Landrovers provided at a cost of £191m. This will reduce the number of variants to around 60, thus reducing maintenance costs as well as providing improvements in reliability and operational capability.	Paragraphs 5.2-5.5, 5.9-5.10 and 5.17-5.18
We note that one of the lessons the Department have identified, as a result of their experiences on this operation, is the need to pay more attention to expeditionary equipment, including accommodation units. We are concerned that delays in erecting accommodation units, which cost over £30m, meant that the Department did not get as much value for money from these units as they intended during the IFOR operation, although they expect them to be available for future operations (conclusion viii).	The Department accepts the Committee's conclusion. The deployment took place at very short notice and required twice as much accommodation as the UN had needed . . . Unfortunately, competing operational demands for scare engineering resources results in a delay in erecting them. Action has been taken to make provision within the Defence programme for additional Expeditionary Campaign Infrastructure Expenditure.	Paragraphs 4.10-4.20
Control of Assets Stores and Cash We consider it unsatisfactory that, despite the assurances the Department gave us following the Gulf Conflict and despite the experience they gained in the former Yugoslavia before the IFOR operation began, keeping track of high-value and operationally important equipment has again proved to be a problem. We are concerned that systems developed by the Department were unsuitable to cope with the operational conditions in the former Yugoslavia and that they therefore did not give full value for money (conclusion ix).	The Department accepts that this is an area requiring further attention. As regards the tracking of equipment, the Theatre Equipment Database Yugoslavia (TEDY) project was introduced to establish a single system for tracking all key equipments in theatre making use of modern bar coding and computer technologies. As regards other logistic information systems, the Department used a number of systems, some well established and others being introduced to take account of experience in the Gulf Conflict, that would in due course have been linked to provide complete visibility of spares and assets both in units holding stores and in transit. These systems, though their utility was affected by problems of handling and communicating the large volumes of data involved in operations in the former Yugoslavia, were nevertheless able to provide improved visibility, for example, of resources in the supply chain from base depots into theatre (VITAL) and of spares held in theatre (GLOBAL).	Paragraphs 6.2-6.7

continued…

Recommendation (extracts)	Government Response (Treasury Minute) (extracts)	Reference
We are concerned that there have been weaknesses in the Department's controls over stores. In particular, we consider it unacceptable that there has been a breakdown in controls over ammunition and missiles, including some 452 Milan anti-tank missiles with a value of some £6 million. We note the Department's assurance that a number of discrepancies have now been resolved, and that the Milan missiles have been located. But we find it disturbing that significant discrepancies are still unresolved, including ammunition worth some £3.9m which has still not been traced (conclusion xii).	The Department accepts that there were weaknesses in accounting for stores and ammunition in the difficult operational circumstances that prevailed in the former Yugoslavia. The Department has taken action to bring about the necessary controls over ammunition stocks and other stores and to review management control measures, accounting standards and training regimes. The identified discrepancies in accounting for ammunition have been the subject of an urgent and thorough reconciliation programme, which has reconstructed the relevant accounts for the period from 1994 to date. The figures stand at some £4.1m of ammunition for which there is documentation, but which has not been traced; and £1.3m of ammunition for which there is no supporting documentation. In both cases, these represent an increase in the figures reported in evidence to the Committee in January 1997. These figures may be reduced as further checking continues, but there will remain significant discrepancies.	Paragraphs 6.8-6.15
Contracting Arrangements We note the Department's arrangements for moving personnel and equipment to and from the former Yugoslavia are an improvement over those for the Gulf Conflict, but we are concerned that the Department had to pay premium prices to charter shipping. We recommend that in future the Department explore the scope for generating more competition, and therefore better prices, by approaching the market earlier for some of their requirements, especially those that can be planned ahead with a degree of certainty. These would include, for example, the routine turnover of troops and equipment operating in the former Yugoslavia as part of the Stabilisation Force, and the final withdrawal (conclusion xvi).	The Department notes the Committee's recommendation. When the operation began the planning time from approach to the civil market to expected presentation of the ship was 14 days and has now been extended to around 30 days. This may improve the availability of certain militarily useful ships for charter. In all cases, however, the Department has to balance the advantage of an early approach to the market against the risk of nugatory expenditure if the operational requirement subsequently changes.	Paragraphs 3.10-3.12

Appendix 2: Chronology of Events in Kosovo

1998

January - June

Federal Republic of Yugoslavia increases the size of its security force in Kosovo, including both Federal Army (VJ) and paramilitary police (MUP), and in the summer launches an offensive to reclaim territory from the Kosovo Liberation Army (KLA). Large numbers of Kosovar Albanian civilians (estimated: 250,000) are displaced in Kosovo, with some 80,000 refugees outside the province, raising fears of a humanitarian catastrophe.

Contact Group (France, Germany, Italy, Russia, the United Kingdom and the United States) meets regularly to resolve the situation by diplomatic means.

11-12 June

NATO Defence Ministers task NATO military planners to produce a range of options, both ground and air, for military support to the diplomatic process.

15 June

Over 80 NATO aircraft, including 4 RAF Jaguars, participate in Exercise DETERMINED FALCON in Albanian and Macedonian airspace.

12 August

NATO Secretary General Solana issues a statement confirming that the North Atlantic Council had "reviewed military planning for a full range of options to bring an end to violence and create conditions for negotiations".

23 September

United Nations Security Council adopts resolution 1199, demanding a cease-fire and the start of real political dialogue.

24 September

NATO's North Atlantic Council issues an ultimatum to Belgrade, insisting that air strikes would follow unless the violence is halted.

October

Contact Group meeting gives United States envoy Richard Holbrooke a mandate for his mission to Belgrade to secure agreement of the requirements of Security Council Resolution 1199. North Atlantic Council approves operational plan for air strikes. KLA Command declare a ceasefire.

On 12 October Holbrooke mission is announced successful. Milosevic agrees to the withdrawal of troops, and subsequent monitoring by the Kosovo Verification Mission. Milsosevic also agrees to make efforts to find a permanent political settlement. On 15 October NATO Chiefs and General Perisic (VJ Chief of Staff) sign

	an accord in Belgrade on NATO air verification of the settlement. A day later an agreement is signed establishing the Kosovo Verification Mission, under the auspices of the Organisation for Security and Co-operation in Europe.
November-December	Kosovo Verification Mission verifiers begin deployment to Kosovo.
	NATO Extraction Force formed and deployed (including United Kingdom contingent).

1999

15 January	Racak massacre - Serbs refuse to allow International Criminal Tribunal for the Former Yugoslavia to investigate.
29 January	Contact group meet in London at Foreign Minister level, and agree principles for a resolution of the conflict. Serbian and Kosovar Albanian leaders summoned to proximity talks in Rambouillet, France.
30 January	Contact Group demands that all parties agree on a political settlement by 20th February.
19 February	4th Armoured Brigade HQ and Lead Armoured Battle Group (2,225 personnel in total) deploy to Greece and Macedonia together with key elements of the Allied Rapid Reaction Corps.
20 February	Rambouillet talks extended for three days.
23 February	Talks close, with partial acceptance of Contract Group terms. Further talks scheduled for 15th March.
26 February	1,500 Royal Engineer and supply troops deployed.
March	Increasing conflict between Serb and KLA forces.
15 March	Second round of talks between Serb and Kosovar Albanian leaderships begins.
18 March	HMS Splendid diverts to Adriatic.
19 March	Talks adjourned after it becomes clear that the Serb representatives were under instructions not to agree to the implementation of autonomy for Kosovo. Withdrawal of Kosovo Verification Mission begins and is completed a day later.
22 - 23 March	United States envoy Holbrooke sent once more to Belgrade. However, he fails to persuade President Milosevic to withdraw his forces.

23 March	NATO Secretary Solana delegates authority to the Alliance's Supreme Commander to begin air strikes against the Federal Republic of Yugoslavia.
24 March	Air campaign begins at 1900 GMT and lasts for 78 days.
28 March	Additional 13 United Kingdom aircraft committed.
Late March	NATO widens range of attacks to cover targets of high military value across Serbia.
3 April	First air strike against target in central Belgrade.
12 April	HMS Invincible Task Group deploys to Northern Ionian Sea.
29 April	Further 9 RAF aircraft committed.
6 May	Group of Eight Foreign Ministers agree principles to resolve the crisis. These form the basis for United Nations Security Council resolution 1244. Unlike the Rambouillet Accords, they demand full withdrawal of Serb forces from Kosovo, while also requiring the demilitarisation of the KLA.
7 May	Further 4 RAF Harriers deploy to Italy.
1 June	12 Tornado GR1's deploy from RAF Bruggen to Solenzara.
3 June	President Milosevic accepts the agreement presented to him by Finnish President Ahtisaari and Russian envoy Chernomyrdin (the agreement represents the Group of Eight principles formed on 6th May).
9 June	"Military Technical Agreement" is signed by Kosovo Force (KFOR) and representatives of the VJ and MUP. The agreement calls for the immediate cessation of hostilities and sets timelines for the withdrawal of FRY forces from Kosovo. This includes the marking of mine fields, booby traps and other obstacles.
5 - 10 June	Further 1,900 United Kingdom ground troops deploy to Macedonia.
10 June	Air campaign ends.
	United Nations Security Council resolution 1244 adopted, setting up the United Nations Interim Administration Mission in Kosovo. It consists of four substantive components or pillars: interim civil administration (United Nations-led), humanitarian affairs (United Nations High Commissioner for Refugees-led), reconstruction (European Union-led) and institution building (Organisation for Security and Co-operation in Europe-led). A NATO-led force provides the international security presence.

	NATO give authority to deploy ground forces into Kosovo.
11 June	A small number of Russian troops (200) enter Kosovo unilaterally and establish a presence at Pristina airport.
12 June	KFOR enter Kosovo.
18 June	The Russian Federation agrees to participate in KFOR, a commitment referred to as the 'Helsinki Agreement'.
20 June	Serb withdrawal complete.
21 June	Hashim Thaçi, commander in chief of the KLA, renounces the use of force through an Undertaking of Demilitarisation and Transformation.
20 September	KFOR confirms that the demilitarisation of the KLA is complete. An agreement is reached for the creation of a new civilian organisation called the Kosovo Protection Corps, which will be an unarmed civil relief agency involved in the rebuilding of Kosovo's infrastructure.
8 October	Lieutenant General Klaus Reinhardt replaces Lieutenant General Michael Jackson as COMKFOR and the German-led LANDCENT command unit replace HQARRC.

2000

February to present	Violent clashes between Kosovo Serbs and Albanians in the city of Mitrovica in Northern Kosovo. KFOR reinforces Multinational Brigade North with troops from other sectors, including a company of British Armoured Infantry.
18 April	Lieutenant General Juan Ortuño replaces Lieutenant General Klaus Reinhardt as COMKFOR and the multi-national EUROCORPS take over from LANDCENT.

Appendix 3: Methodology

A3.1 The approach we adopted was as follows:

- We examined the Department's controls over stores and equipment and tested a sample of transactions. This was undertaken at: Headquarters Multinational Brigade (Centre) and BRITFOR in Pristina; Theatre Distribution Centre in Pristina; 34 Field Hospital Squadron and 24 Armoured Field Ambulance Group in Lipljan; Camp Arctic Circle in Skopje; Queens Dragoon Guards in Podujevo; and 101 Logistic Brigade in Pristina.

- We examined the Department's cash controls. This was undertaken at: Headquarters Multinational Brigade (Centre) and BRITFOR in Pristina; Civil Secretariat offices in Pristina and in Skopje; 34 Field Hospital Squadron and 24 Armoured Field Ambulance Group in Lipljan; Queens Dragoon Guards in Podujevo; and 101 Logistics Brigade (Ammunitions compound and catering facilities) in Pristina.

- We examined maintenance activities when visiting the Field Support Squadron Royal Engineers in Piper Camp; 6 Composite Engineering Support Company in Obilic; and 38 Engineering Group in Pristina.

- We discussed other nations' arrangements when visiting the Canadian Armed Forces in Glogovac, the Swedish Army in Ajvalija and the Dutch Army in Petrovec.

A3.2 Figure A3.1 sets out the sites in Kosovo visited during the fieldwork.

Figure A3.1 **Sites visited**

KOSOVO

Podujevo:

- Queens Dragoon Guards
- Civil-military projects

Obilic:

- 6 Composite Engineering Support Company

Pristina:

- Headquarters Multinational Brigade (Centre) and Headquarters BRITFOR
- Theatre Distribution Centre (operated by UK National Support Element)
- Second Battalion Royal Green Jackets (including R Company Headquarters; R Company platoon patrol base; REME detachment; A2 Echelon and Warrior Company at former Yugoslav Army barracks)
- 101 Logistics Brigade (including Ammunition Compound)
- 38 Engineering Group
- Civil Secretariat

Kosovo Polje:

- Kosovo A and Kosovo B power stations

Ajvalija:

- Swedish camp

Airport:

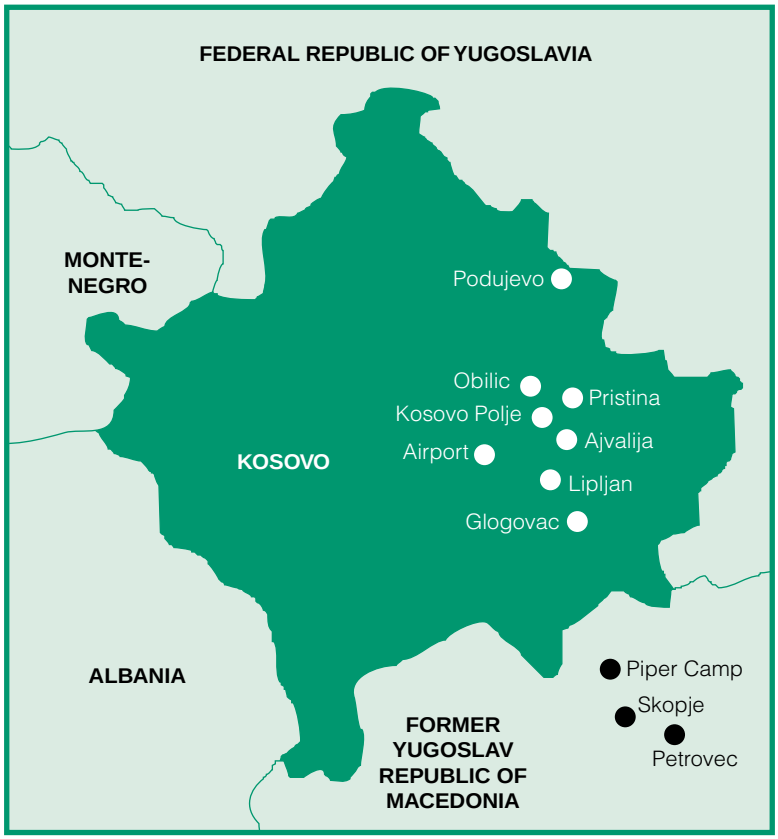
- Air Point of Departure

Lipljan:

- 34 Field Hospital Squadron and 24 Armoured Field Ambulance Group

Glogovac:

- Canadian camp



MACEDONIA

Skopje:

- Camp Arctic Circle
- 1 (UK) Logistics Regiment
- Second Transport Squadron/REME detachment
- Civil Secretariat

Petrovec:

- 1 (UK) Logistics Regiment
- Second Transport Squadron
- Dutch Camp

Piper Camp:

- Field Support Squadron Engineers

Appendix 4: Operations in Kosovo

United Kingdom Name	NATO Name	Start Date	Description
	DETERMINED FALCON	June 98	Air exercises over Kosovo.
SOMERSET/KDOM		Nov 98	Deployment of military and civilian observers in support of the Kosovo Verification Mission.
RADOME	EAGLE EYE	Nov 98	Deployment of two Canberra aircraft to undertake aerial surveillance operations in support of Op SOMERSET.
UPMINSTER	JOINT GUARANTOR	Dec 98	United Kingdom contribution to the Kosovo Verification Mission Extraction Force established in Macedonia.
AGRICOLA	JOINT GUARDIAN	Mar 99	Deployment of UK ground troops in support of KFOR. Includes the deployment of HQARRC.
ENGADINE	ALLIED FORCE	Mar 99	UK contribution to NATO led air strikes against Yugoslavia and Kosovo.
MAGELLAN		Mar 99	Naval operations in the Adriatic.
SPOONER	ALLIED HARBOUR	Apr 99	Planned deployment of an 8,000 strong force to Albania to provide humanitarian assistance.
KINGOWER			Encompasses all of the above operations.

Appendix 5: Glossary

Headquarters Allied Command Europe Rapid Reaction Corps (HQARRC)	NATO-command headquarters, deployed to Kosovo to command KFOR. The United Kingdom are the framework nation for the headquarters.
BRITFOR	British force contribution to KFOR, including the British support to them.
COMBRITFOR	Commander of the British force.
KFOR	Short for Kosovo force, the NATO-led international force responsible for establishing a security presence in Kosovo.
Kosovar Albanians	Ethnic Albanians forming the majority of the population of Kosovo.
Kosovo Liberation Army (KLA)	Kosovar Albanian militia dedicated to the independence of Kosovo.
Kosovo Verification Mission (KVM)	Following the 16 October 1998 agreement , the Kosovo Verification Mission were established as an Organisation for Security and Co-operation in Europe-led mission to verify the withdrawal of Serbian forces from Kosovo. The mission was withdrawn on 19 March 1999 after the Paris peace talks broke down.
Military Technical Agreement	Concluded between NATO and the Federal Republic of Yugoslavia on 9 June 1999. The agreement was designed to co-ordinate the withdrawal of VJ Yugoslav/Serbian forces from Kosovo and the deployment of KFOR.
MUP	Acronym commonly used to describe heavily armed police units of the Serbian Ministry of Interior police force.
NATO Extraction Force	NATO Force established in Macedonia to extract the Kosovo Verification Mission
Organisation for Security and Co-operation in Europe	International organisation actively involved in attaining a peaceful resolution of the Kosovo crisis.
Rambouillet	The location for peace talks held in February of 1999 prior to the NATO military campaign.
United Nations High Commissioner for Refugees	On behalf of the United Nations co-ordinated international humanitarian relief efforts in the region.

United Nations Mission in Kosovo	Authorised by the United Nations Security Council, the Mission has authority over the territory and people of Kosovo.
Vojska Jugoslavie (VJ)	The Army of the Federal Republic of Yugoslavia.