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26 March 1986

CABINET

STATEMENT ON THE DEFENCE ESTIMATES 1986

Memorandum by the Secretary of State for Defence

I attach the draft of my 1986 Statement on the Defence Estimates, which I am currently planning to present to Parliament on Monday 12 May.

2. The main message of this year's Statement is stability, continuity and consolidation. We have come to the end of seven years' real growth in defence expenditure: our task now is to build on that achievement. But the Statement signals that difficulties lie ahead; and, in taking account of comments made by members of the Defence and Oversea Policy Committee (OD) before and at its meeting on 19 March, I have strengthened and clarified the passages that cover the real decrease planned in the defence budget over the next three years and the weighing of priorities that this will necessitate.

3. Chapter One of the Statement sets the strategic context, and emphasises the need for continuity and stability in defence policy. Chapter Two deals with arms control. Chapter Three records developments in Europe and the Alliance, including our efforts to promote equipment collaboration both within Europe and more widely in NATO, and also covers our wider defence interests. Chapter Four describes the roles and equipment of the Services, concentrating this year less on deployments and more on activities. Chapter Five, on finance and management, includes a section on the initiatives taken over the past year to improve value for money in defence procurement; it also prepares the ground for the hard decisions that lie ahead. Chapter Six describes the activities of the Services in the wider community. Annex A contains a detailed description of the military strengths of East and West.

4. As has now become customary, the Statement contains a number of self-contained "essays" on defence policy or activities. Three of this year's seven essays are of particular importance: The Seamless Robe, which is intended to rebut the persistent suggestions that we should undertake a fundamental review of defence policies and commitments; The Strategic Defence Initiative, a timely explanation of the issues and our approach to them; and The Ulster Defence Regiment, a corrective to widespread misconceptions about the Ulster Defence Regiment. The Statement also

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includes a number of smaller "boxes" designed to break up the printed text; more illustrations; and, for the first time in 20 years, half a dozen black-and-white photographs.

5. I invite the Cabinet to agree to the publication of the 1986 Statement on the Defence Estimates.

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Ministry of Defence

26 March 1986

Statement on the Defence Estimates 1986

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Presented to Parliament by the Secretary of State for Defence by Command of Her Majesty 1986

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CHAPTER ONE : THE STRATEGIC CONTEXT

101. 1985 was a successful year for the security policies of the Government and our NATO allies. The Soviet Union returned to the negotiating table - not because of unilateral gestures by the West, but in response to the clear strength and cohesion of NATO. The Alliance's policy of both possessing sufficient defences to deter aggression, and pursuing a real and lasting improvement in East-West relations, was vindicated.

102. The first summit meeting for more than six years between the leaders of the two superpowers, held in Geneva last November, marked a key event in East-West relations. It helped to establish a measure of confidence and greater understanding between the two leaders and produced a number of specific results, including the institution of regular summit meetings and exchanges on regional issues; the commitment to make progress on a wide range of arms control matters (See Chapter 2); and steps to increase East-West contacts. We hope that the outcome will be improved relations, more extensive links and broad cooperation on the full range of East-West questions.

CHANGE AND CONTINUITY IN THE SOVIET UNION

103. Expectations of the new Soviet leadership have been high. Many have expressed the hope that a younger generation of Soviet leaders, who may have a more sophisticated outlook on the world, will be more prepared than their predecessors to cooperate with the West. The Geneva summit was indeed an encouraging sign of a new readiness on the part of the Soviet leadership to discuss the problems. But its results will be judged by deeds, not words, over the months and years ahead.

104. It is still too early to reach a definitive assessment of whether the substance, and not merely the style, of Soviet foreign policy has changed. There have been many fluctuations and differences of emphasis by successive Soviet leaders over the years; but the overwhelming impression of Soviet behaviour since the war remains one of an underlying continuity. To under-

stand why, we must look beneath the external manifestations of Soviet policies to the roots from which they spring - roots that go back beyond the establishment of the Soviet Union in 1917.

105. For superimposed at that time on to a traditional Russian world-view that emphasised the prime importance of national strength, was the ideology of Marxism-Leninism, which saw the world in two implacably opposed camps, capitalist and communist, each struggling to tip the global balance (or 'correlation of forces') in its favour, and held it as scientific truth that communism would ultimately triumph. Whatever changes have taken place in the Soviet Union over the years, this ideology, as the three quotations [below] illustrate, has not altered fundamentally since the founding of the Soviet state nearly 70 years ago. In one respect, however, there has been a vital development: since the advent of nuclear weapons and the means for their delivery in the 1950s and 1960s, Soviet leaders have ceased to regard war with the West as inevitable. It is on this recognition that we must seek constantly to build.

'As long as capitalism and socialism exist we cannot live in peace. One or the other will triumph in the end'.

V. I. Lenin.
Speech to activists of the
Moscow Party Organisation,
1920.

'The CPSU assumed and assumes that this class struggle between the two systems, capitalist and socialist, will continue in the spheres of economics, politics, and obviously, ideology. It cannot be otherwise, because the philosophy and class objectives of socialism and capitalism are opposite and irreconcilable.'

L. I. Brezhnev.
Pravda,
December 1972.

'We state again and again that the outcome of the historical competition between the two systems must not be solved by military means. Our commitment to the policy of peaceful coexistence is evidence of the strength of the new social system and faith in its historical possibilities.'

M. S. Gorbachev.
Victory Day speech,
May 1985.

THE CHALLENGE FOR NATO

106. Against this background, the Soviet Union has attempted to improve its political status and extend its influence on a basis of ever-increasing military power. Indeed only in this respect can the country lay claim to superpower status. The Soviet Union maintains some five million men under arms, more than half of whom face Western Europe. It produces more armaments than all the NATO countries combined. It has developed a massive armoury of chemical weapons, which is quite unmatched in the West. It possesses the largest air force in the world. And in the last 20 years the Soviet Navy has been expanded from a coastal force to one capable of projecting power worldwide. Most significantly, the Soviet Union has undertaken a sustained drive first to catch up with, and then to surpass, the West in nuclear weaponry.

107. Over the past 12 months, the Soviet Union has maintained its substantial programme of modernising existing weapon systems and deploying new ones. Among the nuclear weapons brought into service were the SS-25 mobile inter-continental ballistic missile; another Typhoon submarine with SS-N-20 missiles; further strategic bombers carrying cruise missiles; and more SS-20 launchers. Ground force enhancements have included self-propelled artillery; further deployment of the latest T80 tank; and new surface-to-air missiles. The Soviet Air Force has continued to upgrade its fighter force with, for example, more deliveries of the new Fulcrum aircraft. While Soviet naval improvements are highlighted by the number and variety of submarine deliveries, the construction of a new larger aircraft carrier emphasises the growing unit size of Soviet surface warships. More details are given in Annex A.

108. After a period of relatively slow growth between the mid-1970s and the early 1980s, Soviet military expenditure is now showing more substantial increases. There has been much speculation in the Western media about a possible desire by the Soviet leadership to transfer resources from defence to the civil sector, and indeed it is clear that difficult decisions will have to be made. Nevertheless, there are indications that - despite the implications for both future economic growth and the Soviet standard of

living - the higher annual rate of increase in defence spending seen in recent years will be sustained until at least the end of the decade.

109. The challenge for NATO is not simply a military one. Soviet leaders have never renounced the 'ideological struggle' and have used every means available to propagate their own brand of Marxism, taking full advantage of the freedoms that exist in Western societies to further Soviet aims. These activities are designed to weaken the cohesion of NATO, to foster misleading impressions of Soviet intentions, and to channel criticisms of Western governments into directions that suit Soviet purposes. The new Soviet leadership has shown considerable dexterity in handling the Western media, and we can expect intensified efforts over the next few months to drive wedges between the NATO allies - particularly between the United States and the countries of Western Europe.

110. Outside Europe, the Soviet Union's attempts to shift the global 'correlation of forces' in its favour have suffered a political set-back as a result of the invasion and occupation of Afghanistan, and the failure of the Soviet economy either to provide a suitable model for the developing countries or to supply aid on a scale, and of a quality, that matches the West's. Third World countries have increasingly turned to the West for the aid and trade that they need. The Soviet Union nevertheless continues to seek to extend its influence worldwide. Preferred techniques include the provision of arms and military training; the use of allies and surrogates, like the Cubans in Africa, the Caribbean and Central America; and, as opportunities arise, the active encouragement of disruptive elements in Third World states. In many instances a major Soviet aim is to secure access to overseas military facilities, such as those at Cam Ranh Bay in Vietnam, which now support some 25 to 30 warships and auxiliaries in the South China Sea, and provide a forward base for a growing number of Soviet reconnaissance and combat aircraft.

111. The Soviet Union presents us with the paradox of a country obsessed with its own security but unwilling to acknowledge the implications of its massive military forces for the security of others. There is, moreover, sufficient evidence of Soviet ruthlessness, both against internal dissent

and against what are seen as external threats, to justify a permanent degree of Western caution. We fully accept the Soviet Union's right to protect its legitimate security interests; but Soviet objectives have all too often been pursued to the detriment of the security and way of life of others, as events in both Eastern Europe and Afghanistan have shown. That is why, whether Soviet actions are interpreted as bridgeheads in a communist crusade or as a search for security, it is essential that we and our allies continue to provide an adequate political and military counter-weight to Soviet nuclear and conventional strength. Only in this way can we be certain of protecting the freedom and lifestyle that we have chosen. At the same time, we must seek to develop a dialogue which, over a period of time, could provide a foundation for security at lower levels of forces on both sides.

'Despite our differences with the Soviet Union, we have to talk with them. For we have one overriding interest in common: that never again should there be a conflict between our peoples.'

The Prime Minister.
Speech to a joint session
of the US Congress,
20 February 1985.

NATO'S STRATEGY FOR DETERRENCE

112. Experience has shown us that, notwithstanding its ideology, the Soviet Union is in practice a country with a cautious leadership. Opportunities to increase Soviet influence will be exploited, but only if the risks involved are not too great. Our task, and that of our NATO allies, is to ensure that there are no such risk-free opportunities.

113. NATO deters Soviet aggression through its strategy of flexible response and forward defence. As explained in last year's Statement, we believe that this strategy will continue to provide a sound basis for meeting the Alliance's requirements for many years ahead. There is, of course, room for debate on how it can best be implemented, as technological change affects both our own equipment and force structures and those of the Warsaw Pact. We describe in Chapter 3 the ways in which, through the Conventional Defence Improvements exercise, NATO is aiming to increase the efficiency, cost-effectiveness and capabilities of its conventional armed forces; while in Chapter 5 we discuss the United Kingdom's efforts to obtain better value for the money we spend

on defence. In Chapter 3 we also consider the developments that will result in a substantial reduction in the number of NATO nuclear warheads in Europe.

114. The aim of NATO strategy is the prevention of all war, both conventional and nuclear, and nuclear weapons will play an indispensable part in this for the foreseeable future. NATO is determined to strengthen the credibility of its strategy through the efforts described later in this Statement to improve conventional capabilities. But the continued possession of a range of nuclear forces remains fundamental to our security. For the most elaborate conventional defences in the world would be of no use against an opponent who could threaten a nuclear strike with no fear of nuclear retaliation.

'No householder could assume from the fact that he had not been burgled while in the house that there would be no risk of burglary if he left it empty. It is no more sensible to assume that the Soviet Union would behave, in a situation where it had a nuclear monopoly, as it has behaved in a situation where it knows itself to be vulnerable to devastating nuclear retaliation. The sensible conclusion in both cases is to keep the insurance policy up to date.'

Lord Carrington.
Secretary General, NATO
Address to
the Royal Institute of
International Affairs,
Brussels, October 1984.

THE FUTURE ROLE OF NUCLEAR FORCES

115. In the longer term, changes in force structures on both sides could arise either from large-scale reductions in nuclear arms, or from a new balance between offensive and defensive systems. At this stage it is possible only to speculate on the implications of such changes, and speculation does not provide a sound basis for defence planning.

116. On page [ ] we describe how strategic offensive forces and strategic defences have evolved since the 1950s; while on page [ ] is an account of the wide-ranging Soviet research programme into technologies relevant to defensive systems. The British Government supports research under the US Strategic Defence Initiative (SDI) as a prudent hedge against this Soviet

programme. On 6 December 1985 we concluded an agreement with the US Administration providing a framework for British participation in SDI research. This participation will enhance Britain's ability to sustain an effective research capability in areas of technology relevant to both defence and civil programmes.

THE SOVIET BALLISTIC MISSILE DEFENCE RESEARCH PROGRAMME

1. Mature Soviet research programmes are under way in most of the fields that could contribute to a defence capability against ballistic missiles:

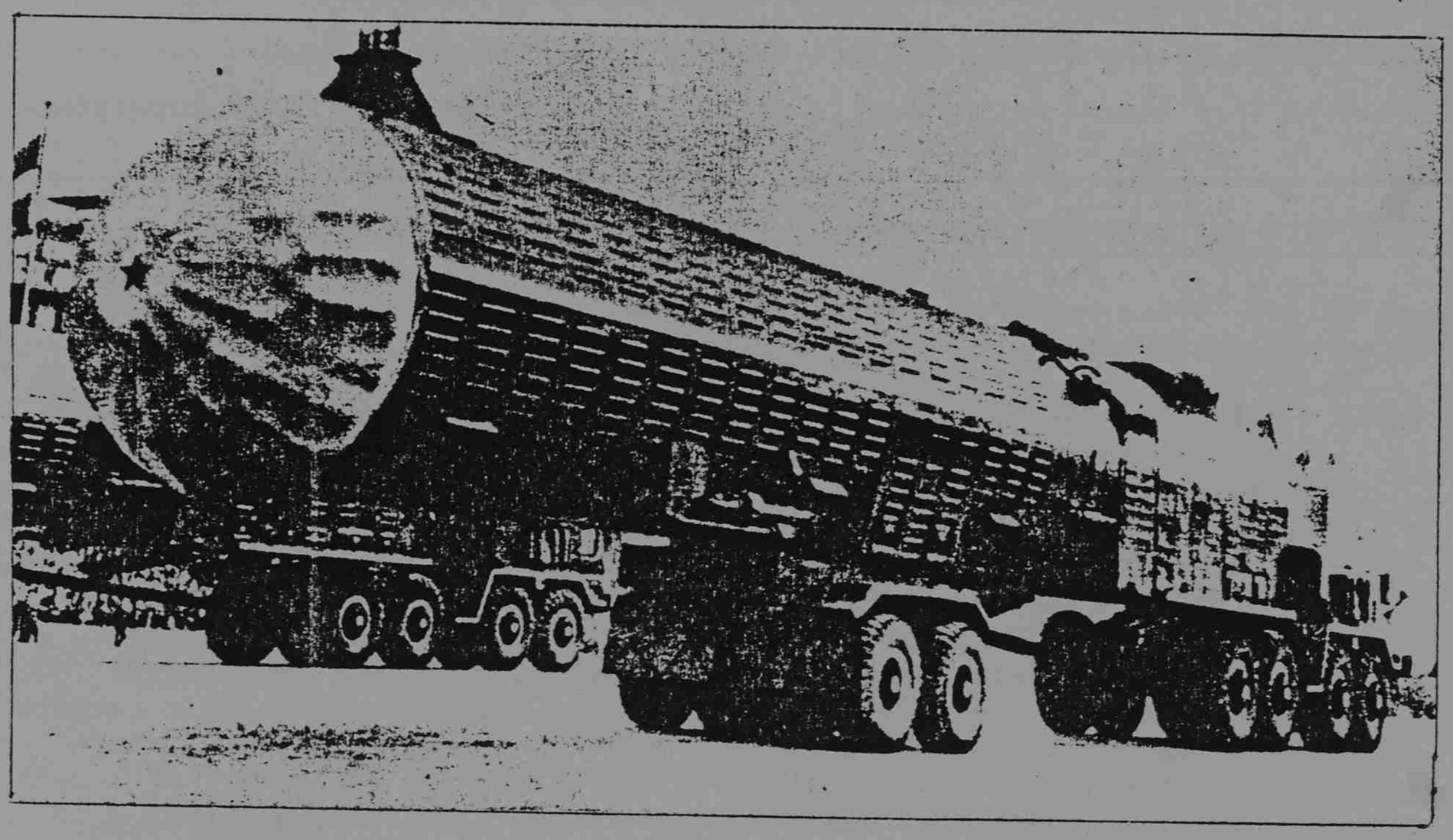
- Lasers: The Soviet Union has an extensive research and development (R&D) programme on high-energy lasers, which dates from the mid-1960s, is carried out at over half a dozen major R&D facilities, and employs more than 10,000 scientists and engineers. It includes research into three types of gas lasers: the gas dynamic laser, the electric discharge laser and the chemical laser, as well as other types including the excimer and free electron laser. Development of high-energy lasers could include those intended for close-range defence of ships at sea, for defence of high-value strategic targets in the Soviet Union and for air defence of theatre forces. An airborne laser, which could have anti-satellite (ASAT) or air defence applications, has been tested; and the testing of a ground-based laser, which could be a prototype ASAT weapon, has also taken place.

- Particle Beam and Radio Frequency Weapons: There is a vigorous R&D programme into particle beam weapons, and this could lead to a prototype space-based system by the late 1990s. Research into radio frequency weapons is also taking place. These have the potential to interfere with components of missiles, satellites or re-entry vehicles. Testing of ground-based radio frequency weapons capable of damaging satellites could take place in the mid-1990s.

- Kinetic Energy Weapons: These use as a kill mechanism the high-speed collision of a small mass with the target. The Soviet Union has a number of long-standing research programmes in this field, including R&D of electro-magnetic rail-guns to accelerate projectiles to extra high velocities. There is, however, no evidence of work on space-based systems.

- Surveillance and Target Detection: The Soviet Union possesses a launch-detection system based on a satellite-borne infra-red sensor in a highly elliptic orbit. It covers US intercontinental ballistic missile launches but in its present form is not capable of detecting submarine-launched ballistic missile launches. An experimental geostationary satellite aimed at improving the performance of the current system has been launched, and there is a strong research programme to improve capabilities in this field.

- Pointing and Tracking: Any effective defensive system against ballistic missiles would require pointing and tracking accuracies of the order of one metre at ranges of 1,000 km to achieve high



A Galosh missile from the Soviet Union's anti-ballistic missile system (photograph courtesy of Jane's Defence Weekly)

enough energy densities. Research is continuing in this field associated with the Soviet space programme, but major advances would be necessary to provide the Soviet Union with adequate capabilities for weapon systems.

- Space Capability: All the space-borne elements of a ballistic missile defence system will require adequate facilities for their launch. The Soviet Union has eight space-launch systems, which are used to place objects in orbit, and is developing two more: a medium- and a heavy-lift launch vehicle. It is also developing an equivalent to the US Shuttle. The new heavy-lift vehicle should be able to lift as much as 150 tonnes into low earth orbit, adequate to launch the components needed for a large manned space complex or elements of space-based weapon systems. With its manned space programmes, the Soviet Union is also acquiring experience of maintaining complex platforms in space.

- Command and Control: The most serious deficiency in Soviet capability is in the electronic systems required to manage the operations involved in detecting, tracking and recording all the missile movements covered by a ballistic missile defence system.

BRITAIN'S CONTRIBUTION TO NATO

117. Britain's security rests on the collective defence provided by the North Atlantic Alliance. Our defence programme must be judged in terms of its contribution to the cohesion and military effectiveness of NATO. As we describe in Chapter 3, the United Kingdom plays a crucial part in the European pillar of the Alliance. British defence expenditure is greater in absolute and per capita terms than that of any other ally except the United States (see Chapter 5).

118. The defence budget in 1985-86 was some £3 billion higher in real terms than it had been in 1978-79; this was the longest period of sustained growth in defence expenditure in more than 30 years. With the ending in 1985-86 of the Government's commitment to meet the NATO aim of 3% annual growth in real terms, suggestions have been made that Britain can no longer sustain all its defence roles and that, as a consequence, a fundamental review of defence

policies is necessary. But as the essay on page [ ] shows, there is no strategic case for drastic change to any one of these roles; nor is there any necessity for such an approach, given the massively increased resources that the Government has committed, and continues to commit, to defence. We therefore believe that there is no justification for a fundamental review of policy priorities, which could only be damaging to NATO's cohesion and effectiveness.

119. Choices will, of course, have to be made about relative priorities in the forward programme, within this established strategic framework. It is to be expected that - in defence as in other public expenditure programmes - there will be more claims for expenditure than there is cash available. This would be true of any realistic forward projection of defence expenditure. The ending of the 3% commitment will sharpen choices and heighten the need - to which the Government is fully committed - to improve the output from defence expenditure as a whole.

THE PROSPECTS FOR EAST-WEST RELATIONS

120. The security that we seek for ourselves is not security at the expense of the Soviet Union. There is business to be done if Moscow is prepared to reciprocate. The Geneva summit has set the tone for East-West relations this year; we sincerely hope that it will mark a lasting turn for the better.

121. There is scope, and an urgent need, to seek common ground on which to build a relationship that will benefit both East and West, and the British Government is continuing to play a leading part in the search for improvements in this field. During the last year, for example, the General Secretary of the Hungarian Socialist Workers Party, Mr Kadar, visited this country; and the Foreign Secretary held further extensive discussions with the Foreign Ministers of the Soviet Union and a number of East European countries. The wide differences that separate East and West cannot be reconciled overnight. But consistent and patient contacts over time can help to build the trust and understanding that are needed to make progress on the key security issues of our age.

ESSAY

THE STRATEGIC DEFENCE INITIATIVE

1. The deployment in the 1950s of substantial numbers of thermonuclear weapons by both the United States and the Soviet Union changed quite fundamentally the nature of thinking on defence matters. Since a nuclear war could not be won in the traditional sense, the principal question facing Western defence planners in the nuclear age became how best to prevent a conflict in the first place.

2. We and our allies have sought to do this by maintaining a defence structure designed not to attack our opponents but to deter possible aggression, by being able to respond appropriately - and if necessary massively - if we ourselves are attacked. This concept of defence by deterrence has been fundamental to NATO's approach since the Alliance was founded in 1949.

3. The means by which the concept has been put into practice have evolved with the passage of time. In particular, the capabilities of the weapons concerned have markedly improved. In the 1950s the threat of strategic nuclear retaliation was based exclusively on manned bombers; then in the late 1950s and 1960s ballistic missiles capable of launch either from land or from submarines were deployed; more recently cruise missiles have begun to appear on a variety of platforms. It was, however, the ballistic missile that confirmed the revolution in strategic thinking begun by the atom bomb. Ballistic missiles came to dominate strategic thinking and the force disposition of the nuclear powers, by virtue of the certainty with which they could penetrate defensive systems and strike their intended target, combined with the appalling power of the nuclear warheads they carried.

4. In the 1960s both superpowers worked on the development of defensive systems against ballistic missiles. By the early 1970s, however, the United States concluded that, given the available technology, such defences were unlikely to be cost-effective; and the Soviet Union came to recognise that it was not in its interests to become engaged in a competition with the United States in this sphere. They therefore agreed, in the Anti-Ballistic

Missile (ABM) Treaty of 1972 and the protocol of 1974, not to develop or deploy systems for territorial defence against ballistic missiles, although one geographically-limited system each was allowed.

5. The effect of the ABM Treaty was to ensure that the United States and the Soviet Union remained open to ballistic missile attack by each other. In these circumstances, both countries were vulnerable to the risk of massive damage in the event of a conflict; each had an overwhelming incentive to refrain from attacking the other; and both were assured, by the certainty of their ability to retaliate, that they were secure from attack. This equation - encapsulated in the phrase 'Mutual Assured Destruction' - has provided the basis of the strategic relationship between East and West since that time, and the framework within which the Western Alliance has conducted its defence policy.

6. After the ABM Treaty was concluded, the United States ceased work on the small anti-missile system to which it was entitled under the treaty. The Soviet Union, by contrast, clearly continued to see a role for defensive systems. It retained around Moscow the Galosh anti-ballistic missile system (see photograph), which is currently being modernised, improved and expanded within treaty limits. And it has continued, as allowed by the treaty, an extensive and wide-ranging research programme into technologies relevant to defensive systems (see page [ ]).

7. On 23 March 1983 President Reagan, in a speech from the White House, announced that he had undertaken a new initiative, designed to determine whether, and if so how, advanced technologies could contribute to the security of the West. In his words:

> 'What if free people could live secure in the knowledge that their security did not rest upon the threat of instant US retaliation to deter a Soviet attack, that we could intercept and destroy strategic ballistic missiles before they reached our own soil or that of our allies?'

8. The Strategic Defence Initiative (SDI) - misleadingly dubbed by the media 'Star Wars' - is a broadly-based research programme, which brings

together and steps up a number of existing US projects. It is designed to establish whether new technologies offer the possibility of cost-effective and survivable solutions, especially by non-nuclear means, to the problem of defences against ballistic missiles. If realised, SDI would in the US view provide the opportunity for both superpowers to shift the relative balance between defensive and offensive forces to a greater emphasis on defence, while at the same time strengthening deterrence and stability.

9. SDI naturally carries many strategic and political implications, which, as the Foreign and Commonwealth Secretary said in a speech in March 1985, will require careful consideration in the years ahead. The US Administration has no preconceived notions about the outcome of SDI research, although it has made clear that any defensive systems must meet strict criteria of survivability and cost-effectiveness before development and deployment could proceed. Should defensive technologies meet these criteria, the Administration intends to consult and negotiate with the Soviet Union under the terms of the ABM Treaty, with the aim of managing jointly a transition to a more defence-reliant balance of forces. It has also made clear its commitment to close consultation with its allies.

10. The British approach to the political and strategic implications of SDI is governed by the accord reached between the Prime Minister and President Reagan at their meeting at Camp David in December 1984. As explained in last year's Statement, they agreed that:

- the US and Western aim is not to achieve superiority, but to maintain balance, taking account of Soviet developments;

- SDI-related deployment would, in view of treaty obligations, have to be a matter for negotiation;

- the overall aim is to enhance, and not to undermine, deterrence; and

- East-West negotiation should aim to achieve security with reduced levels of offensive systems on both sides.

11. The British Government supports the SDI research programme. It is essential to Western security that the Soviet Union should not gain a decisive unilateral advantage in any particular capability. Given the research programme in defensive technologies pursued by the Soviet Union over many years - and against which the improved capability provided by the United Kingdom's Trident D5 programme is a valuable insurance - a US research programme is prudent.

12. Early in 1985, the United States invited its NATO allies and certain others to participate in SDI research. Detailed discussions took place between the US and British Governments, both at Ministerial and official level, to determine the nature and scope of the research that could sensibly be undertaken by British firms and institutions. In December 1985, agreement was reached on an information exchange programme; on the areas in which British companies and institutions have relevant expertise; and on the mechanisms to facilitate cooperation.

13. To provide a comprehensive basis for British participation, draft framework documentation was drawn up in the form of a Memorandum of Understanding signed by the British and US Defence Secretaries on 6 December. This safeguards British interests in the ownership of intellectual property rights and in technology transfer, and provides for consultative and review mechanisms. British companies, universities and research institutions now have the opportunity to compete on a clearly defined basis for the research contracts on offer from the US Government, as well as to participate in the information exchange programme on a fully reciprocal basis for the mutual benefit of the United Kingdom and the United States.

14. To act as a focal point for British participation in SDI, a special office has been set up within the Ministry of Defence, including officials from both the Department of Trade and Industry and the Department of Education and Science. One of the main functions of the SDI participation office will be to identify and promote relevant British skills and technological capabilities available in our industries, universities and research institutions.

15. Participation in the SDI research programme will enhance the United Kingdom's ability to sustain an effective British research capability in areas of high technology relevant to both defence and civil programmes. It opens the way for research possibilities that we could not afford on our own, in technologies that will be at the forefront of tomorrow's world.

ESSAY

THE SEAMLESS ROBE

1. Britain's present military commitments were defined in 1975 after an extensive defence review and have since been reaffirmed in Cmnd 8288 and in successive annual Statements. They reflect our post-war role and our reliance on the collective security afforded by the NATO Alliance.

2. Our contribution falls into four distinct but complementary main areas: the provision of an independent strategic nuclear deterrent; the defence of the United Kingdom itself; our land/air contribution to the European mainland; and maritime operations in the Eastern Atlantic and Channel. We thus maintain a wider spectrum of capabilities than any other NATO ally except the United States and France. Some have questioned whether we can or should continue to maintain them all, and have asked whether all our roles still have the same relevance today, some ten years after they were first defined. This essay considers some of the issues.

Nuclear Forces

3. The Government remains firmly committed to maintaining and modernising our independent strategic nuclear capability, for reasons that were fully set out in Defence Open Government Documents 80/23 and 82/1, and in the essay on Trident in last year's Statement. We do not repeat the arguments here, but concentrate instead on our conventional capabilities, which together account for the major part of our defence expenditure.

Defence of the United Kingdom

4. Defence of the United Kingdom is both vital in itself and essential to ensuring the reinforcement and re-supply of the Continent, on which our security also depends. Any Warsaw Pact attack on Western Europe would almost certainly include a substantial air offensive against targets in the United Kingdom, using both missiles and manned bombers. In addition, we face the risk of mining and submarine attacks around our coast, and of incursions and sabotage

by special forces. In recognition of this, we have been making major improvements to our air defence, and to mine countermeasures and ground defence forces earmarked for the defence of the United Kingdom. These will continue.

European Mainland

5. British ground and air forces are deployed permanently on the mainland of Europe in accordance with our obligations under the modified Brussels Treaty of 1954. Some have argued that this is a radical reversal of traditional British defence policy, and that British Forces Germany, which currently consists of 55,000 troops and a tactical air force, should be reduced or withdrawn.

6. The permanent stationing of British forces on the Continent is indeed a new departure in history. It is one that successive Governments have believed is the most powerful symbol of our commitment to the security of Europe, and the most tangible manifestation of our belief in NATO's aims and strategies. There are three main arguments against weakening our commitment to the Central Front:

- First, as Cmnd 8288 said, 'the forward defence of the Federal Republic is the forward defence of Britain itself'. British Forces Germany is a major fighting force in its own right: none of our allies is able to assume our responsibilities for the defence of 65km of front or to replace our more widely spread air assets. And yet the maintenance of strong forces there is central to the credibility of NATO's military posture, on which deterrence is based.

- Secondly, such a move would raise serious doubts among our allies, both European and North American, about our continued commitment to NATO's strategy of forward defence and to the efforts being made to strengthen the Alliance's conventional capability; and would send quite the wrong signal to the Soviet Union about the solidarity and cohesion of the Alliance.

Thirdly, unless the forces concerned were disbanded, it would cost more in the short- to medium-term to bring them home, to house them and to provide training areas, support and infrastructure in the United Kingdom than it would to leave them in the Federal Republic. We would have less money, not more, available for enhancements to our other capabilities.

7. The integrity of the Alliance depends on the maintenance of a credible collective capability to respond to aggression, and this calls for the ability to reinforce areas that come under threat. Although the United States provides the bulk of NATO's reinforcements, we also contribute specialist reinforcement forces. This role cannot be considered in isolation from the others: for example, Soviet operations on the Northern Flank would have a major impact on maritime operations in the Norwegian Sea and the Atlantic and on the defence of the United Kingdom itself.

Maritime Forces

8. The United Kingdom depends on the freedom of the seas for its security and prosperity. In particular the sea-lines of communication across the Atlantic, Channel and North Sea are vital to NATO's reinforcement and resupply plans. Without massive movements of US and British men and material to the European mainland, land battles would probably be lost.

9. The Soviet Union is well aware of all this. The Soviet navy is no longer a coastal force, as it was at the end of the Second World War, but a wide-ranging, highly effective, all-purpose fleet capable of threatening Western interests in every part of the world, and particularly in the sea areas around Western Europe. To counter this threat we and our NATO allies need a balanced and versatile maritime capability.

10. Britain provides 70% of the ready NATO maritime forces in the Eastern Atlantic and Channel and is the only European member of the Alliance able to contribute to all areas of maritime capability. We are in a unique position, historically and geographically, to make such a contribution; and we intend that it should continue.

Interdependence and Flexibility

11. The elimination of any of the United Kingdom's four main NATO commitments would substantially weaken the Alliance and would thereby make this country itself much less secure. But there is more to it than that. The roles cannot be viewed in isolation from one another. The pervasive coverage of modern surveillance systems and the increasing range of new generation weapons, together with new operational concepts, serve to increase the interdependence of the NATO regions and to interlink areas and capabilities that have hitherto been regarded as distinct.

12. We have long talked of a 'seamless robe' of deterrence. If deterrence is to remain credible we must think in similar terms about NATO's commitments and capabilities. For it is quite certain that the threat we face is itself 'seamless': it cannot be broken down into isolated, self-contained components, limited to particular geographical areas. In short, our roles and commitments are today more closely interrelated that at any time in our history.

13. Moreover, although the main threat to the United Kingdom's security comes from the Soviet Union and its allies, we cannot ignore possible threats to our interests from elsewhere. We have always looked both to Europe and to the wider world beyond; and, as we explain in Chapter 3, we retain national responsibilities, treaty obligations and economic interests outside the NATO area. Where possible we aim to influence, encourage and support friends and allies by economic, political and military assistance rather than by the direct involvement of intervention forces. But the unexpected can happen, as it did in the Falkland Islands in 1982; and if it does, we need to be able to respond. We can do this by taking advantage of the flexibility and mobility of the units trained and equipped to meet the spectrum of threats that we face in the NATO area.

14. None of the above is to suggest that the United Kingdom's precise contribution in each field will, or should, remain unchanged for all time. The threat is constantly evolving, and priorities are constantly being re-defined. Nor should we ignore the significant increase in capability inherent in new generation weapon systems. All this may lead to shifts of emphasis in

the proportion of resources devoted to each role. But the fundamental importance of each role, both itself and as a contribution to the overall structure, will remain.

CHAPTER TWO : ARMS CONTROL

201. Arms control is an integral part of the East-West relationship, and we are firmly committed to achieving results. On page [ ] we set out the basis for an approach to this subject and discuss some of the issues involved. The following paragraphs describe recent developments and prospects for the future. Figure 1 shows the participants in the four sets of arms control talks currently in progress.

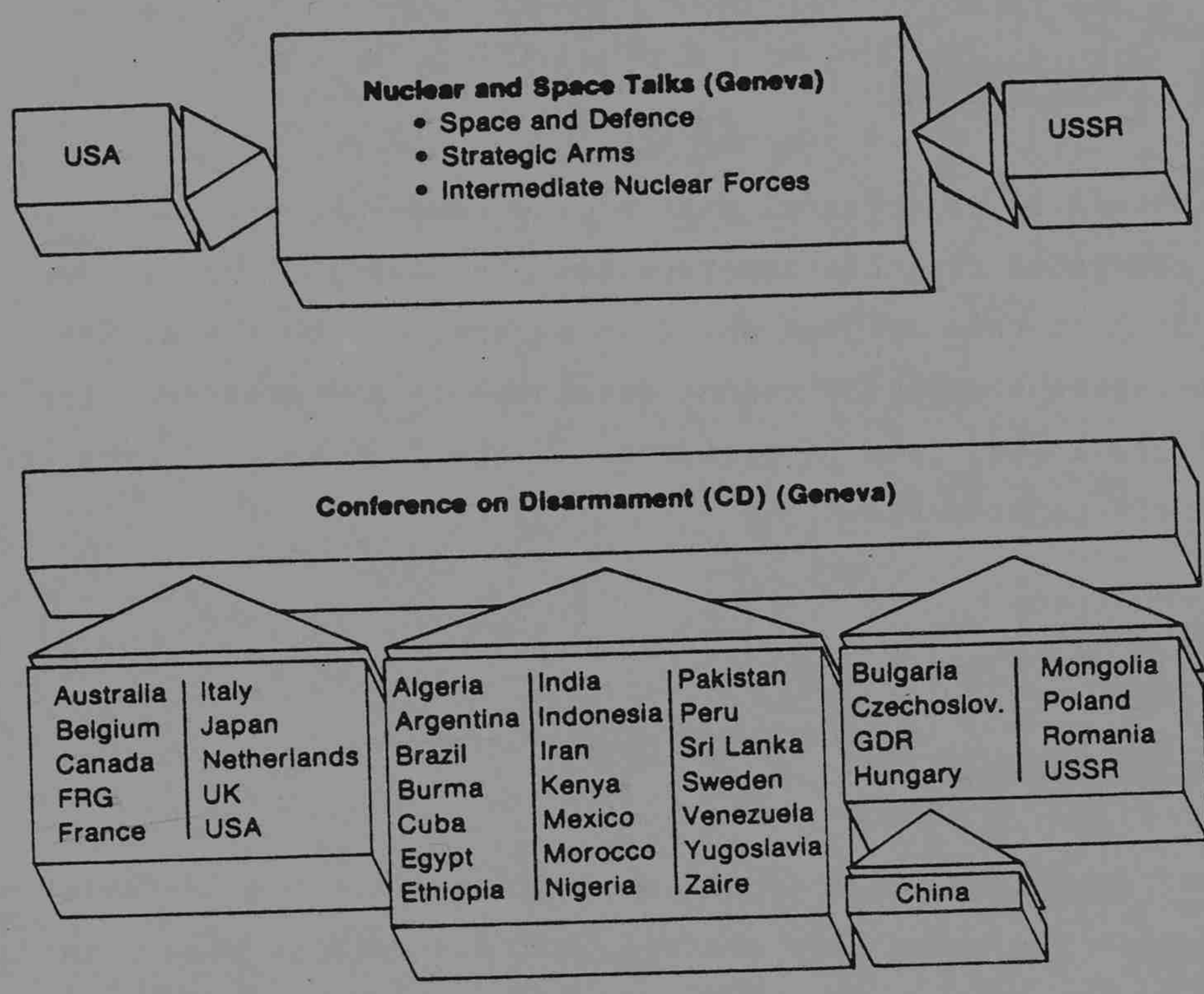
NUCLEAR ARMS CONTROL

US - Soviet Negotiations

202. The most important talks in the nuclear area are the US-Soviet negotiations on nuclear and space arms control, which opened in Geneva in March 1985. The agreed aim is to work out effective arrangements for preventing an arms race in space and terminating it on earth; for limiting and reducing nuclear arms; and for strengthening strategic stability. The negotiations are divided into three groups: on space and defence; strategic arms; and intermediate-range nuclear forces (INF).

203. During the opening rounds, the United States put forward a number of proposals developed from its positions in the earlier, separate, INF negotiations and Strategic Arms Reduction Talks, and emphasised its desire to discuss the relationship between offensive and defensive forces. The US Administration stressed its flexibility and its wish to make progress in all three areas without holding one hostage to another. The Soviet opening position was to propose a familiar series of inequitable or unverifiable bans and moratoria, aimed at perpetuating Soviet advantages in a wide range of offensive systems, including a ban on Strategic Defence Initiative (SDI) research. Soviet negotiators also sought to make progress in the space group a precondition for progress in the other two. The Soviet approach appeared to be to sound out the US negotiating positions; to test the degree of Alliance support for them; and to see if any cheap concessions could be gained from the West. Little progress was therefore made in the first two rounds of the negotiations.

Figure 1 Participants in Arms Control Talks



204. At the end of September 1985, during the lead-up to the Geneva summit, the Soviet Union tabled specific proposals for the first time. These included a proposed reduction of strategic nuclear delivery vehicles by 50%; limits on 'nuclear charges' (bombs and warheads) of 6,000; and of all the nuclear charges possessed by each side, a limit of 60% on the number that could be carried on any one type of vehicle (intercontinental ballistic missiles, submarine-launched ballistic missiles, or aircraft).

205. While the tabling of specific numbers was welcome, many elements of the Soviet proposals were one-sided. In particular, the Soviet definition of 'strategic' systems as those weapons capable of hitting the other side's territory meant that US medium-range missiles and aircraft and carrier-borne aircraft were included, while a large number of comparable Soviet systems were not. This was clearly unacceptable to the United States, since it would have involved agreeing to US inferiority in INF or strategic systems, or both.

206. At the INF level, the Soviet Union proposed a halt in US INF deployments, the elimination of Pershing IIs, and reductions to 100-120 US ground-launched cruise missiles (GLCMs) over an 18-month period, and to zero in a subsequent phase. In return, the Soviet Union would reduce its SS-20s in Eastern Europe to a level equivalent to the combined total of US GLCMs and British and French strategic weapons. These proposals were essentially no more than a variation of the familiar Soviet insistence on matching SS-20s against the British and French deterrents in the INF negotiations.

207. NATO's position throughout the negotiations has been that they are bilateral between the United States and Soviet Union, and that INF systems on one side should be matched against INF systems on the other. The British deterrent, being seaborne, strategic, and national, has no place in these negotiations; nor has the French. The proposals did show, however, that the Soviet Union now accepted that an interim INF agreement could be reached independently of the space and strategic areas; and also implied an acceptance of some level of US INF deployments, at least on a temporary basis.

208. After consultation with the NATO allies, the United States tabled further proposals in early November, building on the earlier US position, picking up the positive elements of the Soviet proposals, and including: endorsement of the principle of 50% reductions in strategic forces, on an equitable definition of 'strategic'; specific proposals for reductions in launcher numbers; a limit of 4,500 on ballistic missile warheads and of 1,500 on air-launched cruise missiles; and a limit on ballistic missile throw-weight. At the INF level, the United States made specific proposals for an interim agreement, with a limit of 140 US and Soviet long-range INF (LRINF) missile launchers in Europe, and warhead levels of perhaps 420-450. There would be proportionate reductions of SS-20s in Asia, and an agreed global LRINF warhead limit. The British Government welcomed this move, which reflected Alliance consultation and demonstrated the US commitment to pursuing agreement at the negotiating table.

209. At the Geneva summit meeting between President Reagan and Mr Gorbachev last November (see Chapter 1) the two leaders agreed to the principle of 50% reductions in the levels of both sides' nuclear weapons, appropriately applied; and to the principle of an interim INF agreement. In addition they committed themselves to accelerating the pace of the Geneva negotiations, and to making progress on a wide range of other issues.

210. In January 1986, the Soviet Union tabled further proposals, including a wide-ranging nuclear disarmament programme: this contained some important new features but also a number of familiar elements which, if agreed, would have allowed the Soviet Union to maintain its nuclear superiority in the short term and increase the significance of its conventional superiority in the long term. On INF, the Soviet proposal to eliminate US and Soviet medium-range missiles in the 'European zone' was linked to provisions that the United States would not supply strategic and medium-range missiles to other countries and that Britain and France would not build up their corresponding nuclear armaments.

211. After close consultation with allies, the United States responded in February by proposing a three-phase reduction in US and Soviet long-range INF missiles, which would eliminate such weapons worldwide by the end of the

decade, coupled with limitations on shorter-range systems. Whereas the Soviet offer would have allowed the Soviet Union to retain a mobile SS-20 force in Asia and build up shorter-range forces targetted on Western Europe, the US proposals offer a realistic basis for removing the threat from long-range INF missiles, in a way that is consistent with the maintenance of Alliance security. In accordance with agreed NATO policy, the United States also firmly rejected constraints on British and French nuclear forces as a precondition for an INF agreement.

The Government's Position

212. The Prime Minister, when replying to a letter from Mr Gorbachev about the Soviet proposals of January 1986, made clear the Government's view that nuclear weapons at present make an essential contribution to preserving peace and stability and that East and West will continue to rely on them in their deterrent role for the foreseeable future. This does not mean that nuclear weapons cannot be reduced, but security at lower levels of armaments depends on realistic arms control measures which are balanced and verifiable.

213. The Prime Minister suggested to Mr Gorbachev that there should be thorough negotiation on strategic arms proceeding from the US proposals of November 1985 for 50% reductions; on space and strategic defence, where the Camp David four points provided a good basis on which to proceed; and on INF, working on the basis of the US proposals of February 1986, which had the full support of the British Government. The conditions specified by the Soviet Union, as they relate to British nuclear forces, are unreasonable and unacceptable. They seek to prevent the modernisation of Britain's independent strategic deterrent as a precondition for a bilateral US-Soviet agreement concerning quite different nuclear forces. We had previously informed the Soviet Government that the British force is strategic in character and is the minimum size consistent with its role as a deterrent. If Soviet and US strategic arsenals were to be very substantially reduced, and if no significant changes occurred in Soviet defensive capabilities, we would want to review our position and to consider how best we could contribute to arms control in the light of the reduced threat.

214. The Government has stressed its willingness to explore with the Soviet Union the wider aspects of arms control, including the need for increased confidence and greater stability in the East-West relationship. We hope that Mr Shevardnadze will take up the Government's invitation to visit the United Kingdom to pursue this dialogue with the Foreign and Commonwealth Secretary. We have emphasised that nuclear arms control cannot be considered in isolation from the balance of conventional forces. We have welcomed the Soviet Union's apparent recognition of the central importance of verification and hope that this can be reflected in the negotiations under way in various fora concerning both nuclear and conventional arms control.

Non-Proliferation

215. September 1985 saw the successful conclusion of the Third Non-Proliferation Treaty (NPT) Review Conference. The 86 countries taking part reaffirmed that the Treaty was essential to international peace and security and expressed their determination to enhance its implementation and to strengthen further its authority. We strongly support the NPT, and this successful result - despite differing points of view - represents a renewed recognition of the Treaty's importance in preventing the further spread of nuclear weapons.

Nuclear Testing

216. While our highest priority is the achievement of reductions in levels of nuclear weapons, we are also committed to making progress towards a Comprehensive Test Ban. Notwithstanding Soviet assertions to the contrary, important verification problems remain unresolved, and solutions to these need to be more visible before negotiations can be resumed. We are working to resolve them at the Geneva Conference on Disarmament (CD), and in July 1985 tabled a paper on Seismological Verification of a Comprehensive Test Ban aimed at contributing to this process. Unfortunately, because of Soviet tactics, it has not yet proved possible to secure agreement for a working body of the CD to resume work on this subject.

217. In September 1984 the United States had proposed to the Soviet Union that the two sides exchange observers at their nuclear test sites to help resolve uncertainties over the monitoring of nuclear tests. The Soviet Union did not agree, but in July 1985 the United States invited Soviet observers to the US test site for the same purpose. Once again the Soviet Union was dismissive, but in late July Mr Gorbachev announced a nuclear testing moratorium to run from the beginning of August until the end of 1985. He subsequently announced a number of extensions. Such a moratorium is not verifiable, and previous Western experience of Soviet behaviour under a pause in testing gives no ground for believing that it would serve our security interests. In contrast, President Reagan's proposal in December 1985 that US and Soviet experts should meet to discuss verification, and his offer in mid-March 1986 for Soviet observers to inspect a US test, are practical measures, designed to make realistic progress where it is possible.

CONVENTIONAL ARMS CONTROL

218. It is perhaps not surprising, in view of the nature of the weapons themselves, that public discussion of arms control and security issues is concentrated almost exclusively on nuclear weapons and the negotiations for their reduction. But security and stability depend also on the balance of conventional forces between East and West; and non-nuclear forces account for by far the largest part of the total resources committed to defence. The United Kingdom is an active participant in a wide range of conventional arms control and disarmament negotiations.

219. The greatest concentration of conventional forces anywhere in the world is in central Europe. At the Mutual and Balanced Force Reductions (MBFR) talks in Vienna we continue, together with our NATO allies, to seek agreement on balanced and verifiable troop reductions that will enhance stability and security at lower levels of forces. If we are to ensure that both sides can have confidence in any agreement, there can be no room for uncertainty or mutual suspicion. We must agree both on the number of troops in the reductions area (Federal Republic of Germany, East Germany, Benelux,

Poland and Czechoslovakia) and on measures to ensure that, once withdrawn, they cannot subsequently be re-introduced without the knowledge of the other side. The problem is further complicated by differences in the geography of NATO and the Warsaw Pact (see Annex A). Although we have continued to offer a dialogue with the Soviet Union and its allies on these and other issues, they have shown no evidence of a corresponding willingness to enter into serious negotiations.

220. On 5 December 1985, the United Kingdom tabled a new proposal on behalf of the NATO participants in the negotiations. This takes up an earlier Eastern offer and seeks to build on areas of agreement between the two sides. Initial reductions of 5,000 US and 11,500 Soviet troops would be followed by an exchange of information on forces remaining in the reductions area and a three-year commitment not to increase them. During this period, confirmation of compliance with the terms of the agreement and confidence in the accuracy of the information exchanged would be established by a range of verification measures. By putting forward this proposal, the West has made a constructive attempt to break the long-standing deadlock in the talks. It is disappointing that, in their response tabled in Vienna on 20 February, the East made no corresponding move, confining themselves to a restatement of earlier and inadequate verification proposals.

CHEMICAL AND BIOLOGICAL WEAPONS

221. The agenda for the 40-nation Conference on Disarmament in Geneva covers a wide range of issues, but none is more important to our security than the negotiations on a comprehensive and verifiable global ban on the development, production and stockpiling of chemical weapons. During the past year some progress has been made towards drafting a Convention, but major problems remain over verification. As in other arms control negotiations, the parties to an agreement must be able to satisfy themselves that others are complying with their obligations - in this case, to destroy all chemical weapons and never to manufacture them again.

222. The United Kingdom makes a particularly active contribution to these discussions and has tabled a number of working papers, which have been well

received. In February this year, we assumed the chairmanship of the important ad hoc committee on chemical weapons. We hope that this will enable us to provide an added impetus to reaching an agreement that will eliminate the threat posed by these weapons, more than 60 years after the 1925 Geneva Protocol banned their use in war. If no agreement is forthcoming in Geneva, the United States may resume the production of chemical weapons, which it suspended unilaterally in 1969, in order to ensure that it continues to have a credible deterrent against Soviet use of its massive chemical weapons stockpile.

223. We cannot afford to be complacent. We describe in Annex A the threat posed by the formidable Soviet chemical warfare capability; but the further use of chemical weapons in the Gulf War illustrates the danger posed by the proliferation of these weapons in the Third World. In an attempt to make proliferation more difficult, the British government has imposed export controls on a range of chemicals that might be used to manufacture chemical weapons. But these measures are no substitute for the negotiation of the global ban to which we remain committed, and which is the only long-term solution to the problem.

224. For many years, biological and chemical weapons were bracketted together for arms control purposes, but the problems of reaching agreement on an all-embracing treaty were such that, in 1969, in response to a British initiative, separate negotiations began on biological weapons. The 1972 Biological Weapons Convention prohibited the development, production and stockpiling of bacteriological (biological) and toxin weapons. It has since been signed by more than 100 states and will be the subject of a Review Conference in Geneva later this year. This Conference will need to take account of the continuing negotiations on chemical weapons, of recent technological developments, and of the need to seek verification provisions for the convention which at the moment are wholly lacking. We shall be playing an active part both in the preparations for the Conference, and in the Conference itself.

CONFIDENCE-BUILDING MEASURES

225. Worthwhile arms control measures are not confined only to those involving reductions in force levels or the elimination of groups of weapons; a climate

of confidence and trust is essential if we are to make real progress towards disarmament. In an attempt to introduce greater openness, and to reduce the risks of a misunderstanding leading to conflict, the 35 participating states at the Conference on Security and Cooperation in Europe (CSCE) in Helsinki in 1975 agreed to notify one another in advance of all military activities involving more than 25,000 men. They also undertook, voluntarily and on a reciprocal basis, to invite observers to military manoeuvres. The United Kingdom has adhered to both the spirit and the letter of the Helsinki Final Act. We have invited observers to every exercise that has taken place above this threshold since 1975, the most recent being Exercise Brave Defender (see page [ ]). Although other NATO nations and many of the neutral and non-aligned states of Europe were represented, as with Exercise Lionheart in 1984 neither the Soviet Union nor any other member of the Warsaw Pact chose to attend.

226. The Conference on Disarmament in Europe (CDE) meets in Stockholm. Its mandate is to agree a set of mutually complementary Confidence- and Security-Building Measures, which will extend the scope of the Helsinki Final Act and reduce still further the risk of military confrontation. As in other arms control negotiations, our approach is closely coordinated with that of our NATO allies. We have together put forward proposals for the package of concrete measures shown in Table 1. If accepted, they would be equitable, verifiable, militarily significant and applicable to the whole of Europe.

227. Proposals have also been tabled by both the Warsaw Pact and the group of neutral and non-aligned (NNA) countries. Those of the Warsaw Pact have been confined for the most part to declaratory measures that would do little to enhance either confidence or security, while the NNA countries' proposals are closer to those put forward by NATO. Much useful progress has been made on procedural issues, and the way has been opened for drafting to begin. We shall continue to work for early agreement on practical measures in time for progress to be reviewed at the Vienna CSCE Review Conference in November this year.

Conference on Disarmament in Europe (CDE) Table 1
Western Proposals for Enhanced Confidence- and Security-Building Measures
Helsinki Final Act (1975)

- Notification of military manoeuvres involving 25,000+ troops.
- Voluntary invitation of observers to attend military manoeuvres.

Proposals Tabled by Western allies in CDE (1984)

- Exchange of information on the structure and organisation of military forces in the CDE zone (Europe from the Atlantic to the Urals);
- Forecasting and subsequent formal notification of military activities at a level significantly lower than 25,000;
- Mandatory invitation of observers to demonstrate the non-threatening nature of these activities;
- Compliance and verification arrangements, including occasional inspections, to confirm that other states are complying with their obligations;
- Improvement of contacts and communication between participating states.

ESSAY

ARMS CONTROL AND DEFENCE

1. Arms control has been very high on the international agenda this year. It is therefore timely to look in depth at some of the issues involved.

2. Defence and arms control are not alternatives; as was recognised in the 1967 Harmel report of the North Atlantic Alliance and is enshrined in NATO doctrine, they are complementary, sharing a common goal - to make the world in which we live a safer one. Arms control can make us safer in several ways:

- By contributing to stability: that is, a state of affairs in which no-one would achieve a decisive advantage by firing the first shot, or risk suffering decisive disadvantage by failing to do so. This is more a matter of the structure of forces, above all of nuclear forces, than of numbers alone. Closely coupled with this is the achievement of greater understanding of, and predictability in, the strategic relationship between states, and especially the superpowers.

- By limiting the arms race: it is natural for states to seek to assure their own security by competing with, and reacting to, others' military deployments. But governments have a responsibility to do what they can to restrain and, if possible, eliminate this competition. The reason is not just to save money, so as to free resources for other priorities; it is also to avoid the international tensions and misunderstandings to which an arms spiral can give rise.

- By preventing the spread of weapons: arms control can help prevent the proliferation of nuclear weapons to parts of the world in which they are not already a feature of a stable security framework; it can also prevent the spread of other weapons of mass destruction, such as chemical weapons; and can reduce the motivation of all states to acquire more conventional weapons than are strictly needed for their own security.

3. Arms control can only be built successfully on a perception of common interest, which leads to agreements that confer benefits and obligations on all parties. It is because arms control concerns interests which are both vital and shared that agreements must be equitable, balanced and verifiable. It follows that there are a number of things that arms control is <u>not</u>:

- It is not a means by which one side can change the force-structure of the other, so as to gain unilateral advantage. Arms control agreements are only achieved when the parties perceive a common interest, or at least the possibility of a trade-off of interests; it is quite unrealistic to expect one side to bargain away what it sees as the foundations of its security.

- Nor is arms control a means of preserving or freezing existing unilateral advantages. Some differences arising from geography and other factors will always remain, but arms control agreements will only contribute to stability if they lead to an equitable balance of forces.

- Arms control is not an alternative to providing the necessary means for defence. It complements a policy of deterrence, and can be pursued only on the basis of strength, not weakness.

- Nor is it an easy route to improving East-West relations. While confidence in the strategic relationship is a good basis on which to build better political understanding, arms control touches the deepest interests and concerns of nations. It is therefore easier to achieve when tension is low and trust is high; indeed, agreements are more likely to come about as a consequence of stable international relations than to be a precursor of them.

4. Arms control is not achieved quickly but by patient - and often laborious - negotiation, building a basis for common understanding. It has to deal with military realities, rather than pious hopes, if it is to provide a substantial basis for security at lower levels of forces. Hard questions on such matters as adequate verification need to be answered, not

by-passed. The ideal is seldom within easy reach, but it is important not to give up on that account. The complete abolition of nuclear weapons, for example, is not a realistic prospect in the foreseeable future; nor, in the conventional field, is an agreement on the wholesale reduction of forces. Steps towards arms control must for the present be more modest; but they are nonetheless vital.

5. Chapter 2 contains many examples of how the United Kingdom helps in this process. We can best contribute not by unilateral gestures, which call into question our commitment to our own security and provide no guarantee of an adequate response; but by a sustained effort within the Alliance framework, including close consultation with the United States in the context of their bilateral negotiations with the Soviet Union.

6. Our record is good. We have played a leading role in the most recent initiative in the Mutual and Balanced Force Reduction talks in Vienna; we have contributed much to the highly important negotiations on chemical weapons in Geneva; we have made major inputs into the Non-Proliferation Treaty Review Conference in Geneva, and the Conference on Disarmament in Europe in Stockholm; and we have played a significant part in promoting dialogue with the Soviet Union and its allies. We sincerely want progress, and we very much hope that the coming months will see substantive steps taken towards a safer and more stable world.

CHAPTER THREE: BRITAIN IN EUROPE AND NATO

301. The security of the United Kingdom is inseparable from that of our NATO allies. Successive Governments have recognised that the Alliance - whose Treaty enshrines the principle that an attack on one is considered an attack on all - provides the best guarantee of our security, and have reaffirmed our commitment to collective defence. In last year's Statement we discussed NATO's deterrent policy and its strategy of flexible response: the major contribution that we make to the Alliance helps to ensure the continued credibility of that strategy.

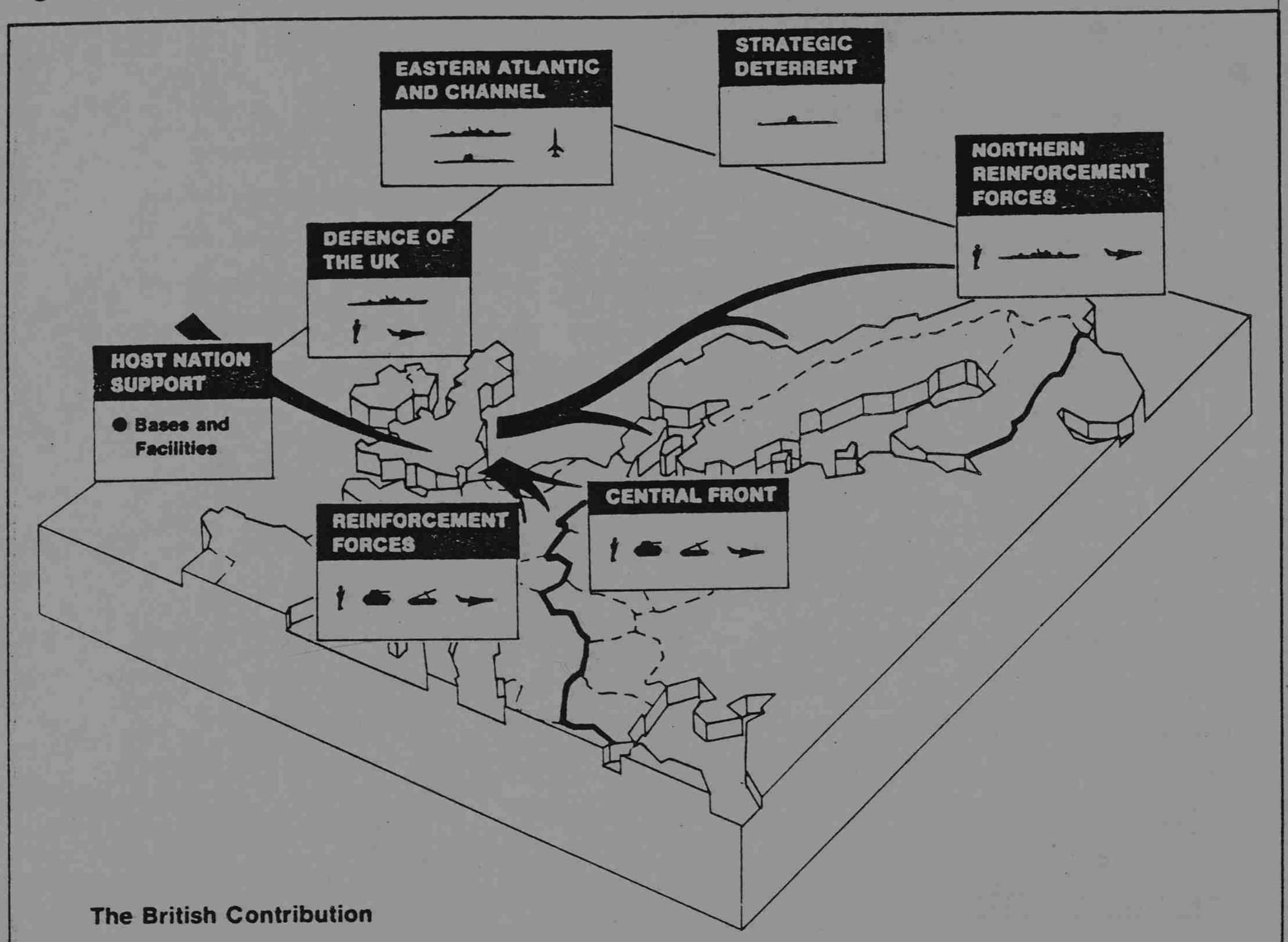
302. Crucial to NATO is the transatlantic relationship. There is no substitute for the commitment and contribution to collective security represented by the presence of substantial US and Canadian forces on European soil. At the same time, as was recognised in the 1974 Ottawa Declaration on Atlantic Relations, the forces of the European allies serve to defend both Europe and North America. NATO has long recognised the importance to common defence of maintaining a strong and cohesive European pillar.

THE EUROPEAN PILLAR

303. The current European contribution to NATO is a strong one. As we explained last year, the European allies collectively provide the major part of the ready forces stationed in Europe and of the warships in the Atlantic and European waters. Annex A describes the major improvements being made to European ground, air and naval forces.

304. The United Kingdom forms a vital part of this European pillar. In addition to our capability for the defence of the home base, we maintain substantial ground and air forces in Central Europe and provide the largest European naval contribution to the Eastern Atlantic and Channel. We also provide specialist reinforcement forces, in particular for NATO's Northern Flank; and make available facilities and support to forces from across the Atlantic. The range and extent of our contribution is illustrated in Figure 2.

Figure 2 The British Contribution to Defence in Europe



The British Contribution

Central and Northern Europe[2]	Among European nations[1]	Among NATO as a whole[1]
Main Battle Tanks	15%	10%
Anti-tank Guided Weapons[3]	25%	15%
Air Defence Aircraft	45%	30%
Ground Attack Aircraft	30%	20%
Manpower (active duty personnel)	25%	20%
The Atlantic and Channel[4]		
Carriers	100%	40%
Submarines[5]	60%	30%
Destroyers/Frigates	60%	30%
Maritime Aircraft	80%	30%

Notes

Figures show the British contribution in each category as an approximate percentage of that of the European members of NATO and of NATO as a whole.

1. Excluding France and Spain.
2. Figures relate to in-place forces stationed in Central and Northern Europe in peacetime.
3. Includes crew-served and/or mounted ATGW.
4. The calculation of maritime forces includes those (mainly US Navy) based in the Western Atlantic.
5. Excluding SSBNs.

Host Nation Support

1. Like other European NATO nations, particularly the Federal Republic of Germany, Britain contributes to the common defence by supporting the stationing of allied forces in peacetime. Peacetime support includes making available surplus land and buildings for the stationing of NATO forces, together with certain training facilities. The value of such support, though difficult to quantify, is considerable.

2. No less important is the provision made for the reinforcement that would be required in Europe from North America in a crisis. The US/UK Lines of Communication (LOC) Arrangement, drawn up in 1973, permits the United States to establish, operate and maintain lines of communication and ancillary facilities in this country as part of its NATO obligations.

3. We have agreed to ensure that requests for facilities will be considered, provided that the British Government always has priority in using national resources and that costs are borne by the US Government. All plans to use civilian resources are drawn up in close consultation with other Government Departments, as well as relevant civilian authorities.

4. Because peacetime medical facilities might prove inadequate for wartime needs, the United States is establishing its own contingency hospitals. These are pre-positioned hospital units in kit form, which would be activated in a crisis and would thereby reduce the burden on the National Health Service. These hospitals will be equipped, manned and financed by the US Government.

European Defence Cooperation

305. Our policy is further to strengthen the European pillar of the Alliance by both bilateral and multilateral cooperation. We attach great value to our close links with other allies in Europe and to the work of the organisations devoted to European defence cooperation: as Table 2 shows, the United Kingdom is a member of all the principal European security groupings. During the past twelve months, the nations of Europe have shown, through cooperation in practical ways, their firm commitment to their own defence. A particular effort has been made to strengthen equipment collaboration through the work of the Independent European Programme Group (IEPG), which is discussed in paragraphs 310-311 below.

306. Within NATO, the Eurogroup carries out useful work in a wide variety of areas. Eurogroup Defence Ministers meet twice a year to discuss defence and security issues, and to direct the work of a number of sub-groups promoting collaboration between the European allies in such diverse areas as training, logistics, communications, operational concepts and military medicine. The Eurogroup also plays a valuable role in bringing European defence activities to the notice of a wider public, particularly in North America. Last year saw two speaking tours of the United States, conducted by panels of military and civilian speakers; and, in September, a successful meeting of information experts from the Eurogroup countries.

307. In last year's Statement we described the decision taken by Ministers to reactivate the Western European Union (WEU) and to reform its institutions. The WEU provides a unique forum for bringing together both Foreign and Defence Ministers of the seven member states to develop a European consensus on issues of broad political and strategic concern. Ministers met in Bonn and Rome in April and in November, and agreed to set up three new agencies, under the collective title of Agencies for Security Questions, to carry forward the detailed work of the WEU. They have now been established and have begun their studies into arms control and disarmament, security and defence questions, and armaments cooperation.

308. The last year has also seen, in December, agreement by Heads of the European Community member states on the principles of the new Treaty on European Political Cooperation. This requires them to coordinate the political and economic aspects of security, without impeding the work of either NATO or the WEU. The United Kingdom will be fully involved in this work.

Composition of NATO and Main European Defence Groupings

Table 2

	NATO	Eurogroup	WEU	IEPG
Belgium				
Canada				
Denmark				
Federal Republic of Germany				
France	(1)			
Greece				
Iceland	(2)			
Italy				
Luxembourg				
Netherlands				
Norway				
Portugal				
Spain	(1)			
Turkey				
United Kingdom				
United States				

Notes:

1. France and Spain do not participate in NATO's integrated military structure.

2. Iceland has no armed forces of its own.

EQUIPMENT COLLABORATION

309. We have stressed in recent Statements that the NATO countries, if they are to make the best use of resources, must share the costs of modern equipment through effective collaboration. The thrust towards European collaboration stems from a number of factors, including pressure from the United States for Europe to make a greater, and more coordinated, contribution to the common defence; and a growing European recognition that a stronger and more cohesive effort within Europe will strengthen the Alliance as a whole, by reducing wasteful duplication of effort and increasing standardisation, while at the same time enhancing the strength of the European defence industrial base.

310. The principal multilateral forum for European defence equipment collaboration is the IEPG. Defence Ministers in the IEPG have stressed that if we are to succeed in making the most of collaboration, we must improve on the ad hoc arrangements under which collaborative projects have been generated in the past. A systematic approach requires us to:

- harmonise operational concepts, requirements and timescales, bringing Ministers into the process at an earlier stage;

- extend collaboration to cover the research stages before projects are begun; and

- encourage a more competitive European defence industry generally.

311. IEPG Ministers met in London in June 1985 and (with the assumption by Spain from the Netherlands of the IEPG chairmanship) met again in Madrid in April 1986. They have been able to record substantial progress in all three areas:

- Harmonisation of requirements: the main responsibility for following this up falls on Panel 1, which Britain chairs. This is making good progress: in the past year five outline European staff targets (the first in the history of the IEPG) have been agreed; these include sonar equipment, which is of particular interest to the United Kingdom. Studies are also under way in a large number of other equipment areas.

- Collaborative research: discussions are taking place on a range of potential cooperative technology projects (CTP), and there are good prospects that a significant number will be launched during 1986. The United Kingdom and Spain have already agreed the first CTP on explosives injection moulding, and other projects are expected to follow in the near future. The United Kingdom hosted a conference of Directors of National Research and Development Establishments in February 1986. Its aim was to achieve a better mutual understanding between IEPG countries on the ways in which defence research and development are carried out, and to encourage better communication in an effort to achieve greater interdependence in research programmes.

- Improving competitiveness: a study is being undertaken by an independent group of experts within the IEPG into ways of improving the competitiveness of the European armaments industry. The results will be presented by the study team towards the end of 1986. In the meantime Defence Ministers' intention that there should be wider application of competition is being reflected in the negotiation of project arrangements.

312. These efforts to improve collaboration between the European members of NATO are not an alternative to transatlantic cooperation but, on the contrary, enable Europe to cooperate more effectively on an equal footing with the United States. The last year has seen useful progress in equipment collaboration between the European and American members of the Alliance. The US Congress has passed two amendments designed to encourage collaboration

with Europe: the Nunn amendment to the 1986 Defence Authorisation Bill set aside $200 million for collaborative research and development; while the Quayle amendment to the Arms Export Control Act and to Title 10 of the United States Code removed some of the administrative obstacles to cooperation. In addition, the US Secretary of Defense has issued instructions to ensure that the possibilities of procuring equipment collaboratively with allies are fully considered within the Department of Defense.

313. These moves have been welcomed by NATO Ministers. In December 1985 they launched a new Improvement Strategy for Armaments Cooperation, which recognised that the will to collaborate more effectively in the development and production of defence equipment existed in full measure in NATO and that the essential need was to find effective means to translate that will into practice. Ministers agreed that greater efforts should be made towards both the coordination of operational requirements and the sharing of research in militarily useful emerging technologies. They also accepted that development of intra-European and transatlantic cooperation should go forward in parallel. For without a strengthened and more competitive European technological and industrial base, wider transatlantic cooperation in the development of advanced systems and a more effective European effort will be difficult to achieve. The corollary is that Europe will hope to compete more effectively with the United States in NATO and world markets.

314. It is by results that collaboration is judged. But defence research, development and production form a long process - as much as 15 years from conception to entry into service of a major item of equipment - and therefore take time to come to fruition. There have, nonetheless, been a large number of successful projects over the years; and encouraging progress has been made, as described [below], on projects in hand during the last year.

European Collaborative Projects

- A major achievement has been the agreement between the United Kingdom, the Federal Republic of Germany, Italy and Spain to proceed with project definition for a European Fighter Aircraft (EFA). This began in September 1985 and is due for completion in the middle of this year. EFA is the most complex and technologically advanced collaborative project since the United Kingdom, Germany and Italy collaborated on Tornado - and will benefit from the experience of the Tornado programme. The possibilities for cooperation between the industries of the EFA countries and of France on aspects of EFA and Rafale are being studied, as are the prospects for using components in common with US aircraft.

- Tornado itself achieved a major success in 1985, when the first export sales to Oman and Saudi Arabia were agreed (see Chapter 5).

- Development of the Anglo-Italian EH101 civil/naval ASW helicopter is going well, and the first prototype is due to fly within the next year.

- We expect to make a decision later this year on full development of the third-generation anti-tank guided weapon system (TRIGAT) with our French and German partners; agreement has been reached with five other European nations (Belgium, Greece, Italy, the Netherlands and Spain) for their participation in the next phase.

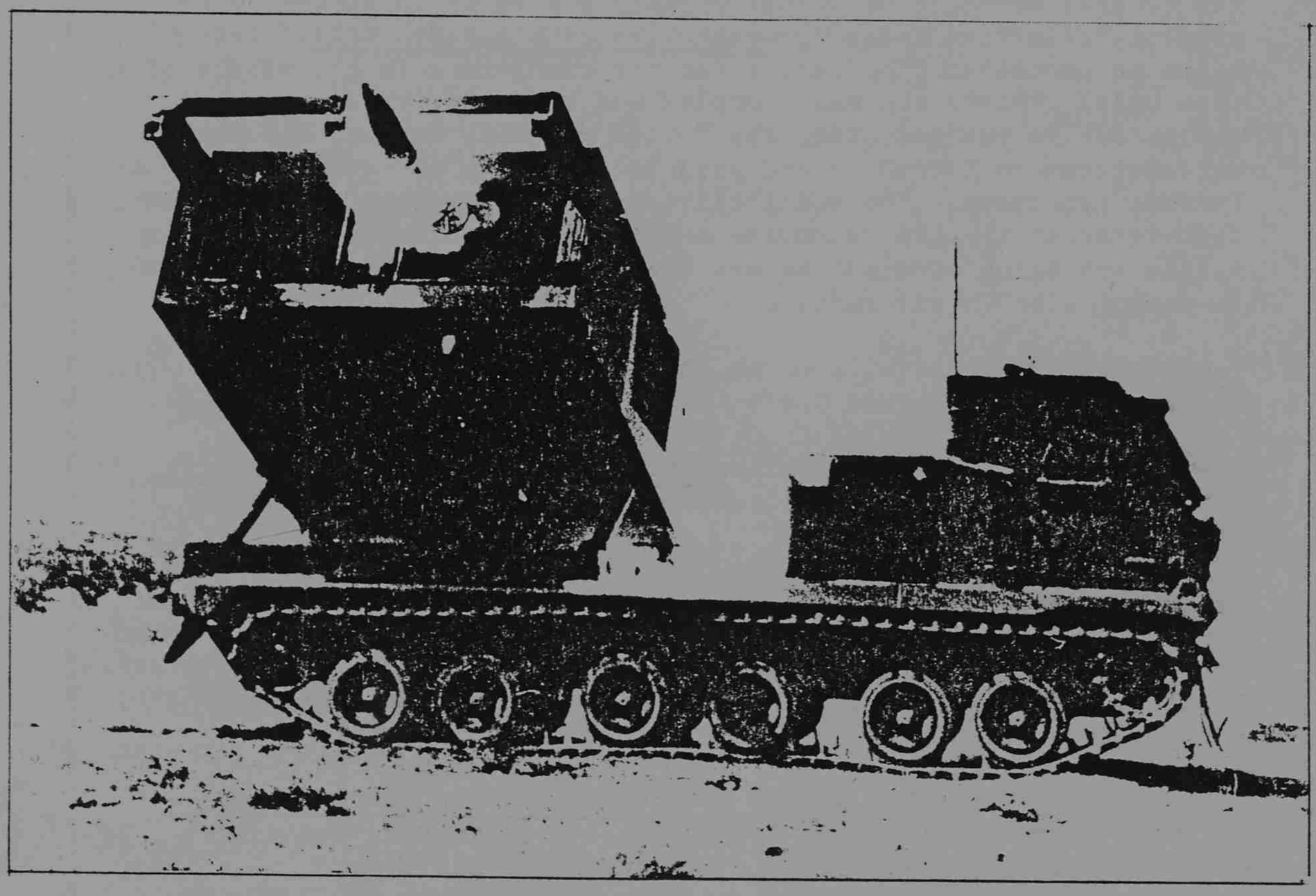
- A feasibility study for a NATO helicopter for the 1990s (NH 90) began in September 1985 and is due to last 14 months; the United Kingdom, France, Germany, Italy and the Netherlands are participating.

- Efforts will be made, together with France, Germany, Italy and the Netherlands, to define a single harmonised requirement for a battlefield helicopter for use by the armies of the five nations.

Transatlantic Collaborative Projects

- The US version of the joint UK/US second generation Harrier aircraft has now entered service; production of the first batch of the British version, the Harrier GR5, is under way, and the aircraft is expected to enter service in 1988. Negotiations are also well advanced on a further joint development to give both the British and the US aircraft a full night attack capability.

- The feasibility study for the NATO Frigate Replacement, in which the United States and Canada are collaborating with six European countries, including the United Kingdom, was completed in October 1985. Decisions on the next phase will be taken this year.



The Multiple-Launch Rocket System, an example of transatlantic defence cooperation within NATO (photograph courtesy of Hunting Engineering Ltd)

. It has also been agreed that European production of the US-developed multiple-launch rocket system (by the United Kingdom, France, the Federal Republic of Germany and Italy) will begin during 1987; and the collaborative development of the terminally-guided warhead for that system (United States, United Kingdom, France and Germany) which began in 1984, is proceeding well.

NATO DEFENCE PLANNING

Conventional Defence Improvements

315. Much has been done over the years to improve the quality of NATO's conventional defences, chiefly through equipment modernisation. The past twelve months have seen further significant steps. As was foreshadowed in last year's Statement, Ministers endorsed an initial report on Conventional Defence Improvements (CDI) when they met in May 1985. The report identified key deficiencies that could, if not corrected, threaten NATO's ability to implement its strategy.

316. The report also highlighted areas on which attention will need to be concentrated to provide the greatest return. It emphasised that:

- special efforts should be made to acquire more ammunition stocks for selected battle-decisive systems;

- NATO should continue to exploit the most advanced emerging technologies for defence purposes;

- more emphasis needs to be placed on planning over a longer period, and on coordinating the different elements of planning, so that resources can be distributed in a more balanced way.

317. The Conceptual Military Framework (CMF), which was endorsed by Ministers in December 1985, is an important step forward. In an era of scarce resources and rising defence costs, we need clear advice from the NATO military authorities on their requirements and relative priorities for maintaining an adequate defence posture in the longer term. The CMF provides such advice: it sets out the basic requirements of NATO strategy, and allows planners to see where resources could be most usefully spent. As such, it will be used by NATO and by individual nations as the basis for their long-term defence and armaments planning.

318. Much of NATO's work on improving conventional defences will take time to come to fruition, and sustained effort and commitment will be needed. But there has been important progress. At their December meeting, Ministers welcomed this and indicated that they expected a steady pattern of improvements. Work under way includes steady modernisation of equipment and exploitation of emerging technology. Following the decision in December 1984 to double the NATO infrastructure budget and to increase the number of hardened aircraft shelters, planning is well advanced to increase the pace at which infrastructure projects can be completed; some 90% of the budget will be spent on CDI-related projects.

319. This special effort to strengthen the credibility of NATO strategy and enhance its conventional forces will continue. It will require an even greater emphasis within NATO on making better use of resources and on improved cooperation and coordination of the various planning activities.

Nuclear Policy

320. NATO remains committed to the maintenance of a full range of nuclear forces to contribute to deterrence. In the absence of an effective arms control agreement, it has continued to modernise its longer-range intermediate forces by the deployment of Pershing II and ground-launched cruise missiles (GLCMs) in Europe, in accordance with the 'twin track' decision on modernisation and arms control taken in December 1979.

- The operational deployment of 108 Pershing II missiles in the Federal Republic of Germany has now been completed.

- In the United Kingdom the deployment of six flights of GLCMs at RAF Greenham Common has been completed; and construction work at RAF Molesworth, which will provide a second base for cruise missiles, has now begun.

- The deployment of GLCMs in Italy began in 1984; Belgium deployed its first flight in March 1985; and the Netherlands

government decided on 1 November 1985 to proceed with the deployment of GLCMs on its territory.

321. The Alliance has also been continuing its consideration of the other elements of its nuclear forces based in Europe. When they met at Montebello in Canada in October 1983, NATO Defence Ministers decided to approve the conclusions of a report from their High Level Group of officials, which recommended substantial reductions in the numbers of NATO nuclear warheads deployed in Europe. As a result these numbers will be reduced by some 2,400 from the 1979 level. Ministers invited the Supreme Allied Commander in Europe (SACEUR) to prepare a plan for the reductions and to ensure the continued effectiveness and survivability of the reduced stockpile.

322. SACEUR presented his report to NATO's Nuclear Planning Group when it met in March 1985 in Luxembourg, and it was considered by NATO Ministers in October in Brussels. The report emphasised the continuing importance of maintaining a full range of effective nuclear-capable forces, including aircraft, missiles and artillery, in support of NATO's strategy of flexible response. It also made a number of specific recommendations, which SACEUR is now pursuing in coordination with the nations concerned. In some areas the need for action will not arise for many years, and no early decisions are therefore required. In other areas, SACEUR's proposals for reductions and improvements require early decisions or are already being processed. For example, NATO's atomic demolition munitions have already been withdrawn, and Nike Hercules surface-to-air missiles will be progressively replaced by conventionally-armed Patriot missiles. No decisions affecting the modernisation of weapon systems in service with British forces have been made, but discussions are taking place about a number of recommendations made by SACEUR to improve their survivability and effectiveness in the longer term.

CHEMICAL WEAPONS

323. We describe in Annex A the formidable offensive chemical warfare (CW) capability possessed by the Soviet Union, and the measures currently being taken to protect our forces against attack. In the United States the President

established in January 1985, at the request of Congress, a Chemical Warfare Review Commission to consider the adequacy of the US CW posture, and in particular to look at whether the existing US stockpile should be modernised by the production of binary munitions (weapons in which two chemical ingredients mix in flight to produce the chemical agent). Other nations were approached for their views. The British Government expressed concern about the scale of the CW threat from the Warsaw Pact and emphasised that NATO should continue as a first priority to work urgently for a total ban on all aspects of CW. We noted that US moves towards modernisation would underline to the Soviet Union the benefits of reaching early agreement on such a ban, and reiterated the need to uphold NATO's deterrent strategy of flexible response.

324. The Commission's report, which was published last June, concluded that modernisation of the US CW stockpile would be more likely to encourage negotiations for a comprehensive ban than to hinder them. The Commission believed that the ability to retaliate in kind was necessary to deter the Warsaw Pact from using chemical weapons and that, although the existing US CW stockpile provided a deterrent, it was becoming less reliable. It concluded that the US Administration's proposed modernisation programme would be an essential first step to the provision of a credible deterrent.

325. In December 1985, the US Congress approved funding in 1986 for the production, but not final assembly, of new binary chemical weapons, subject to a number of conditions, including the requirement that the US Administration consult other NATO nations about its intentions. The Congressional decision permits the final assembly of complete binary weapons after 1 October 1987, but only if the United States has not entered into an arms control agreement by that date. Chapter 2 describes efforts that are being made at the Conference on Disarmament at Geneva to conclude a comprehensive and verifiable global ban on chemical weapons. There is no reason why, with goodwill on both sides, such an agreement should not be reached before then.

BEYOND THE NATO AREA

326. Although the commitment to NATO lies at the heart of our defence policy, British interests are not confined to the Treaty area. We have formal responsibilities for the defence of our remaining Dependent Territories around the world; in most overseas countries there is a resident British community; our political and economic links are worldwide, and so are our trade routes.

327. We therefore have a legitimate interest in promoting stability in many parts of the world, as well as a responsibility to provide garrisons in a number of places overseas. Our wider activities also make their own contribution to the security interests of the Alliance, which benefits from the flexibility and mobility of units trained to meet a wide spectrum of threats: our out-of-area capabilities, details of which are given in Chapter 4, provide protection not only against threats to British national interests but also against challenges to the security of the West as a whole.

Commitments Overseas

328. Our main overseas presence is in the Falkland Islands, Hong Kong, Belize, Brunei and Cyprus. The garrison in the Falklands reflects the continuing need for a military presence sufficient to deter aggression and to defend the Islands against attack. The new airport at Mount Pleasant was opened by HRH Prince Andrew in May 1985. We plan to concentrate major elements of the garrison there, and this will bring useful operational benefits as well as financial and manpower savings. We have already cut transport costs by over £25 million a year, and since the new runway will enable us to reinforce the garrison rapidly if need be, we should be able to achieve a further reduction in force levels without diminishing our ability to defend the Islands.

329. Until 1997 Britain will have full responsibility for the defence and internal security of Hong Kong, and will maintain the necessary forces there. We announced in September 1985 our decision to revert in 1987 to the force level that existed up to 1980 - a decision that was taken after full consultation with the Hong Kong Government and shows our confidence in the colony's

stability. This means that we shall be disbanding the 2nd battalion 7th Gurkha Rifles, which was formed in 1980 as a temporary addition to the garrison to combat an upsurge in illegal immigration and was, in consequence, never established at the same level as the other Gurkha battalions. Its disbandment has no implications for the long-term viability of the Brigade of Gurkhas: we intend that there shall be a continuing role for the Gurkhas within the British Army after 1997.

330. The British forces in independent Belize and Brunei are not there to defend sovereign British interests but at the request of the host governments, who value their presence as a major contribution to national security. In return, our troops benefit from the varied experience of operating in a challenging environment, often in remote jungle conditions - experience that itself helps to maintain the preparedness of our forces for operations elsewhere in the world. Their readiness and flexibility were amply demonstrated in September and November when British forces from Belize went to Mexico City to assist in earthquake relief operations and to Colombia to help in disaster relief following the destruction of the town of Armero (see Chapter 6).

331. The Sovereign Base Areas in Cyprus play an important role in supporting peacekeeping operations in the region - particularly the United Nations Forces in Cyprus (UNFICYP) and Lebanon (UNIFIL) and the Multinational Force and Observers (MFO) in Sinai. They also provide our forces with excellent training opportunities that are not readily available elsewhere.

Military Assistance Overseas

332. A less dramatic, but very important, element in promoting regional stability is the wide range of military assistance programmes that we run to help friendly nations to maintain effective defence forces. These programmes not only help to foster good relations with the countries involved; they also contribute to an improved climate of regional security from which we derive other benefits, both direct and indirect. Last year nearly 700 British Servicemen were in loan service appointments in countries outside NATO, and nearly 4,000 non-NATO overseas students were trained at military establishments in the United Kingdom.

333. Both the nature and the scope of our assistance vary enormously. At one end of the spectrum we have had a single Warrant Officer in Papua New Guinea; at the other, substantial teams in the Gulf, Brunei and Zimbabwe. Yet they all share in promoting goodwill and stability and, as a consequence, earn a degree of appreciation from their hosts and other regional governments which often far outweighs the scale of direct aid that we can provide. For example, our success in training the Zimbabwe National Army since 1980 has generated a request - which we are now meeting - for another small team to be set up in Zimbabwe to train soldiers from the Mozambique Army.

ESSAY

HOW NATO WORKS

1. The North Atlantic Treaty Organisation (NATO) is an association of 16 free and sovereign nations, which have joined together to preserve their security through mutual self-defence. But the organisation is more than a military alliance; and it does not base its security on military strength alone. It also provides for continuous cooperation and consultation in political, economic and other non-military fields and aims to foster a constructive relationship between all nations. The signatories of the North Atlantic Treaty are pledged, for example:

- to settle international disputes by peaceful means, as set out in the United Nations Charter (which reserves the right of self- and collective defence);

- to refrain from the threat or use of force in any way that would would be inconsistent with the purposes of the United Nations; and

- to eliminate conflict in their economic policies and encourage international economic cooperation between their countries.

Consultation in NATO

2. NATO members consult regularly both on issues directly involving the Alliance or its members, and on developments elsewhere in the world. The search for better East-West relations is at the forefront of Alliance policies, and NATO's position on arms control and disarmament measures is developed through frequent and intensive discussion. On the defence side, consultation is concerned primarily with determining force requirements, coordinating national defence efforts in accordance with NATO goals and objectives, and setting up the infrastructure needed to enable the forces of member nations to operate. Members also consult on such matters as the arrangement of joint training programmes and exercises.

3. There are three principal consultative bodies in the Alliance:

- The North Atlantic Council (NAC) is the highest forum for consultation and decision-making. Ministers of Foreign Affairs meet twice a year, and from time to time the Council also meets at Heads of Government level.

- With the withdrawal of France from the military side of the Alliance in 1966, the Defence Planning Committee (DPC), which had been established in 1963, became the coordinating and decision-making body for all military matters. It meets twice a year at the level of Ministers of Defence.

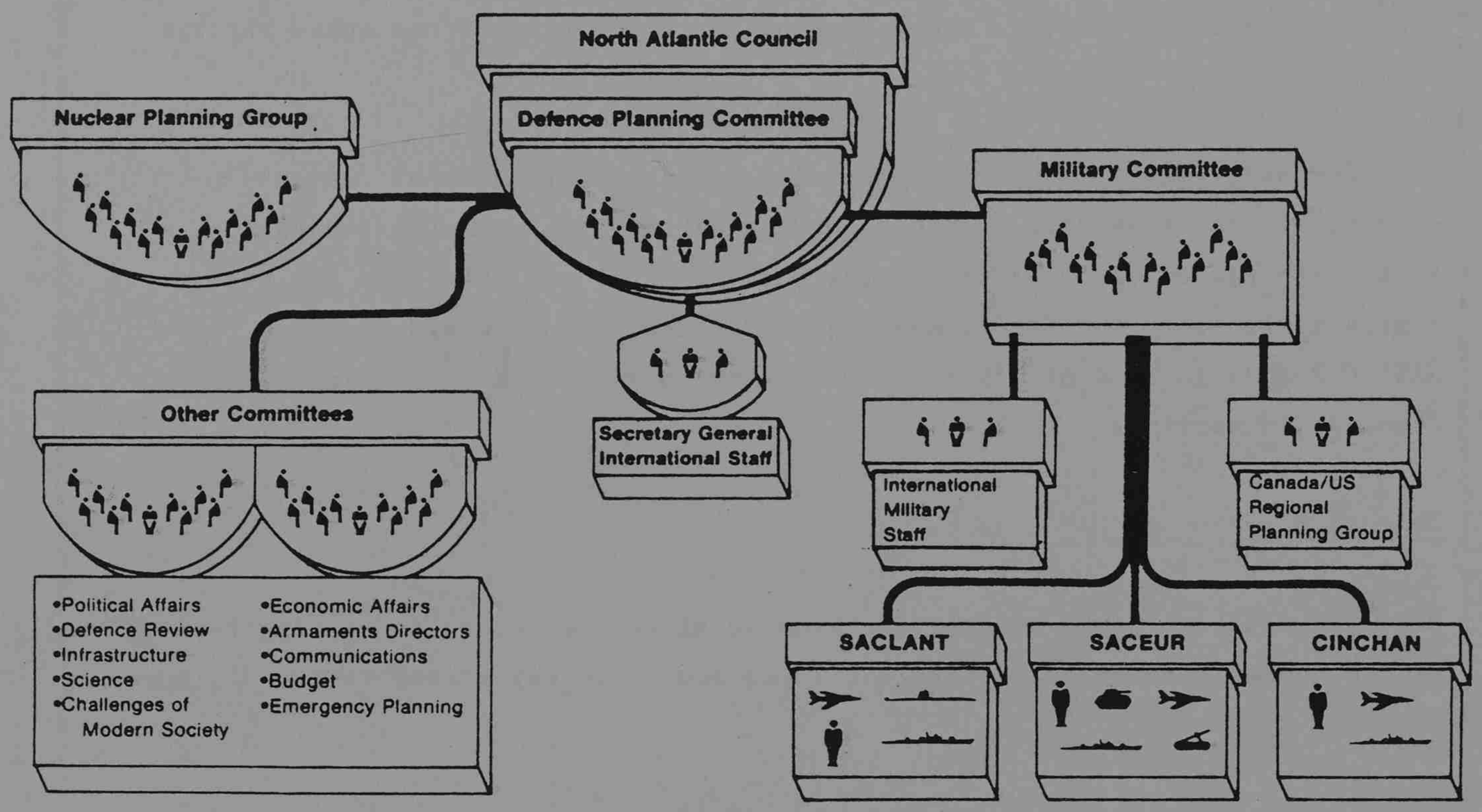
- Defence Ministers also meet in the Nuclear Planning Group (NPG), in which 14 countries now participate.

These bodies also meet regularly between Ministerial sessions at the level of Permanent Representatives (Ambassadors).

4. All meetings of the NAC, DPC and NPG are chaired by the Secretary General, who is responsible for promoting and directing the process of consultation in the Alliance, and has the authority to offer to mediate between member nations in cases of dispute. He is assisted by an integrated international staff. As Figure 3 [below] illustrates, there are also specialist committees, which provide detailed advice to the NAC and DPC on a range of issues.

5. The Military Committee is the highest military authority in the Alliance. It is composed of the Chiefs of Staff of all member nations except France (which has only observer status and is represented by the Chief of the French Military Mission) and Iceland (which has no armed forces of its own). The Chiefs of Staff meet when necessary, but at least three times a year. At other times, the Committee is composed of Permanent Military Representatives appointed by the Chiefs of Staff. The Military Committee, assisted by an integrated international military staff, has as its main responsibilities advising the Council and DPC on the military measures needed for the common defence of the NATO area, and giving broad strategic direction to the Major

Figure 3 Civil and Military Structure of NATO



NATO Commanders. It is also responsible for a number of NATO military agencies, including the NATO Defence College in Rome.

The NATO Commands

6. The North Atlantic Treaty area is divided among three Commands, each under the authority of a Major NATO Commander: the Supreme Allied Commander Europe (SACEUR); the Supreme Allied Commander Atlantic (SACLANT); and the Allied Commander-in-Chief Channel (CINCHAN). Figure 4 shows how the NATO area is divided between these Commands. The Major NATO Commanders are responsible for: developing defence plans for their respective areas; determining force requirements; and deploying and exercising forces under their command.

7. Forces of member countries generally remain under national control in peacetime. But some, for instance certain air defence units on constant alert, are placed under NATO's operational control, and some form the integrated staffs assigned to the NATO Commands. Additional forces would transfer to NATO Commands in time of crisis, while others are earmarked to join these Commands in wartime.

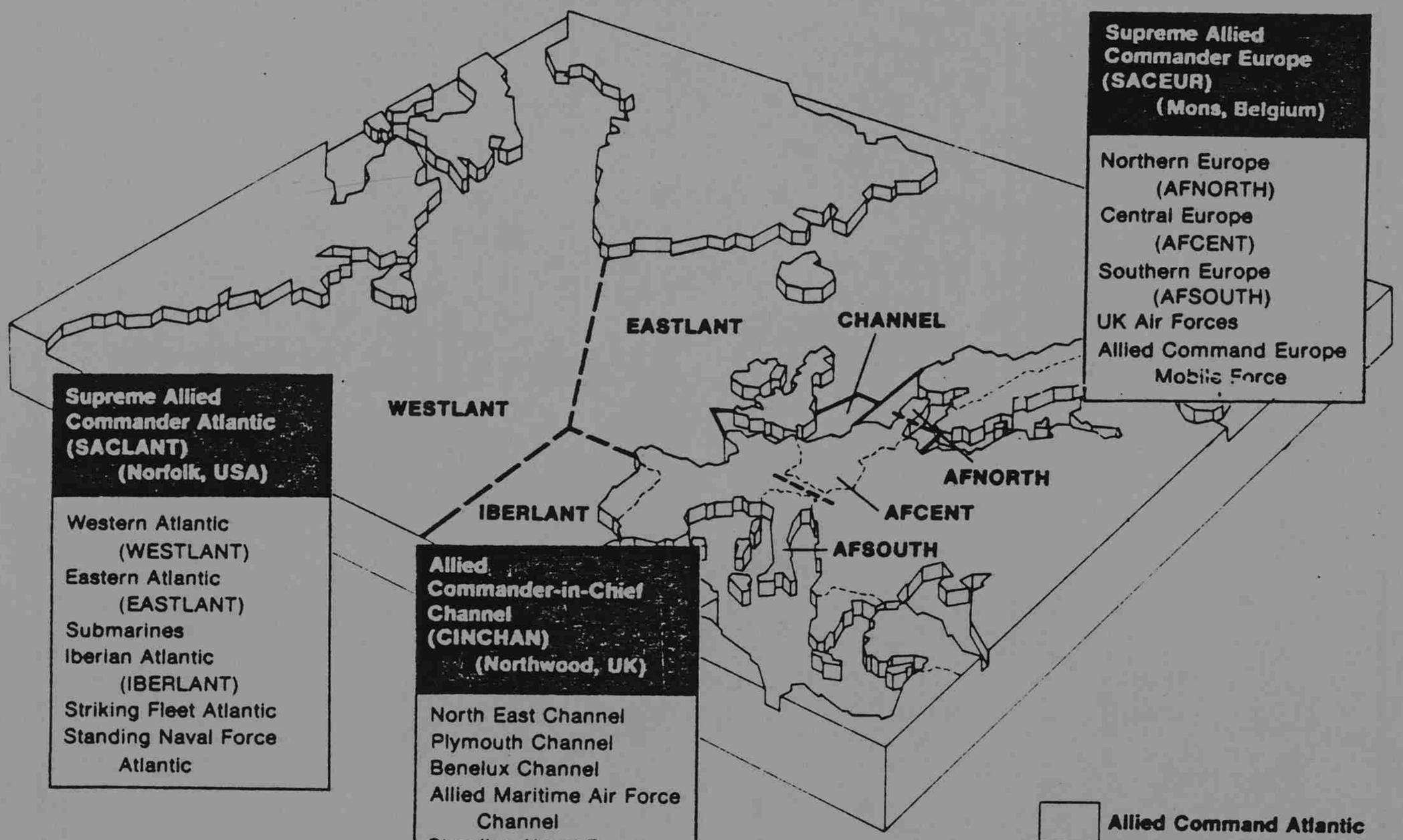
Defence Planning in NATO

8. The Alliance seeks to coordinate national defence plans in the light of NATO's common defence requirements. There are three key stages in the Alliance planning system:

- First, political directives for defence planning are developed and issued in the Ministerial Guidance approved by Defence Ministers in the DPC. This is updated every two years.

- Secondly, a year later, specific military planning targets are set for member nations in the form of Force Goals covering a six-year period. They, too, are updated every two years.

Figure 4 The NATO Commands



Note:
The defence of the United Kingdom and of Portugal do not fall under the responsibility of any single major NATO Command. UK Air Forces (UKAIR) form one of SACEUR's Major Subordinate Commands.

- Finally, against the background of the latest Ministerial Guidance and Force Goals, a review is carried out annually of the forces made available by nations during the current year and their plans for the next five years. This leads up to Defence Ministers' adoption at a DPC meeting in December of a common NATO Force Plan for a five-year period.

CHAPTER FOUR:

ROLES, FORCES AND EQUIPMENT

401. In last year's Statement we described in some detail the structure, deployment and equipment programmes of the Services, including not only the regular forces but also the reserve forces and the United Kingdom's merchant fleet. But credible deterrence does not depend just on organisations and deployments: in the last resort, what counts is the perceived ability of our armed forces to take swift and effective action when the need arises. As well as covering force structures and equipment programmes, therefore, this chapter describes some of the ways in which the Services might carry out such action and the tactics they might employ.

EQUIPMENT

402. Since 1979, as Table 3 shows, a substantial quantity of new equipment has been ordered for the armed forces. In 1985-86 much of this equipment came into service, and more new orders were placed, as is illustrated in Tables 4, 5 and 6:

- Table 4, covering Royal Navy equipment, shows that the programmes to modernise the submarine and surface fleets have been maintained in 1985-86, several new platforms, equipment and aircraft having been ordered or brought into service.

- Table 5 illustrates the steady progress being made to improve and update the Army's equipment, especially its armoured vehicles, artillery, air defence, small arms and communications equipment.

- Table 6 shows that the RAF's major re-equipment programmes are continuing to come into effect, and that new, advanced weapons as well as aircraft are being accepted into service.

Table 3 Major Equipment ordered since 1979

Royal Navy		Army		RAF	
Submarines		**Tanks**		**Strike/Attack**	
Nuclear-Powered Fleet Submarines	5	Challenger Regiments	6	Tornado GR 1	73
Type 2400 Diesel Submarines	4	Challenger ARRV, Regiments' worth	6	**Offensive Support**	
Frigates		120mm ammunition	Full operational stocks	Harrier GR5	62(3)
Type 22	8	**APCs**		**Air Defence**	
Type 23	1	Warrior Battalions	12	Tornado ADV	162
MCMVs		Saxon Battalions	11	Phantom F4J	15
Hunt Class	8	**Field Artillery**		**Transport/Tankers**	
River Class	12	MLRS Regiments	3	VC10	9(1)
SRMH	1	BATES	1 system	Tristar	9
Patrol Craft		**Air Defence Batteries**		BAe 146	2
Coastal Training Class	15	Rapier Field Standard B2	2	HS 125	6
Naval Aircraft		Tracked Rapier	4	Chinook Helicopter	8
Sea Harrier FRS1	23	Javelin Launchers (2)	12	**Basic Trainer**	
Harrier T4	3	**Infantry Weapons**		Tucano	130
Sea King Mk5	13	SA80	175,000		
Sea King AEW	8	51mm Mortar	2,400		
Sea King Mk4	21	**Surveillance**			
Lynx Mk 2/3	10	Milan Night Sight	1,275		
Jetstream Mk 2/3	4				
Skynet Communications Satellites(4)	3				

Notes:

1. Conversions of existing aircraft.
2. Includes Territorial Army.
3. Includes two prototypes.
4. The satellites will be used by all three Services.

Table 4 — Royal Navy Equipment

	Numbers brought into service 1985-86	Numbers ordered 1985-86
Submarines		
Nuclear-powered Fleet Submarines	1	1
Type 2400 Submarines	-	3
Carriers		
ASW Carriers	1	-
Destroyers		
Type 42	2	-
Frigates		
Type 22	1	-
MCMVs		
Hunt Class	2	2
[River Class	[7]	-
Single-Role Mine-hunter	-	1
Patrol Craft		
[Coastal Training Class	[4]	-
Naval Aircraft		
Sea Harrier FRS1	14	-
Sea King Mk5	1	-
Sea King AEW	2	-
Sea King Mk 4	4	9
Lynx Mk 2/3	-	7
Jetstream Mk 2/3	2	-

Other Naval Equipment Ordered in 1985-86

Skynet Communications Satellite (1)

Sea Dart: production of further missiles

Sting Ray Torpedoes: main production order

ESM for submarines: development and production of improved systems for retrofitting to Oberon and Valiant/Churchill class submarines

Sonar 2031: inboard electronics for towed-array sonar for ships

Sonar 2046: inboard electronics for towed-array sonar for submarines

Notes:

(1) A joint procurement with the Army and RAF. The satellite will be used by all three Services.

Table 5 — Army Equipment

	Numbers Brought into Service 1985-86	Numbers Ordered 1985-86
Tanks		
Challenger	1 regiment	1 regiment
Night observation and gunnery system	3 squadrons	4 regiments
New 120mm ammunition	Operational stocks completed	-
Challenger Armoured Repair and Recovery Vehicle	-	6 armoured regiments' worth
Armoured Personnel Carriers		
Warrior (MCV 80)	-	12 battalions
Saxon	2 battalions	5 battalions
Field Artillery		
Multiple Launch Rocket System (MLRS)	Trials models	3 regiments
Air Defence		
Rapier Field Standard B2	-	2 batteries
Tracked Rapier	1 battery	-
Javelin	3 batteries	-
Infantry Weapons		
SA80	One battalion's worth	175,000
51mm mortar	2,000	-
Surveillance Equipment		
Night sight for Milan anti-tank weapon	775	375

Other Army Equipment

Brought Into Service 1985-86

Ptarmigan Digital Communications System
Wavell ADP System

Ordered 1985-86

Battlefield Artillery Target Engagement System (BATES)
Bomblet Shells
Phoenix Remotely-Piloted Vehicle

Table 6 — RAF Equipment

	Numbers delivered 1985-86	Numbers ordered 1985-86
Aircraft		
Tornado GR1 (Strike/Attack)	18	-
Tornado ADV (Air Defence)	20	-
Chinook (Support Helicopter)	5	-
VC10 Tanker	2	-
Tristar Tanker/Transport	1	-
Harrier GR5 (Offensive Support)	2 (1)	
Tucano (Basic Trainer)	-	130

Other RAF Equipment

Accepted in 1985-6

Sea Eagle Missile

JP233 Airfield Denial Weapon

Improved BL755 Anti-Armour Weapon

Radars for improved UK Air Defence Ground Environment

Satellite Communications Terminals

Skyguard Air Defence System

Ordered in 1985-6

Passive night/poor visibility flying aid for Tornado and Harrier GR5

[Defence-owned telecommunications system in UK]

Note:

1. Prototypes

Table 7
Estimated Programme Costs of Major Equipments Entering Development in 1985-86

Project	Estimated Total Development & Production Costs (1985-86 Prices)
A passive night and poor visibility flying aid for fixed-wing aircraft	£213.5 million
Challenger Armoured Repair and Recovery Vehicle	£90 million (1)
Blue Kestrel Radar for EH 101	£102 million

Note:
1. Initial tranche of production only.

Table 8
Unit Costs of Defence Equipment

Equipment	Unit Cost (1985-86 Prices) (excluding development costs)
SSK (Type 2400)	£100 million
Minesweeper Fleet	£4.5 million
Doppler Navigation Equipment	£38,000
Radar Altimeter	£10,000
Improved Kinetic Energy Round for Chieftain/Challenger	£1,000
Emergency Life Support Apparatus for ships and submarines	£115

In addition, a number of major equipments entered full development during the year; these are shown in Table 7. The unit costs of defence equipment range from many millions of pounds for the most sophisticated weapon systems, down to a few hundred pounds for the simple items. Some examples are given in Table 8.

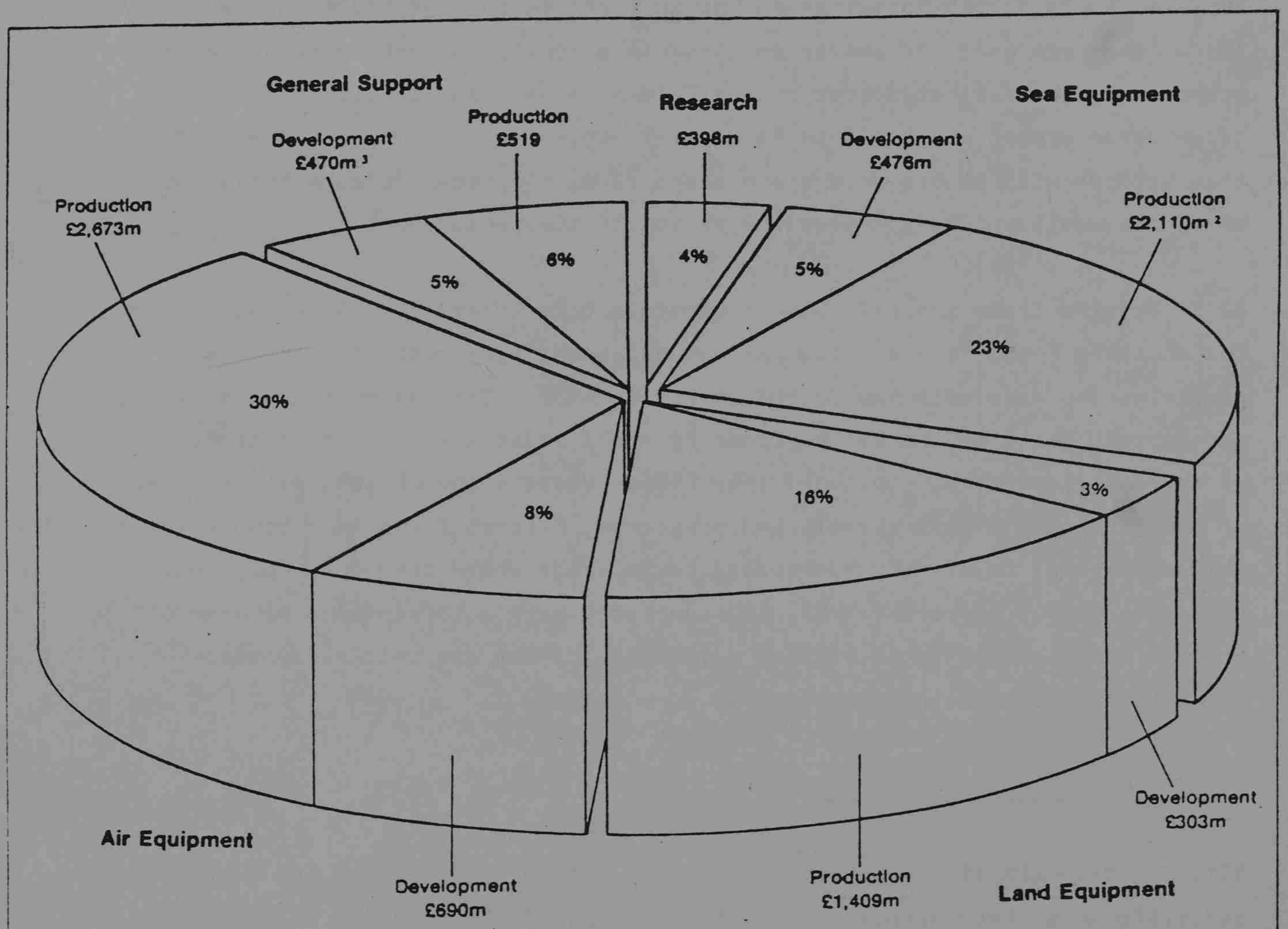
403. Annual expenditure on defence equipment has risen since 1979 by about 40% in real terms. In 1986-87 we plan to spend some £8,250 million on equipment and on meeting related procurement costs; this represents about 45% of the defence budget. Figure 5 illustrates the main divisions of the procurement programme in 1986-87.

NUCLEAR FORCES

404. All our nuclear forces are committed to NATO. Since 1969 the Royal Navy has maintained at least one Polaris submarine on patrol at all times, providing the United Kingdom with an independent strategic nuclear force of last resort, and making a valuable contribution to the Alliance. Nine RAF strike-attack squadrons of Tornado GR1 and two of Buccaneer are based in the United Kingdom and the Federal Republic of Germany. These are capable of nuclear operations with the British free-fall bomb, as well as conventional warfare. The Royal Navy can also deliver nuclear bombs from Sea Harrier aircraft and depth bombs from shipborne anti-submarine helicopters, and RAF Nimrod maritime patrol aircraft can deliver US depth bombs against submarines. The British Army in the Federal Republic of Germany operates one regiment of Lance surface-to-surface missiles and five regiments of artillery capable of firing nuclear warheads supplied by the United States.

405. The programme to replace Polaris with Trident in the mid-1990s is on schedule. A contract is under negotiation with Vickers Shipbuilding and Engineering Ltd for the construction of SSBN 05, the first of the United Kingdom's four Trident class submarines; SSBNs 06 to 08 will be ordered progressively over the next few years. We have also placed the first contracts for the modernisation of the Clyde Submarine Base to accommodate both Trident and part of the growing fleet of nuclear-powered Fleet submarines (SSNs) and conventional submarines (SSKs). In the meantime, the programme to fit new

Figure 5 The Main Divisions of the Procurement Programme 1986-7[1]



Notes

1. Figures relate to expenditure at Estimates Prices and net of Appropriations-in-Aid.
2. Including the cost of equipment for dockyard services.
3. Including the cost of some HQ staff who are responsible for both research and development.

motors to our Polaris missiles will ensure that the force remains effective until Trident enters service.

406. At average 1985-86 prices and at an exchange rate of $1.28 to the pound (the rate used, by convention, for this year's re-costing of the defence programme), the estimated cost of the Trident programme is £9.87 billion, of which we expect about 55% to be spent in this country. We still expect that Trident will absorb on average about 3% of the total defence budget or 6% of the equipment budget over the period of its procurement.

407. British firms are eligible to obtain sub-contracts for D5 weapon systems for both the Royal Navy and the US Navy under the agreements for industrial participation made with the United States in 1982. The full-scale engineering development phase of the US programme is still under way, and the selection of sub-contractors has continued into 1986. Despite the obvious difficulties of breaking into a well-established programme, British firms have been reasonably successful in winning sub-contracts in areas where they have competed. Up to the end of September 1985, 160 contracts with a total value of some $40 million had been let to 51 British companies. These are initial awards: the potential for follow-on orders is much greater.

DEFENCE OF THE UNITED KINGDOM

408. The main aim of any country's security policy is to defend its territory and citizens against attack. But defence of the United Kingdom is not just a matter of defending our homeland. This country serves as a forward operating base for SACLANT's maritime forces, a main operating base for CINCHAN's maritime assets, and a rear operating base for SACEUR's ground and air forces; it is also essential for the safe and timely reinforcement and re-supply of the European mainland. Just as NATO is fundamental to our security, therefore, the defence of Britain is inseparable from that of Europe.

Maritime Defence

409. The naval contribution to the defence of the United Kingdom lies partly in deployment of ships and submarines in the Norwegian Sea and Eastern Atlantic

and partly in defence of ports and anchorages. The former constitute a first line of defence against ship- and submarine-launched land attack missiles, while closer to home frigates and shore-based helicopters help counter the threat posed by submarines operating in the shallow seas. In addition, surface ships operating within the UK Air Defence Region enhance our air defence capability. Uninterrupted use of our ports and anchorages is vital for our national survival in peace and war, and for the movement of material before and during hostilities. The security of key harbours is therefore as important as that of shipping at sea. The Royal Navy provides defence against water-borne attack, major contributions being made by the Royal Naval Reserve (RNR) and the Royal Naval Auxiliary Service (RNXS).

410. One of the more serious threats to shipping in shallow waters is that from modern mines, which the Soviet Union possesses in large quantities. The laying of minefields could be an effective way, for example, of impeding seaborne reinforcement through European ports or inhibiting the movements of our Polaris submarines. Defence against mining begins by denying enemy submarines, surface ships and aircraft access to waters in which to lay their minefields. In the event that mines are laid, however, we need appropriate countermeasures.

411. The Royal Navy uses two types of mine countermeasure (MCM) vessel to combat the threat presented by ground and moored mines:

- the mine-hunter uses short-range, high-frequency sonar sensors to locate mines, which can then be recovered by divers for intelligence purposes, or neutralised by an explosive charge placed by a diver or a remotely-controlled vehicle;

- the minesweeper either uses a towed mechanical sweep to cut the cables of moored mines, or detonates the mines by simulating acoustic and magnetic ship signatures.

Mine-hunters offer the quickest and most effective MCM techniques, but in some areas obstructions on the sea-bed can reduce the effectiveness of the mine-hunter's sonar, and in these areas minesweepers would be employed.

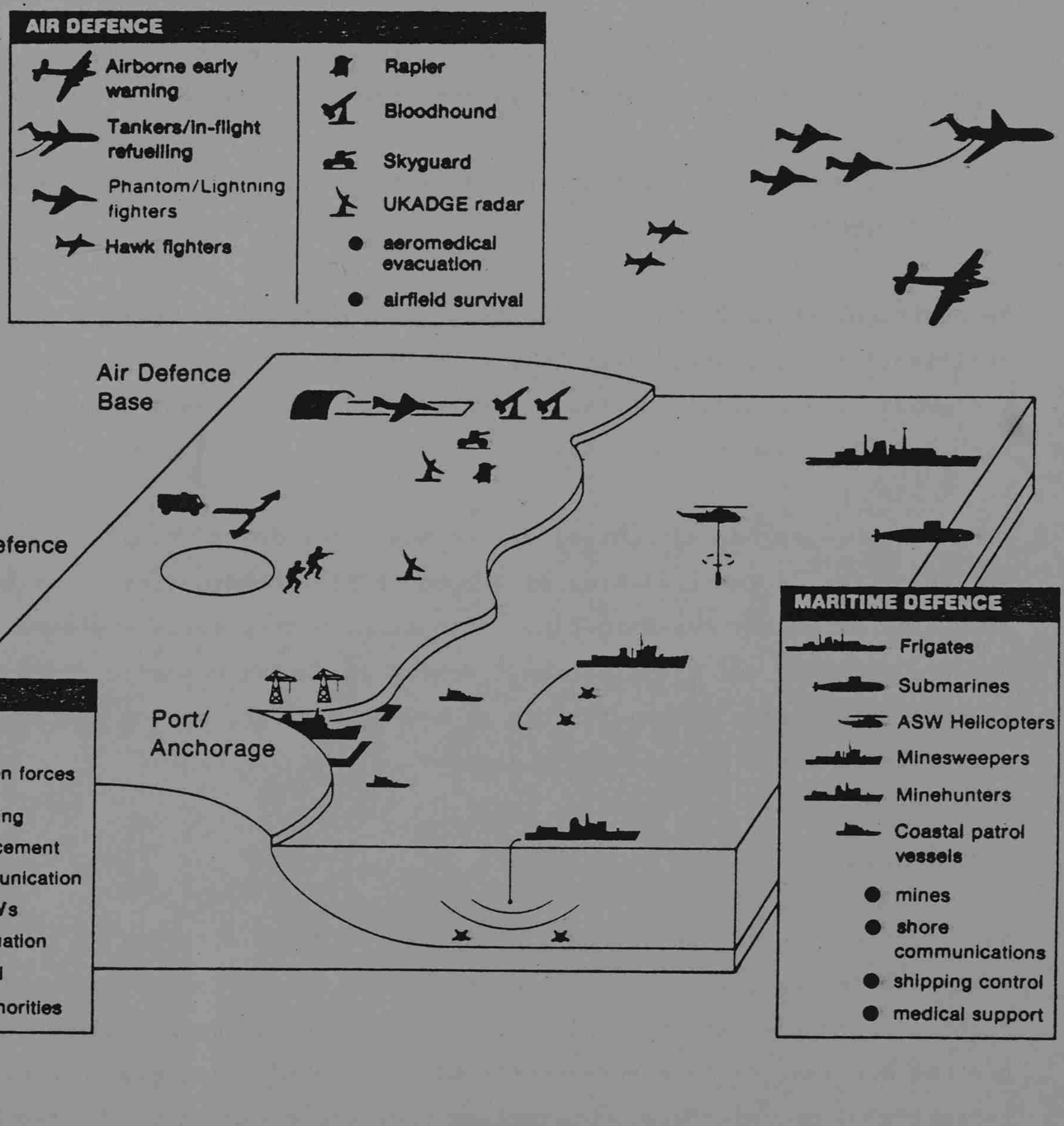
412. The Reserves operate a significant part of our minesweeping force; man shore communications centres; implement the naval control of shipping; and provide medical support teams. RNR medical officers frequently take temporary posts in Service hospitals at home and abroad, thereby keeping in touch with Service procedures. The role of the RNXS has been broadened to include participation in measures for the defence of ports and anchorages, and further recruiting and training has begun.

Home Defence

413. The Army, supported by the Royal Navy, Royal Marines and RAF, has a major role in the ground defence of vital installations against attack by groups of enemy special forces, and this was practised in Exercise Brave Defender last year (see page [ ]). In addition, Army units in the United Kingdom have a wide variety of other military tasks: reinforcing BAOR; out-loading depots; maintaining the lines of communication to Europe; guarding prisoners of war; evacuating casualties from BAOR; and, if required, giving assistance to the civil authorities, including explosive ordnance disposal (EOD) (see Chapter 6).

414. We already have over 100,000 ground forces available for the defence of the United Kingdom. Most of them would have a direct operational role in guarding key points and as members of mobile reaction forces in time of tension or war. A significant proportion of these tasks would be undertaken by the Home Service Force, whose numbers are being expanded: 47 companies are being formed throughout the country, and recruiting is going well. In addition, since 1979 the RAF has formed six squadrons of the Royal Auxiliary Air Force (RAuxAF) Regiment to provide vital ground defence at airfields in the United Kingdom. For the future, the RAF is beginning a two-year trial to examine the feasibility of forming a RAuxAF Support Force similar to the Home Service Force.

Figure 6 Defence of the United Kingdom



415. Three of the six new infantry battalions to be formed as part of the Territorial Army's expansion programme will have home defence roles. In addition, we are setting up:

- two more Royal Engineers Airfield Damage Repair squadrons, making eight in all, to keep RAF air stations operational after conventional attack;

- an Army Air Corps squadron, equipped with the Scout utility helicopter, to provide quick-response airborne reaction forces; and

- further Intelligence and Security, Royal Military Police and EOD units.

In addition, up to 20,000 Regular Army reservists, who previously had no mobilisation role, would also be used in wartime to provide extra companies for guards and general duties; a further 12,000 Army reservists would be used for other specified tasks.

416. Better command and control arrangements for United Kingdom Land Forces, including the 77 Tactical Area of Responsibility headquarters that would be activated at county level in time of tension, have greatly improved home defence training and coordination. We are enhancing communications systems, stockpiling defence stores for use at key points, and making available further surveillance and night viewing equipment.

Air Defence

417. Air defence of the United Kingdom is the responsibility of RAF Strike Command. In peacetime a Quick Reaction Alert (Interceptor) force, comprising fighter, airborne early warning (AEW) and tanker aircraft and command and control systems, is on a permanently high state of readiness to preserve the integrity of our airspace. Operations take place within the United Kingdom Air Defence Region (UKADR) to intercept, identify and, if necessary, shadow targets of interest. Any aircraft that intrudes into our national airspace

A prototype Tornado air defence aircraft in combat air patrol configuration, fitted with long-range fuel tanks, four Sky Flash and two Sidewinder air-to-air missiles

without authority is escorted back into international airspace using established international procedures.

418. In war, air defence would be achieved by a combination of aircraft on Combat Air Patrols (CAPs) far out over the North Sea, the Norwegian Sea and the Atlantic, and other fighters deployed from their operational bases, where they would be kept on high states of ground alert, or from naval task groups. These patrols would be directed by fighter controllers who monitor information from the radars of the United Kingdom Air Defence Ground Environment (UKADGE) and AEW aircraft. Fighter CAPs would be supported by Victor, VC10 and Tristar tanker aircraft; by refuelling in the air, fighters can remain on patrol far from base for long periods. The aim is to prevent enemy aircraft from getting within the range necessary to deliver stand-off weapons, which are coming into service with the Warsaw Pact in increasing numbers, against British civil and military targets and against NATO naval forces within the region. Aircraft that eluded the outer defences would be engaged by other fighters on medium-range CAP or on ground alert, including Hawks armed with Sidewinder missiles. Closer-range defence would be provided by surface-to-air missiles (Bloodhound and Rapier) and radar-controlled guns (Skyguard). The Skyguard system, captured during the Falklands campaign, is operated by a Royal Auxiliary Air Force squadron, and provides a valuable low-cost improvement to our air defences.

419. The substantial programme of investment in our air defences continues, as Table 6 shows. The fighter force is being progressively equipped with Tornado air defence variant (ADV) aircraft, of which 20 have been delivered so far. The Tornado ADV Operational Conversion Unit was formed in May 1985, and will become operational during the course of this year. When the re-equipment programme is complete, there will be seven Tornado squadrons; two squadrons of Phantoms will remain in service. Significant improvements are being made to the Sky Flash and Sidewinder missiles fitted to the Tornado and Phantom aircraft. Improvements to the Rapier missiles in service with the RAF Regiment are also under consideration. As part of the UKADGE modernisation programme, three radars have been delivered.

420. The serious problems experienced during the development of the Mission System Avionics of the Nimrod AEW aircraft have continued to delay the introduction into service of a modern capability for airborne early warning. On 25 February, agreement was reached with GEC Avionics Ltd on risk-sharing arrangements for the project to continue for an interim period of up to six months, during which time the company will provide firm-price, risk-sharing proposals against a technical specification aimed at fulfilling the needs of the Royal Air Force. Other companies, both at home and abroad, have also been invited to submit firm-price proposals for meeting these needs. This approach will make it possible to identify the way forward that offers the best value for money. The AEW Shackletons are meanwhile being kept in service.

THE EUROPEAN MAINLAND

The Central Region

421. British ground and air forces are stationed permanently on the mainland of Europe in accordance with our obligations under the Brussels Treaty. Strong, professional and well-equipped units, both in BAOR and in RAF Germany, are powerful symbols of our commitment to the security of Europe and the most tangible manifestation of our belief in NATO's aims and strategies.

British Army of the Rhine

422. BAOR has a current peacetime strength of 55,000 but would be expanded to a total force of about 150,000 on mobilization. It comprises a strong fighting formation, 1(BR) Corps, together with logistic support. 1(BR) Corps itself consists of four divisions: three armoured divisions are located permanently in the Federal Republic, while the 2nd Infantry Division is based in the United Kingdom in peacetime and would deploy to the Federal Republic in a period of tension.

423. Together with corps from Belgium, the Netherlands and the Federal Republic, 1(BR) Corps forms part of NATO's Northern Army Group (NORTHAG), which is responsible for the defence of Northern Germany roughly from the Ruhr to the coast. Within that area, 1(BR) Corps is responsible for a 65km

The new SA 80 infantry weapon

stretch of front. The Commander-in-Chief of BAOR also carries the NATO appointment of Commander Northern Army Group (COMNORTHAG).

424. NORTHAG's plans and concepts have recently been revised (see below), and new developments must obviously be matched by the right equipment. The Challenger tank and Warrior (MCV 80) armoured personnel carrier enable armoured brigades to achieve the degree of protected mobility required under the new concept. But battlefield mobility can only be achieved if our troops can counter enemy artillery and air attack. We plan to improve the fire-power, range, coordination, accuracy and survivability of 1(BR) Corps' artillery support; and three new systems, the Multiple-Launch Rocket System, the Phoenix remotely-piloted vehicle, and the artillery ADP system BATES, are being developed for introduction in the early 1990s. We also intend to form a new air defence regiment; and the introduction of tracked Rapier into BAOR is improving the mobility of our area air defence.

NORTHAG'S New Concept

1. Since NATO's adoption of the strategy of forward defence and flexible response in 1967, NORTHAG has planned to fight its defensive battle as far to the East as possible, and has adopted a defensive plan to defeat the enemy by wearing down the impetus of an attack. But continuing improvements in Soviet fire-power and developments in operational concepts have led us to reconsider these tactics. Soviet military doctrine places great emphasis on the concentration of forces to achieve surprise and local superiority, and the Soviet Operational Manoeuvre Groups are intended to exploit initial breakthroughs and penetrate rapidly into NATO's rear areas. Faced with these developments, NORTHAG's static defence began to look increasingly brittle. A revised concept for the defence of the area was therefore prepared, and has now been approved by NATO and by the national authorities of each of the countries concerned.

2. The revised concept places greater emphasis on the selection and defence of vital areas; on co-operation between ground and air forces; on tactical flexibility and mobility; and on the employment of reserves. Indeed, a key element of the plan is a considerable strengthening of the armoured reserve forces available to NORTHAG. It is important to recognise that the concept does not mark any change in NATO's essentially defensive posture; nor does it imply any abandonment of the principle of forward defence, which remains a fundamental tenet of NATO strategy. But it does recognise that force improvements permit the adoption of a more mobile tactical concept. Static defence can lead only to a war of attrition, while the new concept would allow the defenders to seize the initiative from the aggressor, giving the Alliance a much better chance of defeating the enemy, rather than merely delaying him.

425. Territorial Army enhancements will soon greatly improve our ability to reinforce BAOR. Three of the six new infantry battalions being raised have NATO roles, as do five new Javelin-equipped air defence batteries, a new armoured reconnaissance squadron, two Special Air Service squadrons and improved medical support. BAOR's other logistic services will be strengthened with additional ordnance units and workshops. The trial of raising Territorial Army units on the Continent is going well: an ambulance-train staff and a transport squadron have been fully recruited, and three other sub-units are being formed.

426. Elements of 1(BR) Corps exercise regularly, taking particular advantage of the opportunity to use the actual areas in which they might have to operate. These exercises involve the reinforcement of BAOR with troops from the United Kingdom and a rigorous examination of the men, equipment and plans on which our operations are based.

RAF Germany

427. RAF Germany operates from four airfields in the northern half of the Federal Republic. Its forces, together with air forces from the Federal Republic, Belgium, the Netherlands and the United States, form the 2nd Allied Tactical Air Force (2 ATAF), whose tasks include the air defence of the northern half of the Federal Republic, the support of NORTHAG, and the disruption of attacking forces.

428. Our air defence forces in Germany comprise two squadrons of Phantoms and four of Rapier surface-to-air missiles. In peacetime, the Phantom squadrons have a national responsibility, shared with the United States and France, for policing the airspace over the Federal Republic and ensuring access by air to Berlin. Their permanent high state of operational readiness, including a quick-reaction capability, is designed to deter a surprise attack. In war, all air defence units would contribute to the overall mission of the Commander-in-Chief Allied Forces Central Europe: the Phantoms would be employed to defend the 2 ATAF area, and the Rapier squadrons would provide point defence for the RAF's airfields.

429. The planned deployment of Tornado GR1 aircraft to RAF Germany is continuing. The aircraft is able to penetrate the Warsaw Pact's defences by day or night and in all weathers, and could strike enemy airfields, lines of communication and other key targets. Air attacks against the Warsaw Pact second echelon would contribute to the land battle by preventing reinforcement and follow-on forces from reaching the front line. Delivery to the Tornado force of the JP 233 cratering and area-denial weapon began in 1985; the Air-Launched Anti-Radiation Missile (ALARM) is planned to give the aircraft the ability to undertake low-level missions. The Jaguar squadron based in RAF Germany is employed mainly on tactical reconnaissance to provide intelligence on the deployment of Warsaw Pact forces, but could also be used in the offensive role.

430. Two Harrier GR3 squadrons are based in RAF Germany. Operating from dispersed sites, they could provide a rapid response to Army requests for close air support, and could be used in deeper interdiction sorties. These squadrons in Germany will be replaced in the late 1980s by the Harrier GR5. Two support helicopter squadrons - Puma and Chinook - provide in-theatre logistics and tactical air transport for 1(BR) Corps and RAF Germany. In war, these squadrons would be reinforced by UK-based helicopters.

431. The Air Transport Force, using Hercules and VC10 aircraft, would play a major part in carrying British troops to reinforce the Central Region, and UK-based aircraft would operate against a hostile thrust into the region. Harrier and Jaguar aircraft would deploy forward as necessary, while Tornado GR1 aircraft would operate from their United Kingdom bases; these aircraft would be used to counter enemy amphibious landings and to support NATO land operations.

The Flanks of NATO and Reinforcement Forces

432. The United Kingdom/Netherlands Amphibious Force - to which we contribute 3 Commando Brigade Royal Marines and all the specialist amphibious shipping, supported by ships taken up from trade - is available to reinforce Norway, the Baltic Approaches or certain Atlantic islands. The possession of an amphibious force enables the Royal Navy to support NATO operations on the

Northern Flank, and allows for flexible intervention in out-of-area operations. The United Kingdom Mobile Force (1 Infantry Brigade and logistic support) is earmarked for deployment in tension or war to the Allied Forces Baltic Approaches, where it would reinforce either Denmark or Schleswig-Holstein. The RAF's recently strengthened air transport force could be available to assist with the deployment of reinforcement forces.

433. The United Kingdom provides an infantry battalion and some force troops, including armoured reconnaissance, artillery, helicopters and logistic support, for the Allied Command Europe (ACE) Mobile Force (Land), which is available to SACEUR for deployment on either the Northern or the Southern Flanks of NATO. This requires considerable flexibility on the part of both men and equipment, and the Force needs to exercise to discharge either option: in 1985 it exercised in both Turkey and Zealand (see Annex B). We contribute air support to the Northern Region under SACEUR's Rapid Reinforcement Plan, and to the ACE Mobile Force (Air) - commitments that are regularly exercised. We could also deploy a RAF Harrier squadron to the region as part of SACEUR's Strategic Reserve (Air).

Amphibious Reinforcement of Norway

1. Once the United Kingdom/Netherlands force has been committed to operations it may land directly from its own shipping across and over beaches, without any need for ports and airfields. The force has sufficient helicopters and landing craft to enable it to establish and consolidate an initial lodgement ashore. The mobility afforded by these helicopters and landing craft makes the force particularly suitable for operations in North Norway, where land movement is severely limited by fjords, poor roads, steep-sided valleys, bridges, defiles and tunnels, and where airfields are few and far between.

2. The terrain in Norway also favours the defender, and small numbers of specialist troops can tie down forces out of all proportion to their size, particularly in the valley bottoms and defiles that canalise enemy movement. To prepare for such operations most of the landing force goes to Norway each winter to train in the harsh environment - with temperatures down to -30°C - in which it might have to fight.

THE EASTERN ATLANTIC AND CHANNEL

434. A key role of our maritime forces in war would be to conduct operations against Soviet naval forces, including the safeguarding of reinforcement and re-supply routes through the Eastern Atlantic and Channel areas. The freedom to conduct maritime operations in these waters and in the Norwegian Sea, and the denial of that freedom to enemy forces, are essential to support the defence of Europe.

435. The principal threat to the Atlantic routes would come from enemy submarines. Anti-submarine warfare (ASW) is a highly specialised field, in which the European maritime forces, particularly the Royal Navy and maritime patrol aircraft of the Royal Air Force, have a major role to play. Soviet submarines, which are being launched at a rate of about one every six weeks, can attack with a variety of weapons: torpedoes, short-range missiles, and anti-ship missiles fired from ranges in excess of 200 nautical miles. NATO must therefore be able to project a multi-layered ASW capability over a huge area of ocean, if enemy attack submarines are successfully to be held at arm's length from the critical Atlantic routes. Defence against these submarines would begin when they sailed, forcing them to run a long gauntlet through 'killing zones' of increasing severity, and placing them under continuous threat of destruction - from mines, submarines, ships and maritime aircraft - as they crossed the Norwegian Sea and attempted to break into the Atlantic.

Anti-Submarine Warfare (ASW)

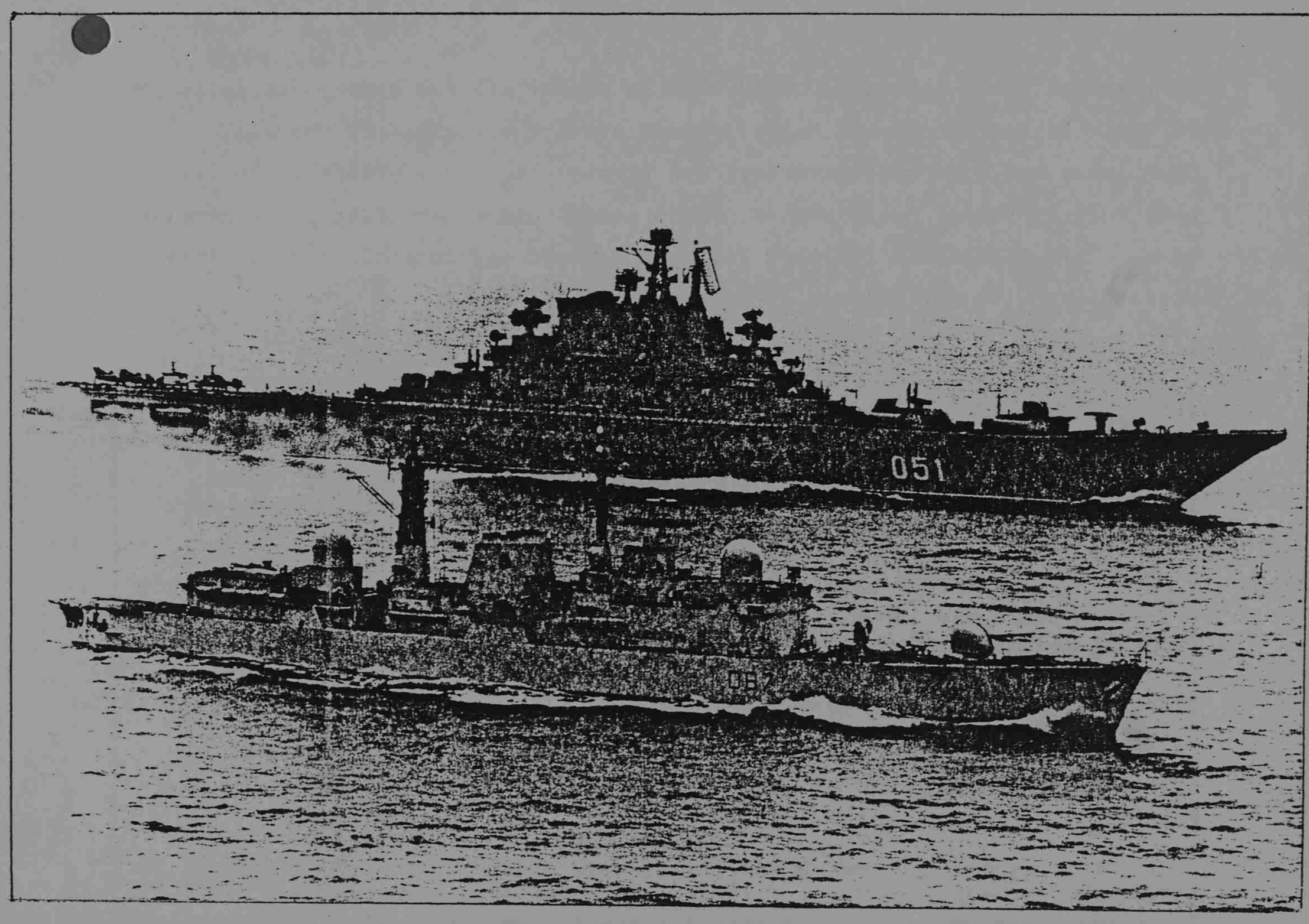
1. NATO ASW forces carry a variety of ASW sensor and weapon systems to detect and locate enemy submarines, and then to attack and destroy them. The most important sensor for sustained operations is the towed array, widely deployed in the submarine flotilla, and now being fitted extensively in the surface fleet. The towed array is a long string of hydrophones capable of detecting at significant ranges the noises emitted by a submarine; sonar operators, with training and experience, can recognise and classify these noises. For searching large or distant areas quickly, the Nimrod maritime patrol aircraft (MPA) use the same principle of hydrophone deployment by laying a pattern of sonobuoys; these incorporate a radio link which relays information to operators in the aircraft. Submarines and ships fitted with towed arrays and aircraft equipped with sonobuoys are therefore the forward layers of ASW defence.

2. A target detected by towed array, particularly at long range, must be localised before it can be attacked successfully. This process would normally be undertaken by a MPA or by helicopters, using passive or active sonobuoys or active dipping sonar. Once accurate short-range sensors had detected the target, it could be attacked and destroyed by submarine, ship or aircraft using missiles or torpedoes.

3. Although towed-array sonar and passive sonobuoys are excellent at detecting submarines, adverse oceanographic conditions or quiet tactics might allow some Soviet submarines, particularly diesel-powered boats, to break through the outer layers of defence and into the Atlantic, to threaten our reinforcement shipping. Ships, helicopters and MPA would use both active and passive sonar and radar as the final layer of defence.

436. The principles of layered defence would also be applied to protection from air attack. Air warning radar would give the first indication of an approaching threat. The initial counter would be made by fighter aircraft, either shore- or carrier-based. Enemy aircraft and missiles that managed to penetrate the outer air-defence layer would then have to contend with area air-defence missiles, such as Sea Dart, which would be launched by ASW carriers or Type 42 destroyers. Low-level aircraft and missiles, and other forces that had breached the outer layers, would be engaged first by point-defence missiles such as Sea Wolf, and ultimately by close-range, rapid-fire guns. Decoy and electronic countermeasure systems would also be used.

437. Similar methods would be used in providing protection from attack by hostile surface vessels. The outer layers would be our own submarines, using torpedoes or sub-surface-launched guided weapons, and aircraft using air-launched guided weapons and bombs. Sea Harriers and Buccaneers, now deploying the Sea Eagle missile, provide a long-range ability to attack surface ships. The ability of Buccaneer aircraft to attack in all weather conditions has been greatly enhanced by improvements to electronic counter-measures and the use of self-defence missiles. Buccaneers from the same operating base could deliver low-level surprise attacks on targets many hundred of miles apart. Nimrod maritime patrol aircraft using Searchwater radar would also help to locate targets and direct aircraft to them, and could themselves add to the weight of the attack by launching their own Harpoon missiles. The inner layers of defence would be provided by ship-launched missiles (Exocet and, soon, Harpoon) and in the last resort by guns.



HMS Newcastle shadowing the Soviet VSTOL aircraft carrier Kiev in the Norwegian Sea (six months before taking part in the evacuation from Aden)

438. A Task Group commander would need to employ all the assets available to build layers of defence below, on and above the surface of the sea. Each layer would be complementary, and rarely completely effective on its own; but, by proper coordination, would contribute to an effective defensive plan. This highlights the need for good command and control, and for inter-operability with our allies.

Skynet

1. Since the early 1950s, the United Kingdom has made a significant contribution to our understanding of the potential of space. Early work included the development of Black Arrow, an all-British satellite launching vehicle, and a range of experimental satellites.

2. In the early 1960s, work at the Royal Aircraft Establishment showed that geostationary satellites were technically possible, and could be used for civil or military communications. This work led to the development of the Skynet series of military communication satellies: Skynet 1, launched in November 1969, was the first of its type in the world. Over the next few years three further Skynet satellites were launched; but only one, Skynet 2B, is still in orbit, and it is now almost at the end of its useful life.

3. Plans for two Skynet 3 satellites were abandoned in 1975-76, when the decision was taken to lease satellite capacity from other sources. This, however, gave us no direct national control over the satellites; and in the event suitable leasing capacity rapidly became less available. The Skynet programme was therefore re-established in 1981. Skynet 4 satellites will provide essential military communications for all three Services into the 1990s, and will operate with a wide range of fixed and mobile terminals

4. Three Skynet satellites of advanced design are currently on order from British Aerospace, the main contractor; Marconi Space Systems are the principal sub-contractor. The first satellite, Skynet 4A, is scheduled to be launched by the US Space Shuttle from the Kennedy Space Flight Centre at Cape Canaveral. Subject to satisfactory resolution of the problems that led to the tragic loss of the Space Shuttle Challenger earlier this year, we plan to launch Skynet 4A as soon as the revised schedules allow.

5. We remain confident in the Shuttle programme, and still intend to take up the invitation from the United States to provide a payload specialist on board the Shuttle for the launch of each of the first two Skynet 4 satellites. As well as being the on-board experts on Skynet 4, the payload specialists will conduct a number of experiments on behalf of various British academic and scientific organisations. These include studies into the effects of weightlessness on motor skills, the co-ordination of head and eye movements, and the mixing and spreading of glues.

6. To prepare for their missions, the payload specialists have been thoroughly trained in the characteristics of the satellites, and in the normal and contingency procedures that apply during launch and initial deployment. They have also undergone physiological and safety training at Cape Canaveral for the space flight itself.

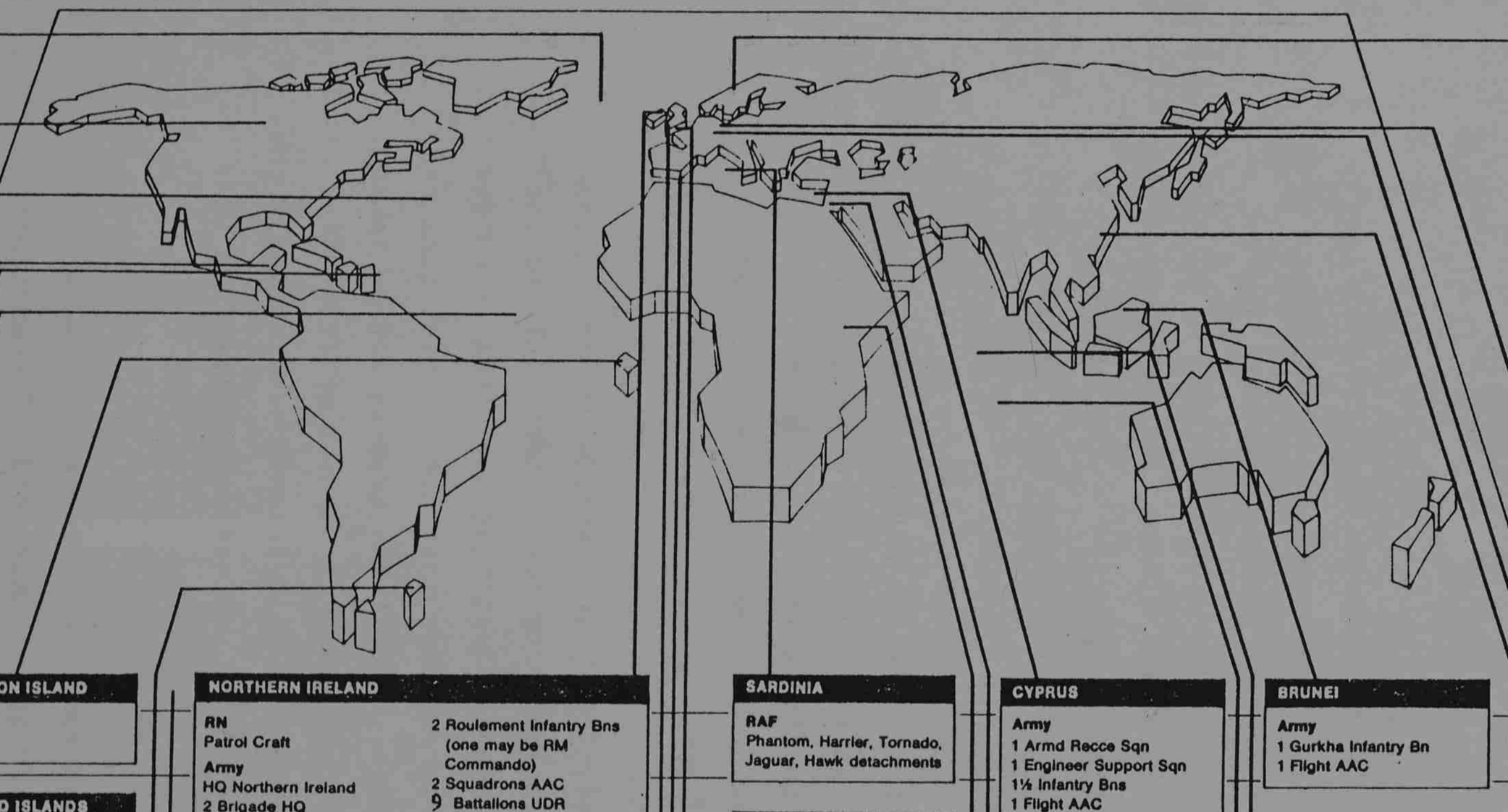
BEYOND THE NATO AREA

439. The current deployment of British forces outside the NATO area is described in Chapter 3. All our garrisons need regular support by air or sea, and all would need rapid reinforcement in time of tension. The RAF's Air Transport Force (ATF) undertakes the airborne task, as well as providing airlift for exercises both within and outside the NATO area. Its squadron of VC10s and four squadrons of Hercules are supported by the Tanker Force, in which Tristars are being deployed in both the tanker and the transport role, and the long-serving Victors are being replaced by VC10 tankers. A two-year trial of a RAF Volunteer Reserve (RAFVR) crew flying on VC10s from Brize Norton is just beginning, the first time the RAFVR has provided aircrew for a front-line aircraft for over 20 years. All front-line aircraft, including the ATF, are now being equipped with in-flight refuelling probes, and the RAF's ability to carry out air deployments is now much less dependent on the availability of overflying rights and staging airfields.

440. The Royal Navy's ability to sustain operations worldwide without shore support hinges on its techniques of replenishing fuel, ammunition, stores and food while remaining at sea. The Royal Fleet Auxiliary (RFA) provides specialised tankers, ammunition and stores ships that can transfer fuel and stores while steaming alongside warships. Additional tankers can be taken up from trade, to maintain a constant fuel chain in support of front-line tankers with operational groups of warships. This extends substantially the endurance and range of Royal Navy Task Groups, as was demonstrated in the Falklands campaign.

441. The ground forces that we would be most likely to use in military operations outside the NATO area - 5 Airborne Brigade and 3 Commando Brigade Royal Marines - have their primary commitments within the Alliance, in the home defence of the United Kingdom and reinforcement of the Northern Flank. The need to use these forces out of area could arise for a number of reasons:

Figure 7 Deployment of the Armed Forces, early 1986



EASTERN ATLANTIC and NORTH SEA

RN
ASW Carrier, Destroyers Frigates, Submarines, LPD, RFAs, MCMVs, Offshore Patrol Vessels SOV, Survey Vessels, Shore-based Wessex and Sea Kings

RAF
Buccaneers, Canberras, Nimrods, Phantoms, Victors, VC10s

CANADA

Army
Training Unit

WESTERN ATLANTIC

RN
Frigates, RFA

BELIZE

Army
1 Armd Recce Troop
1 Field Artillery Battery
1 Engineer Squadron
1 Infantry Bn
1 Flight AAC

RAF
Harriers, Pumas
½ Squadron RAF Regt. (Rapier)

WEST INDIES

RN
Destroyer, Frigates
Submarines
Survey Vessels, RFA

CENTRAL ATLANTIC

RN
Survey Vessels

ASCENSION ISLAND

RAF
Hercules

FALKLAND ISLANDS

RN
Submarines, Destroyers, Frigates, Patrol Vessels, RFAs, STUFT, Sea Kings

Army
1 Infantry Bn Group
Supporting Arms and Services

RAF
Phantoms, Hercules, Chinook & Sea King helicopters
RAF Regiment Squadron (Rapier)

ANTARCTIC

RN
Ice Patrol Ship

NORTHERN IRELAND

RN
Patrol Craft

Army
HQ Northern Ireland
2 Brigade HQ
1 Engineer Squadron
6 Resident Infantry Bns
2 Roulement Infantry Bns (one may be RM Commando)
2 Squadrons AAC
9 Battalions UDR

RAF
Puma/Wessex helicopters
Squadron RAF Regt.

GREAT BRITAIN

RN
Destroyers
Frigates
Submarines
MCMVs
Offshore Patrol Vessels
RFAs
Survey Vessels
Helicopters
Royal Marines Commando Forces
Royal Marines SBS
Royal Marines Forces for home defence

Army
Specialist Reinforcement Units for NATO
Reinforcements for BAOR
Forces for home defence
1 SAS Regiment

RAF
Buccaneers, Canberras, Chinooks, Harriers, Hawks, Jaguars, Lightnings, Nimrods, Phantoms, Pumas, Hercules, VC10s, Sea Kings, Shackletons, Tornados GR1 & F2, Tristars, Victors, Wessex, communications aircraft & helicopters
RAF Regiment Squadrons
Bloodhound, Rapier

SARDINIA

RAF
Phantom, Harrier, Tornado, Jaguar, Hawk detachments

CHANNEL

RN
ASW Carrier
Destroyers, Frigates, Submarines, MCMVs
Offshore Patrol Vessels
RFAs
Shore-based Wessex and Sea Kings

RAF
Canberras, Nimrods

GIBRALTAR

RN
Frigate, Lynx

Army
1 Infantry Bn
1 Surveillance Troop Royal Artillery

RAF
Airbase detachments

CYPRUS

Army
1 Armd Recce Sqn
1 Engineer Support Sqn
1½ Infantry Bns
1 Flight AAC

RAF
Phantom and Lightning detachments
1 Wessex Squadron
1 RAF Regt Squadron

UNFICYP Contingent
1 Armd Recce Sqn
½ Infantry Bn
1 Flight AAC
Supporting Services

SINAI

MFO Detachment

KENYA (Exercise)

Army
1 Engineer Squadron

BRUNEI

Army
1 Gurkha Infantry Bn
1 Flight AAC

DIEGO GARCIA

RN
Naval Party
RM Detachment

INDIAN OCEAN

RN
Destroyer, Frigate
RFA

NORWAY (Exercises)

RN
RM Commando Brigade HQ
2 RM Commandos with combat and logistic support
Sea Kings and Wessex helicopters
RM Assault Squadron

Army
1 Infantry Bn Group

RAF
Harriers, Jaguars, Pumas, Chinooks

BERLIN

ARMY
Infantry Bde

RAF
Support Units

WEST GERMANY

Army (BAOR)
1 Corps HQ
3 Armoured Divisions
1 Artillery Brigade

RAF Germany
Buccaneers, Jaguars, Tornados, Phantoms, Harriers, Pembrokes, Pumas, Chinooks, Rapier
RAF Regt Squadrons

HONG KONG

RN
Patrol Craft
HM Raiding Sqn

Army
1 Gurkha Engineer Regt
1 UK Infantry Bn
4 Gurkha Infantry Bns
1 Squadron AAC

RAF
1 Wessex Squadron

AAC	Army Air Corps	HQ	Headquarters	Recce	Reconnaissance	SOV	Seabed Operations Vessel
Armd	Armoured	LPD	Assault Ship	Regt	Regiment	Sqn	Squadron
ASW	Anti-Submarine Warfare	MCMV	Mine Countermeasures Vessel	RFA	Royal Fleet Auxiliary	STUFT	Ships Taken Up From Trade
Bde	Brigade	MFO	Multinational Force and Observers	SAS	Special Air Service	UDR	Ulster Defence Regiment
Bn	Battalion	RE	Royal Engineers	SBS	Special Boat Squadron	UNFICYP	United Nations Force in Cyrpus

Note: This map does not include 662 loan service personnel deployed worldwide.

to protect British sovereign territory; to assist a friendly government; or to help in the evacuation of British nationals. Whatever the cause, we would have to respond quickly when the call came.

Aden Evacuation

1. The importance of being able to react rapidly to out-of-area crises was vividly illustrated in January by the sudden need to mount an evacuation from South Yemen. HM Yacht Britannia was in the Red Sea, en route to New Zealand to undertake a Royal Tour, when fighting broke out in Aden. It was quickly decided, with the full agreement of Her Majesty The Queen, that Britannia should wait off Aden, since the fighting appeared likely to present grave risks to the safety of the British community there. She was later joined by HM Ships Newcastle and Jupiter, the Royal Fleet Auxiliary Brambleleaf and the hydrographic survey ship HMS Hydra. Two RAF Hercules were also flown to Djibouti, in case an opportunity arose to mount an air evacuation, although, in the event, they were not used.

2. Operating closely with the Russians and French, Britannia mounted a series of evacuations in and around Aden, taking off over 1,000 people of many different nationalities. As a non-combatant ship, well equipped with boats and able to accommodate large numbers, she proved ideal for the task. Further up the coast, the merchantman Diamond Princess evacuated almost 250 more; while Hydra took off some 50 people from the easternmost part of the country. Newcastle, Jupiter and Brambleleaf played an invaluable role providing logistic and communications support to the ships operating inshore.

442. The improvements in our out-of-area capability foreshadowed in the 1980 Statement - and accelerated by the events of 1982 - have now been largely put into effect. Command and control have been improved by the creation of a dormant Joint Force Headquarters (based at HQ South East District), to be commanded by a two-star officer. This would be activated in response to a crisis outside NATO, and would command limited operations. Depending on their nature, large-scale out-of-area operations would continue to be commanded from CINCFLEET, from HQ United Kingdom Land Forces, or from HQ Strike Command. The improvements to 5 Airborne Brigade announced in November 1983, the completion of the Hercules stretch programme and the fitting of station-keeping equipment in the Hercules fleet, all mean that we are better able to launch a rapid and effective battalion group parachute assault, if ever the need arises.

MERCHANT SHIPPING

443. Because the United Kingdom's merchant fleet is of great importance for defence needs, the scale of its recent decline has caused some concern. There are, however, still sufficient ships of most of the particular types that we need to enable us to meet our foreseen defence requirements for cross-Channel reinforcement and direct support of Royal Navy operations. The one exception is mine countermeasures vessels, referred to below. Last year the Department of Transport and the Ministry of Defence jointly sponsored a study into the future trends in those parts of the merchant fleet for which there is a defence requirement. This study has indicated that, for the foreseeable future, most of our requirements are likely to be met. Together with the Department of Transport, we continue to monitor the situation closely.

444. Last year we said that there was a serious shortage of trawlers suitable for mine countermeasures purposes, and that studies into alternative means of meeting the requirement were in hand. These studies, examining the possibility of using North Sea support ships for the role, will be completed in the spring. Further information about the principal categories of British merchant vessels required for defence purposes, and the number of seafarers available to man them, are set out in Table 1.3 of Volume 2.

Warsaw Pact and NATO Merchant and Fishing Fleets

The primary role of the Warsaw Pact merchant and fishing fleets is commercial. Nevertheless, all fleets have a significant secondary role as an extension of the Soviet armed forces. Nearly all the ships incorporate military design requirements and are used routinely in naval exercise and for surveillance of Western military and economic targets of all types, both at sea and on land. Total strengths [1] of the Warsaw Pact and NATO merchant and fishing fleets in 1985 were as follows:

	Number of Ships [2]	Gross Registered Tons
Warsaw Pact	5,133	30,092,643
of which USSR	4,076	23,632,219
NATO	7,819	118,804,399
of which UK [3]	876	13,800,034

Notes:

1. Source: Lloyds Register of Shipping Statistical Tables 1985.

2. Figures cover all ships of 1,000 gross registered tons and over.

3. Includes all UK-registered merchant vessels. Not all ships are suitable for defence purposes.

ESSAY

EXERCISE BRAVE DEFENDER

1. Exercise Brave Defender, which was the largest military Home Defence exercise held since the Second World War, took place in September last year and was designed to test revised plans for the ground defence of installations that would be vital to the United Kingdom and NATO in a period of tension or war. There are several hundred of these key points located throughout the country: they range from large facilities such as ports, airfields and storage depots to small, inconspicuous but no less important installations like communications centres and relay stations. All would provide attractive targets for an enemy, particularly if they were not adequately defended.

2. The main threats faced by installations in a period of tension or conventional war would be air attack and sabotage. The United Kingdom has over three thousand miles of coastline, which it would be impossible to seal completely against small numbers of highly-trained sabotage teams. As we explained in the 1984 Statement, the Soviet Union's special forces - spetsnaz - are trained to conduct special or covert reconnaissance and sabotage operations. In wartime, they would operate far behind our lines, with most units providing reconnaissance and target-marking, and others carrying out sabotage attacks on important installations. Sabotage teams are unlikely to be large in size, but would have a potential to cause damage out of all proportion to their numbers. They could move covertly and swiftly to their targets, where a well-placed bomb or attack by a stand-off missile could readily achieve their aim.

3. Our plans have recently been revised to improve the arrangements for defending key points against such teams. These arrangements involve a number of considerations special to home defence. Most important is the concept of police primacy. In a time of tension or war, as in peacetime, the maintenance of law and order is the primary responsibility of the police, and the role of the armed forces is to act in support of the civil authority when requested.

4. Secondly, because of the speed with which spetsnaz teams could act, we need to pre-position forces at vital installations and have reserves that could move rapidly and in good time to wherever they were needed. The dispersal of such forces throughout the country requires complex deployment and logistic arrangements, and detailed co-ordination of command and control between the three Services and with the police.

5. Thirdly, at vital installations it is neither sensible nor practicable for the guard force to operate solely within the perimeters of the facilities they have to protect. A man in a sentry-box, for example, could not disrupt enemy reconnaissance and stand-off attack. Our revised plans include the identification, for each vital installation, of an individual Ground Defence Area (GDA) tailored to its needs and to the local geography, and associated with the tactical plan for its defence. GDAs would be patrolled by the installation's military guards.

6. In the preliminary phase of the exercise, which began on 2 September, logistic support was established and 'enemy' and umpire organisations were set up. Mobilisation and deployment of Home Defence Forces started on 6 September, and by the evening of 8 September some 200 exercise key points were being guarded. The main exercise concentrated on attacks by special purpose forces but also included conventional air attacks simulated by RAF and USAF aircraft. The reinforcement of key points with mobile reaction forces was also practised. The enemy forces were provided by regular troops and numbered some 4,500 (including about 1,000 from BAOR). Enemy activity was kept deliberately high to ensure that all those being exercised were fully tested. Although Brave Defender was essentially a military exercise, police forces played a significant part both in providing a presence at exercise key points and in undertaking a liaison role at headquarters.

7. Exercise Brave Defender produced a number of notable 'firsts'. It was the first time that all three Services, regular and reserve, had been brought together in a nationwide military home defence exercise; some 65,000 men and women were involved, a major role being played by members of the volunteer and reserve forces, including the newly-formed Home Service Force,

the Royal Naval Auxiliary Service and the Royal Auxiliary Air Force Regiment. It was also the first time that police forces had joined in such an exercise; forces from each of the country's home defence regions were involved. And it was the first time that US forces stationed in this country had participated in an exercise of this kind in defence of the bases they use; about 1,000 US Servicemen took part.

8. The detailed assessment of an exercise such as this inevitably takes time, but many worthwhile lessons have been learnt. Particularly encouraging was the response by members of the volunteer and reserve forces, whose turn-out was well up to expectations; the exercise demonstrated the essential contribution made by these men and women to home defence. The Home Service Force had a successful debut in its first major exercise, and Brave Defender received much helpful comment and support both in the press and from the public at large: for example, some 1,800 landowners allowed the Services to use their land, and during the exercise itself there was a flood of offers of assistance and information.

9. Most importantly, Exercise Brave Defender validated the revision of ground defence planning announced in the 1984 Statement. The new plans provide a more effective defence of vital installations and more efficient use of available manpower. Since these installations are vital not just to the United Kingdom but to the NATO Alliance as a whole, the success of Brave Defender has enhanced the value of our contribution to NATO's strategy of defence and deterrence.

CHAPTER FIVE : MONEY, MEN AND MANAGEMENT

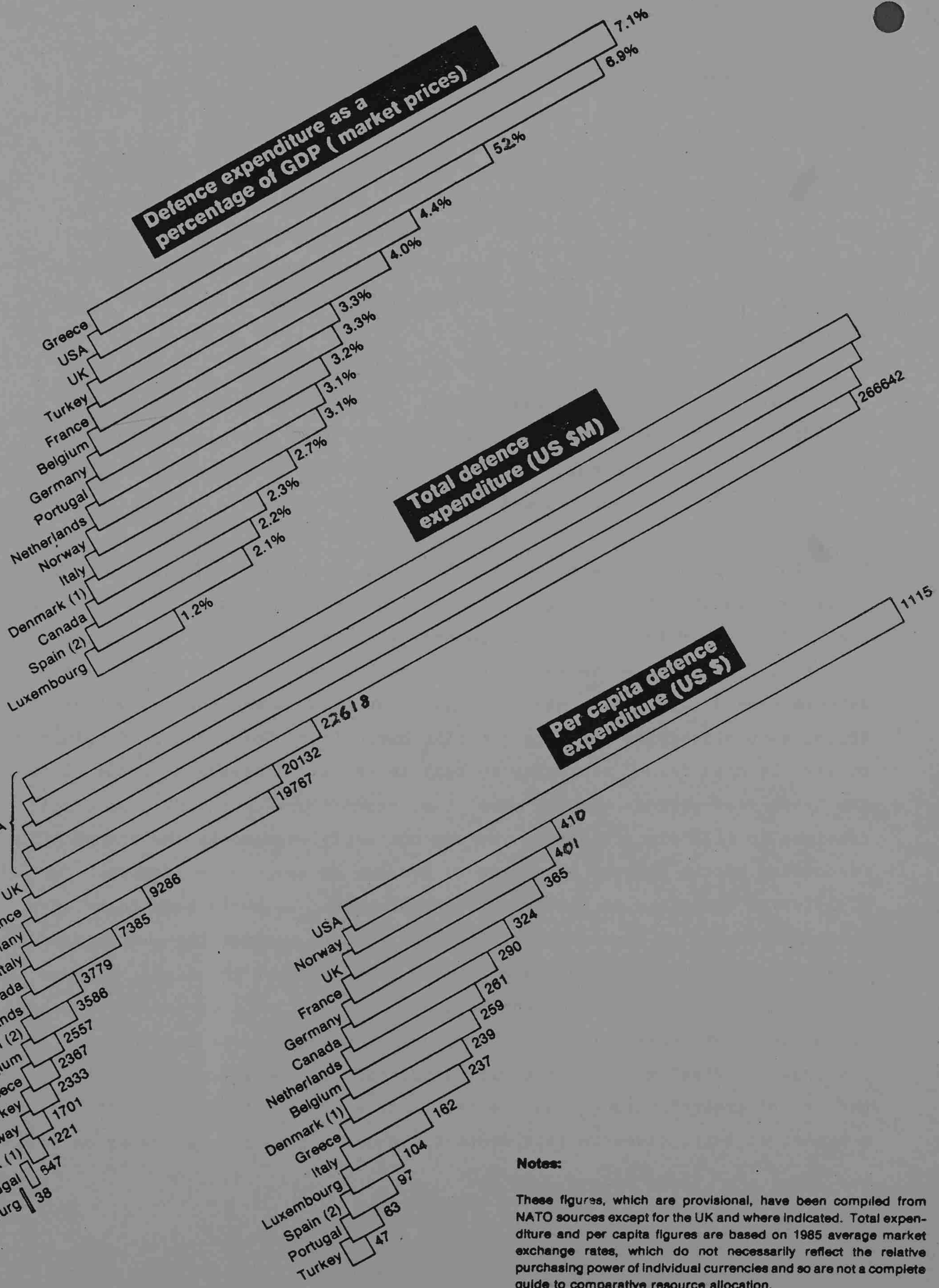
THE DEFENCE BUDGET

501. The defence budget for 1986-87 will be £18,479 million - higher in absolute terms than that of any other ally, except the United States. This is illustrated in Figure 8. Figure 9 breaks down the budget by main areas of expenditure, while Figure 10 analyses defence resources by major programmes.

502. Apart from minor technical changes, the cash provision for defence in 1986-87 is unchanged from the planned expenditure first announced in the 1985 Public Expenditure White Paper (Cmnd 9428). It includes provision of £442 million for Falklands expenditure, compared with £552 million in 1985-86.

503. This year's defence budget is the first following the ending of our commitment to the NATO real growth target in the period up to 1985-86; and the Estimates for 1986-87 seek to consolidate the substantial enhancements in defence capabilities achieved during the past seven years of real growth in defence expenditure. Although the budget for 1986-87 and the two subsequent years, as published in the recent Public Expenditure White Paper, is planned to rise in cash terms, its value in real terms will decrease by about 6% over the three-year period. At the same time, expenditure on the Falklands will continue to fall significantly. We are currently engaged in the annual re-costing of the defence programme to provide an up-to-date framework for Ministerial decisions on expenditure commitments. We shall need to balance the preservation of our present front line numbers against the requirement to invest in expensive new equipment to strengthen further the fighting power of our armed forces in the 1990s and beyond. Some difficult decisions will have to be taken but there will be no need for any change in our main defence posture. Increasing importance will also apply to the extent to which we can secure greater output from the cash made available to the defence programme; a number of initiatives in this respect are set out in the following paragraphs.

Figure 8 A Comparison of Defence Expenditure: NATO countries 1985



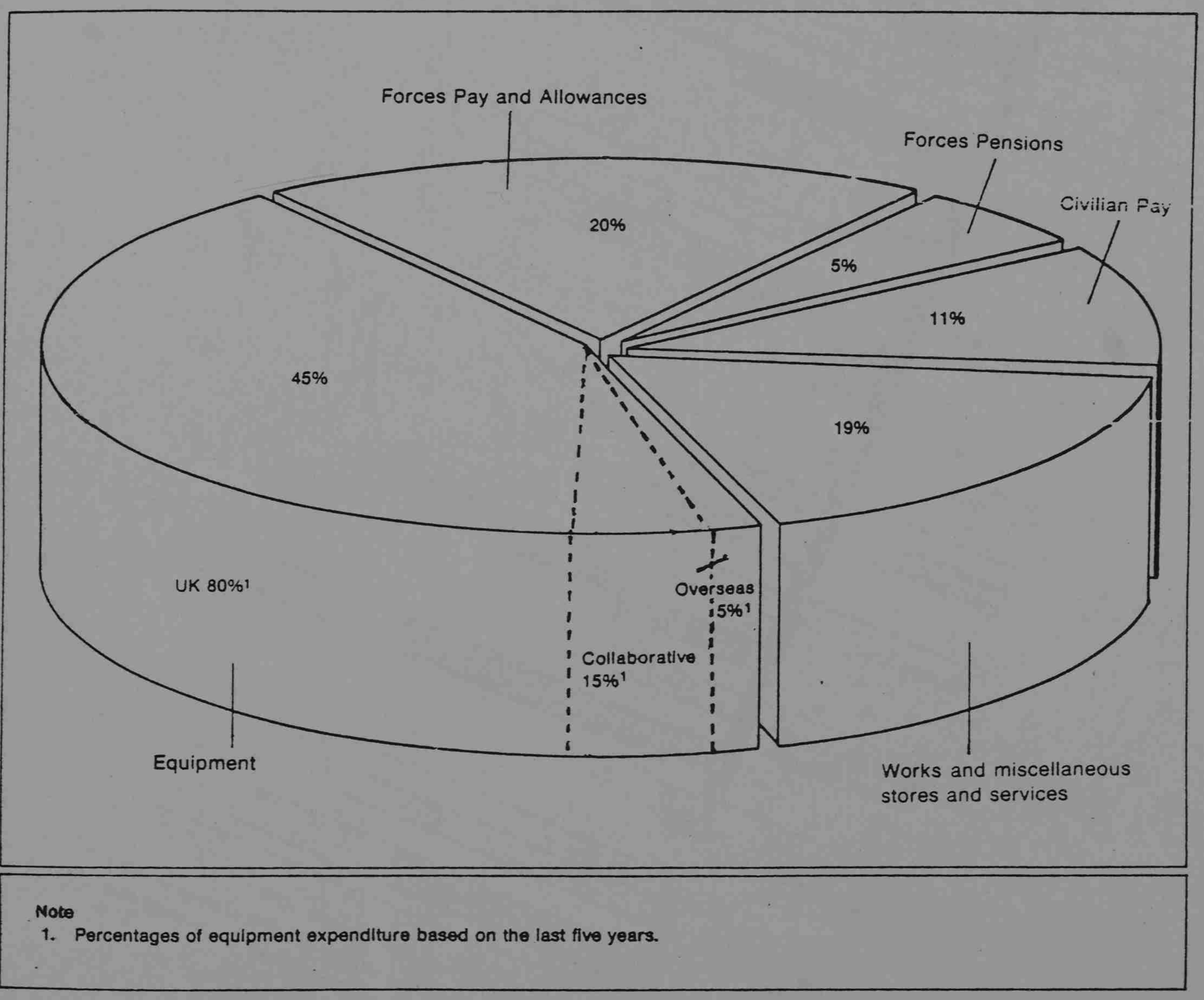
Notes:

These figures, which are provisional, have been compiled from NATO sources except for the UK and where indicated. Total expenditure and per capita figures are based on 1985 average market exchange rates, which do not necessarily reflect the relative purchasing power of individual currencies and so are not a complete guide to comparative resource allocation.

(1) Figures for Danish defence expenditure in 1985 were not available at time of printing. The figures quoted are those for 1984.

(2) The figures for Spain are compiled from national sources.

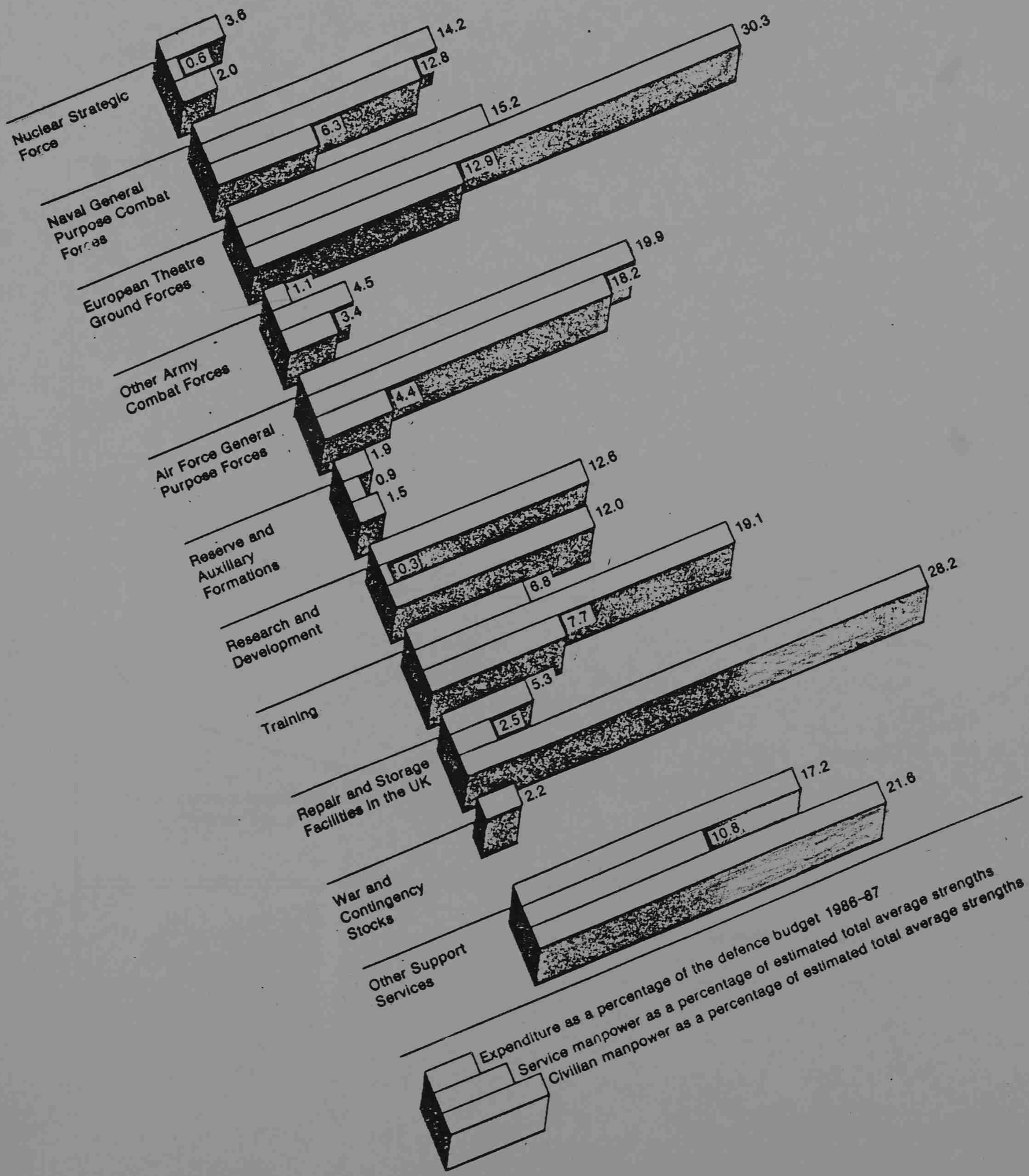
Figure 9 The Divisions of the Defence Budget by Principal Headings 1986-7



Note

1. Percentages of equipment expenditure based on the last five years.

Figure 10 An Analysis of Defence Resources (1986-87) by Major Programmes



Note
A more detailed functional breakdown of the defence budget is given in Table 2.5 of Volume 2; the manpower devoted to each function is set out in Table 4.3.

THE EFFICIENCY PROGRAMME

504. As we have explained in recent Statements, we are determined to improve the value for money obtained from defence expenditure and the output that can be bought for a given cash input. We are pursuing efficiency and value for money on a number of fronts:

- in the management and organisation of the Ministry of Defence;
- in the control of defence manpower;
- in the procurement of defence material; and
- in the supply of goods, services and support to the armed forces.

MANAGEMENT AND ORGANISATION

MINIS

505. The second round of MINIS (the Department's high-level management information system) ended in the summer of 1985. It led to a number of important general conclusions, including that:

- there was scope for simplifying chains of command and for other rationalisations in the support area;
- there should be more contacts with the private sector through exchanges of personnel, joint commercial ventures, contracting out, and use of external advice; and
- line managers should be given more authority and accountability.

The round also gave rise to a number of efficiency studies and is proving a useful vehicle for positive management by Ministers and senior staff.

506. MINIS is now nearing the end of its third round. The emphasis in the first two rounds was on organisation and management; this year both the MINIS documentation and the meetings with Ministers have focussed on achievement, objectives and efficiency measures in the 177 management areas of the Department. As a new feature, Ministers have held a series of meetings attended by representatives of the three Services and the civilian staffs responsible for functional areas such as contracts, land and buildings, communications and information systems. These new opportunities to compare the situation in different parts of the Department have proved valuable.

Responsibility Budgets

507. MINIS has provided the framework and top structure for the widespread introduction of responsibility budgets. Staff Responsibility Budgets (SRBs) were first introduced in 1984 for civilian staff; they have now been extended, on an experimental basis, to military staff in the support area. Their aim is to allow line managers more freedom to decide - within Department-wide budgetary and manpower constraints - the mix of staff and certain associated resources required to achieve objectives defined in MINIS. The system is still in its infancy, however, and work is in hand to refine and improve it wherever practicable.

508. As foreshadowed in last year's Statement, we are now introducing Executive Responsibility Budgets (ERBs) into the support area. For 1985-86 some 50 units, with operating costs of about £1.5 billion a year, were allocated budgets; and the programme will be extended over the next two years to the remaining units in the programme, whose total operating costs are broadly of the same order. It is too early to assess the full impact of ERBs, since in the initial stages we have been concentrating on making the system work and getting people used to it. There have been teething problems, as was to be expected with a major new enterprise of this kind, although already our experience has been that the system is fully workable. At the same time, management in the support areas has begun to reap benefits from ERBs, including:

- clarification of issues of responsibility and authority;

- more systematic allocation of tasks and resources; and

- more timely provision of accurate information to managers to aid decision-making.

We are working to develop the system further, and paying special attention to the need for greater delegation of authority.

Defence Organisation

509. The new structure of the higher organisation for defence has been operating successfully for over a year. We are now looking at specific areas in which some refinement may be necessary, but no major changes are foreseen: it is a matter of fine tuning.

DEFENCE MANPOWER

Manpower control

510. Manpower is one of our major resources, absorbing some 30% of the defence budget. We need to use it as economically and effectively as possible. We have therefore sought to deploy our Servicemen and women where they will be of most operational value; and, as we have reported in previous Statements, we have introduced programmes of savings measures into the support area in order to strengthen the front line. We have also made savings in civilian staffs by putting work out to the private sector; by improving efficiency; and by eliminating inessential tasks. As a result, since 1979 we have reduced our UK-based civilian workforce by about 77,000 (some 30%).

511. In the reorganisation of the Ministry of Defence we have created new machinery within the Office of Management and Budget and the Central Defence Staff to assess, on a defence-wide basis, the balance to be struck between manpower and other demands on the defence budget. We shall continue to make economies wherever practicable; in particular, we intend to reduce the number of civilians to about 165,000 by the end of 1986-87. The transfer of the Royal Dockyards to commercial management (see page [ ]) will enable

further substantial cuts to be made in the number of civilian staff employed by the Department.

Recruitment, Retention and Morale

The Services

512. Recruitment to the Services remains generally very satisfactory. Most of our recruiting targets are being met, although there are still short-falls of officers, technicians and other skilled trades, in which we face fierce competition from the civil sector.

513. After the Government had restored full pay comparability in 1979, the voluntary outflow from the Services reduced considerably. It increased by comparison between December 1984 and December 1985; while it is not at a critical level, shortages of officers in a few areas in each Service are causing concern. The annual rate of applications from officers at December 1985 was 3.9% of the trained strength (compared with 5% in 1978-79 and 3.4% at December 1984), with actual exits at 3.4% (4% in 1978-79 and 2.9% at December 1984). Applications for premature voluntary release from Servicemen were 3.4% of trained strength (6.8% in 1978-79 and 3.2% at December 1984) with actual exits at 2.8% (4.4% in 1978-79 and 2.2% at December 1984). The situation is, of course, being closely watched; but there is no evidence that Service personnel are leaving because they consider their pay to be too low. We believe that the operation of a fair system of assessing Service pay is essential in maintaining a healthy state of morale, and that levels of Service pay have been important in attracting and retaining good-quality recruits (see page [ ]). Other conditions of service are kept under review, and more detailed studies of the reasons for premature voluntary outflow are being undertaken.

Civilians

514. Recruitment and retention of civilian staff in the Ministry of Defence need close attention, to ensure that we have the numbers and calibre of staff that we need to manage the defence programme in an efficient and effective way.

515. Difficulty is being experienced in recruiting and retaining engineers, scientists, accountants and ADP specialists of good quality in adequate numbers; there are also problems over the retention of experienced clerical staff in London and a number of other areas. The rate at which staff - many of them graduates with high potential - are leaving the Department has recently increased. In certain specific categories we cannot recruit enough staff to make up the losses, and this is a matter of growing concern.

516. A number of measures have therefore been introduced to secure the staff we require. For example:

- increases have been made in the take-up of sponsored student engineers;

- since the autumn of 1985, sponsorship has been available for science undergraduates, and for graduates wishing to re-train in science disciplines relevant to the Department;

- special pay additions are being introduced for posts in certain high priority areas;

- across the Civil Service as a whole, unified grading at Principal level (introduced from 1 January 1986) will benefit key staff; and the pay of staff in other technological grades is being improved.

517. These measures will be helpful in securing the staff we need to maintain the defence programme; but the situation is being closely monitored by senior management in the Ministry of Defence.

Civilian Apprentices

518. The Ministry of Defence is a major employer and trainer of civilian apprentices, who are the main source of our craftsmen and technical officers. In recent years we have not been able to offer as many training places as in the past; nevertheless, we recruited 1,040 apprentices in 1985 and at the

end of the year there were 4,100 in training. We are still the largest single employer and trainer of apprentices in the shipbuilding and engineering industries.

519. We plan to recruit enough apprentices to provide for the normal wastage of craftsmen and technical officers. We aim to concentrate on attracting more people with the academic ability to reach Higher National Certificate standard as technician engineers. Since numbers of school leavers generally are expected to decline during the remainder of the decade, we shall be seeking to widen our recruitment of applicants with qualifications in mathematics or physics at 'O'-level or GCSE. Hitherto we have tended to recruit in the South of England, where most of the defence establishments requiring apprentices are located; but in future we shall be making a bigger recruitment effort in the Midlands and North.

THE PROCUREMENT EXECUTIVE

520. The Ministry of Defence is British industry's largest single customer. Of the total defence budget for 1986-87 some 45%, or £8.25 billion, will be spent specifically on equipment. This varies widely in sophistication and price - from Trident submarines to torch batteries. By far the greatest part of the equipment budget is spent with British suppliers, who, as both contractors and sub-contractors, range from the largest national organisations with turnovers of hundreds of millions of pounds to small firms employing only a handful of people.

521. The interdependence between the Ministry and British industry is illustrated by the fact that we take:

- 50% of the output of the British aerospace industry;

- 60% of the output of the British ordnance industry;

- 20% of the output of the British electronics industry; and

- 40% of the output of the British shipbuilding and ship-repairing industry.

This work provides jobs for some 225,000 people directly and another 170,000 indirectly. A further 120,000 jobs are supported if exports of defence equipment are included.

522. These statistics give only a broad indication of the size of the task that falls to the members of the Procurement Executive (PE) of the Ministry of Defence. The PE's overriding aim is to obtain equipment of the right performance and quality for the needs of the armed forces at the best possible price. The work falls under three main headings:

- the development and procurement of equipment, through competitive processes wherever possible;

- the promotion of exports of British defence equipment; and

- research activities in both the public and private sectors.

This work is carried out against the background of our commitment to international equipment collaboration, which is described in detail in Chapter 3.

Competition

523. The initiative for greater use of competition in defence procurement is now in its third year. In 1983-84 the total percentage by value of contracts placed subject to competitive forces was 38%; in 1984-85 it rose to 46%; and in 1985-86 further improvements have been made. When the full year's figures are available and have been analysed, we expect them to show that the percentage has risen to some 60%.

Buying Defence Equipment

1. Equipment projects pass through a number of stages, and the Procurement Executive examines the opportunities for competition at each one. For a typical major project, the process is as follows:

- The concept stage, at which ideas for the new equipment are first set down. They may have been stimulated by changes in the threat, advances in research or technology, obsolescence of existing equipment, or a combination of these factors. At this stage we consult industry and the trade associations to ensure that we have access to as many innovative ideas as possible and that we do not prematurely restrict the number of potentially interested firms. If the concept appears sound it is endorsed as a military staff target.

- The feasibility study stage, where work is done to determine whether the concept can be realised. Industry usually carries out feasibility studies, and wherever possible we insist on several firms doing studies in competition. Sometimes we pay for these, but firms often enter feasibility study competitions at their own expense and risk. If the project proves feasible, the staff target is refined and approved as a more detailed staff requirement.

- The project definition stage, during which the necessary work is done to take the project to the point at which it could enter full development with a fair likelihood of success. Project definition involves the demonstration of new technologies, the identification of areas of risk, and the drawing-up of detailed time and cost plans. We try to ensure competition at this stage, too, usually between the two or three firms that came out best in the feasibility study competition. We often fund all the competitors in project definition, an investment justified by the substantial advantages we derive from the competition.

- Full development, carried out by the successful firm on the basis of specifications agreed with the Ministry of Defence. We are increasingly making use of cardinal point specification procedures, which define key performance features but otherwise allow industry the maximum scope to innovate, cut costs and enhance the export potential of the equipment. These procedures have to date been used on about 50 different contracts, worth nearly £1 billion.

- Equipment production, which we try to make the subject of fixed-price contracts wherever possible. Design contractors cannot assume that they will be awarded the first production order as a matter of course: they may have to prove the competitiveness of their production plans against those from other firms. Even when equipment is in production, there can be no cosy assumptions about continuity of orders; this will only occur if price, performance and quality remain competitive for later batches of equipment.

Major projects are referred to Ministers at each stage, starting at the end of the concept stage but before feasibility studies have begun. This very early reference ensures that Ministers are satisfied from the outset with operational objectives and proposed approaches to procurement.

2. Throughout development and production we try to drive a hard bargain for the taxpayer. Bidders' conferences are set up to encourage involvement by the widest possible range of firms in at least some of the work on offer, either directly or as sub-contractors. We require prime contractors in our more valuable contracts to tell us their plans for competition at sub-contract level. We obtain the right to free use of intellectual property in a product where this is sensible and practicable and would lead to increased competition. Finally, we debrief unsuccessful tenderers on request and advise them on aspects of their tenders to which they could usefully pay attention in future.

524. Examples of particular successes of competition are set out [below]. They represent significant achievements and have been obtained in two ways: by new competitive processes, and by improvements in organisation, management and financial information.

New Measures

525. Last year's Statement described a number of measures that had been introduced to promote competition. Since then the following significant new measures have been taken:

- Modification of Defence Contract Condition 15: under this condition design contractors normally expected to obtain at least the first production order. We now reserve full rights to go to competition for production. The company carrying out the development work will, of course, be well placed to compete; but there should be no automatic expectation of future work: it will have to be fought for keenly.

- Wider ranges of suppliers: many companies have regarded the defence market as difficult to enter and likely to involve complicated security regulations. We have been at pains during the last year to demonstrate that defence business is accessible on a wide basis to British companies, and to encourage firms to make realistic proposals and submit tenders, even where they have not previously thought of competing. The response has been

enthusiastic: in most cases new companies have been delighted to be approached and to be given the opportunity to show what they can do. As a result, we are receiving proposals for equipment that meets our requirements at lower prices than we would otherwise have expected to pay.

- New procedures for 'best and final' offers: in defence, as in other areas of procurement, there is often advantage in proceeding to second and subsequent stages of bidding, and in inviting companies to revise and sharpen their offers. We have therefore produced new procedures for 'best and final' offers, which will enable us, where we choose, to seek second and subsequent sets of proposals on a basis that is clear and fair to all concerned.

- Advertising contract opportunities: We are taking steps to advertise major tenders and contracts at the earliest possible stage to encourage more firms to bid for defence contract and sub-contract work.

Successes for Competition

Some illustrative examples of the benefits stemming from competition are as follows:

- A new company has entered the field of remote ground sensors. Competition for the latest order between the two proprietary products has led to a saving of about 10% on the price previously paid by the Ministry.

- The decision to introduce competition into the supply of the Warrior armoured personnel carrier (MCV 80) was taken at an early stage in the programme, as mentioned in the 1984 Statement. We have so far saved about £100 million, or 12%, of the previously estimated costs.

- The contract for the armoured repair and recovery vehicle for Challenger was won in a competition, and produced a saving approaching 20% of the initial budgetary estimate. We intend to place later orders for the vehicle following further rounds of competition.

- Successive rounds of competition for missile pallets provided lower prices each time. For the first batch the winning tender's price was considerably below that of the design company, whose own tender was lower than the non-competitive prices we had previously paid. For subsequent batches the margin between the

successful tenderer and the design company was even greater. The final effect has been a saving of some 50% on the original price.

. The order for a batch of Type 2400 submarines was placed as a result of competition; the combination of batch ordering and competition saved about £20 million on the previously estimated costs.

Organisation, Staffing and Information

526. To run an effective procurement organisation requires well-trained staff of high quality, working in the right organisational framework and with access to accurate, up-to-date information. A number of improvements have been made in 1985-86. They include:

- revised procedures for the operation of the PE Management Board, enabling it to consider major projects and their progress, and to act along the lines of the Board of a commercial company;

- the appointment of a small team to study aspects of organisation and project management so that opportunities for improvements can be swiftly determined, brought to the attention of top management, and implemented;

- the integration of contracts staff with project management teams, subject to professional safeguards; this puts the contracts function at the heart of project management, without division of management authority;

- improvements in training arrangements;

- an increase in secondments, both inwards and outwards;

- improvements in the scope, accuracy and distribution of financial information on our contracts and contractors; and

- increased use of expert legal advice in the framing of contract terms.

527. In addition, the creation in 1984 of a single Directorate General of Defence Quality Assurance (QA), together with continued encouragement for

industry to take on more responsibility for the quality and reliability of its products, has produced considerable economies: we have saved 500 staff and have reduced the number of regional QA offices from over 70 in 1984 to under 30 now. We are also making efforts to improve the specification of defence requirements at the earliest stages of the procurement cycle by co-locating QA and project staffs whenever possible; and we have introduced the use of NATO standards in place of our own defence standards to specify QA requirements in contracts and for assessing contractors. In parallel, we are continuing to devolve the certification of sub-contractors to nationally accredited bodies. These measures are also of more general value to industry in international markets.

Defence Exports

528. The export of defence equipment brings both political and economic advantages to the United Kingdom. Politically, defence exports to friendly countries underline our concern for their security, strengthen their ability to resist aggression and help to protect Western interests. In economic terms, defence exports account for some 120,000 direct and indirect jobs and constitute about 3% of total visible exports. Sales to overseas customers account for nearly a third of our national defence production and allow the maintenance of a stronger defence industrial base than could be sustained by British requirements alone. The prospect of such sales can stimulate firms to bid more keenly for defence contracts, resulting in better value for money in our own procurement. We have always encouraged companies to put forward proposals that will both meet our requirements and have good export potential; but we are now planning to include in defence contracts specific provisions to cover export possibilities.

529. Britain has been a consistently successful defence exporter. Even in 1984, when the world defence market contracted by a quarter, we largely succeeded in maintaining our level of defence sales, consolidating our position in the top three of the free world's largest defence exporters and increasing our share of the market from 6% to nearly 8%.

530. New contracts recorded in 1984 amounted to some £2.25 billion, and a significant increase is expected to be shown for 1985, a year marked by spectacular successes for British defence manufacturers, who enjoyed active Government support. Substantial orders were received for a number of items of British equipment, including the first sales of the Tornado aircraft outside the three partner countries. Further orders were received for the highly successful Hawk and Sea Harrier aircraft, and British electronics companies also won major overseas business. The sales of Tornado aircraft showed what could be achieved from collaborative projects in which European nations work together to pool their knowledge and experience. These sales augur well for the future, as more major projects are becoming collaborative. Just as with national products, so internationally-developed equipment must be designed from the start with exports in mind. This has been an important consideration in the discussions about the European Fighter Aircraft.

531. The Defence Export Services Organisation (formerly the Defence Sales Organisation) once again arranged the Royal Navy Equipment Exhibition at Portsmouth in September 1985. Together with the British Army Equipment Exhibition (BAEE) and the Farnborough Air Show (the latter sponsored by the Society of British Aerospace Companies), this provides major opportunities for British defence exporters to demonstrate their wide range of products and expertise. Preparations are now well under way for BAEE 86, to be held at Aldershot in June.

Defence Research

532. We plan to spend £398 million on defence research in 1986/87; this is about 2% of the defence budget. Roughly two-fifths of this will be spent in industry and the universities, and the remainder in our own research establishments.

533. Defence research involves the application of scientific and technical expertise to the conception, selection, development, production, improvement, operation and support of weapon systems and equipment for the armed forces. Notable recent achievements include:

- Forward-Looking Infra-Red (FLIR): a thermal imaging system for night-flying, developed by the Royal Aircraft Establishment (RAE)

in close collaboration with industry, which will shortly be produced for the RAF and has great potential for worldwide sales;

- multi-processor computer system hardware: developed by the Royal Signals and Radar Establishment (RSRE) in cooperation with industry, which will be capable of real-time interpretation of target images;

- techniques to recover and identify minute traces of explosives: developed at the Royal Armament Research and Development Establishment, these techniques have not only contributed to military work in this field but have become of great value to the civil authorities in identifying explosives used in criminal activities.

534. We are taking further steps to develop the contribution that the intellectual and physical assets of our research establishments can make to the advantage of industry and society as a whole. These include leasing part of the RAE site at Farnborough for light industry and general aviation, bringing revenue for the Department, a much-needed service to business travellers, and additional employment opportunities to the area. We are introducing research grants, financed jointly with the Research Councils, for universities or similar institutions which have proposals for research that are of high academic quality and of relevance to defence. Our research establishment facilities can be used if appropriate and available. An example of this is the scheme of research that we have recently launched in collaboration with the Department of Trade and Industry (DTI); this has begun with initiatives in pattern recognition and silicon microsystems at RSRE. A senior industrialist was also appointed last year to the post of deputy director at one of the establishments.

535. The DTI uses the facilities and staff of the research establishments to carry out a programme of work for civil purposes. This programme, expected to be worth some £26 million in 1985-86, is carried out mainly at RAE and RSRE, and also in the British National Space Centre (BNSC), part of which is based at Farnborough. The research establishments' extramural programmes include, additionally, work estimated to cost £14 million in 1985-86 funded by DTI; and the establishments support some areas of the DTI's own grant-aided

work by providing technical appraisal and monitoring services. This year, about half the defence space research programme will be carried out in the BNSC; we therefore hope, with other participants, to reap the benefits of a more closely coordinated space research programme.

536. Last autumn saw the launch of Defence Technology Enterprises (DTE) Ltd, the product of a joint initiative by the Ministry of Defence and a number of companies that have now become DTE's founder shareholders. DTE has the commercial and financial expertise to improve the spin-off to the civilian market-place of innovative ideas and technology that arise in the defence research programme. Our research establishments already have an impressive track record of innovation on which DTE can build. For example:

- RSRE invented the pyroelectric vidicon, a cheap and simple device for seeing in the dark by infra-red radiation; equipment based on this was used by British civilian rescuers in Mexico in the search for earthquake survivors (see Chapter 6).

- RAE Farnborough has developed a new alloy of aluminium and lithium that is lighter and stiffer than aluminium/copper and has considerable potential for future aircraft projects; the materials industry is being licensed to produce this alloy.

DTE will operate initially from these two establishments and from the Admiralty Research Establishment.

537. In the wider field of research and development, we are looking at the relative priorities of civil and defence needs for scarce scientific and technological resources. Our aim is to increase the contribution that these resources make to the development of the economy.

Higher Defence Studies

1. Informed public debate on questions of defence policy is of great importance in a democracy, and the academic community has a major contribution to make. We are therefore keen to encourage closer links between the Ministry of Defence and the academic community in the field of defence studies. During the past year we have made a concerted effort to extend and improve these links, and we are encouraging the universities and relevant institutes to play a more active role in the development of defence policy.

2. The Department already sponsors or participates in many seminars and conferences, at which senior officers and officials can meet and exchange ideas with members of the academic community, and we plan to extend these. We also hope to commission short papers from time to time on subjects in which individual academics are intimately involved.

3. Two new defence lectureships were established in 1985 - at London (King's College) and the University College of Wales, Aberystwyth - to specialise in the challenging area of the impact of technology on defence policy. Together with two lectureships at Cambridge and one at Aberdeen, these bring the total number of lectureships funded by the Ministry of Defence up to five.

4. We regularly send serving officers to universities to study defence-related subjects at an advanced level, both to develop their intellectual powers and to carry out research of value to the Services. Seven officers are currently taking the one-year M Phil degree course in international relations at Cambridge; two are taking the MA in war studies at King's College, London; and two are undertaking Defence Fellowships at Cambridge and Southampton Universities.

SUPPORT SERVICES

538. It remains our policy to put support services out to contract wherever they can be done more economically in the private sector and without damaging operational capability. Cleaning and laundry services are now almost entirely contracted out, and the proportion of catering carried out under contract will steadily increase between now and 1988. As well as these basic support tasks, we are extending the principle of competition to technical functions such as aircraft servicing and vehicle storage and servicing. Research and test facilities have been put out to contract at the Royal Military College of Science at Shrivenham, as have the operations of the Procurement Executive Stores Depot at Aston Down, and the Proof and Experimental Establishment (P&EE) at Shoeburyness. At Shoeburyness we will not only realise significant savings in running costs but will be able to redeploy about 130 military personnel to the front line.

539. Looking ahead, we plan to contract out the work of about 70% of the total manpower at the P&EEs. We will complete this task in 1988. We are also examining the feasibility of placing a number of common support activities at several units under the same contractor. In each case we need to weigh up complex financial and operational factors; but we intend to press on with increased use of competitive service contracts wherever we sensibly can.

Naval Support

540. The drive to shift the balance of Royal Naval manpower to the front line has cut some 6,000 billets in support areas since 1981. About 70% of manpower is now in the front line. In the largely civilian area of Fleet Support, we are also continuing to seek improvements in efficiency. In the last year a wide-ranging management audit of the Marine Services Organisation - consisting mainly of the Royal Maritime Auxiliary Service - has recommended major changes to cut costs. We are now acting on these recommendations. In the Royal Naval Supply and Transport Service we are rationalising depots, reducing some tasks and putting others out to contract. Of the Royal Naval Stores Depots, Deptford closed last year, Woolston will close later this year, and Llangennech in 1988; the torpedo range at Arrochar will also close this year. The system of quality assurance for naval weapons is being rationalised, with a prospective saving of about 200 posts. Consultancy studies on naval aircraft support have shown that costs can be cut by streamlining the management structure, improving information systems, and revising maintenance and logistics strategies. In putting these and other changes into practice in the Fleet Support area, we are taking care not to put at risk the operational effectiveness of the many services that the civilian work-force provides.

The Royal Dockyards

1. The two Royal Dockyards at Devonport and Rosyth make up a sizeable industrial undertaking. They employ between them some 19,000 people, and have a turnover of about £400 million a year.

2. A number of studies have taken place over the last 15 years into the organisation of the Dockyards. Although their recommendations have differed, there has been wide agreement on the nature of the problems facing the Dockyards, and on the need for changes in the way they are run, to be sure of securing the greatest value for the taxpayer's money.

3. Last April we published a Defence Open Government Document to launch a period of public consultation on the future management of the Dockyards. This set out our objectives and a range of options for achieving them. We identified as the primary requirements:

- safeguarding essential strategic and operational interests;

- a clear separation of the Dockyards, as suppliers, from the Fleet, their customer, combined with the introduction of accounting procedures that reflect normal commercial practice and allow the customer to know the cost of meeting his requirements;

- maximising the competitive incentives placed on the Dockyards, while also giving them the managerial freedom and autonomy to respond positively and compete on fair terms.

The options discussed ranged from a Trading Fund to full private ownership. The Government's preference was for the introduction of commercial management by contractors: under this scheme, competent British companies, selected after competitive tender, would manage the Dockyards under contract for a fixed period, although the land and assets would stay in Government ownership.

4. This option, in our view, recognises the strategic importance of the assets through retention of ownership, while providing a continuing spur to improved performance through the option of seeking new tenders at the end of a contract period; it also offers the Dockyards the benefit of commercial discipline and management in the shortest timescale. We did not consider, at the end of the consultative period, that any of the other options that had been suggested offered the same combination of advantages.

5. On 23 July 1985, therefore, we announced our intention of seeking tenders for the management of the Dockyards from April 1987. Appropriate legislation (the Dockyard Services Bill) was introduced in November, and received its second reading on 2 December. We intend to form two companies, one at each Dockyard, to which management and workforce will transfer. The selected commercial managers will take over these companies for an initial period of seven years, transferring into them their own top and supporting management. We will then place contracts for the refit and repair of ships with these companies.

6. Commercial interest in the management of the Dockyards has been encouraging. Balfour Beatty and the Weir Group, and Babcock International and Thorn EMI, have formed groups to prepare bids for the operation of Rosyth; while Trafalgar House, Plessey and A&P Appledore formed a similar grouping last year to consider a bid for Devonport. A variety of other companies have also made their interest public. In addition, a small team of managers at Devonport Dockyard has formed a company and put together an outline plan to bid for the contract to manage the Dockyard. Subject to satisfactory progress of the legislation, tenders will be evaluated in time for the successful contractors to be chosen in the autumn, leaving a period of parallel running with the current management at the end of this year. This will ensure a smooth transition to full commercial management in April 1987. By this time we shall also have taken steps to ensure that the Dockyards can compete more effectively with other ship-repairers in the United Kingdom and abroad, through a drive for efficiency that will enable numbers at Devonport and Rosyth to be reduced by 2,000 and 400 respectively from April 1985 levels.

7. We believe that the introduction of commercial management will offer the Dockyards the prospect of the most secure and competitive future, while giving the highest standard of service to the Royal Navy. It should place them in a better position not only to win additional naval work, but also to expand into new areas, to the benefit of the local economies.

Army Support

541. In last year's Statement we announced the results of Exercise Lean Look, which identified 4,000 military posts in the Army's support area that could be transferred to the front line. We have begun to put these measures into practice, although full implementation will take until the end of the decade. The search for increased efficiency continues, and we are carrying out further studies into areas suggested by Lean Look.

RAF Support

542. The RAF continues to press ahead with its contractorisation and efficiency programme, involving both uniformed and civilian posts. Following the successful letting of contracts for service and supply tasks at RAF Linton-on-Ouse, we intend to let a similar contract for RAF Shawbury this year, and to extend the arrangements to other Basic Flying Training schools in due course. We also plan to put out to contract catering services at a range of stations. These measures will release scarce manpower from the support area to the front line. While RAF reservists already provide mobile air movements, aeromedical evacuation, intelligence and other headquarters support units, as well as ground and air defence units, trials have begun on the feasibility of making even greater use of reservists.

Defence Medical Services

543. Last year we reported on our studies into ensuring that the medical resources available to the Ministry are used in the most cost-effective way. Further rationalisation measures have been implemented since then. The most significant were the closure of the Joint Services Medical Rehabilitation Unit at RAF Chessington and the transfer of its functions to RAF Headley Court; and the closure of the Joint Services School of Physiotherapists, future requirements for physiotherapists being met by direct recruitment of qualified civilians. We are considering the possibility of putting out to contract work currently undertaken by uniformed and civilian dental technicians, and we are investigating the direct supply of drugs to hospitals.

Energy Efficiency

1. The Government is seeking to promote a significant improvement in the efficiency with which energy is used throughout the British economy, and as part of this campaign has designated 1986 Energy Efficiency Year. Savings in running costs are important to both public and private sectors, and the Ministry of Defence - a very large energy user - is therefore fully involved.

2. Most of our energy consumption is in the form of propulsion fuels for aircraft, ships or vehicles; but domestic uses such as heating or lighting also absorb large sums. In these areas in particular, good energy management and investment in energy-saving techniques can reduce costs without any operational penalty.

3. Since the early 1970s, we have reduced our consumption of energy by some 30%, but we believe that more can be done. We are therefore injecting new momentum into our drive for energy efficiency. A senior officer from the Defence Staff has been appointed 'Energy Coordinator' to oversee the performance of the Ministry as a whole. In December a presentation was held for several hundred senior staff to convince them of the importance of examining critically the ways in which energy is used in the areas they manage, and a publicity campaign is being mounted to ensure that staff at all levels are aware of the cost of energy and the scope for savings.

ESSAY

THE SERVICE LIFE

1. It is now some 23 years since the last conscript left barracks and returned home to civilian life. Since that time the day-to-day defence of the realm has been in the hands of regular volunteer Servicemen. In this respect the United Kingdom is unique among the major European member states of NATO, and it is perhaps timely to consider the direct and indirect implications of manning our forces solely with volunteers.

2. For this country conscript forces are, of course, the exception rather than the rule. Conscription was only introduced in 1916, two years after the start of the First World War, and was abandoned when peace returned. It was re-introduced in 1939, and this time lasted for 15 years after the end of hostilities. Although the continuation of conscription after 1945 had been found necessary to enable Britain to meet its widespread post-war commitments, there were high training and administrative costs. It became increasingly evident that an all-volunteer force would be more cost-effective; and in 1957 the decision was taken to end conscription.

3. This resulted in training economies and a rise in professional standards, together with improvements in morale. But manning an all-volunteer force involves facing difficult challenges of recruitment and retention. The Services need to recruit some 30,000 men and women every year. A considerable amount of money and effort must therefore be spent on convincing potential recruits that there is a worthwhile and fulfilling career awaiting them, and on retaining them when once they have been trained.

Rewards and Penalties

4. Individuals' reasons for joining and remaining in the Services are many and varied; they include duty, comradeship, learning a trade, responsibility, travel, sport and adventure. The opportunities are substantial: the number of branches, trades and employment groups on offer to the potential recruit, for example, runs into many hundreds. The RAF alone offers 15 branches for

officer entrants and 143 different trades for airmen, who may be eligible for some 3,000 trade qualification annotations and many recognised civilian qualifications (for example, Higher National Diploma or City and Guilds). Such training benefits not only the Services but ultimately the national pool of skills, when the Serviceman returns to civilian life.

5. Responsibilities can be heavy: a junior Army NCO could find himself in charge of an infantry section on patrol in Northern Ireland; a RAF flying officer could be at the controls of a Tornado aircraft; while a naval lieutenant might be the navigating officer of a £200 million nuclear submarine. All this before any of them reached the age of 30.

6. Although the opportunities for service overseas have reduced in recent years, Figure 7, which shows the spread of British military deployments in 1986, illustrates the scope still available for travel. If short-duration training detachments are included, the number of countries that may be visited is considerably larger than shown. For the purposes of adventurous training alone, we sponsored some 600 overseas expeditions to 62 countries in 1984-85, in such diverse environments as Antarctica, the Sahara and the Himalayas.

7. Inevitably, some will suffer from disappointed expectations. Others may not have fully appreciated the disadvantages that go with Service life and can become especially apparent as personal circumstances change. The attraction of foreign postings, or extended sea-time, that appealed to the single Serviceman may fade once he has a wife and family and is faced with long periods of separation, the disruption of home life, and interruptions to his children's education. The Service commitment requires a very high standard of personal discipline, and this leads to constraints on an individual's freedom. The Serviceman is not able to seek alternative employment other than at the end of his engagement or, if he wishes to leave earlier, either by giving a long period of notice or buying his release; he is liable to duty 24 hours a day and seven days a week and has no right to claim overtime; he must be ready to react as promptly and rapidly as NATO or national preparedness criteria require; he needs to be continuously vigilant, for example, against terrorist threats; and, above all, he must be trained and prepared to fight if necessary. In all, while there are

many opportunities and advantages to Service life in the 1980s, there are also considerable pressures on the individual and his family.

Pay and Conditions of Service

8. Because of the particular circumstances of Service life, we attach a high priority to ensuring that Servicemen and women receive a fair rate of pay for the work they do. The concept of a 'military salary', introduced in 1970, enabled all Service personnel to receive pay related to that for comparable civilian jobs. Also implicit in the concept was that a fair price should be paid by Servicemen and women for their food and accommodation.

9. As there is no directly analogous civilian occupation, a process of detailed job evaluation has been adopted. This is undertaken by a joint Services' team on behalf of the independent Armed Forces Pay Review Body. In carrying out its evaluations, the Review Body recognises that the Service life has certain disadvantages when compared with any civilian occupation. As a result, an additional payment, called the 'X' factor, is made. This is currently 10% for Servicemen and 7½% for Servicewomen. The Government has accepted in full every recommendation of the Review Body since 1980.

10. Pay is probably the most important single element in the range of conditions of service, but other aspects also count a great deal to the individual. Various allowances and other benefits are therefore aimed at overcoming the particular difficulties posed by Service life, and can be of significant value. For example:

- Local Overseas Allowances compensate for extra costs of living abroad;

- all Service personnel receive free medical and dental treatment;

- all Service personnel are entitled to certain leave travel at public expense; and

- married Servicemen with children at boarding school are eligible for an allowance to assist with school fees.

The total cost of Service allowances, including benefits such as those above, amounted to over £600 million in 1984-85.

11. All conditions of service are kept under close review, and a number of improvements have recently been made:

- new family visits schemes have been introduced for those serving in Northern Ireland and the Scottish islands;

- Service parents no longer have to contribute up to 3% of their salary towards the cost of holiday visits by children at boarding school in the United Kingdom; and

- in 1983 a scheme was introduced to enable Service personnel to buy surplus married quarters in England and Wales at a substantial discount; this is now being extended to the whole of the United Kingdom, on the basis of freehold rather than leasehold.

The balance of advantage

12. We have only been able to touch here on the various factors that influence the recruitment and retention of those who constitute our fighting forces. We must offer them interesting, challenging and rewarding careers, with the prospects of advancement and the ability to employ their talents to the full. They must receive a fair rate of pay for the work they do, and conditions of service appropriate to their special circumstances. The very nature of a Service career entails duties and obligations not found in civilian life. Where operational considerations are involved, the penalties cannot be easily ameliorated. But our aim is to combine fair pay and conditions so as to ensure that the armed forces retain the fully-trained and well-motivated personnel who are vital to the maintenance of our defence.

CHAPTER SIX: THE SERVICES AND THE COMMUNITY

601. The armed forces have their own traditions, skills and requirements which reflect the role they play in society. But there is wide scope for them to benefit from the expertise found in the civilian community. The Services look to industry to develop and produce their specialised equipment; they also draw widely on the skills of other sectors of society for a range of administrative and support services.

602. Chapter 5 discusses the steps we are taking to involve the rest of the community, and in particular the private sector of industry, in work to equip and support the armed forces. This chapter considers the support which, in its turn, the civil community looks to the Services to provide from the expertise and facilities maintained for defence purposes. Such support ranges from the informal contribution brought by Servicemen and women to their local communities; to help with socially and environmentally useful tasks; to vital assistance in emergencies. This work is valued not only by those who benefit directly: the Services themselves welcome the training opportunities and the test of their readiness that it affords.

MILITARY AID TO THE COMMUNITY

General Assistance

603. During the past year Servicemen and women have supported several projects at local schools and have helped with many fetes and fund-raising activities. Assistance in charitable work has included the repair of boats belonging to a centre for the handicapped in Cornwall by shipwrights from HMS Raleigh, and the administrative support given by HMS Nelson to children's homes and to the regional Blood Transfusion Unit. The Army has continued to support the Prince's Trust, a number of volunteers assisting during 1985 in the work of restoring Maiden Castle (a 40-acre Iron Age earthwork construction). Other Army activities have included the building or strengthening of footbridges and paths, notably in Scotland; the construction of a harbour wall at Port Gordon in Morayshire; and the transportation of a railway engine on a military vessel to Alderney. In January 1985, following an urgent request from Gwynedd

District Council, a Puma helicopter from RAF Odiham went to the site of a landslip on the A55 near Llanfairfechan and, after all other attempts to move material up the steep gradients had proved unsuccessful, completed six lifts of heavy earth-moving equipment and a compressor. In June the National Trust were assisted by two RAF Chinook helicopters in lifting stone and topsoil to rebuild foot-paths in the high fells.

604. A major military assistance task was undertaken in December, when serious bursts in the water mains threatened supplies to a large part of the city of Leeds. In response to an initial request, a small number of soldiers were deployed on pumping and water-carrying duties, but when further difficulties resulted in a complete cut-off of water to some 250,000 people, a much larger operation was mounted at short notice. 193 bowser teams, involving over 550 soldiers, sailors and airmen from all over the country, were deployed to provide water distribution points in the city until the emergency was brought under control three days later.

Disaster Relief Overseas

1. The Services' relief effort in Ethiopia (known as Operation Bushell) continued during 1985. The RAF, helped by Army personnel from the Royal Corps of Transport, lifted food and other relief supplies from Addis Ababa and the port of Assab to areas of need within the country. To do this they frequently used the specialised technique of air-dropping. By the time the last of our Servicemen withdrew on 19 December 1985, the detachment had flown 2,152 sorties and delivered 32,000 tonnes of supplies. There were flights on every day of the operation, a total of 409 consecutive days.

2. Perhaps the most swiftly mounted operation of 1985 was the relief mission sent to Mexico City in September, when an earthquake devastated the city and claimed thousands of lives. On the day after the Mexican authorities appealed for international assistance, a Royal Engineer team arrived from Belize, together with a RAF detachment operating two Puma helicopters and a Hercules. The Engineers, using a variety of specialist equipment, spent over a fortnight restoring the vital nationwide telephone centre, which had been severely damaged by the earthquake. They worked around the clock in conditions that were difficult, dangerous, and often distressing. While their work was under way, a second team, made up of Royal Navy and civilian Fire Service rescue specialists, was sent out from the United Kingdom equipped with thermal imaging cameras capable of detecting the presence of people trapped in the debris. This team operated as a largely independent unit and, under the direction of the Mexican police, travelled all over the city, helping in the search for survivors.

A RAF Hercules unloading relief supplies at Mekele in Ethiopia

3. Less than two months after the Servicemen from Belize had returned from Mexico City to their base, units from the garrison were once again called on to help in disaster relief. In early November, following the volcanic eruption which devastated the town of Armero in Colombia, a team drawn from all three Services was despatched to Bogota with two Puma helicopters and a Hercules transport aircraft. As soon as the team arrived, it immediately set to work helping to evacuate survivors and, once that phase had been completed, devoted itself to the distribution of food, medical supplies and equipment. Throughout its time in Colombia, the team succeeded in making a contribution to the relief operation out of all proportion to its size.

4. The Servicemen involved in these relief operations, by their unstinting efforts, won the gratitude and appreciation both of the Governments concerned and of all those whom they were able to help. The operations also proved their worth to the forces involved. The conditions under which they worked provided stringent tests of the training and high professional standards of the personnel who took part and, particularly in Ethiopia, of the reliability of their aircraft and equipment.

Northern Ireland

605. The Services have now been engaged in active operations against terrorism in Northern Ireland for 16 years. During that time, the nature of the operation has changed. We have come a long way from the peak of violence in the 1970s, and the armed forces are now operating entirely in support of the Royal Ulster Constabulary (RUC). Force levels have come down from the 1970s, too, and the Army's strength in the Province has remained at about 9,500 for several years, augmented by the invaluable support of the nine battalions of the Ulster Defence Regiment (UDR), drawn from within the Province itself [(see page [ ])]. But terrorism continues, and there will be no quick solution. The terrorist has learned to be more careful and sophisticated over the years and is also much better equipped.

606. This year the Army has again demonstrated its ability to respond rapidly to changes in the terrorist threat and the needs of the RUC. An additional infantry battalion of some 550 men was deployed to the Province on 2 January 1986 to meet additional operational commitments in support of the RUC, particularly in the border areas. The Royal Engineers have also been assisting the RUC with urgent building work as a result of difficulties caused by IRA intimidation of civilian contractors. In particular, they have undertaken the rebuilding of RUC stations severely damaged in terrorist attacks just before Christmas; work began on the first of these at Ballygawley in January.

607. Much of the work is now concerned with the less spectacular but still vital tasks of deterrence and of providing reassurance to the community. The Security Forces continue to keep up the pressure on the terrorist, and there has been a steady success rate in terms both of those charged with terrorist offences - 522 in the past year - and of the seizure of weapons and explosives. In all nearly seven tonnes of explosive were recovered during the year. There was a notable success in April 1985, when a joint RUC and military patrol found a store of 987 kg of home-made explosive in 37 fertiliser bags during the search of a farm near Dungannon. The work of the Explosive Ordnance Disposal (EOD) teams has continued to be outstanding. During the year they responded to 771 calls for assistance and neutralised 3,500 kg of explosive - thus saving lives, property and jobs from destruction by terrorist bombs.

608. There is, regrettably, a continuing cost to be paid by both the RUC and the armed forces. In 1985 another six soldiers were killed, bringing the total since 1969 to 533; and a further 33 were injured. The full part played by the UDR is illustrated by the fact that four of those killed were members of the Regiment. In the last year members of the armed forces serving in Northern Ireland earned 73 gallantry awards, including one Military Cross and six Military Medals.

Bomb Disposal

609. Some 4,400 requests for bomb disposal assistance in Great Britain were answered in 1985 by Royal Engineer, Royal Army Ordnance Corps (RAOC), Royal Navy and Royal Air Force EOD teams. Of this total nearly 4,000 involved the disposal of items of conventional munitions, many left over from the Second World War. The remainder were for suspected terrorist devices, of which 29 proved to be real, nearly 100 were hoaxes, and over 300 were false alarms.

610. The most notable incident occurred in June when a team from the RAOC was called on to deal with a major find of IRA bomb-making material discovered in a tenement block in Glasgow. The team successfully recovered a quantity of explosives, detonators, weapons and documents. The clearance of

this cache was part of a successful police operation, which precipitated the end of the IRA's planned summer bombing campaign against seaside towns in Great Britain.

611. In the aftermath of the bomb that devastated the Grand Hotel in Brighton in October 1984, there has been a marked increase in awareness of the threat from explosive devices. Demand for EOD training has been high: RAOC teams have given lectures to 334 police courses and 177 other agencies, and a series of courses for policemen in search techniques has been run by the Royal School of Military Engineering at Chattenden.

612. But, as noted above, the bulk of EOD work consists of dealing with unexploded devices from earlier wars. A London Underground line had to be closed and the area evacuated when a 250 kg German bomb was discovered at West Ham in September 1985. It took a team of nine men 13 hours to remove. German ordnance and weapons were also cleared from a site in Guernsey. Other tasks have taken teams outside the United Kingdom. In the early part of 1985, nearly 70,000 individual Second World War items were cleared by the Royal Engineers in the Solomon Islands; while from April to August a Royal Navy diving team assisted the Maltese Government in removing wartime ordnance, so that dredging could begin in the Grand Harbour in Valletta.

Search and Rescue

613. The permanent standby service operated by the Royal Navy and RAF, assisted by other Service support as necessary, was called out on 1,314 occasions in 1985, and rescued 883 people, almost all of them civilians. Following the tragic disaster in June 1985, when an Air India Boeing 747 with 329 people on board crashed into the sea off the coast of Ireland, an intensive search and rescue operation was mounted. This involved not only Royal Navy and RAF Sea King and RAF Chinook helicopters, RAF Nimrod aircraft and HMS Challenger, but also rescue vessels and aircraft from the US Air Force, the Irish Air Corps and Navy and the Royal National Lifeboat Institution, as well as British and Spanish merchant vessels. Over 268 hours were flown by British and American aircraft before the search was called off, by which time 130 bodies had been recovered.

614. In April 1985, two youths were rescued by helicopter in worsening conditions from a cave into which they had been swept after their motor-boat smashed against Ramsgate cliffs. The incoming tide plunged the RAF winchman beneath the waves and into the cave during his rescue efforts, and he was later awarded the Air Force Cross. A widely reported incident occurred during the Fastnet Yacht Race in August, when the yacht Drum England overturned, and another was in difficulties. The crews were rescued by a Royal Naval diver, who was subsequently awarded the George Medal, and winched to safety by a Wessex helicopter. Another was the attempt, also in August, by the Virgin Atlantic Challenger to win the record for passenger-carrying Atlantic crossings. In the final stages of the attempt the vessel was damaged and had to be abandoned. The sinking vessel was quickly located by a RAF Nimrod and the crew picked up from the recovery vessel Geest Bay by a RAF Sea King helicopter.

Protection of Offshore Resources

615. The Royal Navy's Fishery Protection Squadron has continued to make a major contribution to the protection of our fishing and offshore oil and gas interests. Vessels of the Castle, Island and Ton class, whose officers are specially trained for the task, are used for boarding fishing vessels of all nationalities and inspecting papers, equipment and catches. Suspected offenders are detained and escorted to the nearest convenient port for the Fisheries Departments to carry out a full investigation and possible prosecution. A recent review of operational patterns should lead to further improvements in the Squadron's ability to respond to the needs of the customer departments. The Squadron was formerly supported in the air by RAF Nimrod aircraft; but it has now been agreed that the tasks of observation and collection of data should be taken on by civilian aircraft under the direct control of the Fisheries Departments.

616. The armed forces, and particularly the Royal Marines' Comacchio Group, have remained ready to respond swiftly in support of the civil authorities to incidents involving offshore oil and gas installations. The operators of these installations do, of course, take their own protective measures, and they are further protected by the high level of air- and sea-traffic around them, including regular patrols by Royal Navy ships. Against this background, the Government concluded last year that random patrols by Nimrod

aircraft on behalf of the Department of Energy would no longer be needed after July 1985. Details of expenditure on offshore tasks, and figures for boardings and convictions of fishing vessels, are given in Tables [6.4 and 6.5] of Volume 2.

THE SERVICES IN THE COMMUNITY

Civil Use of Military Facilities

617. The Ministry of Defence owns various facilities which, because of the nature of Service operations, are not always used to full capacity in peacetime. In some instances these can be made available for civil use. A number of pistol and rifle clubs, for instance, pay to use Service ranges. Most important perhaps are our many airfields, which in some places provide the only access for aircraft. Our policy has long been to encourage their wider use, provided that operations, security and safety are not affected and that no extra cost falls to the defence budget. This helps to ensure the full use of defence facilities and provides a useful source of extra revenue. It also benefits business and local employment. There are over 200 registered regular users of these airfields: some are large commercial concerns; others include breweries, businessmen, flying clubs and private individuals. We are currently conducting a review into ways of improving our procedures and making them more attractive to business aviation. Part of the Royal Aircraft Establishment at Farnborough is to become a civil enclave for the development of light industry and general aviation (see paragraph 534). We are also considering leasing compact civil enclaves at the more commercially popular airfields at RAF Manston and RAF Northolt.

Meteorology

618. The Meteorological Office serves both the armed forces and, as the national Meteorological Service, the public (through free weather forecasts and severe weather warnings), as well as an increasing number of specialist users who pay to receive its more detailed information. The last year has seen growing interest by customers in the information the Office can provide. A number of international airlines, including Pan American

and Japanese Airlines, have now joined British Airways in taking data direct from the Office for flight-planning purposes. Particular local authority and commercial interest is being shown in the short time-scale information obtained by combining data from rainfall radars (jointly paid for by the Office and Water Authorities) and satellite imagery. This technique helped the Office, for example, to give the Lawn Tennis Association advance warning last summer of a violent thunderstorm. Earlier in the year, the BBC introduced its new weather presentation on television. This was developed jointly with the Office, the additional costs involved being met by the BBC.

619. Most of the work arising from the 1983 Resource Control Review has now been completed, and we hope that by 1988 further savings can be achieved on the same scale as the £200,000 per annum reported in last year's Statement, mainly through increased use of commercial equipments. In addition, the Office is expecting to save about £500,000 each year from 1986, as the result of an initiative taken with its European partners in reorganising the North Atlantic Ocean Stations agreement. We are also working, with the help of consultants, to increase the commercial exploitation of the Office's global forecasting ability.

620. We shall continue to devote the main part of the Office's research effort (some 11½% of resources) to improving and updating forecasting techniques. The development and operational testing of a new mesoscale numerical model has made substantial progress. When used in conjunction with radar rainfall and satellite data, this should greatly improve our short-term and local forecasts. Work has also continued on weather-related aspects of pollution, such as acid rain; and on the effects of changes, both natural and man-made (for instance, increased carbon dioxide), on the climate.

Hydrography

621. During the past year, ships and craft of the Royal Navy's Surveying Flotilla, and chartered commercial vessels with Royal Navy Surveying Teams on board, have completed a full programme of hydrographic surveys both overseas and around the United Kingdom in support of civil and defence requirements. In addition, contracts have been placed with commercial

surveying companies on behalf of the Department of Transport in support of civil hydrography for merchant shipping. The Royal Navy's new coastal survey vessel HMS Roebuck was launched in November 1985 and will enter service this summer.

The Defence Estate and Conservation

622. The Ministry of Defence is a major land-owner; but we do not retain land unless it is required to support the armed forces. This policy led us, in the year to the end of November 1985, to dispose of 1,210 hectares, and at that time a further 2,000 were undergoing disposal. We have, however, also continued to acquire land where this is essential to meet Service requirements, mainly by the purchase of available land next to existing training areas. Further details of the defence estate are given in Tables [5.15 and 5.16] of Volume 2.

623. In last year's Statement we discussed in detail the conservation activities being undertaken on the defence estate. The amount and scope of work being done continue to increase. The recording and monitoring of flora, fauna, and features of geological or historical interest have produced some remarkable statistics. A British record was achieved at one site when 307 species of plant were recorded within one kilometre square. At another site, our ornithologists have recorded a colony of 306 pairs of little tern, one of the rarest terns in Britain; 400 pairs of house martin were found nesting in a single building; and 25,000 common scoter were observed wintering within a range danger-area.

624. Other groups of fauna have been studied by our conservation groups. For example, 160 species of spider (a quarter of all known British species) were recorded at one site, while two further sites support over 130 species each. All six species of deer are present at a single location in Norfolk, and nine of the 15 species of bat roost at another. Defence property is also well endowed with ancient monuments, and active work on them is being carried out at 42 sites. On the geological side, the finest example in this country of a raised beach (an Ice-Age feature) is protected at a site in Dorset.

Public Relations

625. The Press Office of the Ministry of Defence in London, which is manned 24 hours a day, handles more than 1,000 calls a week and deals with journalists from both the United Kingdom and overseas on the whole range of defence topics. A viewdata information retrieval system is being installed to speed the flow of information to the press. It is expected to be fully operational by early summer. Promotions and facilities staff arrange media visits to Service units in the United Kingdom and throughout the world. Regular press conferences, briefings and interviews are also provided.

626. Our aim is to give the public a close-up view of the Services' day-to-day operations. Representatives of the media are encouraged to participate in major exercises and deployments - during 1985, as far afield as the Falkland Islands, the Bosphorus, the West Indies and the Gulf. In exercise Brave Defender (see page [ ]), over 2,000 press facilities were organised in different parts of the country. In addition, 80 correspondents visited the out-of-area exercise Purple Victory. The variety of Service work was seen by over 100 media representatives who flew in Hercules aircraft to witness at first hand the humanitarian food sorties in Ethiopia.

627. Exhibitions and publications reinforce this activity by taking the message direct to the public. A NATO/British defence policy exhibition toured eight major venues in 1985; and a NATO briefing tour was mounted in Nottingham, Bristol and Oxford, at which speakers at open meetings explained defence policy and answered questions from the public. This year a revised and updated exhibition will tour the country, and the programme of the briefing tour will be extended to reach a larger audience.

628. The Government's response to the Report of the Study Group on Censorship (Cmnd 9112) was published in April 1985 as Cmnd 9499. This set out our plans to base the control of military information in war on an improved advisory service at home and an accreditation bargain with journalists in the field. Follow-up work will also take into account the study commissioned from the Centre for Journalism Studies at University College, Cardiff, into relations between governments, armed forces and the media, which was received last summer.

629. We are aiming to develop the widest possible consensus as to what constitutes legitimate protection of national security interests in time of conflict, and hope to begin a process of consultation with the Defence Press and Broadcasting Committee and the media this year. We also look forward to a further trial of accreditation arrangements in Exercise Eternal Triangle 1986. Our NATO allies will be kept informed of, and involved with, the development of our policy.

Youth Training Schemes

630. We have set a target of 1,100 places in 1986 for school-leavers aged 16 or 17 to train under the Ministry of Defence Civilian Youth Training Scheme. Some of these will be on the new scheme, to be introduced this year, which includes two-year programmes for 16-year olds and opportunities for all to obtain, or work towards, vocational qualifications.

631. 550 of the places available are set aside for dependants of those serving with British Forces Germany. This year we shall be improving their 'off the job' training, by establishing facilities to cater for City and Guilds, Business and Technician Education Council and Royal Society of Arts courses. We also intend to expand this scheme to cater for dependants of personnel serving in Hong Kong, Cyprus and Gibraltar, where there are limited opportunities for young people to gain worthwhile employment. We hope in this way to encourage 16- to 18-year olds to accompany parents serving overseas, by enhancing their prospects of finding good employment on their return to the United Kingdom.

632. The armed forces themselves also provide many training opportunities for young people. To date there have been over 9,000 applicants for places under the Armed Services Youth Training Scheme (ASYTS), of whom nearly 2,700 have been accepted. Although the rate varies between the Services, on average some 60% of those who enter the scheme transfer to regular engagements with the armed forces. In line with the Manpower Services Commission's scheme, the ASYTS is to be expanded to offer 16-year olds two years of training instead of the twelve months currently allowed.

ESSAY

THE ULSTER DEFENCE REGIMENT

1. The Ulster Defence Regiment (UDR) was established in 1970 following the report of Lord Hunt's Advisory Committee on Police in Northern Ireland. The Committee's main recommendations were based on the principle that police and military roles should be separate in Northern Ireland, as in the rest of the United Kingdom. As a result, the Royal Ulster Constabulary (RUC) was relieved of all duties of a military kind and the Ulster Special Constabulary, which had assisted them, was stood down. At the same time two new forces were established: the RUC Reserve was to be a force to assist the RUC with routine policing matters; the UDR was set up as a locally recruited, and largely part-time, regiment of the British Army under the control of the General Officer Commanding, Northern Ireland, to support the regular forces on purely military duties. Over the last 16 years the Regiment has made an invaluable contribution to the fight against terrorism in the Province and has evolved to meet the changing nature of that threat.

2. The Regiment is unique in being a locally recruited force raised to meet a local problem; all its members - both full- and part-time - live in their own homes. Nevertheless, the UDR is a regiment of the British Army and is fully integrated into the Army's operations in Northern Ireland. All Army operations, including those of the UDR, are conducted wholly in support of the RUC, and this principle is built into all levels of organisation, operational tasking and planning. The support required by the RUC is agreed and coordinated at regular meetings, at every level, between the police and the Army. The employment of the UDR in sensitive areas is closely monitored and controlled, and the need to patrol in or near these areas is kept under constant review; such patrols are as far as possible accompanied by members of the RUC.

3. With over 2,700 full-time and 3,700 part-time members, the UDR is the largest infantry regiment in the British Army. It is organised into nine battalions of 14 permanent cadre (that is, full-time) and 36 part-time companies.

. The battalions are under the operational command of 8 and 39 Infantry Brigades, whose headquarters are in Londonderry and Lisburn respectively. They are commanded by Regular Army officers, and in addition some 35 officers and 70 non-commissioned officers are seconded from the Regular Army to the UDR. They and the Commanding Officers are responsible for the direction and supervision of training and the general administration of the battalions. In some areas UDR Commanding Officers also have Regular companies under their operational control, and other UDR battalions receive Regular Army support when the need arises.

. The company is the smallest sub-unit to have an independent base, and Company Commanders are responsible for the training, discipline and conduct of troops under their command, reporting to their Commanding Officers.

4. Permanent cadre soldiers are in most respects directly comparable to their counterparts in the Regular Army, although they are limited by their terms of service to duty in Northern Ireland, and this is reflected in their training. They are excluded from certain roles, such as riot control, but are otherwise deployed exactly as any other Army unit in the Province. Part-time soldiers bolster the efforts of their full-time colleagues, in particular by providing support to the RUC at nights and at weekends.

5. On joining the Regiment, permanent cadre soldiers undertake nine weeks of basic training, which lays special emphasis on the skills required by soldiers who act in support of the civil power and who therefore come into daily contact with members of the public. All initial training courses, whether full- or part-time, include instruction from the RUC. Basic training is carried out in Northern Ireland, but UDR personnel also attend relevant courses in Great Britain. These include six months' training for permanent cadre officers at the Royal Military Academy, Sandhurst, and for officers and NCOs at the School of Infantry at Warminster. Attachments of officers and NCOs to Regular battalions in Great Britain are also encouraged.

6. The part-time soldier is training for a specific and limited task, which does not require the full range of military skills. His training is

primarily for basic patrolling techniques, and these are covered in much the same depth as for regular soldiers. The recruit undertakes 14 days of initial training, after which he must pass tests on subjects such as weapon handling, field-craft, powers of search and questioning and relations with the public. All part-time soldiers are required to pass similar tests to those undergone by the Regular Army before being accepted for operational service.

7. It is regrettable that, at present, only about 3% of the Regiment are Roman Catholics. This was not always so: when the Regiment was formed some 18% of its members were Catholic. The main reason for the decline has been the pressure, of varying degrees, exerted by different sections of the nationalist community against those who might otherwise have joined the Regiment. This has ranged from a deliberate campaign of intimidation by the Provisional IRA at one extreme (of the first 25 members of the UDR to die in terrorist incidents eight were Catholic), through powerful social and family pressures and appeals from community leaders. Roman Catholic members of the Regiment continue to be especially vulnerable, both because they are singled out as targets and because they generally live in areas where the terrorists can operate with the greatest confidence.

8. The clearly defined duties of the UDR are to support the RUC in enforcing the law impartially as between the two communities in Northern Ireland. In spite of its predominantly Protestant composition, the Regiment's impartiality was clearly demonstrated during the 1977 Ulster Workers' Strike, when the Government was under pressure from Protestant extremists. Nevertheless, except for brief periods, the predominant threat to peace has tended to come from terrorists claiming to represent the nationalist community. The concentration of terrorist activity in nationalist areas has inevitably meant that the operations of the Security Forces, including the UDR, have had a greater impact on the normal life of the minority community.

9. Like any other soldiers, members of the UDR are trained in proper standards of behaviour in dealing with the public, and these are strictly enforced. But the best way of demonstrating impartiality would be for the Regiment to become more fully representative of both communities. This is made difficult when even some respected members of the minority community urge their fellows not

to join. We shall nevertheless continue to urge Roman Catholics to join the Regiment and seek to persuade all sections of the community to give it their support.

10. The UDR is a disciplined force, well led and effectively trained for the range of tasks for which it is needed. Its members are defending their lives, their families, their livelihoods and their community against aggression, and their courage and commitment are outstanding. In 16 years the Regiment has lost 153 officers and soldiers killed, including four women; and another 307 seriously injured in the fight against terrorism. These figures stand as an enduring monument to the bravery and dedication of the Regiment.

ANNEX A

THE MILITARY FORCES OF EAST AND WEST

CONVENTIONAL FORCES IN EUROPE

Calculating the Conventional Balance

1. Calculating the comparative conventional strengths of NATO and the Warsaw Pact is a very difficult task. A comprehensive assessment of the balance between opposing forces would need to take into account not just numbers of troops and equipments but how they would actually be used on the battlefield and how effective they would be. In practice, such assessments are difficult enough to carry out even for small-scale engagements, such as an anti-tank platoon against a squadron of tanks, and for a defined scenario. To extend them to cover all arms, on both sides, in all likely scenarios, is correspondingly more difficult, and the problem is compounded by uncertainties about the performance of weapon systems and their operators. All accounts of the military balance are, therefore, necessarily incomplete.

2. The simplest accounts are those restricted to numbers of men, or divisions, and equipment on each side. But even these simple comparisons are beset with problems, for example:

- which forces to count: there is no single way of deciding which forces to include; a global count has the merit of simplicity, but may have little bearing on the immediate threat to particular regions;

- reliability of counting: large items, such as ships, are easy to count; smaller ones, such as tanks and artillery pieces, are less easy; others, such as anti-tank guided weapons, are almost impossible to count accurately. Moreover, the Warsaw Pact's excessive secrecy limits our knowledge of systems and deployments and may reduce the reliability of our figures;

- categorisation: arbitrary lines have to be drawn between, say, frigates and patrol boats, or tanks and armoured reconnaissance vehicles. Putting a border-line case into one category rather than another could have a significant effect on the resulting balance.

3. A more complex approach would, in addition, need to take into account:

- equipment characteristics: the age, technological sophistication, firepower, reliability and accuracy of equipment; and

- preparedness: the readiness of front-line forces, the extent to which they are under strength in peacetime, and the ease with which they can be reinforced.

Attempts have been made to draw up military balances that include these points, but it is difficult to present the resulting assessments in a readily

understandable way. Moreover, such efforts rarely command universal approval: different authorities may disagree over the relative weight to be given to each factor. And, no matter how carefully such factors are incorporated into the analysis, the result will still fall short of what would be necessary for a fully comprehensive military balance.

4. A complete net assessment would need to take into account not only the factors mentioned above - which are all broadly quantifiable, even if their interpretation may be a matter of dispute - but a whole range of other factors that are either wholly qualitative or so scenario-dependent as to make it impossible to draw general conclusions. These factors include:

- differences in geography, terrain and environment (including the weather) in areas where otherwise similar forces might be deployed;
- the different effects that these factors might have on the attacker as opposed to the defender;
- differences in military strategy and force structure;
- the sustainability of forces, which depends in turn on quantities and survivability of logistic stocks and supply lines for fuel, ammunition and spares; and
- such other factors as surprise, deception and differences in political organisation, allied cohesion, training, leadership and morale.

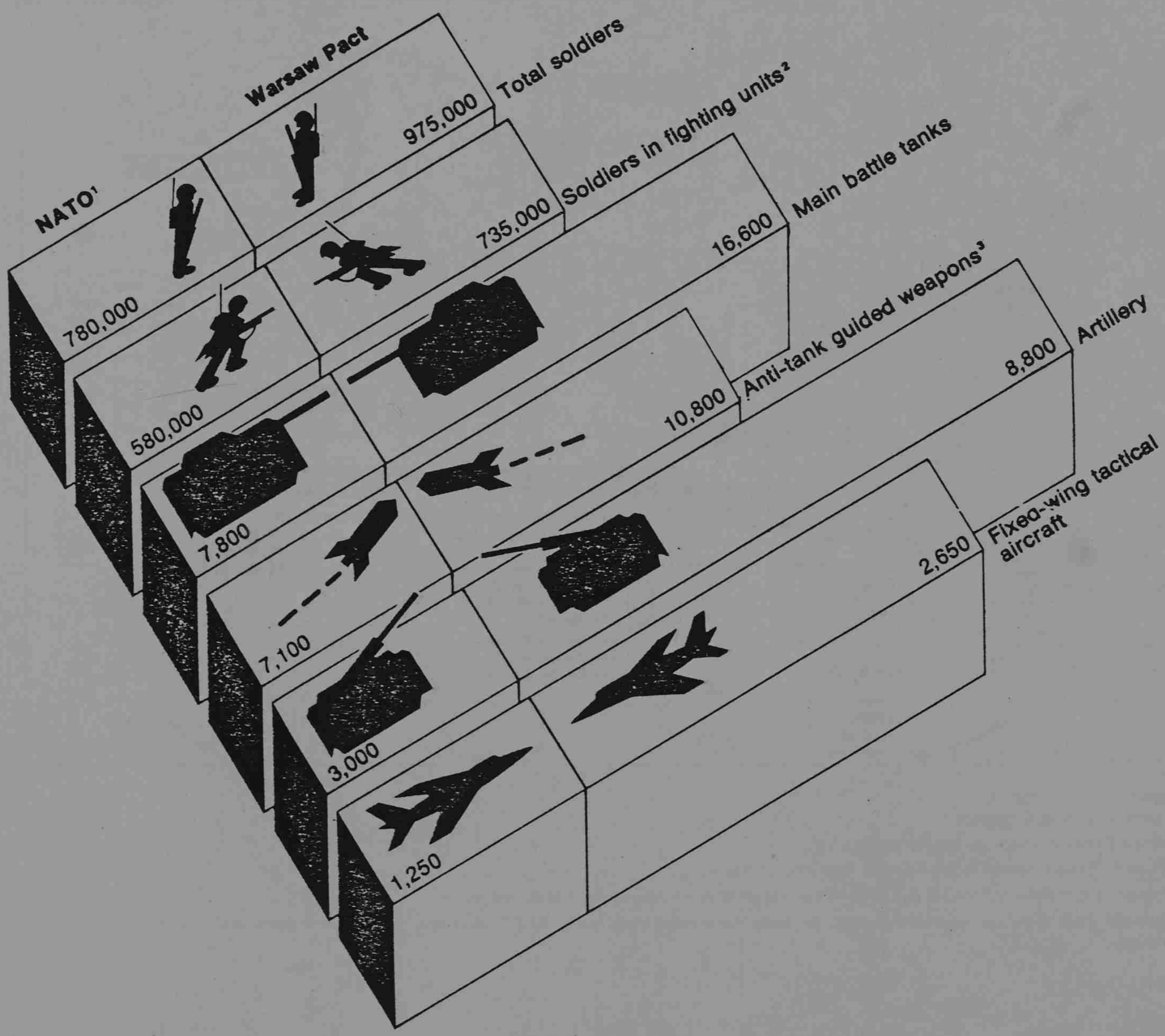
There is so much scope for the exercise of judgement and opinion in assessing factors such as these that the outcome is bound to be controversial.

5. It is beyond the scope of this Statement to attempt a complete net assessment. Instead, in this Annex and its illustrations we give an account of the forces of East and West which, though necessarily simplified and restricted in scope, attempts to apply equal criteria to both sides.

Land/Air Forces

1. Figure 11 illustrates the conventional forces of NATO and the Warsaw Pact in place on the Central Front - that is, NATO forces in the Benelux countries and the Federal Republic of Germany, and Warsaw Pact forces estimated to be in Poland, Czechoslovakia and the German Democratic Republic. Figure 12 gives a broader picture of conventional forces in place in Central and Northern Europe including, for example, those in the United Kingdom and in the three Soviet Western Military Districts, which could quickly be mobilised and deployed to the Central Front. The illustration excludes other reinforcement forces on both sides. It shows, however, that the Warsaw Pact

Figure 11 The Current Balance of Forces on the Central Front

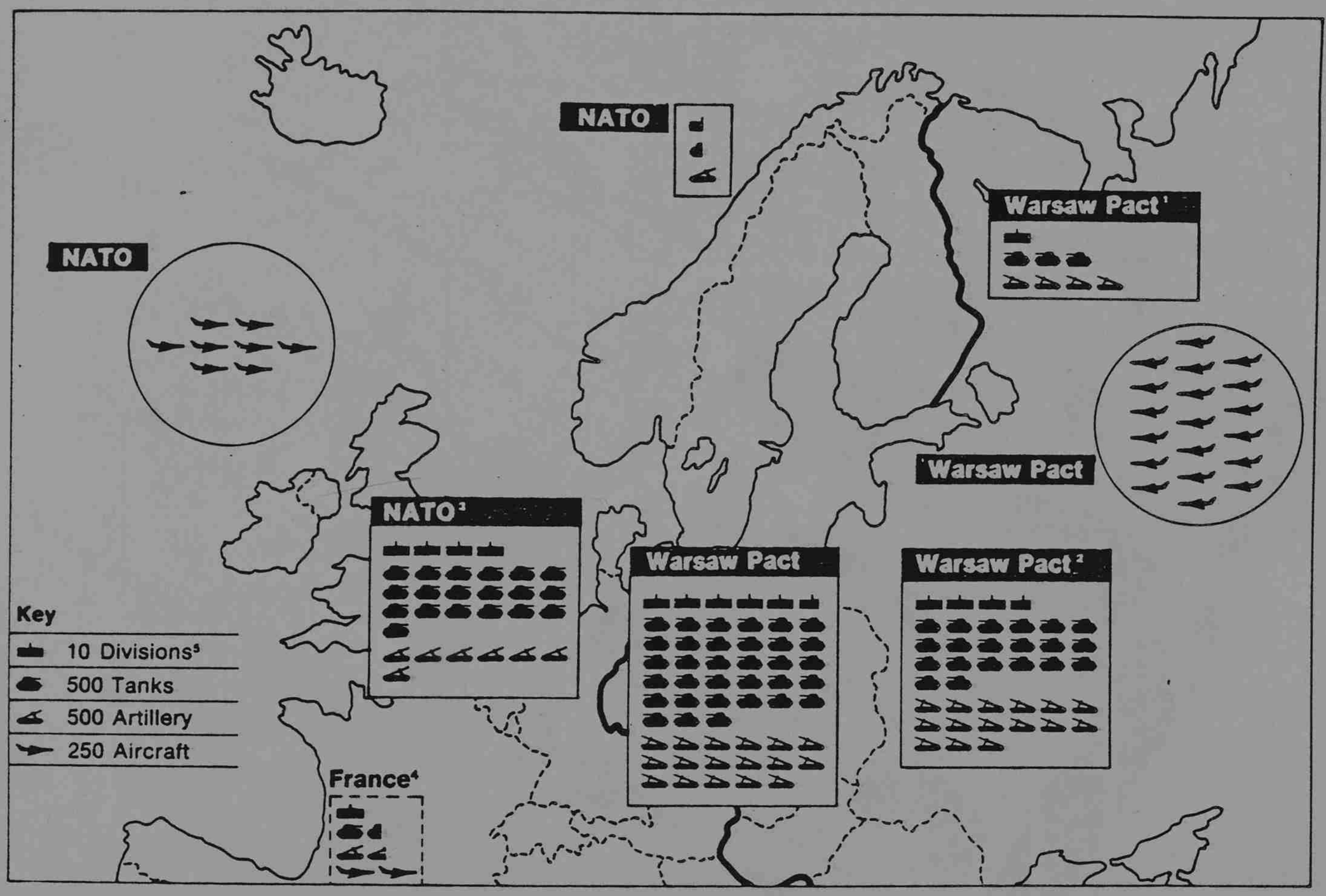


¹ Includes French forces in the Federal Republic of Germany which are not declared to NATO. Excludes the Berlin garrison.

² Corresponds to a balance of 57 Warsaw Pact to 33 NATO divisions. Warsaw Pact divisions normally consist of fewer personnel than many NATO divisions, but contain more tanks and artillery.

³ Crew-served systems and vehicle-or helicopter-mounted systems.

Figure 12 The Current Disposition of Forces in North and Central Europe



Notes

[1]Leningrad Military District.

[2]Three Soviet Western Military Districts.

[3]Includes French forces in the Federal Republic of Germany.

[4]France is a member of NATO but does not participate in its integrated military structure.

[5]Warsaw Pact divisions normally consist of fewer personnel than many NATO divisions, but contain more tanks and artillery.

is better placed geographically to move additional forces to the front line and to sustain them once they are there. By contrast, most of NATO's additional reinforcements of men and equipment would have to be moved across the Atlantic from North America.

Warsaw Pact

2. The Soviet Union's ground forces are being upgraded: new units are being created and expanded, equipment for existing units modernised and the logistics infrastructure expanded. The effect of such improvements is being enhanced by the reorganisation of these forces (to make best use of their new capabilities); and by improved training and command and control procedures. Soviet tank and motor rifle divisions are being steadily expanded and reorganised to provide greater firepower. Equipment improvements include self-propelled artillery, with better ammunition; better conventional warheads for short-range ballistic missiles; and further deployment of the latest T80 tank, which has a gas turbine engine and a laser range-finder system, and can fire an anti-tank guided missile (ATGM) through the main gun barrel. The wheeled SA-9 air defence system has largely been replaced by the tracked SA-13, and a new division-level surface-to-air missile, the SA-11, which has increased mobility and target handling ability, is starting to enter the inventory. The standard front-line SA-4 is due to be replaced in the near future by the SA-X-12, which can shoot down tactical ballistic missiles.

3. Soviet air forces are being upgraded with new fighters that have a true look-down/shoot-down capability. Both the Foxhound interceptor and the new agile fighter Fulcrum are coming into service in increasing numbers. Designed as an all-weather fighter-interceptor and similar to the F18, Fulcrum will increase the threat to NATO low-flying aircraft, and is assessed to be able to engage cruise missiles; a ground-attack variant may also be developed. Its slightly larger partner, the Flanker air superiority fighter, which is similar to the F15, is also now nearing operational deployment. The airborne early warning and tanker variants of the Candid airframe will enhance the operational capabilities of the new interceptors, and the heavy-lift capability of the air force will be significantly enhanced by the Condor, a new large transport aircraft currently being flight-tested. The Frogfoot,

designed to provide close air support for the ground forces, has seen extensive service in Afghanistan and is now being deployed with Warsaw Pact forces in Europe. The Hind anti-tank helicopter is still being added to the front line at a fast rate, and logistic support for the ground forces will shortly be improved by the new heavy-lift helicopter Halo.

NATO

4. Chapter 3 describes the special effort currently being made to improve NATO's conventional capabilities. In 1986 the European members of NATO will introduce some 500 new main battle tanks into their inventory, mainly of the advanced Challenger and Leopard II types, and a further 350 tanks will be upgraded. Over 400 other armoured vehicles are being introduced, including Saxon armoured personnel carriers and over 30 new bridge layers. More effective use of tactical mobility will permit personnel and materiel to be concentrated, and this will be assisted by new highly mobile helicopters and support vehicles. Ground forces will be supported by new weapons such as the multiple-launch rocket system (MLRS); and command, control and communications systems supporting NATO forces in battle are being upgraded. More man-portable and hand-held anti-tank weapons are being produced; over 550 Milan and TOW systems will be acquired by the European armies in 1986; and large numbers of new man-portable anti-aircraft missile systems are being introduced.

5. US forces stationed in Europe include four army divisions, two brigades of US-based divisions and two armoured cavalry regiments, along with 28 US Air Force (USAF) tactical air squadrons. The United States plans to be able to field ten army divisions, 88 USAF squadrons and one marine amphibious brigade within ten days of a decision to mobilise. More US materiel is being pre-positioned in Europe. Major improvements to the US ground forces modernisation programme include the introduction of the M1 Abrams main battle tank, the Bradley fighting vehicle equipped with TOW anti-armour missiles, and the Apache attack helicopter carrying Hellfire anti-armour missiles. Canadian forces in Europe are being increased by 1,200 men, and Canada will commit a dedicated battalion to the ACE Mobile Force (Land).

6. NATO has traditionally relied on its theatre air forces to offset the Warsaw Pact's great combat potential on the ground. NATO's tactical air forces are being steadily improved, as F15 and F16 aircraft are increasingly introduced into service with the USAF, and over 70 F16s and Tornados will be added to European air forces in 1986, together with 100 more combat aircraft of other types. The flexibility of these forces will be enhanced by the introduction of support aircraft including more tankers and transport helicopters. The infrastructure programme will provide 665 hardened shelters in Europe for reinforcing aircraft. Increases in missile stocks are planned, and new air-to-surface missiles, airborne and low-altitude targetting systems, and electronic countermeasures equipment are being developed. Air defence in the central region will be enhanced by the Patriot and Roland missile systems. The AWACS airborne early warning system, together with the air command and control system, will provide a capable structure for the direction of allied air forces and air defence systems in Europe and its maritime approaches.

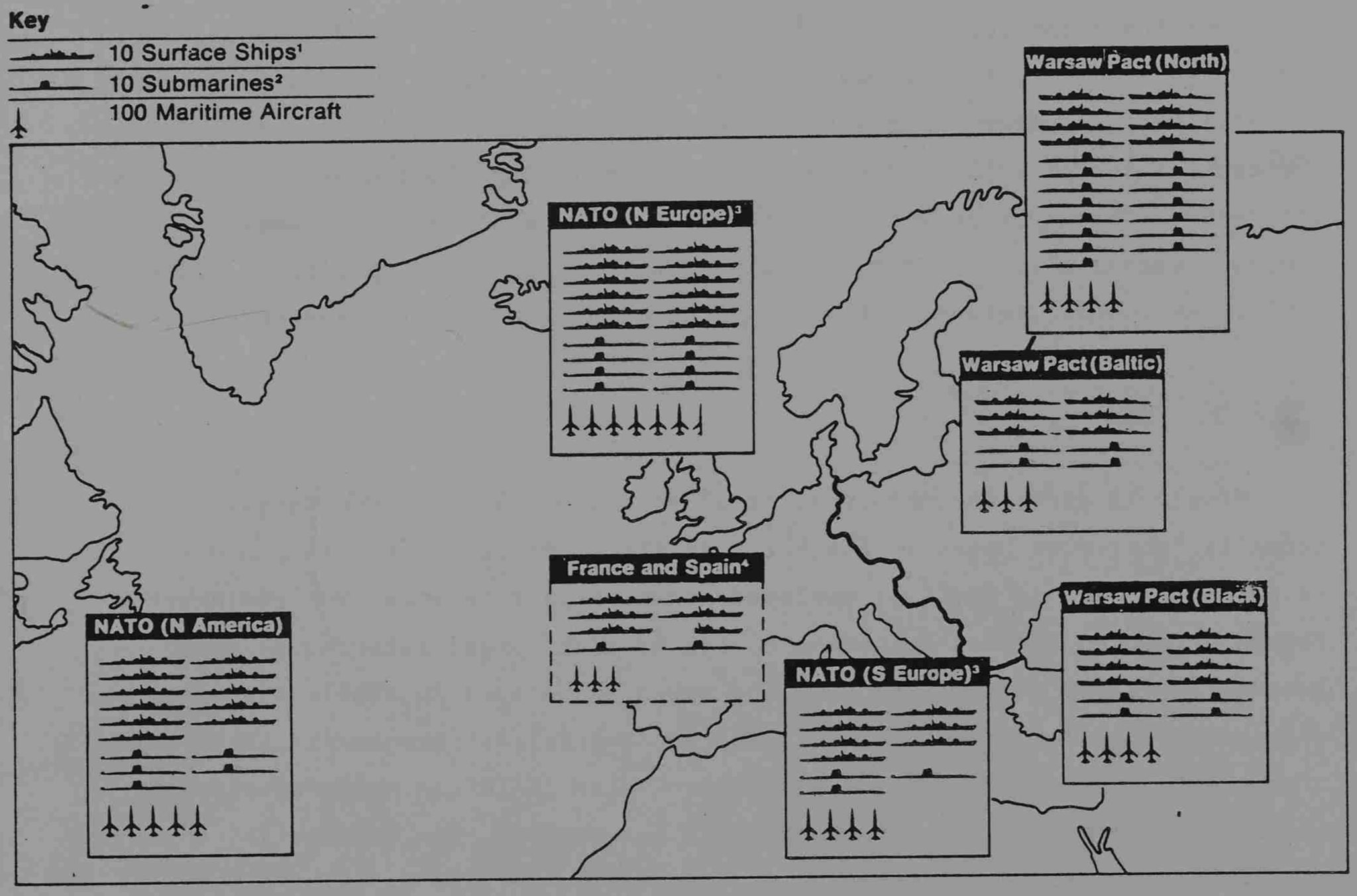
Maritime Forces

7. Figure 13 shows the principal naval forces of NATO and the Warsaw Pact normally located or based in the North Atlantic and seas bordering Europe. Ships and submarines could be deployed anywhere in this area, but the naval forces have been divided according to sea or fleet areas relating to home bases. It is not sensible to view the maritime balance in simple ship-against-ship terms, not least because there are fundamental differences in the missions of the naval forces of NATO and the Warsaw Pact: NATO's concern to protect its reinforcement and re-supply shipping, for example, has no parallel in the Warsaw Pact. The largest single contribution to NATO maritime forces is that made by the United States, but the availability of US ships in the Eastern Atlantic at the outbreak of hostilities cannot be assumed. European navies, and in particular the Royal Navy, must therefore be ready to play a leading role in initial operations.

Warsaw Pact

8. The Soviet Navy maintains at sea a submarine ballistic missile force and practises the defence of that force in war. Further wartime tasks include

Figure 13 NATO and Warsaw Pact Principal Naval Forces



Notes

[1]Principal Surface Combatants; frigates, destroyers, cruisers, aircraft carriers.

[2]Excludes SSBNs.

[3]Includes US Forces based in Europe.

[4]France and Spain are members of NATO, but do not participate in its integrated military structure. Their naval forces are divided between the Atlantic and the Mediterranean.

control of sea areas, or at least their denial to NATO. The Soviet Navy keeps a small proportion of its strength deployed far afield. It does so as a demonstration of its own worldwide reach, as an indication of potential Soviet interest in overseas areas, and to monitor Western activities.

9. A significant part of Soviet naval strength lies in submarines, which are being added to the fleet at a rate of about one every six weeks. This building programme comprises a variety of new classes of submarine (currently at least six, of which five are nuclear powered), and spans the whole range of undersea warfare and brings with it advances in quietness, speed, deep-diving capability and damage resistance. As with the submarines, Soviet surface warships have, within the last decade, become larger and more technologically sophisticated: examples are the Kirov and Slava class guided missile cruisers, and the Udaloy and Sovremenny class destroyers. All have greater endurance than their predecessors, and improved weapon systems and sensors provide greater firepower and flexibility. The fourth Kiev class VSTOL aircraft carrier is nearing completion, and a new larger aircraft carrier has recently been launched.

NATO

10. NATO nations are improving their own maritime capability, both through the provision of new warships and submarines and the modernisation of existing vessels. US and European navies are continuing their force expansion and modernisation programmes designed to ensure the preservation of an essential margin of allied maritime superiority in key ocean areas.

11. The US Navy is aiming for a 600-ship navy comprising 15 carrier battle groups, surface combatants (including four battleship surface action groups), 100 nuclear attack submarines, land-based ASW maritime patrol aircraft, associated escorts and logistics support, mine-warfare forces and amphibious vessels. Next year, the European NATO members expect to introduce 19 new warships, including a helicopter carrier, four escorts and three submarines. Both US and European maritime air forces, including the US carrier-based force of combat aircraft, are being improved. The serious threat posed by the Soviet Union to naval and merchant shipping movements in European waters,

especially around shipping routes and reception ports and bases, will be met by the modernisation of NATO's mine countermeasures (MCM) forces, including the construction of advanced MCM vessels and the development of new sonar and associated equipment. The European nations are introducing further new and modernised materiel, including sonars, electronic countermeasures and communications equipment, and are increasing stockpiles of key weapons and munitions.

Soviet Defence Expenditure

12. The Soviet Union claims that its defence expenditure declined throughout most of the 1970s and, despite a substantial rise in 1985, will this year be about 19 billion roubles - less than 7% higher than in 1970. Even after discounting the effects of inflation (which the Soviet figures do not), we estimate that Soviet defence spending has grown by approximately 60% over the past 15 years. In current prices, outlays are now well over six times the official defence budget. The rate of increase, which fell back after the mid-1970s, has quickened since 1983, with the introduction of substantial amounts of new equipment into the forces. This higher growth rate is likely to be sustained at least to the end of the decade.

13. Defence accounts for some 14 to 16% of the Soviet Union's gross domestic product - a larger share of national resources than in any NATO country. Unless the economy performs better than in the recent past, the burden may increase still further. This would have serious implications for the leadership's ability to meet its targets for civilian investment (which is important for future economic performance) or improvements in living standards. Nevertheless, Soviet Government statements suggest that defence retains its high priority.

Chemical Weapons

14. The Soviet Union is capable of engaging in chemical warfare (CW) on a very large scale. It produces and stockpiles a variety of types of chemical weapons and is estimated to have some 300,000 tonnes of nerve agent alone. It also has specialist troops responsible for aspects of nuclear, biological and

chemical warfare. Soviet Servicemen are versed in the doctrine and tactics of CW; and Soviet forces have a variety of means of delivering chemical attacks by land- and sea-based systems and from missiles and bombs.

15. In the light of the Soviet CW threat NATO places a high priority on providing the right defensive equipment and on training our forces in its use. The United Kingdom, for example, is bringing into service a new respirator, new protective clothing, and new detection and monitoring equipment; and we are continuing with defensive research to keep abreast of the developing threat.

16. Among the NATO allies, only the United States now possesses chemical weapons - a limited and ageing retaliatory capability - and it has produced none since 1969. Chapter 3 gives an account of the consideration currently being given to the modernisation of US stocks with binary weapons.

NUCLEAR FORCES OF NATO AND THE WARSAW PACT

Calculating the Nuclear Balance

1. Simple numerical representations of the nuclear forces of East and West suffer from the same limitations as simple comparisons of conventional forces. Factors such as accuracy, reliability, reaction time and survivability are very difficult to quantify and compare, especially since detailed information about capabilities is seldom disclosed. The location, mobility and vulnerability of weapon systems, and the existence of defensive forces, are also important factors.

2. To begin with, should we compare numbers of warheads or weapon systems? The former might be thought more realistic, but there are problems.

- First, many strategic systems can carry several, and in some cases a varying number, of warheads. Although we can compare reasonably accurately the maximum number of multiple independently-targettable re-entry vehicles (MIRVs) on each missile, we cannot tell if Soviet systems are MIRVd to their full capacity, and therefore how many warheads are actually being carried.

- Secondly, warheads can vary considerably in size; warhead counts therefore give no indication of the destructive power of systems as measured by throw-weight or yield.

- Thirdly, aircraft can carry a variable number of weapons; some intermediate and short-range missile systems are dual-capable and can be re-loaded; and we do not know the number of rounds available for Warsaw Pact nuclear artillery.

The total number of warheads stockpiled is therefore not known, and any estimates would be arbitrary and inaccurate. We therefore believe that launcher numbers provide a more practical basis for comparison.

3. Problems still remain in comparing like with like. Our division of systems into strategic forces, longer-range intermediate nuclear forces, shorter-range intermediate nuclear forces and short-range nuclear forces is to some extent arbitrary; but it is helpful in providing a framework that at least avoids the most obvious inequalities, such as would arise, for example, from comparing an intercontinental ballistic missile with MIRVS, a tactical aircraft with bombs, and a short-range artillery piece. Furthermore, most shorter-range systems are dual-capable; and because we do not know how many Warsaw Pact systems are actually assigned to nuclear operations, we need to show, for comparison purposes, all NATO's systems of dual-capable types, even though most of them are assigned to the conventional role and could not be used to deliver nuclear weapons.

5. Where possible, our categories follow those used in arms control negotiations. But they are not definitive:

- the Soviet Union generally uses different terminology;
- the range of a system is sometimes less important than its role;
- many systems can be used at much shorter ranges than their maximum;
- aircraft range depends on flight profile, weapon load, and capability for refuelling; and
- new systems, such as cruise missiles, do not always fit neatly into existing categories.

Strategic Forces

17. Strategic forces, as specified in SALT II, are those whose range or type of delivery system allows them to undertake intercontinental attack. They include intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs) and heavy bombers. Air- and sea-launched cruise missiles are also included because of the range of their launch platforms; the ground-launched cruise missile (GLCM), on the other hand, does not have an intercontinental range and is therefore shown with long-range intermediate nuclear forces (LRINF) (see below). The Soviet Backfire bomber, which had previously been included under strategic forces, is now thought to be earmarked for use in Europe, and is therefore included with LRINF. If refuelled, however, it could pose a threat to the United States.

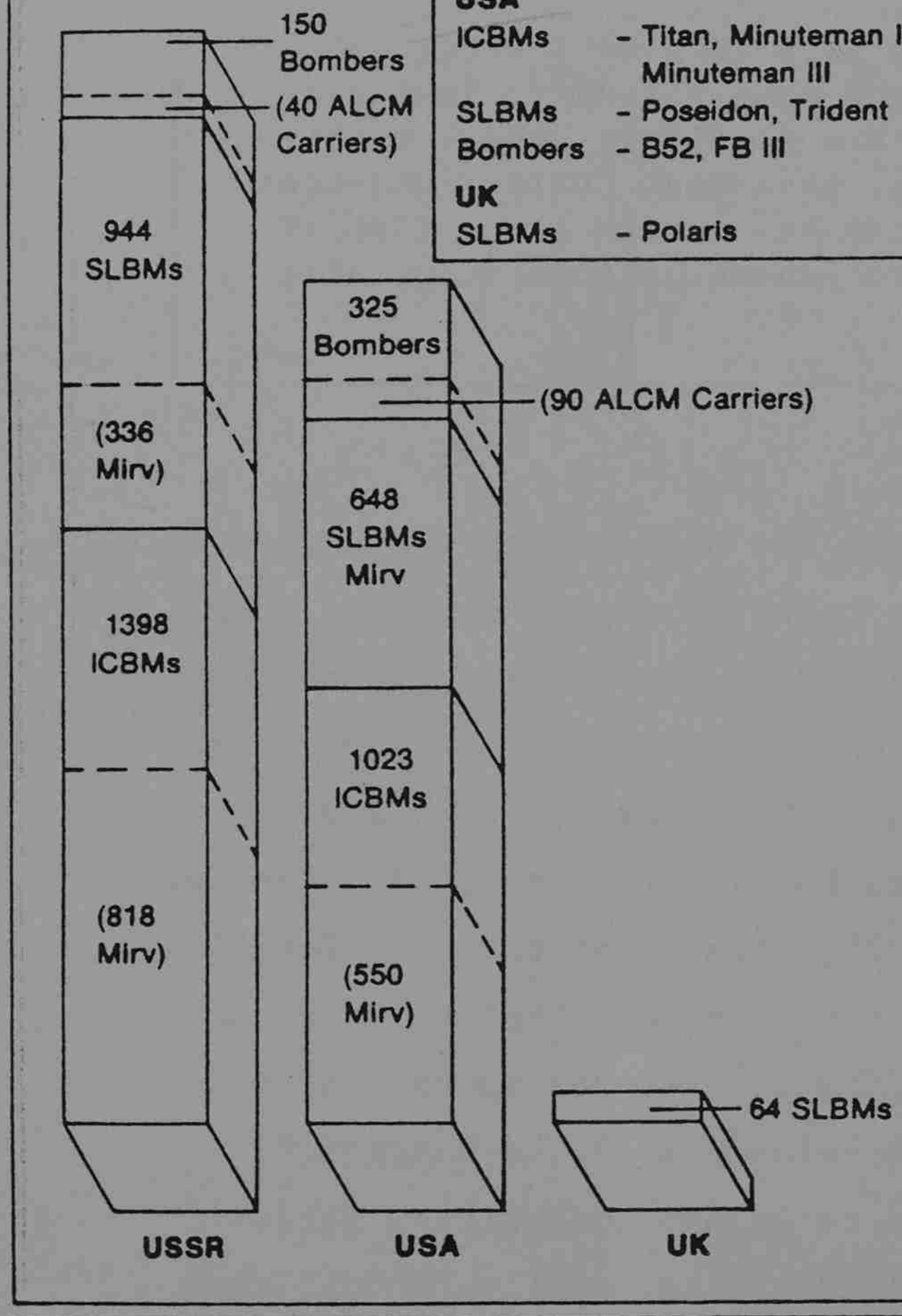
Figure 14 The Balance of Strategic and LRINF Systems — end 1985[1]

Strategic Systems Worldwide

USSR
ICBMs – SS11, 13, 17, 18, 19, 25
SLBMs – SS-N-6, 8, 17, 18, 20, X23
Bombers[4] – Bear, Bison

USA[2]
ICBMs – Titan, Minuteman II, Minuteman III
SLBMs – Poseidon, Trident
Bombers – B52, FB III

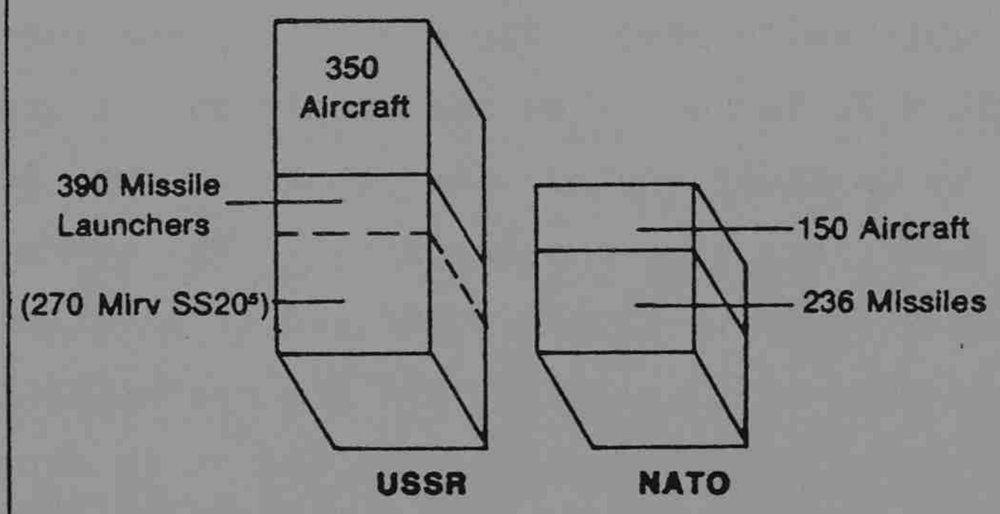
UK
SLBMs – Polaris



LRINF Systems in Europe[3]

USSR
Missiles – SS4, SS20
Aircraft – Badger, Blinder, Backfire[4]

NATO
Missiles – GLCM, Pershing II
Aircraft – F III



Notes

[1]French systems are not included in this diagram. They comprise 96 SLBM, 18 S3 missiles and about 30 Mirage IV Bombers. The diagram does not include defensive systems.

[2]The United States is also deploying SLCM on a variety of surface ships and submarines.

[3]Includes land based systems in Europe from the Urals westward; excludes aircraft with a primary maritime role.

[4]The Backfire bomber, which had previously been included under strategic forces, is now thought to be earmarked for use in Europe, and is therefore included with LRINF. If refuelled, however, it could pose a threat to the United States.

[5]Each SS20 missile has three warheads.

Nuclear Asymmetries

As Figure 14 shows, the Soviet Union has more strategic delivery systems than the United States, although when aircraft-delivered weapons are included the United States probably continues to have an advantage in warheads (about 11,000, compared with 10,000 for the Soviet Union). The structure of US and Soviet strategic forces is, however, different: this complicates assessments of the balance.

- Much of the Soviet force consists of ICBMs. This gives the Soviet Union a significant advantage in missile warheads, and in particular ICBM warheads, of which it has about three times as many as the United States. Because it has so many large land-based missiles, it also has about three times as much missile throw-weight as the United States - about 5,900 tonnes compared with 1,900 tonnes. The Soviet Union therefore has the potential to destroy all US land-based missiles while keeping part of its own ICBM force in reserve.

- By comparison, the United States, with less than one quarter of its warheads on ICBMs, is unable to pose the same threat to Soviet missiles. About half the US warheads are on SLBMs; these missiles are more survivable, but less accurate, than most Soviet land-based systems. Furthermore, the United States has a high proportion of its warheads on aircraft, and these are generally more vulnerable than missiles.

18. Both the Soviet Union and the United States are modernising their strategic forces. In the past year the Soviet Union has begun to deploy a mobile ICBM, the SS-25, and is continuing to develop another ICBM, the SS-X-24, which is probably rail-mobile and also has multiple independently-targettable re-entry vehicles (MIRVs). The fourth Typhoon submarine, which carries 20 MIRVd SS-N-20 SLBMs, is on sea trials and is expected to become operational shortly. Two units of another new submarine, the Delta IV, with 16 of the new SS-NX-23 SLBMs, are also on sea trials. The new variant of the Bear bomber, which carries AS-15 air-launched cruise missiles (ALCMs), continues to be deployed; as many as 40 aircraft are now operational. Development of the Blackjack strategic bomber continues, and it is expected to become operational later in the decade as an ALCM carrier. A sea-launched cruise missile (SLCM), the SS-NX-21, is also under development; this could eventually be deployed on a wide variety of submarines and possibly ships. In addition a larger cruise missile, which may have a number of basing options, is under development.

19. The US strategic modernisation programme includes the deployment of MX ICBMs in existing Minuteman silos, the procurement of 100 B1 bombers and the development of the Trident D5 SLBM. B52G bombers have been equipped with ALCMs, and B52H bombers are now being similarly modified. An advanced cruise missile is under development. The seventh Ohio class submarine, with 24 Trident C4 missiles, started sea trials last autumn. In order to stay within SALT II limits, the United States has dismantled a Poseidon submarine. SLCMs are being deployed in a variety of surface ships and submarines. In the longer term the United States is planning to develop and deploy a small single-warhead ICBM, commonly referred to as Midgetman, which could be mobile; an Advanced Technology Bomber which incorporates stealth technology is also planned.

Intermediate and Short-Range Nuclear Forces

20. Both NATO and the Warsaw Pact have a variety of systems that can deliver nuclear weapons at less than intercontinental range. Intermediate nuclear forces (INF) include all systems that fall between short-range and strategic, and can be sub-divided into longer-range and shorter-range intermediate nuclear forces (LRINF and SRINF), the former having a range in excess of about 1,000 km. Short-range nuclear forces include artillery and missiles with a range of less than about 150 km. They are sometimes known as 'battlefield' weapons.

21. The numbers of LRINF, SRINF and short-range forces shown in Figures 14 and 15 include only land-based systems in Europe from the Urals westward. They exclude:

- missiles based outside Europe, such as SS-20s in the Eastern USSR;
- aircraft in the United States and Eastern USSR;
- aircraft whose primary mission is maritime, such as those of the Soviet naval air forces and NATO aircraft with an anti-ship role;

- NATO sea-based nuclear systems, such as the Terrier surface-to-air missile, the ASROC and SUBROC anti-submarine missiles, and air-delivered bombs;

- aircraft on US aircraft carriers; and

- Warsaw Pact sea-based systems, such as SS-N-3, SS-N-7, SS-N-12 and SS-N-19 anti-ship cruise missiles, nuclear depth bombs, surface-to-air missiles, and SS-N-5 non-strategic ballistic missiles on submarines.

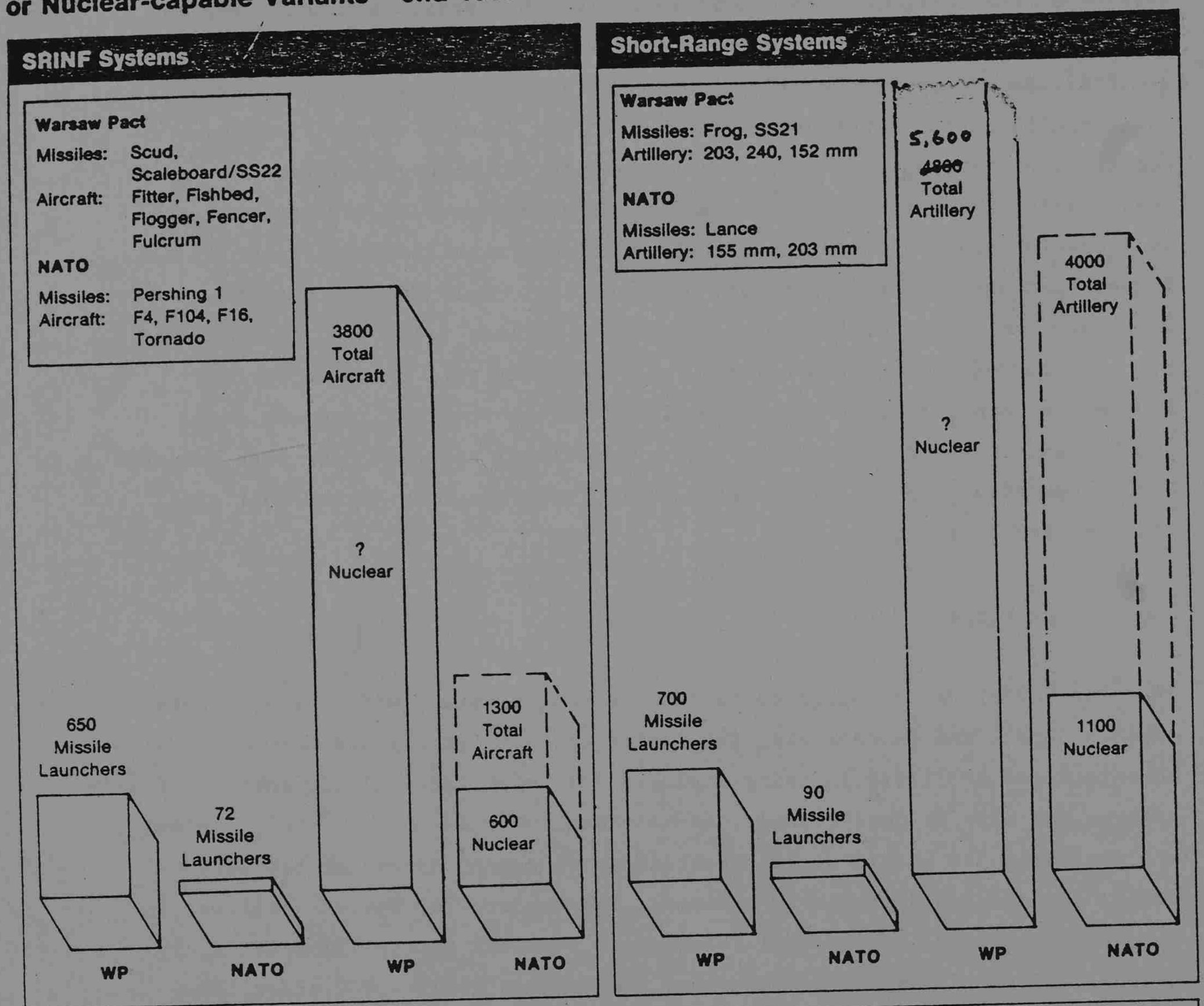
Longer-Range Intermediate Nuclear Forces

22. At the end of 1985 NATO had deployed 236 GLCMs and Pershing II missiles. Despite the unilateral moratorium on LRINF deployments declared by Mr Gorbachev last April, the Soviet Union continued to construct SS-20 bases and deploy new missiles. At the end of 1985 the total force had grown to 441 launchers with 1,323 warheads, about two-thirds of which face Europe. Thus the Soviet Union still has a substantial superiority in LRINF missile warheads, and this imbalance is increased when aircraft are taken into account. The Soviet Union is continuing to improve its LRINF missiles, and a GLCM, the SSC-X-4, has been developed. The Soviet assertion that a balance of LRINF exists in Europe is based on highly selective inclusion and exclusion of systems. For example, on the NATO side British and French strategic forces and large numbers of US SRINF aircraft in Europe are included; but on the Warsaw Pact side thousands of comparable Soviet aircraft (Floggers, Fitters, Fishbeds and Fencers) are excluded. The Soviet Union also presents an exaggerated figure for American carrier-based aircraft, while excluding several hundred aircraft of the Soviet naval air forces.

Shorter-Range Intermediate Nuclear Forces

23. NATO has withdrawn Pershing I missiles as Pershing II are deployed. The Soviet Union has been deploying a more accurate version of the Scaleboard missile, of which about 50 have probably been moved forward into East Germany and Czechoslovakia. A replacement for the Scud, the SS-23, has also been

Figure 15 The Balance of Shorter-Range Systems with Nuclear or Nuclear-capable Variants – end 1985[1,2]



Notes

SRINF Aircraft. This diagram shows all aircraft of types known to have a nuclear-capable variant. On the NATO side, the number assigned to the nuclear role is indicated by the coloured part of the column. The other aircraft shown are not assigned to the nuclear role, and could not be so used. The Warsaw Pact does not disclose similar information about its own aircraft, and it is not possible to produce reliable estimates. All Warsaw Pact aircraft of types known to be nuclear-capable are therefore shown.

Short-Range Artillery. This diagram shows all artillery pieces of types known to have a nuclear-capable variant. On the NATO side, the number available for the nuclear role is indicated by the coloured parts of the column. The other artillery pieces included are not available for use in the nuclear role. Similar information is not available for Warsaw Pact systems.

[1] Includes land based systems in Europe from the Urals westward.

[2] French systems are not included in this diagram. They comprise Mirage IIIE and Jaguar aircraft and Pluton missiles. The diagram does not include maritime systems.

developed, and further improvements in Soviet shorter-range missile systems are expected. Both sides continue to modernise their air forces; NATO Tornados and F16s are replacing the older F104s and F4s, while new high-performance, dual-capable Soviet aircraft such as Fencer are being deployed. A direct numerical comparison of SRINF aircraft numbers is, however, difficult. Unlike NATO, the Warsaw Pact does not disclose how many of its aircraft are assigned for nuclear operations; we have therefore included in Figure 15 all Warsaw Pact shorter-range aircraft of types that could deliver nuclear weapons. The number of NATO aircraft with a nuclear role, 600, is indicated by the coloured part of the column; the other aircraft shown, a further 700, are of similar types but are assigned for conventional use and could not be used in the nuclear role. These additional aircraft have been included for comparative purposes: even with their inclusion, the Warsaw Pact still has a marked advantage.

Short-Range Nuclear Forces

24. The Soviet Union continues to replace Frog missiles with the much more capable SS-21, and is deploying the latter in East Germany and Czechoslovakia. More improved artillery is being deployed. As with tactical aircraft, artillery systems may also be dual-capable, and although we know how many NATO systems are available for use in nuclear operations we cannot determine how many Soviet systems could similarly be used. The numbers for Soviet artillery in Figure 15 therefore include all 1,400 newer versions of the 152mm artillery system, and the 203mm and 240mm pieces, as well as about 4,200 older 152mm guns, some of which may have a nuclear capability. On the NATO side all 155mm and 203mm artillery that could be used to deliver nuclear shells are shown in colour along with, for comparison purposes only, another 3,000 pieces of the same types that are not available for use in the nuclear role.

ANNEX B

EXERCISES

1. During 1985, British armed forces again undertook an extensive and varied programme of collective training activities, both with our NATO allies and with other friendly countries. Exercises conducted outside the NATO area are shown in Figure 16.

Major NATO Exercises

2. We participated in two major NATO exercises last year:

- Wintex-Cimex, a biennial command post (or paper) exercise conducted by Alliance members. Its aim is to test military command and control procedures and to exercise Alliance authorities in procedures intended for use in time of international tension and war. This year it was held in February and March, and participation within the United Kingdom extended down to District and equivalent level.

- Ocean Safari, which took place in August and September, was a maritime exercise covering the Atlantic and Norwegian Sea areas and involving some 160 vessels and over 200 aircraft from Alliance countries, including France. We contributed 33 ships, led by HMS Invincible and HMS Illustrious, together with RAF Buccaneer, Canberra, Nimrod and Phantom aircraft.

National Exercises

3. Many national exercises were mounted throughout the year, the most important being Brave Defender in September. This is discussed in detail on page [ ]. The annual Royal Navy fleet exercise, Autumn Train, took place in the Eastern Atlantic in October. 15 British vessels took part, including two of our three aircraft carriers, supported by RAF Canberras, Nimrods, and Buccaneers together with aircraft from France and the United States. Two major exercises were held to test the ability of British air defence forces to

deal with large-scale air attacks. Other important national activities in the NATO area were Rolling Deep, a brigade-level amphibious exercise in September; Jolly Roger, a submarine training exercise in the Norwegian Sea in October; and, earlier in the year, the first exchange of personnel between British and Spanish land forces. In home waters, we sponsored three joint maritime courses, which provided intensive operational training for both British and NATO ships and aircraft.

Joint Exercises

4. During 1985, the United Kingdom/ Netherlands Landing Force and the British contingent to the ACE Mobile Force (Land) (over 5,000 troops in total), together with RAF reinforcement units, took part in the Norwegian national exercise Cold Winter; elements of the United Kingdom contingent to the ACE Mobile Force (Land) then took part in Albatross Exchange, a command post exercise held in Denmark. In the Mediterranean and Gibraltar areas, Royal Navy and RAF forces participated in two NATO maritime exercises, Distant Hammer and Locked Gate, in May and June respectively; and the United Kingdom ACE Mobile Force (Land) Southern Region forces took part in Archway Express, a major field training exercise in Turkey, in October.

5. Tornado GR1 aircraft took part in a low-level, tactical flying exercise, Green Flag, in the United States. The main emphasis of this exercise was on electronic warfare, and it was carried out in an environment closely resembling the Central Front. Tornados also carried out tactical training in Canada and again participated in the annual United States Air Force (USAF) Strategic Air Command bombing competition at Ellsworth Air Force Base, South Dakota. A team of four crews and six Tornados from RAF Marham were supported by three Victor tankers. Of the 34 crews competing, they achieved the outstanding result of finishing first and second in the competitions for two trophies, and second and eighth in the third. Sorties were up to five hours long, and crews had to demonstrate live and simulated weapons release, timing control, electronic warfare techniques, and air-to-air refuelling. Their success reflected not only the skill of the crews but the exceptional qualities of Tornado as a weapon system. Other RAF activities included Nimrod aircraft undertaking anti-submarine warfare training at the Atlantic Underwater Test and

Evaluation Centre ranges in the Bahamas, and the normal annual series of air defence exercises. These were supplemented in July, when a Soviet naval exercise offered a realistic test of the United Kingdom air defence system.

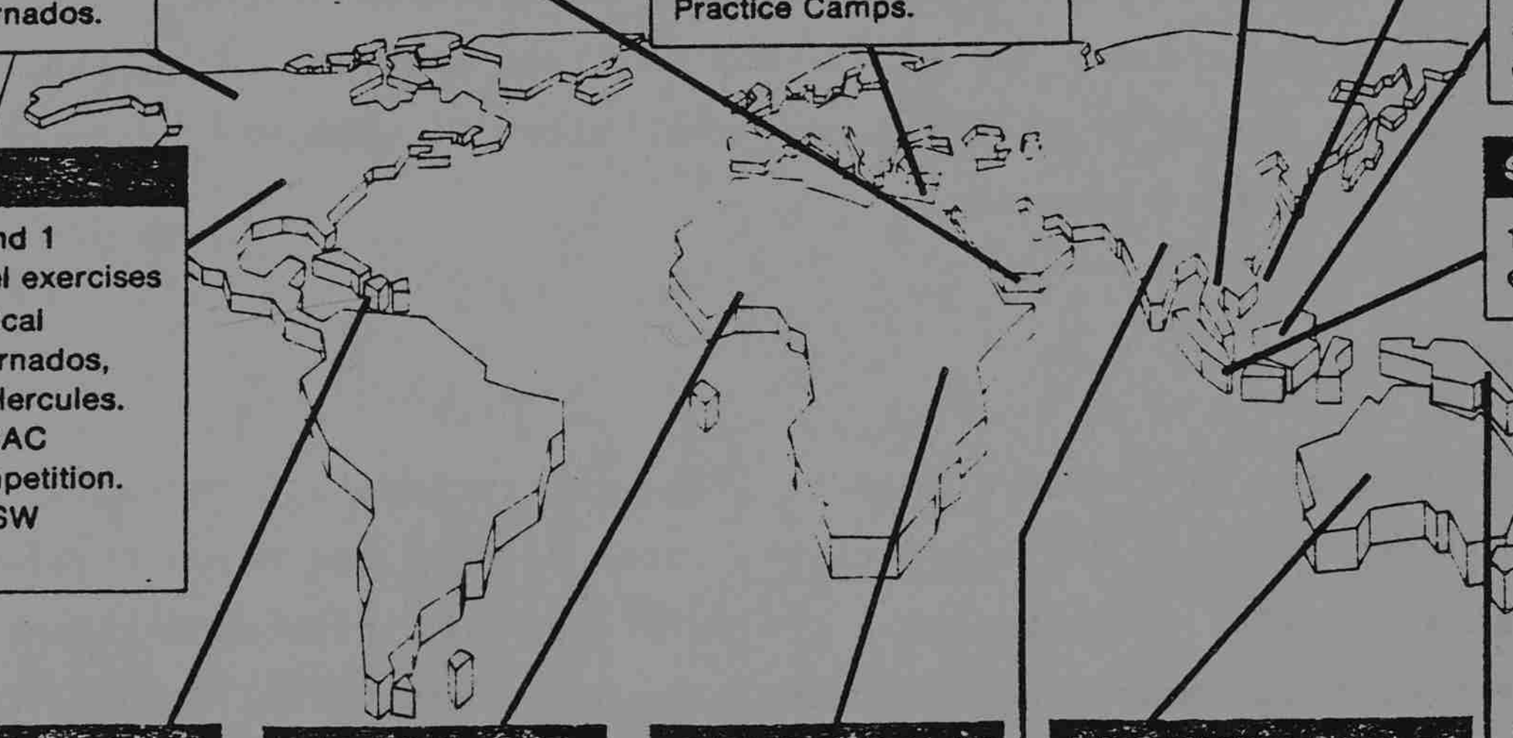
6. Elsewhere in the world, United Kingdom-based troops exercised and conducted joint training in Canada, the United States, Oman, Kenya and several Caribbean countries; and forces from our garrison in Hong Kong participated in the annual Five Power Defence Arrangement (FPDA) land exercise in Australia (Platypus) as well as exercising in a variety of locations throughout the Far East and Pacific areas. The major FPDA maritime exercise, Starfish, took place in May in the South China Sea; the United Kingdom was represented by two patrol craft from Hong Kong.

Plans for 1986

7. Deployments and exercises abroad in 1986 will include a Royal Navy Task Group deployment in which HMS Illustrious, three escorts and three Royal Fleet Auxiliaries will circumnavigate the world and participate in a series of exercises with our friends and allies. The opportunity will also be taken to visit a number of countries in the Pacific and Asia. In addition, we shall be demonstrating our support for the FPDA (with fellow members Australia, New Zealand, Malaysia and Singapore) by taking part in Exercise Starfish 86 in the South China Sea. Illustrious' Sea Harriers will also be contributing to the Integrated Air Defence Systems exercises. Royal Marines will be embarked for part of the deployment and will be exercising in Malaysia and Brunei; and, on the final leg of the deployment, they will be involved when the group as a whole takes part in a major out-of-area exercise in Oman in November and December.

8. This exercise - to be called Saif Sareea (Swift Sword) - will demonstrate the United Kingdom's ability to respond rapidly to a crisis anywhere in the world by strategic air deployment. It will test the improvements we have made in our command and control arrangements and should involve about 5,000 men from all three Services (including those forming the task group). The exercise will be conducted jointly with the Sultan of Oman's Armed Forces.

Figure 16 Exercises outside Europe in 1985



CANADA

Training by 7 Battle Groups and 3 Battalion Groups.
RE Construction Training.
Low-level tactical training by Tornados.

OMAN

2 Company-level exercises.
Nimrods to MP training.

CYPRUS

15 Company-level exercises.
1 RMAS exercise.
Miscellaneous Minor Unit training.
10 RAF Armament Practice Camps.

MALAYSIA

3 Company-level exercises.

SOUTH CHINA SEA

1 FPDA exercise involving 2 RN patrol craft.

BRUNEI

4 Company-level exercises.

SINGAPORE

1 Company-level exercise.

USA

2 Battalion- and 1 Company-level exercises
Low-level tactical training by Tornados, Jaguars and Hercules.
Tornados to SAC Bombing Competition.
Nimrods to ASW training.

CARIBBEAN

Frigate plus support vessel to maritime exercise.
1 Company-level exchange exercise.
1 Communications exercise.
RM Company to Jungle training.

GHANA

1 Communications exercise.

KENYA

3 Battalion and 1 Company-level exercises.
RE Construction and Survey training.

NEPAL

RE Survey training.

AUSTRALIA

1 FPDA HQ exercise.
1 Company-level exercise.
RE exchange exercise.

PAPUA NEW GUINEA

1 Company-level exercise.

NEW ZEALAND

1 Company-level exercise.

FIJI

2 Company-level exercises.

It follows Exercise Purple Victory, the first training exercise for the new two-star joint headquarters, which was held in the North of England in November 1985 to practise our ability to assist in the evacuation of British nationals, and involved the deployment of 5 Airborne Brigade and extensive RAF participation.

ANNEX C

STRENGTH OF THE FLEET

Table 1. Ships of the Royal Navy - Strength as at 1 April 1986

Serial	Type/Class	No	Operational or engaged in preparing for service or trials or training	No	Undergoing refit or on standby etc
1	SUBMARINES				
	Polaris	3	Resolution, Renown, Revenge,	1	Repulse
	Fleet	13	Valiant, Warspite, Churchill, Conqueror, Sovereign, Swiftsure, Superb, Spartan, Splendid, Trafalgar, Turbulent, Tireless, Torbay*.	2	Courageous, Sceptre
	Oberon Class	9	Orpheus, Oberon, Odin, Opossum, Onslaught, Opportune, Olympus, Otus, Onyx.	4	Otter, Oracle, Ocelot, Osiris
	Porpoise Class	2	Sealion, Walrus		
2	ASW CARRIERS	3	Invincible, Illustrious, Ark Royal		
3	ASSAULT SHIPS	1	Intrepid+	1	Fearless
4	GUIDED MISSILE DESTROYERS				
	County	2	Fife, Glamorgan		
	Type 82	1	Bristol		
	Type 42	10	Cardiff, Glasgow, Exeter, Southampton, Nottingham, Liverpool, Manchester, York, Gloucester, Edinburgh.	2	Birmingham, Newcastle.

Serial	Type/Class	No	Operational or engaged in preparing for service or trials or training	No	Undergoing refit or on standby etc
5	FRIGATES				
	Type 22	8	Broadsword, Battleaxe, Brilliant, Brazen, Boxer, Beaver, Brave+, London.*		
	Type 21	5	Amazon, Arrow, Alacrity, Avenger, Ambuscade.	1	Active.
	Leander Class	19	Leander, Euryalus, Galatea, Naiad, Arethusa, Aurora, Cleopatra, Phoebe, Sirius, Argonaut, Minerva, Andromeda, Hermione, Jupiter, Scylla, Achilles, Diomede, Apollo, Ariadne.	3	Danae, Penelope, Charybdis.
	Rothesay Class	2	Yarmouth, Rothesay.	1	Plymouth.
	Navigation Training Ship	1	Juno+.		
6	OFFSHORE PATROL				
	Castle Class	2	Dumbarton Castle, Leeds Castle.		
	Island Class	7	Alderney, Guernsey, Jersey, Lindisfarne, Orkney, Shetland, Anglesey.		
7	MCMVs				
	Minesweepers	7	Alfriston, Bickington, Hodgeston, Stubbington, Soberton, Upton, Walkerton.	1	Cuxton,
	River Class	12	Waveney, Carron, Dovey, Helford, Humber, Blackwater, Itchen, Helmsdale, Orwell, Ribble, Spey, Arun.*		

Serial	Type/Class	No	Operational or engaged in preparing for service or trials or training	No	Undergoing refit or on standby etc
7 Cont	Minehunters Ton Class	13	Bildeston, Bossington, Brereton, Brinton, Bronington, Gavinton, Hubberston, Iveston, Kedleston, Kellington, Nurton, Sheraton, Wilton.	2	Kirkliston, Maxton.
	Hunt Class	10	Brocklesby, Cattistock, Cottesmore, Dulverton, Ledbury, Middleton, Chiddingfold, Hurworth, Bicester,+ Atherstone*.	1	Brecon.
8	PATROL CRAFT				
	Bird Class	4	Cygnet, Peterel+, Sandpiper+, Redpole.	1	Kingfisher
	Coastal Training Craft	15	Attacker+, Fencer+, Hunter+, Chaser+, Striker+, Archer+, Biter+, Smiter+, Pursuer +, Trumpeter+, Blazer+, Dasher+, Puncher+, Charger+, Ranger+.		
	Peacock Class	5	Peacock, Plover, Starling, Swallow, Swift.		
	Falkland Islands Patrol Vessels	3	Protector, Guardian, Sentinel.		
	Gibraltar Search and Rescue Craft	2	Cormorant, Hart.		
9	SUPPORT SHIPS				
	Submarine Tender	1	Wakeful.		
	MCM Support Ship	1	Abdiel.		
	Seabed Operations Vessel	1	Challenger.		
10	ROYAL YACHT/ HOSPITAL SHIP	1	Britannia.		

Serial	Type/Class	No	Operational or engaged in preparing for service or trials or training	No	Undergoing refit or on standby etc
11	TRAINING SHIPS				
	Fleet Tenders	4	Manly+, Mentor+, Messina+, Milbrook+.		
12	ICE PATROL SHIP	1	Endurance.		
13	SURVEY SHIPS	8	Beagle, Bulldog, Hecate, Herald, Hydra, Gleaner, Hecla, Roebuck*.	2	Fawn, Fox.

Notes:

(i) All ships in serials 1-7 are assigned to NATO, or will be so assigned on becoming operational. Ships in remaining serials could be made available in support of NATO operations if national requirements permit.

(ii) This table includes ships due for completion or disposal during the course of 1986-87; the numbers of each type are not, therefore, an accurate indication of the ships available at any one time. Ships solely engaged in harbour training duties are not included.

(iii) Ships marked * were under construction on 1 April 1986 and are planned to enter service during 1986-87.

(iv) Ships marked + are engaged partly on trials or training.

(v) Ships approved during 1985-86 for disposal: Hermes, Ajax, Berwick, Crichton, Monkton and Wolverton.

(vi) Alert and Vigilant have been returned for duty with the Royal Maritime Auxiliary Service.

Table 2. Ships of the Royal Fleet Auxiliary - Strength at 1 April 1986

Serial	Type	No	Operational, Preparing for Service or engaged on Trials
1	Fleet Tankers, Large	4	Olmeda, Olna, Olwen Tidespring
2	Fleet Tankers, Small	5	Black Rover, Blue Rover, Grey Rover, Gold Rover, Green Rover
3	Support Tankers	5	Appleleaf, Bayleaf, Brambleleaf, Plumleaf (i), Pearleaf (ii)
4	Fleet Replenishment Ships	4	Resource, Fort Austin, Fort Grange, Regent
5	Helicopter Support Ships	1	Engadine (iii)
6	Landing Ships Logistic	6	Sir Bedivere, Sir Geraint, Sir Lancelot, Sir Percivale, Sir Tristram, Sir Caradoc (iv)
7	Forward Repair Ship	1	Diligence
8	Helicopter Support and Supply Ship	1	Reliant

Notes:

(i) RFA Plumleaf will be replaced by RFA Oakleaf (ex MV Oktania) on completion of her conversion to full support tanker configuration.

(ii) RFA Pearleaf will be replaced by RFA Orangeleaf (ex MV Balder London) on completion of her conversion to full support tanker configuration.

(iii) RFA Engadine is engaged in training.

(iv) Sir Caradoc is an interim replacement for Sir Galahad.

Table 3. Royal Marines Commando Forces

Serial	Type	No
1	Headquarters	
	Commando Brigade Headquarters RM	1
2	Commandos	
	RM Commandos	3
3	Artillery	
	Commando Regiment RA	1
	Commando Battery RA (Volunteer)	1
4	Engineers	
	Commando Squadron RE	1
	Commando Squadron RE (Volunteer)	1
5	Light Helicopter Support	
	Brigade Air Squadron RM	1
6	Logistics Units	
	Commando Logistic Regiment RM	1
7	Special Boat Squadron	
	Squadron RM	1
8	Assault Squadrons	3

Table 4. Naval Aircraft

Serial	Role	Aircraft	Squadron No.
1	Air Defence/Attack	Sea Harrier FRS1	800 801
		Sea Harrier FRS1/ Harrier T4	899
2	Anti Submarine	Sea King Mk 2/5	810 814 819 820 824 826 706
		Wasp	829(ii)
3	Anti Submarine/ Anti Ship	Lynx Mk 2/3	815(ii) 702
4	Airborne Early Warning	Sea King Mk 2 (AEW)	849(ii)
5	Commando Assault	Sea King Mk 4	846 707
		Wessex Mk 5	845
6	Aircrew Training	Gazelle Mk 2	705
		Jetstream Mk 2/3	750
		Chipmunk	-
7	Fleet Support/Search and Rescue	Wessex Mk 5	771 772
8	Fleet Support	Hunter Canberra	-
9	Support	Sea Devon	-
		Sea Heron	-

Notes:

(i) All the above aircraft are declared to NATO, or could be made available in support of NATO operations.

(ii) Aircraft in these squadrons are deployed in flights of single and multiple aircraft.

ANNEX D

STRENGTH OF THE ARMY

Major Combat Headquarters and Combat Arm Numbers (i)

	Regular Army				TA
	BAOR	Berlin	UK	Elsewhere	UK
Headquarters					
Corps Headquarters	1				
Armoured Divisional Headquarters	3				
Infantry Divisional Headquarters			1		
Brigade Headquarters	10(ii)	1	16		
Field Force Headquarters				1(iii)	
Armour					
Armoured Regiments	11		3(iv)		
Armoured Reconnaissance Regiments	2		3		5(v)
Artillery (vi)					
Field Regiments	8		6(vii)		2
Heavy Regiments	1				
Missile Regiments	1				
Depth Fire Regiments (incl locating capability)	2				
Air Defence Regiments	2		1		4
Locating Regiments			1		
Engineers					
Engineer Regiments	5		5	1(viii)	7
Armoured Engineer Regiments	1				
Amphibious Engineer Regiments	1				

	Regular Army				TA
	BAOR	Berlin	UK	Elsewhere	UK
Infantry					
Battalions	13	3	31	3	40
Gurkha Battalions			1	5	
Special Air Service					
Regiments			1		2
Army Air Corps (ix)					
Regiments	3		1		
Honourable Artillery Company					
Regiments					1

Notes:

(i) Normal deployment locations as at 1 April 1986 are shown; no account is taken of temporary or emergency deployments.

(ii) Includes an Artillery Brigade Headquarters and a Signals Brigade Headquarters.

(iii) Gurkha Field Force.

(iv) Includes two training regiments at Bovington and Catterick.

(v) Two armoured reconnaissance regiments and three light reconnaissance regiments.

(vi) Artillery unit equipments consist of:

Field Regiments - depending on role, 105 mm light guns, 105 mm Abbot self-propelled (SP) guns, 155 mm FH70 towed howitzers and 155 mm M109 SP guns;

Heavy Regiment - 8 inch howitzers;

Missile Regiment - Lance;

Depth Fire Regiments - 175 mm self-propelled guns;

Air Defence Regiments - Rapier and Blowpipe/Javelin.

(vii) Includes one Commando regiment, one parachute regiment and the Royal School of Artillery Support Regiment.

(viii) The Queen's Gurkha Engineers.

(ix) Aircraft types are:

Beaver, Alouette, Scout, Lynx, Gazelle.

ANNEX E

STRENGTH OF THE ROYAL AIR FORCE

Front Line Units (i)

Serial	Role	Aircraft or Equipment	UK	RAF Germany
1	Strike/Attack	Tornado GR1	9 Squadron 27 Squadron 617 Squadron	15 Squadron 16 Squadron 17 Squadron 20 Squadron 31 Squadron 14 Squadron
		Buccaneer	12 Squadron 208 Squadron	
2	Offensive Support	Harrier	1 Squadron	3 Squadron 4 Squadron (v)
		Jaguar	6 Squadron 54 Squadron	
3	Maritime Patrol	Nimrod MR	42 Squadron 120 Squadron 201 Squadron 206 Squadron	
4	Reconnaissance	Canberra PR9	1 PRU (ii)	
		Jaguar	41 Squadron	2 Squadron
5	Air Defence	Lightning	5 Squadron (iii) 11 Squadron (iii)	
		Phantom FG1	43 Squadron 111 Squadron (iii)	
		Phantom FGR2	29 Squadron 56 Squadron (iii)	19 Squadron (iii) 92 Squadron (iii)
		Phantom F4J	74 Squadron (iii)	
		Bloodhound	25 Squadron (iii) 85 Squadron (iii)	

Serial	Role	Aircraft or Equipment	UK	RAF Germany
		Rapier	27 Squadron RAF Regiment (iii) 48 Squadron RAF Regiment (iii)	16 Squadron RAF Regiment (iii) 26 Squadron RAF Regiment (iii) 37 Squadron RAF Regiment (iii) 63 Squadron RAF Regiment (iii)
		Skyguard	2729 (City of Lincoln) Squadron R Aux AF (iv)	
6	Airborne Early Warning	Shackleton	8 Squadron	
7	Air Transport	VC10	10 Squadron	
		Hercules	24 Squadron 30 Squadron 47 Squadron 70 Squadron	
		HS125/Andover	32 Squadron	
		Andover/Wessex Helicopters	The Queen's Flight	
		Pembroke		60 Squadron
		Chinook Helicopters	7 Squadron	18 Squadron
		Wessex Helicopters	72 Squadron	
		Puma Helicopters	33 Squadron	230 Squadron
8	Tankers	Victor K2	55 Squadron 57 Squadron	
		VC10K2/3	101 Squadron	
		Tristar K1	216 Squadron	
9	Search and Rescue	Sea King Helicopters	202 Squadron	

Serial	Role	Aircraft or Equipment	UK	RAF Germany
		Wessex Helicopters	22 Squadron	
10	Ground Defence	Light Armour/ Infantry Weapons	2 Light Armour Squadron RAF Regiment 15 Light Armour Squadron RAF Regiment 51 Light Armour Squadron RAF Regiment 58 Light Armour Squadron RAF Regiment 2503 (County of Lincoln) Field Squadron R Aux AF Regiment (iv) 2620 (County of Norfolk) Field Squadron R Aux AF Regiment (iv) 2622 (Highland) Field Squadron R Aux AF Regiment 2623 (East Anglian) Field Squadron R Aux AF Regiment 2624 (County of Oxford) Field Squadron R Aux AF Regiment 2625 (County of Cornwall) Field Squadron R Aux AF Regiment	1 Squadron RAF Regiment

Notes:

(i) This table shows normal deployment locations as at 1 April 1986. All front-line aircraft, together with certain training and communications aircraft, are assigned to NATO or could be made available in support of NATO operations. Additionally, at 1 April 1986 normal deployment outside the NATO area was as follows:

a. Falkland Islands. Phantoms, Hercules, Chinook helicopters, Sea King helicopters and Rapier. Hercules aircraft are also deployed to Ascension Island for the Falklands airbridge.

b. Cyprus. One squadron of Wessex helicopters and one RAF Regiment squadron.

c. Hong Kong. One squadron of Wessex helicopters.

d. Belize. One flight of Harriers, one of Puma helicopters and a half squadron of RAF Regiment.

(ii) PRU - Photo Reconnaissance Unit.

(iii) These are forces under NATO command.

(iv) R Aux AF - Royal Auxiliary Air Force.

(v) Also has Reconnaissance role.

ANNEX F

AIRCRAFT ACCIDENTS

Accidents involving loss or serious damage to aircraft of the three services 1 January 1985 to 31 December 1985.

			Service Casualties		Civilian Casualties	
Date	Aircraft	Parent Service	Killed	Serious Injury	Killed	Serious Injury
24 Jan	Lynx	Army				
30 Jan	Hawk	RAF	1			
7 Feb	Harrier	RN	2			
18 Feb	Harrier	RAF	1		1	
5 Mar	Wasp	RN				
6 Mar	Lightning	RAF	1			
12 Mar	Scout	Army	1		1	
25 Mar	Bulldog	RAF	1			
1 Apr	Jaguar	RAF			1	
17 Apr	Hawk	RAF				
17 Apr	Sea Fury	RAF				
14 Jun	Buccaneer	RAF	1			
21 Jun	Sea King	RN	1		3	
27 Jun	Sea King	RN	4			
9 Jul	Jaguar	RAF				
8 Aug	Canberra	RAF				
18 Sep	Scout	RN				
19 Sep	Lightning	RAF			1	
26 Sep	Hawk(2)	RAF				
7 Oct	Jaguar(2)	RAF	1			
25 Oct	Wessex	RAF	1		3(i)	
8 Nov	Sea King	RN				
19 Nov	Harrier	RAF				
12 Dec	Tornado	RAF	2			

Notes:

(i) includes 2 Army personnel

ANNEX G

DEFENCE INDUSTRY

UK-based contractors paid £5 million or more by MOD in 1984/85

Over £100 Million

British Aerospace plc (Aircraft)
British Aerospace plc (Dynamics)
British Petroleum Co plc
British Shipbuilders
Esso UK plc
Ferranti plc
The General Electric Co plc
The Plessey Co plc
Racal Electronics plc
Rolls Royce Ltd
Royal Ordnance plc
Shell Transport and Trading Co plc
Thorn-EMI plc
Westland plc

£50-100 Million

Austin Rover Group Ltd
British Railways
Dowty Group
General Motors Ltd
Hunting Associated Industries plc
Lucas Industries plc
Marshall of Cambridge (Engineering) Ltd
Pilkington Bros plc

£25-50 Million

British Airways
British Telecommunications
Cossor Electronics Ltd
Guest, Keen and Nettlefolds plc
Other UK Government Departments
Petrofina (UK) Ltd
Philips Electronic & Associated Industries Ltd
Short Bros Ltd
Smiths Industries
STC plc

£10-25 Million

The British and Commonwealth Shipping Co plc
BET plc
British Manufacture and Research Co Ltd
BTR plc
Cable and Wireless plc
Caltex (UK) Ltd
Cambridge Electronic Industries
Chloride Group plc
DRG plc
Dunlop Holdings
Ferguson Industrial Holdings plc
Flight Refuelling (Holdings) plc
Hawker Siddeley Group plc
Mobil Holdings
Northern Engineering Industries
RCA Ltd
Remploy Ltd
Schlumberger Measurement and Control UK Ltd
Singer Co UK Ltd
Tate and Lyle plc
The Throgmorton Trust plc
Total Oil (GB) Ltd
Trafalgar House plc
United Scientific Holdings
Vantona Viyella plc
Vickers plc
The Weir Group plc

£5-10 Million

Acrow plc
Ameeco (Hydrospace) Ltd
BICC plc
Computing Devices Ltd
Conoco (UK) Ltd
Courtaulds plc
Cranfield Institute of Technology
CT Group Ltd
David Brown (Holdings) Ltd
Fisher Controls Ltd
Goodyear Tyre & Rubber Co (GB) Ltd
Harland and Wolff Ltd
Hewlett Packard Ltd
Hillsdown Holdings Ltd
Imperial Continental Gas Association
Ingram Maritime Co Ltd
Inchcape plc
International Thompson Organisation plc
ITM (Offshore) Ltd

£5-10 Million (Contd)

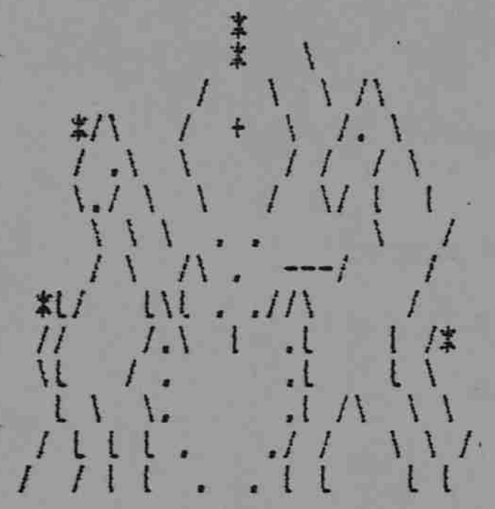
Louis Newmark plc
Marlborough Communications Ltd
Martin Baker Aircraft Co Ltd
Massey Ferguson Holdings Ltd
Paccar UK Ltd
Portsmouth Aviation Ltd
Rank Organisation plc
RFD Group plc
Ropner plc
Saft (United Kingdom) Ltd
Siemens Ltd
Systems Designers International plc
Taddale Investment plc
Volvo BM UK Ltd
Western Scientific Instruments Ltd
Wilkinson Sword Group Ltd
Yarrow Ltd

Notes:

1. In previous years, suppliers of defence equipment only have been listed. This year, the Table also includes suppliers of food, fuels and services.

2. Within each financial bracket, contractors are listed in alphabetical order.

DRAFT DATED 26 MARCH 1986



DIEU ET ✱ MON DROIT

STATEMENT ON THE
DEFENCE ESTIMATES 1986

STATISTICAL VOLUME

Presented to Parliament by the Secretary of State for Defence by Command of Her Majesty 1986

LONDON
HER MAJESTY'S STATIONERY OFFICE

Contents

A publication of the Government Statistical Service

Government Statistical Service

A service of statistical information and advice is provided to the Government by specialist staffs employed in the statistical divisions of the individual Departments. Statistics are made generally available through their publications and further information and advice on them can be obtained from the Departments concerned.

General notes on the tables

Symbols

–	nil or less than half the final unit shown
..	not available
*	not applicable
nes	not elsewhere specified

Sources

Except where otherwise stated all information is from records maintained by the Ministry of Defence for departmental purposes.

Rounding

In many of the tables the figures are individually rounded and thus may not sum precisely to the totals shown.

Introduction

Some reorganisation of the information in this Volume has been carried out this year. The changes, in the order in which they appear, are identified in the following paragraphs.

Last year Volume 1 included a table giving some details of elements of the UK merchant fleet considered to be available for requisition by MOD in an emergency. The inclusion of this table was recommended by the House of Commons Defence Committee in its report on the 1984 White Paper. A similar table is now included as Table 1.3; the intention is to retain this as a statistical record in Volume 2 where it more properly belongs.

The ordering of the tables in Chapter 2 has been changed in an attempt to emphasise the size of the Defence budget in relation to other spending from the national income. Some of the more detailed figures from the United Kingdom National Accounts have however been dropped. (The only other change in this section may be a new presentation of defence spending at constant prices which is still under consideration).

The revised table on research and development expenditure (3.2) has combined the previous two tables on these topics and now gives more detail on research and development separately.

The most noticeable effect of the reorganisation referred to above is in the manpower section. It will be seen that the Service and civilian manpower sections of previous versions have been combined.

Where possible both figures are now presented in the same table. In a number of cases, it has been impossible to give combined figures on the same basis for the period of years covered by the tables, so tables of a similar kind have been grouped closely together.

The objectives of these changes is to enable manpower to be looked upon as a single resource more conveniently. In the past, the way in which information has been collected and presented has developed quite separately. It is hoped that in the future, the two types of information can gradually be made more compatible.

Chapter 5 deals with health, education and accommodation of the Services. These topics are collectively regarded as welfare matters, hence the change of chapter title. The table of social expenditure has been moved to the beginning by way of an introduction to this chapter. Three tables have been moved into this chapter from the previous Service manpower chapter. These tables deal with Service pensions (5.19) and the distribution of the numbers married by age and rank (5.11 and 5.12). The ordering of the tables in this chapter has been changed so as to incorporate the extra tables in as logical a sequence as possible. They are arranged into groups which deal respectively with: medical education, accommodation and general welfare matters. The details of sickness, medical discharge and deaths have been modified and reduced. The male/female splits have been removed for individual causes and separate Service figures are now given in all three tables make them more consistent. The bibliography gives a point of contact from which the fuller information previously published in this volume may be obtained.

1. Summary

General summary. In table 1.1 the year headings have been chosen to give the maximum amount of coverage common to all of the tables represented. This means that in some cases, information for additional years may be obtained from the tables referenced. In all cases, the referenced tables should be consulted for definitions used and for more details of coverage than can be given in a summary table of this kind.

Summary of the Armed Forces. Table 1.2 presents a summary of the units shown in Annexes C, D and E in Volume 1. It should be noted that the table gives only the number of units involved. The number of personnel or the amount of equipment may vary according to the role assigned.

UK Merchant Fleet: principal categories required for defence purposes. Figures from Lloyd's Register of Shipping Statistical Tables were included in last year's Volume 1 as an interim measure, on the number of ships, in different categories of the merchant fleet, which could be considered as being available for defence purposes. A breakdown of supply numbers more closely related to defence requirements has now been adopted, and will be used in future. It is not practicable to provide comparative historical data. An estimate of the availability of manpower is given in Table 1.4.

General Summary

	Table[1]	1981	1982	1983	1984	1985
		£ million				
Defence Spending (Outturn)	2.3	11,182	12,607	14,412	15,487	17,122
expenditure on personnel		4,556	5,058	5,455	5,726	5,983
expenditure on equipment		4,885	5,638	6,297	6,939	7,838
other costs		1,741	1,910	2,659	2,822	3,302
Defence Trade and Production						
Visible trade						
exports of identifiable equipment	2.8 (a)	613	904	919	825	813
imports of identifiable equipment	2.9 (a)	137	199	207	253	246
Invisible trade						
total debits	2.7	1,021	1,183	1,452	1,254	1,453
total credits		119	114	104	148	159
net balance		−902	−1,068	−1,348	−1,106	−1,293
Meteorological Office						
net expenditure	6.7	27	30	34	41	42
Royal Dockyards						
cost of completed work	3.6	458	457	608	538	532
Manpower		Thousands				
Service:						
UK Regular Forces	4.4 (b)	334	328	321	326	326
Locally entered	4.7 (b)	10	10	10	10	10
Regular reserves	4.6 (b)	196	196	193	198	206
Volunteer reserves	4.6 (b)	84	86	87	86	88
Strength changes in year: UK Regular Forces						
Total recruitment	4.15	50	23	22	37	35
Total outflow	4.17	38	29	29	32	35
Civilian						
MOD Total	4.9 (b)	265	252	243	232	206
Non-industrial		134	119	116	114	105
Industrial		141	133	127	119	101
UK based		230	217	209	199	174
Locally engaged		35	35	34	33	32
Energy Consumption		Petajoules				
Total consumption in year	3.5	135.8	136.5	154.2	150.9	139.3
Health, Education and Accommodation		Number				
Number of hospitals: UK	5.3 (c)	11	11	10	9	9
Overseas		10	10	11	11	10
Average number of beds: UK	5.3 (a)	2,290	2,264	2,156	2,056	2,048
Overseas		1,247	1,240	1,254	1,260	1,255
Service Children's Education						
Number enrolled in Autumn term	5.10	33,300	32,500	31,000	29,200	28,500
Married quarters UK	5.13(d)	88,700	87,500	87,000	85,900	85,300
Overseas		46,400	46,000	46,000	46,000	47,600
Freehold land and foreshore (thousand hectares)	5.16(b)	233	231	229	228	224
Search and Rescue						
Total number of incidents	6.2 (a)	1,097	1,111	1,146	1,145	1,129

1. Numbers in this column refer to the main tables where more detailed notes and definitions are given. Unreferenced numbers relate to figures for the financial year ending in March of the year in the column heading. The alphabetic references are:

(a) for calender year figures; (b) for April figures; (c) for December figures; (d) for January figures;

1.2 Summary of the Armed Forces[1]
1 April[2]

Number

	Unit	1981	1982	1983	1984	1985	1986
Front line units[3]							
Royal Navy[4]							
Submarines	Vessels	22	22	21	22	24	26
Carriers and assault ships	Vessels	3	3	4	4	4	4
Destroyers and frigates	Vessels	48	49	55	52	46	47
Mine counter-measure	Vessels	32	33	36	34	32	40
Patrol ships and craft	Vessels	22	21	25	31	29	39
Fixed wing aircraft	Squadrons	3	3	3	3	3	3
Helicopters	Squadrons	14	15	13	12	14	14
Royal Marines	Commandos	3	3	3	3	3	3
Regular Army							
Royal Armoured Corps	Regiments	19	19	19	19	19	19
Royal Artillery	Regiments	22	22	22	22	22	22
Royal Engineers[5]	Regiments	11	11	12	12	13	13
Infantry[5]	Battalions	56	57	56	56	56	56
Special Air Service	Regiments	1	1	1	1	1	1
Army Air Corps	Regiments	6	6	4	4	4	4
Territorial Army							
Royal Armoured Corps	Regiments	2	2	5	5	5	5
Royal Artillery	Regiments	5	5	5	5	5	6
Royal Engineers	Regiments	7	7	7	7	7	7
Infantry	Battalions	38	38	35	35	35	40
Special Air Service	Regiments	2	2	2	2	2	2
Honourable Artillery Company	Regiments	1	1	1	1	1	1
Royal Air Force							
Strike/attack	Squadrons	15	12	10	11	11	11
Offensive support	Squadrons	5	5	5	5	5	5
Air defence	Squadrons	9	9	9	8	9	9
Maritime patrol	Squadrons	4	4	4	4	4	4
Reconnaissance	Squadrons	5	3	2	3	3	3
Airborne early warning	Squadrons	1	1	1	1	1	1
Transport[6]	Squadrons	9	10	11	10	11	12
Tankers	Squadrons	2	2	3	3	3	4
Search and rescue	Squadrons	3	3	3	2	2	2
Surface to air missiles	Squadrons	8	8	8	8	8	8
Ground defence	Squadrons	6	6	6	5	5	5
Royal Auxiliary Air Force							
Ground Defence	Squadrons	3	3	6	6	6	6
Air Defence Guns	Squadrons	—	—	—	—	—	1
Support units							
Royal Navy and Royal Fleet Auxiliary Service							
Support ships	Vessels	3	2	2	2	2	3
Hospital ships	Vessels	1	1	1	1	1	1
Training ships	Vessels	7	5	7	6	4	4
Survey ships	Vessels	12	11	11	12	8	7
Tankers[7]	Vessels	12	14	10	11	14	14
Replenishment ships[7]	Vessels	3	3	3	4	4	4
Support and Supply ships[7]	Vessels	4	3	1	1	2	2
Landing ships, logistic[7]	Vessels	5	5	6	6	5	6
Forward repair ships[7]	Vessels	—	—	—	—	1	1
Royal Marines							
Logistic unit	Regiments	1	1	1	1	1	1

1. This table shows a summary of the units shown in Annexes C, D and E in Volume 1. The number of personnel and the amount of equipment in each vessel, regiment, and battalion and squadron vary according to the role currently assigned.
2. Figures for the current year are provisional.
3. This section of the table shows the number of units which comprise the 'teeth' elements of the Armed Forces and excludes supporting units.
4. Excludes vessels undergoing major or restorative refit, conversion, or on stand-by etc.
5. Includes Gurkhas.
6. Includes helicopters.
7. Ships of the Royal Fleet Auxiliary Service.

1.3 UK Merchant fleet: principal categories required for defence purposes[1]

31 December

	1984	1985
	Number of UK registered vessels available within required time limits	
Type of Vessel:		
Large stern trawlers	17	12
Other fishing trawlers offshore support etc	387	365
Product tankers	94	87
Break-bulk general cargo vessels	177	177
Large passenger liners	3	3
Roll on-Roll off ferries, passenger and freight	70	70
Salvage tugs	102	106

1. Figures from Lloyds Register of Shipping Statistical Tables were included last year as an interim measure. A breakdown of supply numbers more closely related to defence requirements has now been adopted, and will be used in future. It is not practicable to provide comparative historical data.

LOG SEC MATO / PLANS

INQUIRIES: 01 218 7241

1.4 UK Merchant Fleet: Number of Seafarers[1]

	1981	1982	1983	1984	1985
Officers	27,857	25,104	20,635	17,646	15,023
Ratings	27,422	25,224	22,624	20,251	18,595
Misc and seasonal	800	421	387	407	404
Cadets	5,197	4,022	2,732	1,625	1,016

1. These numbers are based upon the General Council of British Shipping (GCBS) register for the years indicated as available for employment in National Maritime board (NMB) agreements with the council's members. They include some foreign seafarers on NMB agreements and some seafarers on non-UK flag vessels registered with the GCBS for manning purposes. The totals in these two categories are not known but estimated at 5% of the current total. The figures do not include UK seafarers not employed on NMB agrrements, currently estimated at 10,000, a figure thought not to have varied much in recent years. The figures for 1985.are provisional.

INQUIRIES : 01 218 7241

2. Finance and trade

Functional analysis of the Defence Budget. Table 2.5 contains an attribution of all defence expenditure included in the Defence Budget to various functional categories known as programme elements. These programme elements are combined into major groupings of expenditure, which correspond with major fields of defence activity, called programmes. The programmes are shown as bold sub-headings in the table. Similar analyses of Service and civilian manpower strengths are also undertaken and the results of these are given in tables 4.3A and 4.3B. The functional attribution of Royal Navy expenditure and manpower was reviewed and improved in 1983–1984. As a result, subsequent figures are not fully comparable with those shown for earlier years.

Industrial analysis of Defence expenditure in the United Kingdom: estimated allocation by commodity group. The figures shown in Table 2.6 are based in part on an analysis of contract payments. Each contract let is allocated to a particular industry, as defined in the *Standard Industrial Classification*, according to the nature of the goods or services to be supplied. All payments against the contract are then recorded to that industry, irrespective of the actual industry to which the establishment supplying the goods may be classified in other official statistics. Non-contract expenditure is allocated on the basis of its Vote designation.

Defence balance of payments: invisible transactions. Table 2.7 covers transactions by the British Government in relation to defence and includes receipts from the United States Government in respect of forces stationed in the United Kingdom. The figures for local defence expenditure represent the drawings of foreign exchange necessary to support our forces overseas. They take no account of offsetting factors such as the reduction in imports to the United Kingdom which result from the stationing of forces overseas, which would be accounted for in the UK balance of payments generally. In addition estimates are made of non-governmental transactions relating to defence. Official payments by the United States Forces in the United Kingdom to British firms and agencies other than central government plus private expenditure by United States personnel are expected to amount to about £500 million in 1986–87.

Exports and imports of defence equipment. Tables 2.8 and 2.9 give details of certain exports and imports of defence equipments which can be identified through the *Customs and Excise Tariff* at free on board (fob) and cost, insurance freight (cif) prices respectively. The Society of British Aerospace Companies compiles statistics on the sales of goods and services by its member companies from which it is possible to identify the exports of other aerospace products for military purposes, most of which cannot be separately identified in the Customs statistics. To give a more complete picture of the exports of defence equipment these figures, together with information supplied by individual electronics and motor vehicle manufacturing companies are shown in the lower section of Table 2.8. It should be noted that the figures in Table 2.8 refer to actual deliveries of defence equipment. As such they are on a different basis from the figure given for Defence Sales in Volume 1 which relates to new contracts recorded.

Glossary of financial terms

Appropriation Accounts are prepared after the end of the financial year and record the actual payments and receipts.

Appropriations-in-aid are receipts used to offset expenditure. They generally arise from the provision of repayment services, the sale of surplus goods or of equipment purchased on behalf of the Defence Sales organisation.

Defence budget consists of all the expenditure for which the Secretary of State for Defence is responsible. It comprises the net total of voted expenditure by the Ministry of Defence and by the Property Services Agency on behalf of the Ministry of Defence which are classified as direct public expenditure for the purpose of public expenditure white papers and the national accounts.

Defence Programme comprises the Defence budget (q.v.) plus external financing of Royal Ordnance plc.

Estimates, Supply Estimates are prepared before the beginning of the financial year and give the proposed expenditure. These are then voted by Parliament.

Estimates prices are the prices used in the Estimates presented to Parliament. They are forecasts of the prices expected to rule when the expenditure occurs.

Outturn, forecast outturn describes actual expenditure or estimates of it made on the basis of incomplete information i.e. before the Appropriation Accounts are prepared.

Outturn prices are the prices of the period when the expenditure occurs, also described as current prices.

Public Expenditure Survey is the annual review of public expenditure plans undertaken by the Government.

2.1 Defence budget and related expenditure[1]

£ million

	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Defence Votes	10,668.0	12,138.3	13,945.4	15,791.5	16,817.8	17,868.9	18,485.9
Attributions from other votes[2]	109.2	126.7	138.1	173.1	204.2	177.9	–
Other adjustments[3]	7.3	8.8	7.1	8.0	11.2	11.7	–6.4
Defence budget	10,784.5	12,273.8	14,090.6	15,972.6	17,033.2	18,058.5	18,479.5
Military aid to overseas countries	6.9	11.4	14.9	14.6	13.0	13.9	13.6
Supporting services[4]							
Accommodation (maintenance and rental)[5]	60.1	66.0	62.6	†	†	†	†
Home publicity[5]	10.7	7.5	7.2	7.1	†	†	†
Civil superannuation	208.3	248.8	254.1	333.0	362.3	347.8	384.9
Rates[6]	77.9	92.7	119.2	78.9	56.7	81.3	123.2
Services by National Audit Office	1.7	2.6	2.7	3.2	4.4	5.0	4.2
Services by Treasury Solicitor[7]	2.0	2.3	2.7	2.6	2.7	2.7	2.7
Valuation services by Inland Revenue[7]	..	0.1	0.1	0.1	0.1	0.2	0.2
Various other services	3.2	1.8	1.9	1.8	1.9	1.9	1.6
Meteorological services in Defence budget	–36.5	–34.2	–36.7	–34.5	–41.3	–43.9	–41.8
Other adjustments[8]	–4.2	–4.2	14.8	14.0	–2.1	–	–
Defence expenditure (NATO and National Accounts definitions)	11,112.6	12,668.3	14,533.7	16,393.5	17,430.8	18,467.4	18,968.1

1. The figures given in the table are based on the *Supply Estimates* and reflect the price levels of *Supply Estimates* for the years in question.
2. These represent Property Service Agency staff costs and other PSA expenditure for which the Secretary of State for Defence is responsible. From 1985–86, consultants' fees in respect of major works are included in Defence Votes totals. From 1986–87, all PSA expenditures are included in Defence Votes totals.
3. These cover those Appropriations-in-Aid and expenditure which are included in the Defence Votes but not classified as public expenditure.
4. These are the Defence portion of services performed by certain government departments for government generally.
5. A dagger † against these items indicates that they have been included in the Defence budget for the years shown.
6. Rates on the Defence portion of the UK civil estate are included in the Defence budget from 1983-84.
7. Prior to 1981-82 included under 'Various other services'.
8. These adjustments are necessary to give the standard NATO and National Accounts definitions of defence expenditure, which have been identical since 1979–80.

2.2 Defence and other spending from the National Income

	1979	1980	1981	1982	1983	1984
	£ thousand million					
At market prices:						
Final expenditure on goods and services	251.0	287.7	314.0	344.3	377.8	411.2
Consumers expenditure	118.2	137.0	152.3	166.6	182.2	194.7
General government[1] final consumption[2]	38.9	48.9	55.4	60.4	65.7	69.7
of which:						
Defence	8.9	11.3	12.6	14.4	15.6	16.8
National Health Service	8.7	11.3	13.0	13.6	15.4	16.2
Education	8.0	9.9	11.1	12.0	12.8	13.6
Gross domestic fixed capital formation	36.9	41.6	41.4	45.4	49.0	55.3
Increase in stocks and work in progress	2.2	–2.9	–3.0	–1.2	0.8	–0.2
Exports of goods and services	55.0	63.1	67.9	73.1	80.0	91.7
Less Imports of goods and services	–54.7	–57.7	–60.4	–67.5	–77.2	–91.9
Gross Domestic Product	196.4	230.0	253.7	276.8	300.6	319.4
	Per cent					
Total Defence expenditure as a percentage of Gross Domestic Product *at market prices*	4.6	5.0	5.0	5.3	5.3	5.3

Source: United Kingdom National Accounts (1985 Edition)

1. General government consists of central and local government excluding expenditure of Government Trading Bodies.
2. Final consumption is current expenditure plus an imputed charge for the consumption of non-trading capital and equals total expenditure less expenditure on grants, subsidies and all other transfers, and expenditure on fixed assets and stocks.

2.3 Principal headings of the Defence budget

	Outturn					Estimates[1]	
	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
	£ million						
Total expenditure[2]	11,182	12,607	14,412	15,487	17,122	18,059	18,479
Expenditure on personnel	4,556	5,058	5,455	5,726	5,983	6,271	6,721
of the Armed Forces	2,460	2,728	2,914	3,076	3,236	3,390	3,678
of the retired Armed Forces	503	624	680	777	828	906	979
of civilian staff	1,593	1,706	1,861	1,873	1,919	1,975	2,065
Expenditure on equipment	4,885	5,638	6,297	6,939	7,838	8,355	8,250
Sea	1,513	1,624	1,730	1,849	2,228	2,451	2,586
Land	904	1,101	1,353	1,475	1,638	1,847	1,712
Air	2,059	2,458	2,640	3,057	3,474	3,506	3,364
Other	410	456	574	558	498	551	588
Other expenditure	1,741	1,910	2,659	2,822	3,302	3,433	3,508
Works, buildings and land	623	664	832	1,067	1,271	1,441	1,440
Miscellaneous stores and services	1,118	1,246	1,827	1,754	2,031	1,992	2,068
Total expenditure at constant (1984–85) prices[3]	15,100	15,314	16,246	16,472	17,122	17,197	16,840 962
Outturn figures adjusted for carry–forward	15,100	15,314	16,246	16,739	17,003	17,197	~~16,840~~ 962
of which estimated Falklands	—	—	885	678	644	526	403 6
	Per cent						
Percentage shares of the total expenditure							
Expenditure on personnel	*40.7*	*40.1*	*37.8*	*37.0*	*34.9*	*34.7*	*36.4*
the Armed Forces	*22.0*	*21.6*	*20.2*	*19.9*	*18.9*	*18.8*	*19.9*
Retired Armed Forces	*4.5*	*4.9*	*4.7*	*5.0*	*4.8*	*5.0*	*5.3*
of civilian staff	*14.2*	*13.5*	*12.9*	*12.1*	*11.2*	*10.9*	*11.2*
Expenditure on equipment	*43.7*	*44.7*	*43.7*	*44.8*	*45.8*	*46.3*	*44.6*
Sea	*13.5*	*12.9*	*12.0*	*11.9*	*13.0*	*13.6*	*14.0*
Land	*8.1*	*8.7*	*9.4*	*9.5*	*9.6*	*10.2*	*9.3*
Air	*18.4*	*19.5*	*18.3*	*19.7*	*20.3*	*19.4*	*18.2*
Other	*3.7*	*3.6*	*4.0*	*3.6*	*2.9*	*3.0*	*3.2*
Other expenditure	*15.6*	*15.2*	*18.5*	*18.2*	*19.3*	*19.0*	*19.0*
Works, buildings and land	*5.6*	*5.3*	*5.8*	*6.9*	*7.4*	*8.0*	*7.8*
Miscellaneous stores etc	*10.0*	*9.9*	*12.7*	*11.3*	*11.9*	*11.0*	*11.2*

1. Figures in these columns are derived from the original *Supply Estimates* for the years quoted. Current forecast outturn at constant (1984–85) prices is £17,195 million.
2. Outturn and Estimates are given at outturn and Estimates prices respectively.
3. The 1978–79 unadjusted outturn at 1984–85 prices is £14,173 million or £14,339 million if adjusted for changes in the definition of defence expenditures over the period.

2.4 Works, buildings and land: Departmental responsibilities

£ million

	Outturn					Estimates	
	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Total defence budget expenditure[2]	623	664	832	1,067	1,271	1,441	1,440
MOD net total[3]	–63	–73	–51	–51	–6	–19	–33
PSA net total	686	737	883	1,118	1,277	1,460	1,473
New works gross total	348	316	394	584	707	856	838
Maintenance gross total	327	425	506	548	542	579	607
Personnel costs[4]	128	140	161	209	251	282	288
Appropriations-in-aid total	–117	–144	–177	–223	–222	–257	–260

1. Figures in this column are derived from the original *Supply Estimates* for that year.
2. Outturn and Estimates are given at outturn and Estimates prices respectively.
3. Including accommodation charges as appropriate.
4. Includes the costs of PSA and DOE staff and consultants and overheads attributable to defence work. From 1985–86, consultants' fees in respect of major works are included in the new works total.

25 Functional analysis of the Defence budget[1]

£ million

	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Total expenditure	10,785	12,274	14,091	15,973	17,033	18,059	18,479
Nuclear strategic force	165	269	327	382	384	509	658
Navy general purpose combat forces[2]	1,461	1,663	1,861	2,149	2,493	2,505	2,625
Submarines	253	339	463	468	322	408	426
Aircraft and ASW carriers	23	26	71	140	94	78	74
Amphibious forces	44	52	52	60	78	81	82
Cruisers	98	95	—	—	—	—	—
Destroyers and frigates	537	594	636	722	691	738	792
Mine counter-measures vessels	75	90	150	159	137	145	147
Other vessels	206	210	204	285	466	452	460
Aircraft	158	175	198	242	312	291	304
Fleet headquarters	18	23	26	24	123	119	118
Overseas shore establishments	49	59	61	49	61	37	48
Naval bases and operational support	..	..	..	..	209	156	174
European theatre ground forces	1,746	1,881	2,194	2,445	2,626	2,764	2,814
British Army of the Rhine	1,227	1,302	1,512	1,700	1,796	1,899	1,882
Berlin[3]	27	27	38	42	47	49	52
Home forces	492	552	644	703	783	816	880
Other Army combat forces	105	44	41	191	197	205	204
Mediterranean	64	56	62	62	68	81	84
Hong Kong and other Far East	19	–35	–36	1	–8	–27	8
South Atlantic	—	—	—	105	113	126	82
Other areas	22	23	15	23	24	25	30
Air Force general purpose forces	1,865	2,240	2,729	3,207	3,409	3,702	3,687
Air defence	199	287	453	579	702	730	817
Offensive support	68	76	83	118	116	202	320
Strike/attack/reconnaissance	620	785	1,005	922	775	817	802
Maritime aircraft	85	108	143	139	135	162	131
Transport aircraft	168	168	164	231	221	254	226
Tanker aircraft	32	43	42	128	200	135	93
Civil charter	13	14	18	17	30	37	18
Other aircraft	104	100	112	122	135	132	245
Operational stations	268	279	328	418	464	526	428
Headquarters	50	57	54	68	76	79	80
General support	258	323	327	465	555	628	527
Reserve and Auxiliary formations	213	253	287	312	357	360	358
Navy	14	12	14	15	16	14	18
Army	182	222	255	279	316	316	323
Air Force	17	19	18	18	25	30	17
Research and development[4]	1,479	1,676	1,833	1,896	2,097	2,304	2,327
Ship construction and underwater warfare	209	298	287	328	390	424	429
Ordnance and other Army	120	150	164	177	182	188	138
Military aircraft	509	498	596	556	508	524	648
Guided weapons	183	223	235	245	314	362	311
Other electronics	231	259	284	282	340	397	427
Other research and development	227	248	267	308	363	409	374
Training	975	1,097	1,162	1,230	1,310	1,294	1,257
Service colleges	71	78	75	85	99	86	100
Navy	311	358	418	443	407	395	391
Army	377	429	420	428	527	538	514
Air Force	216	232	249	274	277	275	252
Equipment support and associated facilities in UK	705	814	869	1,040	931	917	983
Royal Dockyards	108	114	125	128	113	107	125
Other repair and maintenance	218	257	272	401	348	319	304
Storage and supply	289	337	357	403	359	394	456
Quality assurance	90	106	115	108	111	97	98
War and contingency stocks	224	326	403	410	549	535	405
Navy	73	94	110	161	204	206	218
Army	88	145	202	165	225	198	170
Air Force	63	87	91	84	120	131	17
Other support functions	1,820	2,081	2,307	2,631	2,811	2,998	3,184
Whitehall organisations	164	195	205	222	236	248	273
Local administration communications etc in UK	666	812	903	1,080	1,184	1,309	1,380
Meteorological services[4]	36	34	37	34	41	44	41
Family and personnel services in UK	197	229	240	241	251	223	242
Service pensions	554	603	657	754	832	923	986
Other support services	203	208	265	300	262	251	262
Miscellaneous expenditure and receipts	27	–70	78	80	–131	–34	–23

1. The figures given in this table reflect the price levels of the original Estimates for the years in question.
2. Figures from 1984–85 are not fully comparable with those for earlier years. See notes on page 8.
3. Excluding expenditure covered by the Allied 'Declaration on Berlin'.
4. Meteorological research and development is included under Meteorological services.

2.6 Industrial analysis of Defence expenditure in the UK: estimated allocation by commodity group

£ million

	SIC (80) Group[1]	1979–80	1980–81	1981–82	1982–83	1983–84	1984–85
Total[2]		3,986	5,103	6,180	6,954	7,096	8,014
Solid fuels[3]	111 - 120	8	8	9	10	10	11
Petroleum products[3]	140	392	396	512	847	673	737
Gas, electricity and water supply[3]	161 - 170	111	133	160	173	182	195
Ordnance and small arms and explosives	256(part), 329	316	428	437	532	584	675
Other mechanical and marine engineering	320 - 328	221	303	278	347	410	407
Data processing equipment	330	130	158	90	77	97	104
Other electrical engineering	341 - 348, nes			131	127	119	136
Electronics	344, 345	709	1,014	1,219	1,311	1,550	1,638
Motor vehicles and parts	351 - 353	137	184	162	209	187	274
Shipbuilding and repairing	361	332	424	544	517	425	557
Aerospace	364	1,120	1,497	2,007	2,093	2,070	2,461
Instrument engineering	371 - 374	102	138	173	146	125	115
Food[3]	411 - 429	93	101	103	115	113	126
Textiles , leather goods and clothing[3]	431 - 456	78	80	73	84	93	111
Other production industries	111 - 495, nes	122	130	158	185	243	237
Other industries and services	nes	113	109	124	181	215	230

1. Code numbers relate to groups of activity headings in the 1980 revision of the Standard Industrial Classification (SIC).
2. Gross expenditure at current prices excluding VAT, pay and allowances, general administrative expenses (amounting to some £692 million in 1984-85), Property Services Agency expenditure on behalf of the Ministry of Defence and other expenditure on land, buildings and works services. See note on page 8.
3. Includes payments for goods and services purchased overseas.

2.7 Defence balance of payments: invisible transactions[1]

£ million

	Outturn					Estimates[2]	
	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Total debits	1,021	1,183	1,452	1,254	1,453	1,459	1,537
Total military services	996	1,156	1,427	1,219	1,411	1,415	1,488
Local defence expenditure	783	925	1,070	1,008	1,128	1,164	1,227
Germany	654	784	858	790	894	920	966
Other NATO area	35	57	63	75	78	80	87
Mediterranean	71	94	98	111	124	132	143
South Atlantic	—	—	9	8	3	8	3
Far East	–5	–40	4	–9	–7	–19	–12
Other areas	28	30	38	34	36	42	41
Other military services[3]	213	231	357	210	282	251	262
Transfers — contributions to international defence organisations	25	27	25	36	42	44	49
Total credits	119	114	104	148	159	222	226
Receipts from US Forces	76	72	83	126	137	178	203
Other receipts	43	43	21	22	23	44	23
Net balance (— = debit)	–902	–1,068	–1,348	–1,106	–1,293	–1,238	–1,311

1. Non-governmental transactions are excluded but details of these are given in the note on page 8. Outturn and Estimates are given at outturn and Estimates prices respectively.
2. Figures are derived from the original *Supply Estimates* for the years quoted.
3. Including contributions to infrastructure projects (net) and payments for R & D levies. Receipts for R & D levies, etc are entered as 'other receipts'.

2.8 Exports of defence equipment

£ million

	1980	1981	1982	1983	1984	1985
Identified defence equipment[1]	537	613	904	919	825	813
Armoured fighting vehicles and parts	50	112	208	195	146	127
Combat aircraft including helicopters[2]	40	71	126	184	156	71
Military non-combat aircraft including helicopters[2]	64	66	90	76	56	103
Other military aircraft and helicopters	66	–	–	–	–	–
Warships	59	4	27	7	40	4
Guns, small arms and parts	64	51	68	66	121	155
Guided weapons and missiles	25	21	61	61	52	55
Ammunition	102	175	184	145	93	85
Radio and radar apparatus	55	96	100	125	106	128
Optical equipment and training simulators	12	19	39	60	56	85
Destination of identified equipment						
NATO countries and other W Europe	111	172	185	206	175	247
Middle East and N Africa	158	239	405	506	311	284
Other Africa	121	67	97	55	201	155
Asia and Far East	134	124	192	137	108	73
Latin America and Caribbean	13	11	25	16	30	54
Estimates of additional equipment[3]	1,000	1,133	1,160	1,189	1,310	..
Airframe parts and guided weapons	325	417	343	358	448	..
Aircraft equipment	217	169	194	210	235	..
Aeroengines and parts	114	123	165	155	147	..
Space equipment	14	19	26	31	30	..
Other electronics	220	280	300	320	330	..
Road vehicles	110	125	132	115	120	..

1. Categories of equipment which can be identified through the *Customs and Excise Tariff.*
2. Newly constructed only.
3. It is not possible to distinguish these items from similar goods for civilian purposes in Customs & Excise records. These estimates are based on information from the Society of British Aerospace Companies and individual electronics and motor vehicle manufacturing companies. Exports in connection with international collaborative projects are excluded.

2.9 Imports of defence equipment

£ million

	1980	1981	1982	1983	1984	1985
Identified defence equipment[1]	147	137	199	207	253	246
Guided weapons and missiles	65	57	108	85	102	119
Ammunition	20	16	18	17	16	35
Guns, small arms and parts	32	29	27	36	33	40
Armoured fighting vehicles and parts	7	4	14	21	10	10
Radio, radar and optical equipment	21	21	28	47	38	24
Military aircraft including helicopters	2	11	3	–	54	18
Origins of identified equipment						
NATO countries and other W Europe	137	128	184	178	239	220
Asia and Far East	5	3	5	3	5	16
Others	5	6	9	25	9	10

1. Categories of equipment which can be identified through the *Customs and Excise Tariff.*

2.10 Contracts placed: analysis of contracts by type of contract

	1979–80	1980–81	1981–82	1982–83	1983–84	1984–85
	£ million					
Total value of Headquarters contracts placed[1]	5,831	4,089	4,606	6,830	8,580	8,217
	Per cent					
Percentage shares of total value						
Contracts priced by competition	14	22	23	21	22	27
Contracts priced otherwise by reference to market forces[2]	16	14	14	15	16	19
Contracts priced on estimates at outset or as soon as possible thereafter[3]	36	35	40	45	37	31
Contracts priced on actual costs with incentives to minimise costs[3]	12	7	2	3	10	11
Contracts priced on actual costs plus a percentage fee[3]	22	22	21	16	15	12
	Number					
Total number of Headquarters contracts placed[4]	89,111	76,368	66,177	85,716	82,094	96,458
	Per cent					
Percentage shares of total number						
Contracts priced by competition	14	13	14	11	12	12
Contracts priced otherwise by reference to market forces[2]	63	59	55	65	65	70
Contracts priced on estimates at outset or as soon as possible thereafter[3]	13	16	17	13	12	10
Contracts priced on actual costs with incentives to minimise costs[3]	1	1	1	1	1	1
Contracts priced on actual costs plus a percentage fee[3]	9	11	13	10	10	7

1. Including the value of amendments to existing contracts.
2. Includes use of informal competitive tendering procedures and commercial price lists (appropriately discounted).
3. Priced by reference to the Government profit formula.
4. Including the number of amendments which had financial implications for existing contracts.

3. Equipment

Equipment procurement expenditure. Table 3.1 relates to the costs of intramural and extramural research and development, the production of new equipment and spares, repairs, and the associated costs of the research and development establishments and of the personnel in the Procurement Executive managing the programme. The figures exclude intramural maintenance costs, which are not easy to identify.

Defence research and development expenditure. The figures in Table 3.2 relate to defence research and development (R&D) carried out both in MOD R&D establishments and extramurally by industry and the universities. The extramural part of table 3.2 shows for the first time research separately from development, although 1982–83 is the earliest year for which figures are available on that basis.

The table differs from the similar data on defence R&D expenditure published periodically in general articles on the subject (see, for example, *Economic Trends*, August 1985 pp 82 et seq), in that it includes payments to civil votes and central government funds, but excludes superannuation and certain support costs which now appear in *Economic Trends* to line up with the new Cabinet Office Annual Review of R&D.

Service supply systems: major stockholdings. Table 3.4 covers major stockholdings only. The Services have different operational requirements, and thus keep different proportions of their stocks within major stockholding points. Consequently, this table should not be used as a proxy for comparisons between each Service's *total* stocks.

The figures cover general, electronic, technical, engineer and accommodation stores, weapons, ammunition, petrol, oil, lubricants, food and medical supplies, stored aircraft and stored vehicles, repairable items are included. Forms, publications are excluded.

In the first year there are some differences in the make up of the figures. In particular stored vehicles, aircraft in reserve, the RAF holdings of explosives and weapons, and certain Army holdings of weapons are excluded while petrol, oil and lubricants (POL) are only included for the Royal Navy. These exclusions do not apply as from 1981–82 but for the purposes of comparison, figures for 1981–82 on the same basis as previous year's coverage have also been provided.

The value of stock is based as far as possible on the best estimate of prices ruling at the end of each financial year. The item types held in the supply systems of more than one Service are counted once for each Service holding them. The figures on issue and receipt transactions reflect the differences in the number of issuing points and ordering points in each Service.

Defence energy consumption. Table 3.5 covers the 3 Services, the Procurement Executive and the Royal Ordnance Factories. Fuel used in Ministry of Defence buildings which are part of the Civil Estate is excluded. In the case of electricity the figures represent the quantity of oil required to generate the electricity in power stations of average efficiency.

EQUIPMENT

3.1 Equipment procurement expenditure[1]

£ million

	Outturn					Estimates2	
	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Procurement expenditure	5,324	6,121	6,815	7,504	8,573	9,122	9,048
Equipment	4,885	5,638	6,297	6,939	7,838	8,355	8,250
Associated costs	439	483	518	565	735	767	798
Procurement expenditure	5,324	6,121	6,815	7,504	8,573	9,122	9,048
Research	1,627	1,688	305	357	393	383	398
Development[3]			1,395	1,556	1,713	1,933	1,940
Production and repair	3,697	4,433	5,115	5,591	6,467	6,806	6,711
Sea	1,513	1,624	1,730	1,849	2,228	2,451	2,586
Development	283	281	262	344	439	475	476
Production and repair	1,229	1,343	1,468	1,506	1,789	1,976	2,110
Land	904	1,101	1,353	1,475	1,638	1,847	1,712
Development	182	236	211	229	258	286	303
Production and repair	722	864	1,142	1,246	1,379	1,561	1,409
Air[4]	2,059	2,458	2,640	3,057	3,474	3,506	3,364
Development	499	513	461	571	594	705	690
Production and repair	1,560	1,945	2,179	2,486	2,880	2,801	2,673
General support	849	939	1,092	1,123	1,233	1,319	1,386
Research	663	657	305	357	393	383	398
Development[3]			461	412	421	467	470
Production	186	282	325	353	419	469	519

1. This table is derived from the *Appropriation Accounts* and the *Supply Estimates*. The expenditure is net of Appropriation-in-aid. Outturn and Estimates are given at outturn and Estimates prices respectively.
2. These figures are derived from the original *Supply Estimates* for the years quoted.
3. These figures include the costs of some Headquarters staff who are responsible for both research and development.
4. The Division of Air Systems package deals expenditure into either R&D or production has been estimated.

3.2 Defence research and development expenditure[1]

£ million

	Outturn					Estimates[2]	
	1980–81[3]	1981–82[3]	1982–83	1983–84	1984–85	1985–86	1986–87
Gross expenditure on R&D[4]	1,709	1,783	1,762	1,986	2,176	2,428	2,428
Intramural R&D gross	448	502	580	586	622	651	709
Current:							
Personnel costs	263	287	302	297	289	302	309
Materials and equipment	120	145	168	188	204	203	208
Other	18	18	22	13	14	13	13
Capital:							
Land and buildings	16	15	17	22	33	51	81
Plant and equipment	31	37	71	66	83	82	99
Receipts	36	48	51	50	46	57	53
Intramural R&D net	412	454	529	536	576	594	656
Intramural research: net	..	..	170	218	223	229	238
Intramural development: net	..	..	359	318	353	365	418
Extramural R&D expenditure: gross	1,261	1,281	1,181	1,400	1,554	1,777	1,718
Extramural research: gross	..	..	143	148	177	162	169
Other Votes and central government funds	..	..	1	2	2	2	2
Universities and further educational establishments	..	..	8	8	10	9	13
Private industry and public corporations	..	..	133	134	159	145	147
Other	..	..	1	3	4	4	4
Overseas	..	..	1	1	3	3	2
Receipts	..	..	8	9	7	9	10
Extramural research: net	..	..	135	140	170	153	159
Extramural development: gross	..	..	1,038	1,252	1,377	1,615	1,549
Other Votes and central government funds	..	..	28	27	28	34	31
Universities and further educational establishments	..	..	—	1	1	1	1
Private industry and public corporations	..	..	905	1,123	1,255	1,458	1,411
Other	..	..	—	4	—	7	2
Overseas	..	..	105	97	92	114	103
Receipts	..	..	2	14	17	47	27
Extramural development: net	..	..	1,036	1,238	1,360	1,568	1,522
Total extramural R&D: net	1,215	1,234	1,170	1,378	1,530	1,722	1,681
Total research and development: net	1,627	1,688	1,701	1,913	2,106	2,316	2,337

1. Outturn and Estimates are given at outturn and Estimates prices respectively. Excludes civil work carried out by MOD on repayment terms.
2. These figures are derived from the original *Supply Estimates* for the years quoted.
3. In these years extramural expenditure can not be attributed to many of the classifications used from 1982–83 onwards.
4. The proportion of Air Systems package deals expenditure attributable to R&D has been estimated.

EQUIPMENT

3.3 Defence production expenditure[1]

£ million

	Outturn					Estimates[2]	
	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Gross expenditure	4,209	5,046	5,752	6,131	6,961	7,173	7,110
Sea equipment	1,337	1,469	1,601	1,650	1,925	2,134	2,267
Ships hulls and machinery	422	519	499	500	555	538	573
Weapon systems etc.	444	483	555	582	727	834	938
Ship equipment and support services	93	87	92	92	91	131	127
Ship/weapon maintenance, equipment, stores and services	258	256	324	332	401	434	456
Dockyard services etc.	120	125	132	144	151	197	172
Land equipment	950	1,103	1,433	1,398	1,573	1,662	1,487
Guns, small arms and chemical defence stores	63	67	49	31	28	54	59
Ammunition, mines and explosives	212	251	287	278	322	285	209
Fighting vehicles	93	124	100	117	131	161	161
Load carrying vehicles	177	144	134	119	156	139	145
Engineering equipment	54	45	88	83	89	93	66
Guided weapons, electronic equipmnent and instruments	310	425	582	580	602	690	543
Plant and machinery	4	3	2	2	—	1	—
Other stores	37	44	31	32	29	29	8
Maintenance[3]	..	..	160	157	215	209	296
Air equipment[4]	1,715	2,167	2,362	2,682	3,003	2,874	2,803
Aircraft, aero-engines and aircraft equipment	1,347	1,654	1,699	1,730	2,002	1,780	1,814
Guided weapons and electronic equipment	368	513	662	952	1,001	1,095	989
General support[5]	207	306	356	401	460	503	554
Appropriations-in-aid:[6]	512	612	637	540	494	367	399
Sea equipment	108	127	133	144	136	158	156
Land equipment	228	239	291	153	194	101	79
Air equipment	155	223	182	196	123	74	129
General support	21	24	31	48	41	34	36
Net expenditure	3,697	4,433	5,115	5,591	6,467	6,806	6,711
Sea equipment	1,229	1,343	1,468	1,506	1,789	1,976	2,110
Land equipment	722	864	1,142	1,246	1,379	1,561	1,409
Air equipment	1,560	1,945	2,179	2,486	2,880	2,801	2,673
General support	186	282	325	353	419	469	519

1. This table is based on the *Appropriation Accounts* and the *Supply Estimates*. Outturn and Estimates are given at outturn and Estimates prices respectively.
2. These figures are derived from the original *Supply Estimates* for the years quoted.
3. Maintenance is not separately identified before 1982–83.
4. The air equipment breakdown for 1986–87 has been estimated.
5. Including provision of facilities and quality assurance.
6. Appropriations-in-aid arise from the sale of surplus and of goods purchased on behalf of the Defence Sales organisation.

3.4 Service supply systems: major stockholdings

	1980–81	1981–82[1]	1981–82[2]	1982–83	1983–84	1984–85
	£ million					
Value of stock at the year end.	5,689	6,204	6,995	7,673	8,513	9,581
Royal Navy	2,678	2,855	2,855	3,091	3,728	3,897
Army	1,264	1,328	1,816	2,012	2,001	2,282
Royal Air Force.	1,747	2,021	2,324	2,570	2,784	3,402
	Millions					
Item types in inventory at end of year . . .	3.0	2.9	2.9	2.9	3.0	3.1
Royal Navy	0.8	0.8	0.8	0.8	0.9	0.9
Army	0.9	0.8	0.8	0.8	0.8	0.8
Royal Air Force.	1.2	1.2	1.2	1.3	1.3	1.4
Number of issue transactions during year[3] .	7.6	7.9	7.9	9.4	8.8	10.4
Royal Navy	3.0	2.9	2.9	3.7	3.3	4.6
Army	2.8	3.1	3.1	3.6	3.4	3.7
Royal Air Force.	1.8	1.9	1.9	2.1	2.0	2.1
Number of receipt transactions in year. . .	2.0	2.0	2.0	2.4	2.2	2.3
Royal Navy	1.0	1.0	1.0	1.4	1.2	1.3
Army	0.4	0.4	0.4	0.5	0.5	0.5
Royal Air Force.	0.6	0.6	0.6	0.5	0.5	0.5
	Number					
Number of depots covered.	34	34	75	74	71	72
Royal Navy	24	24	24	24	21	21
Army	7	7	11	10	10	10
Royal Air Force.	3	3	40	40	40	41

1. The figures in this column are based on the coverage used in earlier years and are provided for comparison purposes only.
2. From 1981–82 the coverage of items across the Services was put on to a more consistent basis resulting, in particular, in the inclusion of RAF aircraft storage depots and commercially operated bulk aviation fuel storage facilities. See notes on page 15.
3. There are essential operating differences between the Services and so there is no reliable basis for inter service comparison. The Royal Navy figures for 1984/85 reflect an increased visibility of stock following the introduction of the CRISP system.

3.5 Defence energy consumption

Petajoules[1]

	Financial years					1 April–31 December	
	1980–81	1981–82	1982–83	1983–84	1984–85	1984	1985[2]
All Fuels	135.8	136.5	154.2	150.9	139.3	99.0	91.6
Royal Navy[3]	39.8	40.8	54.6	52.2	45.1	30.5	29.8
Army	24.9	24.4	23.6	24.3	24.9	15.7	15.5
Royal Air Force.	57.8	56.9	63.0	60.5	59.8	43.5	41.8
Procurement Executive.	7.7	7.7	7.2	7.4	5.9	4.1	4.5
Royal Ordnance Factories[4]	5.8	6.7	5.8	6.5	3.7	3.7	–
Liquid fuels	113.1	113.6	131.4	126.2	117.1	83.6	77.6
Aviation fuel.	47.1	46.7	54.0	51.3	50.4	38.6	36.3
Diesel	22.2	22.9	36.7	35.9	31.8	22.6	21.3
Furnace oil.	39.2	39.5	36.0	34.3	30.1	18.8	16.5
Petrol	3.6	3.6	3.8	3.7	3.9	2.9	2.8
Other	0.9	0.9	0.9	0.9	1.0	0.6	0.7
Non-liquid fuels	22.7	22.9	22.8	24.7	22.3	15.4	14.0
Electricity	8.6	8.7	8.6	9.2	8.6	6.2	6.2
Gas	8.6	8.4	8.8	9.9	9.5	6.1	5.9
Solid fuel.	5.4	5.8	5.4	5.7	4.2	3.1	1.8

1. Petajoule = 10^{15} joules.
2. Provisional.
3. Royal Navy figures include the Royal Dockyards.
4. Up to January 1985, when the ROFs became a Companies Act company.

EQUIPMENT

3.6 Royal Dockyards and Fleet Maintenance Repair Organisation Establishments

	1979–80	1980–81	1981–82	1982–83	1983–84	1984–85
	£ million					
Dockyard costs charged to production[1]	403.6	494.8	514.3	558.7	537.1	457.8
Direct costs						
Labour	73.9	94.7	97.8	109.5	103.5	96.7
Material	89.1	112.6	93.3	100.8	105.1	95.8
Dockyard services	36.1	47.4	56.1	63.8	66.4	69.6
Contract services	8.9	9.8	10.7	13.9	15.8	11.2
Overhead costs						
Production overheads	76.8	94.5	95.6	108.3	103.2	96.8
Administration and general overheads	118.8	135.8	160.8	162.4	143.1	87.7
less Increase in work in progress	21.3	36.6	57.4	–48.9	–1.1	–74.0
Cost of completed work	382.3	458.2	456.9	607.6	538.2	531.8
For MOD customers	375.1	445.4	447.0	585.6	527.8	513.9
Ship construction repairs and alterations	291.3	351.3	343.7	473.9	423.2	426.8
Major refits	119.2	183.5	148.7	186.1	167.3	216.9
Restorative refits	–	–	–	–	–	13.0
Normal refits	87.9	95.0	105.0	135.0	165.2	121.0
Construction and other Shipwork	84.2	72.8	90.0	152.8	90.7	75.9
Repairs and modification of stores for stock	27.9	27.8	31.7	32.8	32.1	25.3
Manufacture of stores for stock	10.7	11.5	11.2	13.3	10.3	7.9
Plant and machinery for other establishments	3.5	1.8	2.3	7.8	5.5	11.3
Maintenance etc for other establishments	41.7	53.0	58.1	57.8	56.7	42.6
For non-MOD customers, on repayment	1.0	1.2	1.3	1.3	1.7	1.2
Plant and machinery for Dockyard use	6.2	11.6	8.6	20.7	8.7	16.7
	Number					
Major refits completed	6	8	5	5	4	3
Submarines	1	2	1	2	1	2
Destroyers	–	1	–	1	–	–
Frigates	3	3	3	1	2	1
Mine counter-measures vessels	2	2	1	1	1	–
Restorative refits completed	–	–	–	–	–	1
Frigates	–	–	–	–	–	1
Normal refits completed	33	30	36	49	50	42
Royal Navy vessels						
Aircraft carriers	–	–	1	–	–	–
Submarines	1	2	1	1	3	1
Cruisers/destroyers	1	2	1	1	–	–
Frigates	9	4	3	2	4	3
Mine counter-measures vessels	7	9	10	8	8	7
Patrol vessels	3	2	5	4	5	–
Others	10	9	7	12	9	12
Royal Fleet Auxiliary vessels	–	–	3	11	5	5
Royal Maritime Auxiliary Services vessels	2	2	5	10	16	14
Average number of employees	34,049	33,232	31,923	29,554	26,750	24,181
Civilian personnel	33,982	33,165	31,861	29,500	26,705	24,221
Service personnel	67	67	62	54	45	40

1. Costs do not necessarily correspond to cash payments from Votes during the year: for example the direct costs include notional liability for civil superannuation and the cost of material used during the year, though possibly bought in previous years. The overhead costs include provision for the depreciation of fixed assets, many of which were acquired in previous years, and notional interest on capital.

4. Manpower

This section deals with both Service and civilian manpower. It includes staff employed at the Royal Ordnance Factories which changed from being part of MOD to independant Companies Act status on 2 January 1985. Staff employed at the factories are included in the MOD manpower counts up to and including 1 January 1985. The following definitions refer to Service personnel:

Regular Forces comprise both *UK Service personnel* and *locally entered personnel.*

UK Service personnel are normally recruited in the United Kingdom for service worldwide.

Locally entered personnel are recruited outside the United Kingdom to serve in special formations with special conditions of service. In some cases there are restrictions on the areas in which they are required to serve.

Regular Reserves consist of former members of the Regular Forces who have a liability for service in the Reserves.

Volunteer Reserves and Auxiliary Forces comprise personnel in civilian occupations who undertake to give a certain amount of their time to train in support of the Regular Forces. They also include a number of non-Regular permanent staff.

Officers designate are candidates for commissioned service who are required to complete successfully a period of training before they are appointed to commissions. Some enter direct from civil life and others are selected from the ranks. Figures shown for officers include officers designate.

The numbers shown for females comprise the Women's Services and female members of the Nursing Services. Certain professionally qualified female officers are not commissioned in the Women's Services but in the Branch or Corps appropriate to their qualifications. These officers, of whom there were 183 at 1 January 1986 serving in the medical, dental, veterinary and legal specialisations, are included in the numbers of male officers.

Summary of MOD manpower. Table 4.1 shows the MOD Services and civilian manpower and how it is organised.

Functional analysis of manpower. The strengths shown in Table 4.3A are the average numbers of UK Regular Forces plus locally entered personnel provided for in the annual Estimates. Table 4.3B show the corresponding figures for civilians. A summary of these figures appears in table 4.2.

Strengths of UK Service personnel: Regular Forces. Table 4.4 includes personnel undergoing initial training.

Strengths of trained UK Service personnel: Regular Forces. Table 4.5 shows personnel who have completed initial training.

Strengths of the Reserves and Auxiliary Forces. Table 4.6 includes the Ulster Defence Regiment (UDR) and the Home Service Force (HSF). Detailed numbers of full-time and part-time members of the UDR are given in Table 6.1. Recruitment to the HSF began in September 1982.

Strengths of Cadet Forces. Table 4.8 includes the appropriate Service component of the Combined Cadet Force but excludes officers, training and administrative staff. The Girls' Nautical Training Corps, a formerly independent organisation, was incorporated into the Sea Cadet Corps in 1980.

Civilian apprentices. The figures in tables 4.11 and 4.12 include a very small number of female apprentices.

Recruitment of UK Service personnel: by Service. Table 4.15 comprises entrants from civil life.

Recruitment of male UK Service personnel: by category. Table 4.16 uses the following definitions:

Pre-cadets are Army officer candidates who undertake a short period of service as soldiers prior to appearing before the Army's officer selection board.

Officer cadets are entrants who have been selected to serve as officers but who are required to complete successfully a period of training prior to being commissioned.

University cadets are students at universities and comparable educational establishments who have been appointed as midshipmen in the Royal Navy, as acting second lieutenants in the Royal Marines or as officers in the Army and Royal Air Force and who, on graduation, will take up whole-time duty with the Services.

Outflow of UK Service personnel: by Service. Table 4.17 comprises all those who left the Regular Forces and includes deaths.

Outflow of UK Service personnel: categories of exit. The All Services totals given in Table 4.17 are sub-divided in Table 4.18 to show the cause of leaving. As the numbers for female officers designate are small, they have been included in those for female officers. The numbers shown as premature release at own request, for both officers and servicemen, relate only to trained personnel.

Occupational recruitment and losses of UK-based civilian non-industrial staff. Table 4.19 show those entering the department from outside the Civil Service and those leaving both MOD and the Civil Service. The net gains or losses for individual groups in this table do not account entirely for the year to year changes in the corresponding group strength shown in Table 4.10, since transfers between groups, movements from industrial to non-industrial grades and exchanges with government departments are all excluded.

Outflow of trained Service personnel: major skill or trade group. Table 4.20 shows the numbers of personnel leaving the Services possessing certain skills useful to the civilian community. Only personnel in readily identifiable groups of reasonable size have been included. Personnel are classified according to their primary employment in the Services at the time of leaving, in the case of Army officers by the function of their Arm or Corps. Each group covers the full range of skills from the professionally qualified to the semi-skilled.

Indices and illustrative rates of military salary. Table 4.21 provides index numbers (based on 1980/81 = 100) and illustrative rates of military salary.

MANPOWER

4.1. Total MOD strength by area

1 April

Thousands

	Actual						Estimates[2]	
	1981	1982	1983	1984	1985	1986[1]	1986	1987
UK based	563.4	544.5	529.5	525.0	500.3	494.9	492.7	485.9
Service	333.8	327.6	320.6	325.9	326.2	323.5	322.4	320.9
Civilian	229.6	216.9	208.9	199.1	174.1	171.5	170.3	165.0
Central Staffs	..	..	15.9	15.4	15.5	15.2	..	..
Service	..	..	0.8	0.8	1.2	1.2	..	..
Civilian	19.6	18.8	15.1	14.6	14.4	14.0	14.3	14.0
Navy[3]	139.7	134.6	131.8	126.6	123.6	120.4	..	..
Service	73.8	72.6	71.2	70.8	69.6	67.4	..	..
Civilian	65.9	62.0	60.6	55.8	54.0	53.0	52.5	50.3
Army	217.6	212.1	207.4	207.9	207.4	207.3	..	..
Service	164.7	161.9	157.9	160.4	161.2	160.9	..	..
Civilian	52.9	50.2	49.4	47.5	46.3	46.4	45.6	44.0
Air	..	..	113.0	115.6	114.8	114.1	..	..
Service	..	..	89.5	92.7	93.0	92.7	..	..
Civilian	25.6	24.1	23.5	22.9	21.8	21.4	21.4	20.9
PE	..	..	42.8	41.4	39.0	37.9	..	..
Service	..	..	1.1	1.1	1.3	1.3	..	..
Civilian	44.7	42.4	41.7	40.3	37.7	36.6	36.5	35.8
ROF[4]	20.8	19.4	18.6	18.0	*	*	*	*
Civilian	20.8	19.4	18.6	18.0	*	*	*	*
Locally entered/engaged	45.0	44.9	44.0	43.5	42.6	42.0	42.7	41.9
Service	9.7	10.1	10.1	10.1	10.2	9.8	10.1	9.6
Civilian	35.3	34.8	33.8	33.4	32.4	32.2	32.6	32.3

1. Latest actual figures are for 1 January.
2. Figures are those for financial costings.
3. Includes the Royal Marines.
4. Up to 1 January 1985 — see notes.

4.2 Percentage distribution of manpower by major programme[1]

	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
	Thousands						
Total MOD manpower[2]	585.7	582.9	564.9	552.2	549.4	542.8	531.8
Staff not provided for in Defence Estimates[3]							
Royal Ordnance Factories[4]	21.9	20.9	19.3	18.7	18.4	*	*
Department of Environment	24.7	23.3	22.1	20.7	20.7	19.8	19.2
	Percent[2]						
Total MOD manpower	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Service	56.4	58.4	59.2	60.3	61.1	61.6	62.2
Civilian	43.6	41.6	40.8	39.7	38.9	38.4	37.8
Nuclear strategic force	1.2	1.2	1.2	1.2	1.1	1.2	1.2
Service	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Civilian	0.8	0.8	0.8	0.8	0.7	0.8	0.8
Navy general purpose combat forces[5]	6.6	6.5	6.5	6.7	9.5	10.2	10.4
Service	5.1	5.2	5.3	5.5	7.9	7.9	8.0
Civilian	1.4	1.3	1.2	1.3	1.7	2.4	2.4
European theatre ground forces[6]	20.8	21.0	22.8	23.0	22.6	22.9	23.4
Service	16.3	16.7	18.4	18.7	18.4	18.6	18.8
Civilian	4.6	4.3	4.4	4.3	4.2	4.3	4.6
Other Army combat forces	3.7	3.8	3.8	3.9	4.0	4.0	4.1
Service	2.5	2.6	2.6	2.7	2.7	2.7	2.8
Civilian	1.1	1.2	1.2	1.2	1.3	1.3	1.3
Air Force general purpose forces	11.2	11.8	12.1	12.2	12.6	12.8	13.0
Service	9.3	10.1	10.4	10.5	10.8	11.1	11.3
Civilian	1.9	1.7	1.7	1.7	1.7	1.7	1.7
Reserve and Auxiliary formations[7]	1.0	1.0	1.1	1.1	1.2	1.2	1.1
Service	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Civilian	0.6	0.5	0.5	0.6	0.7	0.7	0.6
Research and development	5.7	5.6	5.5	5.1	5.0	5.0	4.7
Service	0.2	0.3	0.3	0.2	0.2	0.3	0.2
Civilian	5.5	5.3	5.2	4.8	4.7	4.8	4.5
Training	17.0	17.4	15.3	15.7	15.2	15.0	14.8
Service[8]	13.5	14.0	12.0	12.5	12.1	12.0	11.9
Civilian	3.5	3.4	3.3	3.3	3.2	3.1	2.9
Equipment support and associated facilities in UK	16.2	15.3	15.0	14.6	13.7	12.6	12.1
Service	1.7	1.8	1.9	1.8	1.5	1.5	1.5
Civilian	14.5	13.5	13.1	12.7	12.2	11.1	10.6
Other support functions	16.6	16.5	16.7	16.4	15.1	15.0	15.2
Service	6.8	7.0	7.5	7.5	6.6	6.6	6.7
Civilian	9.8	9.5	9.3	8.9	8.5	8.4	8.5

1. This table presents a summary of the manpower functional analyses tables 4.3A and 4.3B. A common numbering system is used for the footnotes in all three tables.
2. These figures represent the average strengths provided for in the original Defence Estimates. Service figures include UK regular forces and locally entered personnel. Civilian figures include industrial and non-industrial staff plus all locally engaged staff.
3. Civilians employed on Defence work who are excluded from the Defence Estimates provisions.
4. Up to January 1985 see notes on page 21.
5. Figures from 1984–85 are not fully comparable with those for earlier years. See first note on page 8.
6. For operational and security reasons, Army manpower in the South Atlantic is included in the European theatre ground forces total.
7. Regular whole-time serving personnel attached to Reserve and Auxiliary formations only.
8. Comprises administrative and training staff and the average number of trainees both at initial and higher levels, but excludes personnel on short courses, training carried out by front-line units and operational training.

4.3A Functional analysis of Service personnel: average strengths provided for in the Estimates[1]

Thousands

	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Total Service manpower[2]	330.2	340.6	334.7	333.1	335.8	334.2	330.8
Nuclear strategic force	2.5	2.4	2.4	2.3	2.1	2.1	2.0
Navy general purpose combat forces[5]	30.4	30.1	29.7	30.1	43.3	42.8	42.4
Submarines	2.7	2.7	2.9	2.9	2.9	2.9	2.9
Aircraft and ASW carriers	1.9	1.5	2.1	2.5	1.7	1.7	1.7
Amphibious forces	4.6	4.8	4.1	4.4	5.5	5.4	5.3
Cruisers	1.0	0.7	—	—	—	—	—
Destroyers and frigates	13.0	13.0	13.0	12.5	13.1	13.1	13.0
Mine counter-measures vessels	1.1	1.1	1.1	1.2	1.3	1.3	1.3
Other vessels	1.8	1.7	1.6	1.8	2.1	2.0	2.0
Aircraft	2.2	2.4	2.6	2.5	3.4	3.4	3.4
Fleet headquarters	1.1	1.1	1.2	1.2	3.0	2.9	3.0
Overseas shore establishments	1.0	1.1	1.1	2.1	1.2	1.0	1.0
Naval bases and operational support	*	*	*	*	9.1	8.9	8.8
European theatre ground Forces[6]	95.2	97.3	104.2	103.0	101.2	101.0	100.2
British Army of the Rhine	55.0	56.8	58.8	58.8	57.3	55.9	55.0
Berlin	3.1	3.0	3.0	3.1	3.0	3.0	3.0
Home forces	37.1	37.5	42.4	41.1	40.9	42.1	42.2
Other Army combat forces	14.9	15.0	14.7	14.9	14.9	14.7	15.0
Mediterranean	4.2	4.2	4.3	4.2	4.2	4.1	4.2
Hong Kong and other Far East	9.0	9.2	9.6	9.5	9.5	9.4	9.6
Other areas[6]	1.7	1.6	0.8	1.2	1.2	1.2	1.2
Air Force general purpose forces	54.6	58.6	58.6	58.1	59.6	60.2	60.2
Air defence	3.9	4.4	4.4	4.6	5.0	5.1	5.3
Offensive support	1.1	1.1	1.2	1.2	1.3	1.2	1.3
Strike/attack/reconnaissance	5.1	5.3	4.5	4.8	5.4	5.7	5.6
Maritime aircraft	1.6	1.6	1.7	1.7	1.7	1.7	1.7
Transport aircraft	3.3	3.4	3.7	3.7	3.8	3.7	3.7
Tanker aircraft	0.4	0.5	0.5	0.6	0.7	0.7	0.7
Other aircraft	3.3	3.8	3.9	3.8	4.0	3.9	3.8
Operational stations	18.1	19.9	20.2	19.0	19.2	19.4	19.8
Headquarters	2.7	2.8	2.7	2.7	2.6	2.5	2.6
General support	15.1	15.8	15.8	16.0	15.9	16.3	16.5
Reserve and Auxiliary formations[7]	2.8	2.9	3.0	3.0	2.9	2.9	2.9
Navy	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Army	2.2	2.3	2.4	2.4	2.3	2.3	2.4
Air Force	0.3	0.3	0.3	0.3	0.3	0.3	0.2
Research and development	1.4	1.5	1.5	1.3	1.3	1.4	1.0
Ship construction and underwater warfare	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ordnance and other Army	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Military aircraft	0.2	0.3	0.3	0.3	0.3	0.3	0.2
Guided weapons	0.1	0.1	0.1	—	—	0.1	0.1
Other electronics	0.1	0.1	0.1	0.1	—	—	—
Other research and development	0.6	0.6	0.6	0.5	0.6	0.6	0.3
Training[8]	78.8	81.5	67.8	68.9	66.3	65.0	63.2
Service colleges	4.3	4.7	4.1	4.5	4.2	4.2	4.2
Navy	22.3	24.0	22.6	21.0	14.7	14.4	14.2
Army	34.2	35.2	26.9	27.2	30.4	29.8	28.6
Air Force	18.0	17.6	14.2	16.2	17.0	16.6	16.2
Equipment support and associated facilities in UK	9.8	10.3	10.7	10.2	8.0	8.1	8.0
Royal Dockyards	0.1	0.1	0.1	0.1	—	—	—
Other repair and maintenance	6.5	6.9	7.2	7.2	5.0	5.0	4.9
Storage and supply	3.0	3.1	3.2	2.7	2.8	2.9	2.9
Quality assurance	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other support functions	39.8	41.0	42.1	41.3	36.1	36.0	35.8
Whitehall organisation	2.7	2.8	2.6	2.7	2.9	3.0	3.6
Local administration communications etc in UK	18.0	19.5	20.0	18.8	15.4	15.8	15.5
Meteorological services	*	*	*	*	*	*	*
Family and personnel services in UK	6.6	6.6	6.8	6.4	5.6	5.4	5.2
Service pensions	*	*	*	*	*	*	*
Other support services	12.5	12.1	12.7	13.4	12.2	11.8	11.4

Notes 1–8 To save space, footnotes are referenced to the summary table 4.2.

4.3B Functional analysis of civilian staff: average strengths provided for in the Estimates[1]

Thousands

1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87	
255.5	242.3	230.2	219.1	213.6	208.6	201.0	**Total civilian staff excluding ROFs[2]**
4.5	4.4	4.5	4.3	3.8	4.3	4.0	**Nuclear strategic force**
8.1	7.7	6.9	7.1	9.1	12.8	12.8	**Navy general purpose combat forces[5]**
*	*	*	*	*	*	*	Submarines
*	*	*	*	*	*	*	Aircraft and ASW carriers
—	—	—	—	0.1	0.1	0.1	Amphibious forces
*	*	*	*	*	*	*	Crusiers
*	*	*	*	*	*	*	Destroyers and frigates
*	*	*	*	*	*	*	Mine counter-measure vessels
5.4	5.1	4.9	5.2	5.0	5.0	5.0	Other vessels
0.1	0.1	0.1	—	—	—	—	Aircraft
0.2	0.2	0.2	0.2	1.8	1.8	1.8	Fleet headquarters
2.4	2.3	1.7	1.7	1.2	1.1	1.0	Overseas shore establishments
*	*	*	*	1.0	4.8	4.9	Naval bases and operation support
26.9	25.2	24.6	23.8	23.2	23.4	24.3	**European theatre ground forces**
26.9	25.2	24.6	23.8	23.2	23.4	24.3	British Army of the Rhine
*	*	*	*	*	*	*	Berlin
*	*	*	*	*	*	*	Home Forces
6.6	6.9	6.9	6.9	7.0	6.9	6.9	**Other Army combat forces**
2.6	2.7	2.8	2.8	2.7	2.7	2.7	Mediterranean
3.8	4.0	4.1	4.0	4.1	4.0	4.0	Hong Kong and other Far East
0.2	0.2	—	0.1	0.2	0.2	0.2	Other areas
11.0	10.2	9.8	9.3	9.4	9.2	8.9	**Air Force general purpose forces**
0.1	0.1	0.1	0.1	0.1	0.1	0.1	Air defence
*	*	*	*	*	*	*	Offensive support
*	*	*	*	*	*	*	Strike/attack/reconnaissance
*	*	*	*	*	*	*	Maritime aircraft
*	*	*	*	*	*	*	Transport aircraft
*	*	*	*	*	*	*	Tanker aircraft
0.3	0.3	0.3	0.3	0.2	0.1	0.1	Other aircraft
4.9	4.6	4.5	4.3	4.4	4.5	4.3	Operational stations
0.9	0.9	0.7	0.6	0.5	0.5	0.5	Headquarters
4.8	4.3	4.2	4.0	4.2	4.0	3.9	General support
3.3	3.2	3.0	3.3	3.6	3.6	2.9	**Reserve and Auxiliary formations**
0.2	0.2	0.2	0.2	0.5	0.5	0.2	Navy
2.6	2.5	2.3	2.6	2.6	2.6	2.3	Army
0.5	0.5	0.5	0.5	0.5	0.5	0.4	Air Force
32.0	31.0	29.5	26.7	25.9	25.9	24.0	**Research and development**
3.4	3.5	3.3	3.6	4.4	4.4	3.9	Ship construction and underwater warfare
3.9	3.7	3.6	3.9	3.1	3.2	3.0	Ordnance and other Army
6.5	7.5	7.2	6.0	5.9	5.5	4.8	Military aircraft
2.9	2.6	2.4	2.1	2.3	2.3	2.0	Guided weapons
4.7	3.7	3.5	2.2	1.4	1.4	1.4	Other electronics
10.6	10.0	9.5	8.9	8.8	9.1	8.9	Other research and development
20.8	19.7	18.6	18.0	17.4	16.6	15.6	**Training**
3.3	3.0	2.8	2.7	2.3	2.3	2.1	Service colleges
3.8	3.6	3.4	3.0	2.5	2.2	2.0	Navy
10.9	10.4	9.9	9.7	10.4	9.9	9.3	Army
2.8	2.7	2.5	2.6	2.2	2.2	2.2	Air Force
84.9	78.9	73.9	70.4	67.2	60.3	56.6	**Equipment support and associated facilities in UK**
32.8	31.0	28.8	25.6	23.5	18.5	18,6	Royal Dockyards
15.8	15.1	14.2	14.1	14.6	14.9	13.6	Other repair and maintenance
27.2	24.7	23.2	23.0	21.7	21.2	19.3	Storage and supply
9.1	8.1	7.7	7.7	7.4	5.7	5.1	Quality assurance
57.4	55.1	52.5	49.3	46.9	45.6	45.0	**Other support functions**
11.6	11.1	10.4	10.1	8.0	7.6	8.1	Whitehall organisation
28.1	27.1	26.1	28.0	28.8	28.3	27.7	Local administration communications, etc, in UK
3.1	2.9	2.8	2.7	2.7	2.7	2.6	Meteorological services
9.8	9.3	8.6	7.2	6.1	5.9	5.4	Family and personnel services in UK
0.2	0.2	0.2	—	—	—	—	Service pensions
4.6	4.5	4.4	1.3	1.3	1.1	1.2	Other support services

Notes 1–5 To save space, footnotes are referenced to the summary table 4.2.

4.4 Strengths of UK Regular Forces

1 April

Thousands

	Actual						Estimates[2]	
	1981	1982	1983	1984	1985	1986[1]	1986	1987
All Services	333.8	327.6	320.6	325.9	326.2	323.5	322.4	320.9
Male	316.8	311.9	305.2	309.7	309.8	307.5	306.6	305.2
Officers	40.9	40.9	40.3	40.1	40.3	40.1	40.3	40.6
Servicemen	275.9	271.0	264.9	269.6	269.5	267.3	266.3	264.5
Female	16.9	15.7	15.4	16.2	16.4	16.0	15.8	15.8
Officers	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.3
Servicewomen	14.8	13.5	13.3	14.1	14.2	13.8	13.6	13.5
Royal Navy	66.4	65.1	64.0	63.7	62.8	60.6	60.6	59.1
Male	62.3	61.1	60.1	59.8	59.1	57.2	57.2	55.9
Officers	9.4	9.3	9.1	8.8	8.9	9.0	8.8	8.9
Servicemen	52.9	51.8	51.0	51.0	50.1	48.2	48.4	47.0
Female	4.1	4.0	3.9	3.9	3.7	3.5	3.4	3.3
Officers	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Servicewomen	3.6	3.5	3.5	3.5	3.3	3.1	3.0	2.9
Royal Marines	7.9	7.9	7.8	7.6	7.6	7.6	7.6	7.8
Male	7.9	7.9	7.8	7.6	7.6	7.6	7.6	7.8
Officers	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7
Servicemen	7.3	7.2	7.1	7.0	7.0	7.0	7.0	7.1
Army	166.0	163.2	159.1	161.5	162.4	162.1	160.9	160.7
Male	159.4	157.2	152.9	155.0	155.6	155.5	154.3	154.1
Officers	16.5	16.5	16.3	16.2	16.3	16.1	16.3	16.2
Servicemen	142.9	140.7	136.6	138.7	139.3	139.4	138.0	137.8
Female	6.6	6.0	6.1	6.6	6.8	6.6	6.6	6.6
Officers	0.9	1.0	0.9	1.0	1.0	1.0	1.0	1.0
Servicewomen	5.6	5.0	5.2	5.6	5.8	5.6	5.5	5.5
Royal Air Force	93.5	91.5	89.8	93.1	93.4	93.1	93.4	93.4
Male	87.2	85.7	84.5	87.3	87.5	87.2	87.5	87.4
Officers	14.4	14.5	14.2	14.4	14.5	14.4	14.5	14.8
Servicemen	72.8	71.2	70.2	73.0	73.0	72.8	73.0	72.6
Female	6.3	5.8	5.4	5.7	6.0	6.0	5.9	5.9
Officers	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.9
Servicewomen	5.5	5.0	4.6	5.0	5.1	5.1	5.0	5.1

1. Actual figures for the current year are as at 1 January.

2. Figures are those used for the financial costings.

4.5 Strengths of trained UK Regular Forces

1 April

Thousands

	Actual						Estimates[2]	
	1981	1982	1983	1984	1985	1986[1]	1986	1987
All Services	298.6	304.5	298.0	296.9	297.2	295.4	295.2	291.6
Male	282.9	289.4	283.6	282.0	282.0	280.4	280.3	277.2
Officers	36.5	36.6	36.2	35.7	35.7	35.8	35.6	36.6
Servicemen	246.4	252.7	247.4	246.3	246.2	244.6	244.7	241.5
Female	15.7	15.2	14.4	14.9	15.3	15.0	14.9	14.4
Officers	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1
Servicewomen	13.7	13.1	12.4	12.9	13.2	13.0	12.8	12.4
Royal Navy	58.7	59.9	58.6	58.2	57.2	55.6	55.4	53.9
Male	55.0	56.1	55.0	54.5	53.7	52.2	52.1	50.8
Officers	7.7	7.7	7.6	7.5	7.5	7.4	7.3	7.3
Servicemen	47.3	48.4	47.3	47.0	46.2	44.8	44.8	43.5
Female	3.7	3.8	3.6	3.7	3.6	3.3	3.3	3.1
Officers	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Servicewomen	3.2	3.4	3.1	3.3	3.2	3.0	2.9	2.7
Royal Marines	6.8	7.4	7.3	7.2	7.0	6.9	6.9	6.9
Male	6.8	7.4	7.3	7.2	7.0	6.9	6.9	6.9
Officers	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5
Servicemen	6.3	6.8	6.7	6.7	6.4	6.3	6.4	6.4
Army	146.8	150.8	147.7	145.4	145.9	145.8	145.7	143.8
Male	140.7	145.0	142.1	139.5	139.7	139.7	139.6	137.9
Officers	15.5	15.6	15.4	15.1	15.1	15.2	15.1	15.0
Servicemen	125.1	129.4	126.7	124.4	124.6	124.5	124.5	122.9
Female	6.2	5.8	5.6	5.9	6.2	6.1	6.1	5.9
Officers	0.9	0.9	0.9	0.9	1.0	0.9	0.9	1.0
Servicewomen	5.3	4.8	4.7	5.0	5.2	5.2	5.1	5.0
Royal Air Force	86.2	86.5	84.5	86.1	87.1	87.2	87.3	87.0
Male	80.3	80.9	79.3	80.7	81.6	81.7	81.7	81.5
Officers	12.7	12.8	12.6	12.6	12.6	12.6	12.7	12.7
Servicemen	67.6	68.2	66.7	68.2	69.0	69.0	69.0	68.7
Female	5.8	5.6	5.2	5.4	5.5	5.6	5.5	5.5
Officers	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8
Servicewomen	5.2	4.9	4.5	4.7	4.8	4.8	4.8	4.7

1. Latest actual figures are for 1 January.
2. Figures are those used for the financial costings.

4.6 Strengths of the Reserves and Auxiliary Forces

1 April[1]

Thousands

	1980	1981	1982	1983	1984	1985	1986
All Services							
Regular Reserves:	192.6	196.5	196.4	193.4	198.0	205.5	209.7
Male	191.2	195.1	195.0	192.0	196.5	204.0	208.0
Female	1.4	1.4	1.4	1.4	1.5	1.5	1.7
Volunteer Reserves and Auxiliary Forces	77.0	83.9	86.3	87.3	85.7	88.5	93.1
Male	70.8	76.5	78.6	79.5	77.8	80.0	84.2
Female	6.2	7.4	7.7	7.8	7.9	8.5	8.9
Royal Navy							
Regular Reserves:							
Male	26.9	26.4	24.6	23.7	23.3	23.1	23.6
Female	0.1	0.1	0.1	0.2	0.2	0.3	0.3
Volunteer Reserves and Auxiliary Forces:							
Male	4.2	4.3	4.3	4.3	4.1	4.0	4.0
Female	0.8	1.1	1.1	1.1	1.1	1.2	1.2
Royal Marines							
Regular Reserves:							
Male	2.2	2.2	2.2	2.2	2.2	2.2	2.3
Volunteer Reserves and Auxiliary Forces:							
Male	0.8	0.9	1.1	1.1	1.0	1.1	1.1
Army							
Regular Reserves:							
Male	132.3	136.7	139.4	137.5	142.4	149.3	151.7
Female	0.8	0.7	0.7	0.7	0.8	0.8	1.0
Territorial Army:							
Male	58.8	64.1	66.3	67.0	65.5	67.2	69.4
Female	4.5	5.5	5.8	5.8	5.9	6.5	6.7
Ulster Defence Regiment:[2]							
Male	6.7	6.7	6.5	6.4	6.0	5.7	5.8
Female	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Home Service Force:							
Male	*	*	*	0.3	0.3	0.9	2.9
Royal Air Force							
Regular Reserves:							
Male	29.8	29.6	28.8	28.5	28.5	29.4	30.4
Female	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volunteer Reserves and Auxiliary Forces:							
Male	0.4	0.5	0.5	0.5	0.9	1.0	1.1
Female	0.1	0.1	0.1	0.1	0.1	0.1	0.2

1. Figures for the current year are for 1 January.
2. More details are given in Table 6.1.

4.7 Strengths of locally entered personnel[1]

1 April[2]

Number

		1980	1981	1982	1983	1984	1985	1986
MOD		44,631	45,033	44,876	43,957	43,470	42,626	42,001
Services		8,189	9,730	10,081	10,112	10,109	10,206	9,813
Civilians		36,442	35,303	34,795	33,845	33,361	32,420	32,188
UK								
Army		841	903	1,190	1,194	1,242	1,122	1,355
Continental Europe								
FRG	Civilians	25,098	24,312	23,851	23,251	22,876	22,667	22,615
Elsewhere	Civilians	766	757	746	747	805	809	806
Mediterranean								
Gibraltar	Army	44	42	43	44	48	49	49
	Civilians	2,656	2,662	2,600	2,524	2,418	1,699	1,655
Malta	Civilians	14	13	11	12	12	12	12
Cyprus	Civilians	2,913	2,748	2,712	2,637	2,645	2,611	2,548
Far East								
Hong Kong	Royal Navy	307	348	346	357	374	378	378
	Army	5,045	6,245	6,356	6,250	6,436	6,552	6,100
	Civilians	3,273	3,066	3,137	3,159	3,144	3,143	3,085
Brunei	Army	784	866	788	760	818	841	878
	Civilians	160	193	191	197	206	215	197
Nepal	Army	1,168	1,326	1,358	1,507	1,191	1,264	1,053
Elsewhere	Civilians	594	579	579	611	614	629	674
Other Areas	Civilians	968	963	968	707	641	635	596

1. Locally entered personnel are shown by country of deployment which may not be country of origin.
2. Latest year figures are for 1 January.

4.8 Strengths of Cadet Forces

1 April

Thousands

	1980	1981	1982	1983	1984	1985	1986[1]
All Services	147.8	150.3	150.1	148.5	144.5	144.7	144.7
Male	146.4	146.8	147.0	143.5	139.9	136.3	136.0
Female	1.4	3.5	3.8	5.0	6.6	8.3	8.7
Royal Navy cadets[2]	29.1	30.8	30.8	28.9	28.4	28.4	28.4
Male	28.5	28.2	28.3	26.4	25.2	24.7	24.7
Female	0.7	2.5	2.5	2.4	3.2	3.7	3.7
Army cadets	74.6	75.1	74.1	74.5	73.8	72.1	72.1
Male	74.0	74.5	73.2	73.4	72.6	70.7	70.7
Female	0.5	0.7	0.9	1.1	1.1	1.4	1.4
Royal Air Force cadets	44.1	44.4	45.9	45.1	44.3	44.1	44.2
Male	43.9	44.1	45.6	43.6	42.5	40.9	40.5
Female	0.2	0.3	0.4	1.5	1.8	3.2	3.7

1. Latest year figures are for 1 January.
2. All figures now include Portsmouth Area Volunteer Cadet Corps and Sea Scouts.

4.9 Strengths of civilian staff employed in the Ministry of Defence: by type

1 April

Thousands

	Actual						Estimates[2]	
	1981	1982	1983	1984	1985	1986[1]	1986	1987
MOD civilian staff[3]	264.9	251.7	242.7	232.5	206.5	203.7	202.8	197.3
Non-industrial	124.4	118.8	116.1	113.7	105.2	104.3	104.9	102.5
Industrials	140.5	132.9	126.6	118.8	101.3	99.4	97.9	94.8
UK based[4]:	229.6	216.9	208.9	199.1	174.1	171.5	170.3	165.0
Non-industrial	113.5	108.1	105.6	103.3	94.9	94.0	94.6	92.2
Industrial	116.1	108.8	103.3	95.8	79.1	77.5	75.6	72.8
United Kingdom (excluding Royal Ordnance Factories):	202.9	191.8	184.7	175.7	168.6	166.1	164.8	159.4
Non-industrial	103.1	98.2	96.3	93.9	90.8	89.9	90.6	88.1
Industrial	99.8	93.6	88.5	81.8	77.8	76.2	74.2	71.3
Royal Ordnance Factories[3]:	20.8	19.4	18.5	18.0	*	*	*	*
Non-industrial	5.8	5.4	5.1	5.3	*	*	*	*
Industrial	15.0	14.0	13.4	12.7	*	*	*	*
Overseas:	5.9	5.7	5.6	5.4	5.5	5.3	5.5	5.6
Non-industrial	4.6	4.5	4.2	4.1	4.1	4.1	4.1	4.0
Industrial	1.3	1.2	1.4	1.3	1.3	1.3	1.4	1.6
Locally engaged:	35.3	34.8	33.8	33.4	32.4	32.2	32.6	32.3
Non-industrial	10.9	10.7	10.5	10.4	10.2	10.3	10.3	10.3
Industrial	24.4	24.1	23.3	23.0	22.2	21.9	22.3	22.0

1. Actual figures for the latest year are as at 1 January.
2. Figures are those used for the financial costings.
3. The Royal Ordnance Factories staff are included up to 1 January 1985.
4. UK based personnel are those recruited in the UK even though in some instances they may be serving overseas. Locally engaged staff are those recruited overseas.

4.10 Strengths of occupational groups[1]

1 April

Thousands

	1980	1981	1982	1983	1984	1985	1986[2]
All groups	118.5	113.5	108.1	105.6	103.3	94.9	94.0
Administrative, executive and open structure[3]	11.5	11.0	10.6	10.3	11.3	10.7	10.8
Clerical	29.9	28.0	26.4	26.0	25.2	23.5	23.3
Secretarial	6.4	6.2	5.8	5.7	5.5	5.2	5.1
Supervisory	4.7	4.6	4.4	4.3	4.2	3.6	3.5
Professional and technological	26.5	25.5	23.9	23.4	22.7	19.5	19.0
Science	10.6	10.0	9.7	9.6	8.9	7.8	7.6
Cartographic and hydrographic	1.1	1.1	1.1	1.0	1.0	1.0	1.0
Retired officers	1.9	1.9	1.9	1.8	1.8	1.8	1.7
Police	3.9	3.8	3.7	3.6	3.6	3.4	3.5
Education	2.4	2.3	2.2	2.1	2.0	2.0	1.9
Medical and nursing	0.9	0.9	0.9	0.8	0.8	0.7	0.7
Others	18.7	18.2	17.6	17.0	16.2	15.7	15.9

1. This table covers all UK based non-industrial staff employed within the Ministry of Defence, including those working at the Royal Ordnance Factories.
2. Figures for the latest year are as at 1 January.
3. On 1 January 1984 the open structure was extended to Senior Principal and equivalent grades, drawing in staff who were formerly included in the professional, technical, science and other occupational groups.

4.11 Civilian apprentices: type of establishment

1 April[1]

Number

	1980	1981	1982	1983	1984	1985	1986
All apprentices	7,904	7,850	7,318	6,274	5,297	4,032	4,069
Royal Dockyards[2]	3,612	3,390	2,924	2,157	1,787	1,544	1,566
Stores and maintenance establishments:							
Navy	355	341	377	330	285	287	302
Army	731	729	669	581	417	384	380
Air Force	251	236	260	234	227	191	163
Research and development establishments	1,418	1,512	1,355	1,225	1,085	1,087	1,115
Royal Ordnance Factories[3]	997	1,051	1,068	947	823	*	*
Other establishments	540	591	665	800	673	539	543

1. Figures for the latest year are as at 1 January.
2. Includes the Clyde submarine base.
3. The Royal Ordnance Factories are included up to 1 January 1985.

4.12 Civilian apprentices: location

1 April[1]

Number

		1980	1981	1982	1983	1984	1985	1986
United Kingdom[2]	Total	7,904	7,850	7,318	6,274	5,297	4,032	4,069
	ROFs[2]	997	1,051	1,068	947	823	*	*
	Others	6,907	6,799	6,250	5,327	4,474	4,032	4,069
England	Total	6,412	6,490	5,873	4,972	4,058	2,852	2,891
	ROFs	887	938	948	835	727	*	*
	Others	5,525	5,552	4,925	4,137	3,331	2,852	2,891
Wales	Total	402	411	376	377	353	267	251
	ROFs	56	55	57	55	48	*	*
	Others	346	356	319	322	305	267	251
Scotland	Total	1,057	919	1,037	897	860	892	913
	ROFs	54	58	63	57	48	*	*
	Others	1,003	861	974	840	812	892	913
Northern Ireland	Total	33	30	32	28	26	21	14
Standard Regions of England[2]								
North	Total	71	75	89	54	43	7	3
	ROFs	47	51	51	41	35	*	*
Yorks and Humberside	Total	327	351	254	283	220	39	37
	ROFs	176	195	196	165	148	*	*
East Midlands	Total	369	370	351	294	237	107	90
	ROFs	170	165	161	134	115	*	*
South East	Total	3,294	3,392	2,596	2,218	1,693	1,364	1,431
	ROFS	98	117	128	123	108	*	*
South West	Total	1,755	1,694	1,904	1,565	1,388	1,178	1,175
	ROFs	35	39	39	30	26	*	*
West Midlands	Total	205	206	246	196	166	141	139
North West	Total	391	402	433	362	311	16	16
	ROFs	361	371	373	342	295	*	*

1. Figures for the latest year are as at 1 January.
2. All totals until 1984 include apprentices in Royal Ordnance Factories (ROFs).

4.13 Deployment of manpower: United Kingdom[1]

1 July

Thousands

	1980	1981	1982	1983	1984	1985
United Kingdom	469.3	465.9	423.2	429.8	422.6	397.2
Services	238.1	245.0	215.2	228.9	230.4	229.6
Civilian	231.2	220.9	208.0	200.9	192.2	167.7
National totals[2]						
England	396.7	394.8	371.6	363.8	355.2	333.7
Services	200.0	207.7	195.9	195.1	194.5	193.3
Civilian	196.6	187.1	175.7	168.7	160.7	140.4
Wales	16.4	15.7	15.1	14.9	14.6	12.8
Services	6.9	6.3	6.1	6.1	6.2	6.3
Civilian	9.5	9.4	9.0	8.8	8.4	6.5
Scotland	40.0	40.2	39.5	39.3	40.9	38.2
Services	18.1	18.9	19.0	18.7	20.6	20.1
Civilian	21.9	21.3	20.5	20.6	20.3	18.1
Northern Ireland[3]	15.1	14.7	13.8	13.0	12.7	12.4
Services	11.9	11.6	10.9	10.2	10.0	9.7
Civilian	3.2	3.1	2.9	2.8	2.7	2.7
Standard regions of England						
North	7.5	7.2	7.3	7.0	6.9	5.9
Services	1.2	1.2	1.7	1.5	1.7	2.3
Civilian	6.3	6.0	5.6	5.5	5.2	3.6
Yorkshire and Humberside	23.9	22.6	22.1	23.5	23.1	21.1
Services	14.6	13.6	13.5	14.9	14.8	14.8
Civilian	9.3	9.0	8.6	8.6	8.3	6.3
East Midlands	23.0	22.6	19.6	19.3	19.0	17.6
Services	13.9	14.4	12.7	12.9	13.0	12.9
Civilian	9.1	8.2	6.9	6.4	6.0	4.7
East Anglia	16.6	18.1	18.1	18.1	18.5	19.9
Services	13.8	15.6	15.7	15.6	15.9	16.3
Civilian	2.8	2.5	2.4	2.5	2.6	2.6
South East	189.4	188.3	173.9	166.7	158.5	153.9
Services	94.8	97.9	90.2	89.0	86.7	87.3
Civilian	94.6	90.4	83.7	77.7	71.8	66.6
South West	100.9	101.7	98.8	98.4	96.7	92.1
Services	50.0	53.2	51.9	51.5	50.7	48.1
Civilian	50.9	48.5	46.9	46.9	46.0	44.0
West Midlands	20.7	20.4	19.2	18.4	19.3	18.9
Services	9.7	9.7	8.7	8.1	9.5	9.4
Civilian	11.0	10.7	10.5	10.3	9.8	9.5
North West	14.7	14.0	12.5	12.4	13.2	5.3
Services	2.0	2.2	1.4	1.5	2.1	2.2
Civilian	12.7	11.8	11.1	10.9	11.1	3.1

1. This table identifies the deployment of UK Service personnel and MOD civilians. It includes Royal Navy and Royal Marines personnel on board ships in home waters. It also includes staff in Royal Ordnance Factories up to 1984. See notes on page 19.
2. The source from which these totals are compiled for the Services is different from that used to obtain the United Kingdom element of global deployments. Consequently, the sum of the national figures can differ from the United Kingdom figures.
3. The figures for Northern Ireland include all personnel from other parts of the United Kingdom and from the British Army of the Rhine who are serving on emergency tours of duty, but exclude the Ulster Defence Regiment.

4.14 Deployment of UK Service and Civilian personnel: overseas
1 April

Number

	1980	1981	1982	1983	1984	1985
All overseas areas[1]						
Royal Navy and Royal Marines	5,855	7,203	9,564	7,826	7,698	5,321
Army[2]	67,493	71,169	72,817	73,595	70,140	70,641
Royal Air Force	14,211	14,787	15,000	16,365	17,366	17,202
Civilians	6,220	5,948	5,708	5,613	5,437	5,455
Federal Republic of Germany						
Royal Navy and Royal Marines	39	37	38	19	256	18
Army[2]	54,956	58,928	60,044	57,358	55,163	55,997
Royal Air Force	9,718	10,244	10,411	10,047	10,186	10,571
Civilians	2,191	2,093	2,044	1,913	1,849	1,876
Elsewhere in Continental Europe[3]						
Royal Navy and Royal Marines	374	382	384	360	838	867
Army	3,826	3,977	4,126	3,931	3,909	3,853
Royal Air Force	1,647	1,692	1,727	1,740	1,803	1,623
Civilians	92	70	73	101	101	101
Gibraltar						
Royal Navy and Royal Marines	643	728	679	752	816	733
Army	776	770	832	808	815	771
Royal Air Force	404	412	421	431	465	455
Civilians	299	275	251	233	186	109
Cyprus						
Royal Navy and Royal Marines	17	15	16	16	20	19
Army	3,253	3,190	3,377	3,404	3,307	3,177
Royal Air Force	1,325	1,381	1,383	1,412	1,626	1,539
Civilians	370	368	357	342	323	293
Elsewhere in Mediterranean, Near East and Gulf						
Royal Navy and Royal Marines	2,936	4,338	6,021	907	2,185	552
Army	232	233	252	233	233	238
Royal Air Force	76	89	84	106	114	104
Civilians	11	9	9	11	9	11
Hong Kong						
Royal Navy and Royal Marines	326	334	311	292	275	272
Army	2,389	1,985	1,969	1,917	1,962	1,964
Royal Air Force	251	248	249	264	268	268
Civilians	383	386	400	291	272	298
Elsewhere in Far East						
Royal Navy and Royal Marines	56	58	61	57	58	114
Army	199	201	218	229	235	235
Royal Air Force	20	18	21	17	13	9
Civilians	27	22	22	21	22	15
Other locations						
Royal Navy and Royal Marines	1,464	1,311	2,054	5,423	3,250	2,746
Army	1,862	1,885	1,999	5,715	4,516	4,406
Royal Air Force	770	703	704	2,348	2,891	2,633
Civilians	2,847	2,725	2,552	2,701	2,675	2,752

1. The figures include service personnel who are on loan to countries in the areas shown. The Royal Navy, Royal Marine and civilian figures include personnel who are at sea in each area at the situation date. All Defence Attaches and Advisers and their staffs are included under 'Other locations' and not identified within specific areas.
2. Personnel serving in Northern Ireland on emergency tours of duty but remaining under the command of the Commander-in-Chief, British Army of the Rhine, are included in these numbers. Personnel serving on emergency tours of duty in other overseas areas are included in the numbers for that area.
3. These figures include personnel stationed in Berlin and Sardinia.

4.15 Recruitment of UK Service personnel: by Service

Number

	Financial years					1 April–31 December	
	1980–81	1981–82	1982–83	1983–84	1984–85	1984	1985
All Services	50,488	22,607	21,647	36,991	34,721	26,669	23,860
Male	46,693	21,188	19,342	33,760	32,076	24,639	22,274
Officers	2,924	2,319	2,136	2,544	2,716	1,948	1,948
Servicemen	43,769	18,869	17,206	31,216	29,360	22,691	20,326
Female	3,795	1,419	2,305	3,231	2,645	2,030	1,586
Officers	409	282	232	305	300	212	228
Servicewomen	3,386	1,137	2,073	2,926	2,345	1,818	1,358
Royal Navy	9,088	3,805	3,584	4,785	4,582	3,477	2,759
Male	8,130	3,353	3,078	4,223	4,231	3,200	2,567
Officers	685	400	395	445	537	394	422
Servicemen	7,445	2,953	2,683	3,778	3,694	2,806	2,145
Female	958	452	506	562	351	277	192
Officers	47	18	13	8	14	13	23
Servicewomen	911	434	493	554	337	264	169
Royal Marines	1,674	699	447	447	954	642	806
Male	1,674	699	447	447	954	642	806
Officers	69	52	28	33	43	43	65
Servicemen	1,605	647	419	414	911	599	741
Army	28,871	14,204	13,071	22,348	22,278	17,434	15,386
Male	27,241	13,603	11,679	20,811	20,914	16,388	14,567
Officers	1,285	1,198	1,157	1,295	1,435	974	955
Servicemen	25,956	12,405	10,522	19,516	19,479	15,414	13,612
Female	1,630	601	1,392	1,537	1,364	1,046	819
Officers	204	148	132	173	160	101	116
Servicewomen	1,426	453	1,260	1,364	1,204	945	703
Royal Air Force	10,855	3,899	4,545	9,411	6,907	5,116	4,909
Male	9,648	3,533	4,138	8,279	5,977	4,409	4,334
Officers	885	669	556	771	701	537	506
Servicemen	8,763	2,864	3,582	7,508	5,276	3,872	3,828
Female	1,207	366	407	1,132	930	707	575
Officers	158	116	87	124	126	98	89
Servicewomen	1,049	250	320	1,008	804	609	486

4.16 Recruitment of male UK Service personnel: by category

Number

	Financial years					1 April–31 December	
	1980–81	1981–82	1982–83	1983–84	1984–85	1984	1985
All Services	46,693	21,188	19,342	33,760	32,076	24,639	22,274
Officers	2,924	2,319	2,136	2,544	2,716	1,948	1,948
Pre-cadets	624	594	553	577	689	472	494
Officer cadets	1,019	758	702	875	879	599	550
University cadets	283	216	168	241	235	212	243
Specialists, graduates and other entrants	998	751	713	851	913	665	661
Servicemen	43,769	18,869	17,206	31,216	29,360	22,691	20,326
Adults[1]	20,363	7,256	9,120	19,056	16,307	11,793	10,806
Apprentices	2,869	2,456	2,354	2,370	2,536	2,065	1,782
Young Soldiers/Airmen, Juniors[2]	20,537	9,157	5,732	9,790	10,517	8,833	7,738
Royal Navy	8,130	3,353	3,078	4,223	4,231	3,200	2,567
Officers	685	400	395	445	537	394	422
Officer cadets	399	235	261	242	290	208	223
University cadets	74	43	24	45	47	38	63
Specialists, graduates and other entrants	212	122	110	158	200	148	136
Servicemen	7,445	2,953	2,683	3,778	3,694	2,806	2,145
Adults[1]	2,158	991	1,187	1,570	1,469	1,020	867
Apprentices	654	509	536	542	570	390	326
Juniors[2]	4,633	1,453	960	1,666	1,655	1,396	952
Royal Marines	1,674	699	447	447	954	642	806
Officers	69	52	28	33	43	43	65
Officer cadets	52	39	17	24	24	24	35
University cadets	8	3	1	3	6	6	3
Specialists, graduates and other entrants	9	10	10	6	13	13	27
Servicemen	1,605	647	419	414	911	599	741
Adults[1]	630	371	247	263	590	357	422
Juniors[2]	975	276	172	151	321	242	319
Army	27,241	13,603	11,679	20,811	20,914	16,388	14,567
Officers	1,285	1,198	1,157	1,295	1,435	974	955
Pre-cadets	624	594	553	577	689	472	494
Officer cadets	237	226	206	266	267	162	130
University cadets	79	60	76	90	79	77	76
Specialists, graduates and other entrants	345	318	322	362	400	263	255
Servicemen	25,956	12,405	10,522	19,516	19,479	15,414	13,612
Adults[1]	12,317	3,876	4,959	11,478	10,246	7,434	6,505
Young Soldiers[2]	3,463	340	142	1,146	1,817	1,407	1,016
Apprentices	1,976	1,625	1,580	1,564	1,703	1,531	1,312
Juniors[2]	8,200	6,564	3,841	5,328	5,713	5,042	4,779
Royal Air Force	9,648	3,533	4,138	8,279	5,977	4,409	4,334
Officers	885	669	556	771	701	537	506
Officer cadets	331	258	218	343	298	205	162
University cadets	122	110	67	103	103	91	101
Specialists, graduates and other entrants	432	301	271	325	300	241	243
Servicemen	8,763	2,864	3,582	7,508	5,276	3,872	3,828
Adults[1]	5,258	2,018	2,727	5,745	4,002	2,982	3,012
Young Airmen[2]	3,266	524	617	1,499	1,011	746	672
Apprentices	239	322	238	264	263	144	144

1. Entrants over the age of 17½, but excluding RN and RAF apprentices. (In the Army all apprentices are below the age of 17½ on entry).
2. Young soldiers are entrants between the ages of 17 and 17½; Army juniors are entrants below the age of 17; young airmen and RN, RM juniors are entrants below the age of 17½ (excluding apprentices in all cases).

4.17 Outflow of UK Service personnel: by Service

Number

	Financial years					1 April–31 December	
	1980–81	1981–82	1982–83	1983–84	1984–85	1984	1985
All Services	37,535	29,451	28,657	31,926	34,554	25,617	26,773
Male	84,438	26,799	26,108	29,468	32,095	23,759	24,756
Officers	2,630	2,833	3,214	3,372	3,194	2,444	2,596
Servicemen	31,808	23,966	22,894	26,096	28,901	21,315	22,160
Female	3,097	2,652	2,549	2,458	2,459	1,858	2,017
Officers	286	311	324	304	298	229	279
Servicewomen	2,811	2,341	2,225	2,154	2,161	1,629	1,738
Royal Navy	7,341	5,708	4,617	5,095	5,572	4,032	5,031
Male	6,563	5,131	4,085	4,514	5,011	3,607	4,589
Officers	567	634	750	796	567	422	462
Servicemen	5,996	4,497	3,335	3,718	4,444	3,185	4,127
Female	778	577	532	581	561	425	442
Officers	46	56	59	73	49	41	45
Servicewomen	732	521	473	508	512	384	397
Royal Marines	1,347	781	625	701	913	658	812
Male	1,347	781	625	701	913	658	812
Officers	49	52	61	64	55	43	62
Servicemen	1,298	729	564	637	858	615	750
Army	21,919	17,094	17,178	19,959	21,448	15,949	15,711
Male	20,627	15,878	15,960	18,854	20,286	15,068	14,713
Officers	1,355	1,415	1,491	1,701	1,703	1,300	1,386
Servicemen	19,272	14,463	14,469	17,153	18,583	13,768	13,327
Female	1,292	1,216	1,218	1,105	1,162	881	998
Officers	142	139	165	130	151	111	163
Servicewomen	1,150	1,077	1,053	975	1,011	770	835
Royal Air Force	6,928	5,868	6,237	6,171	6,621	4,978	5,219
Male	5,901	5,009	5,438	5,399	5,885	4,426	4,642
Officers	659	732	912	811	869	679	686
Servicemen	5,242	4,277	4,526	4,588	5,016	3,747	3,956
Female	1,027	859	799	772	736	552	577
Officers	98	116	100	101	98	77	71
Servicewomen	929	743	699	671	638	475	506

4.18 Outflow of UK Service personnel: by category

Number

	Financial years					1 April–31 December	
	1980–81	1981–82	1982–83	1983–84	1984–85	1984	1985
All Services	37,535	29,451	28,657	31,926	34,554	25,617	26,773
Male officers	2,630	2,833	3,214	3,372	3,194	2,444	2,596
Commissioned officers	2,000	2,109	2,530	2,829	2,577	2,003	2,087
Time and age expiries or exercise of right at option point	820	885	1,243	1,276	1,106	840	827
Premature release at own request	877	851	843	917	1,278	879	999
Redundancies	—	—	52	308	10	69	1
Medical reasons and deaths	115	107	142	102	104	71	86
Other reasons	188	266	250	226	79	144	174
Officers designate	630	724	684	543	617	441	509
At own request	168	136	151	84	73	51	88
Medical reasons and deaths	9	6	6	13	12	9	6
Other reasons	453	582	527	446	532	381	415
Servicemen	31,808	23,966	22,894	26,096	28,901	21,315	22,160
Before completion of 6 months service	10,406	4,705	2,712	5,580	5,925	4,374	3,738
By exercise of right	6,511	3,087	1,787	3,655	4,009	2,905	2,571
Unsatisfactory, for disciplinary or other reasons	3,647	1,502	839	1,805	1,695	1,305	1,059
Medical reasons and deaths	240	112	85	116	215	160	107
Compassionate release	8	4	1	4	6	4	1
After completion of 6 months service	21,402	19,261	20,182	20,516	22,976	16,941	18,422
Time and age expiries or exercise of right at option point	10,734	9,009	9,986	10,779	11,501	9,544	8,994
Premature release at own request	6,240	4,158	3,853	4,221	6,113	4,376	5,366
Redundancies	2	22	158	346	422	368	320
Unsatisfactory, for disciplinary or other reasons	3,268	4,953	4,821	4,010	3,538	1,666	2,558
Medical reasons and deaths	1,007	963	1,218	948	1,194	843	1,058
Compassionate release	151	156	146	212	208	144	126
Female officers	286	311	324	304	298	229	279
Time and age expiries or exercise of right at option point	142	141	182	165	162	122	161
At own request	131	156	127	112	108	86	85
Medical reasons and deaths	4	3	7	6	12	10	2
Other reasons	9	11	8	21	16	11	31
Servicewomen	2,811	2,341	2,225	2,154	2,161	1,629	1,738
Time and age expiries or exercise of right at option point	80	73	77	68	58	46	66
By exercise of right to give 18 months notice	446	411	331	308	305	230	266
At own request	425	150	254	329	307	230	221
Marriage, pregnancy	1,363	1,327	1,336	1,199	1,261	940	1,010
Unsatisfactory, for disciplinary or other reasons	439	326	200	198	185	144	143
Medical reasons and deaths	48	44	17	43	41	35	27
Compassionate release	10	10	10	9	4	4	5

4.19 Recruitment and losses of UK-based civilian non-industrial staff[1] : by occupational group

Number

	Financial years					1 April–31 December	
	1980–81	1981–82	1982–83	1983–84	1984–85	1984	1985
Totals[2]							
Recruitment	5,079	4,565	5,451	6,050	6,094	5,133	5,463
Losses	10,372	10,632	8,937	9,606	14,458	7,453	6,918
Administrative and executive:							
Recruitment	135	133	168	183	196	167	123
Losses	817	749	700	669	1,036	667	443
Clerical:							
Recruitment	2,050	2,106	2,693	2,720	2,858	2,435	2,706
Losses	3,500	3,417	3,073	3,156	4,081	2,297	2,449
Secretarial:							
Recruitment	666	439	530	569	619	503	546
Losses	815	720	726	771	871	553	558
Supervisory:							
Recruitment	33	39	39	19	6	3	13
Losses	310	228	304	309	713	185	168
Professional and technological:							
Recruitment	270	187	138	341	208	102	190
Losses	1,607	2,344	1,283	1,495	3,859	1,105	878
Science:							
Recruitment	300	277	340	295	340	295	348
Losses	905	644	538	591	828	570	361
Cartographic and Hydrographic:							
Recruitment	41	21	5	29	41	14	60
Losses	64	53	37	48	50	25	48
Retired Officers:							
Recruitment	187	180	182	170	204	167	159
Losses	201	227	186	194	223	168	173
Police:							
Recruitment	178	37	176	303	341	245	374
Losses	232	207	246	303	231	170	251
Educational:							
Recruitment	175	193	153	233	288	201	149
Losses	305	254	271	311	354	315	285
Medical and nursing:							
Recruitment	144	120	132	106	134	97	109
Losses	153	132	190	140	307	105	162
Others:							
Recruitment	900	833	895	1,082	859	904	686
Losses	1,463	1,657	1,383	1,619	1,905	1,293	1,142

1. Recruitment figures refer to staff entering the Ministry of Defence from outside the UK Civil Service and losses relate to those leaving the Ministry of Defence and the UK Civil Service.

2. Royal Ordnance Factory recruitment and losses are included, up to 1 January 1985. Royal Fleet Auxiliary crews and some staff serving on ocean weather ships are excluded.

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Outflow of trained Service personnel: major skill or trade groups

Number

	1979–80	1980–81	1981–82	1982–83	1983–84	1984–85
Engineering	7,347	5,708	4,855	5,086	5,114	5,793
Mechanical	3,616	3,415	2,467	2,704	2,542	2,977
Electrical	2,997	1,742	1,956	1,835	1,976	2,111
Civil	734	551	432	547	596	705
Mechanical transport[1]	3,046	2,378	2,128	2,319	2,072	2,526
Communications[2]	1,916	1,519	1,296	1,192	1,303	1,444
Catering	1,448	1,242	1,219	1,248	1,214	1,318
Accounting and secretarial	1,229	1,123	1,268	1,153	912	1,196
Supply and stores	1,250	900	978	1,061	1,063	1,145
Medical and dental[3]	900	864	1,037	1,096	1,111	1,048
Aviation[4]	1,199	754	836	950	979	899
Security and fire services	751	544	529	640	612	791
Education[5]	184	144	156	199	238	214
Administration and personnel management[6]	86	66	240	292	313	277

1. Comprising all personnel trained in the control and operation of wheeled and tracked vehicles.
2. Comprising all personnel trained in the control and operation of communications systems.
3. Comprising doctors, dentists, nurses and supporting staff.
4. Comprising flying and ground control personnel.
5. Including physical education instructors other than those with skills covered by other categories.
6. Including officers of the rank of Captain RN and above, and equivalent ranks in the other Services, not included in other categories.

4.21 Indices[1] and illustrative rates of military salary[2]

	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86
	1980/81 = 100					
Military salary index: all ranks[3]	100.0	110.6	117.1	125.7	132.1	145.1
Senior Officers (Major General and above)	100.0	107.1	122.2	130.6	142.7	156.3
Officers (up to Brigadier)	100.0	113.6	121.9	132.5	139.7	155.2
Other ranks (Sergeant and above)	100.0	111.2	118.1	127.0	133.6	146.9
Other ranks (up to Corporal)	100.0	109.2	114.9	122.4	128.5	140.3
	£					
Illustrative rates of military salary (in terms of Army ranks)[4]						
General	31,000	34,000	37,748	40,500	45,501	60,000
Brigadier	18,250	20,900	22,750	25,001	27,101	29,401
Colonel *after 4 years in the rank*	16,151	18,400	19,998	21,879	23,699	25,711
Lieutenant Colonel *after 4 years in the rank*	13,750	15,801	17,199	18,801	20,451	22,170
Major *after 4 years in the rank*	11,001	12,399	13,301	14,527	15,699	16,976
Captain *after 3 years in the rank*	8,501	9,702	10,351	11,298	12,249	13,202
Lieutenant *after 2 years in the rank*	6,650	7,599	8,048	8,777	9,479	10,191
Second Lieutenant	5,201	5,949	6,249	6,500	6,986	7,490
Warrant Officer I *band 6, scale C; after 18 years*[5]	8,983	10,129	10,800	11,694	12,560	13,505
Warrant Officer II *band 6, scale C; after 18 years*[5]	8,592	9,636	10,257	11,068	11,888	12,786
Staff Sergeant *band 5, scale C; after 18 years*[5]	7,669	8,519	9,030	9,673	10,384	11,169
Sergeant *band 5, scale C; after 12 years*[6]	7,172	7,917	8,388	9,018	9,694	10,417
Corporal *class 1, band 2, scale C*	6,482	7,125	7,508	8,037	8,651	9,289
Lance Corporal *class 1, band 1, scale C*	5,344	5,814	6,106	6,493	6,924	7,428
Private *class 2, band 1, scale C*	4,453	4,811	5,048	5,366	5,720	6,081

1. Indices cover adult male UK Service personnel. In the weighting, based on paid strengths at April 1984, doctors, dentists, chaplains, legal and educational officers are excluded.
2. For officers, the mid point of the incremental scales have been used. For servicemen, the pay bandings have been selected which contain the largest number at each rank. Within each rank, servicemen are divided for the purposes of pay into classes, bands and scales according to their employment classification, the nature of their specialisation and the period of commitment to serve. All forms of additional pay, e.g. flying pay diving pay, parachute pay are excluded since they are not paid to the majority of Service personnel.
3. Indices are based on rates of pay which were fixed from 1 April for the whole year except that pay increases for senior officers in 1983–84, 1984–85 and 1985–86 and for all ranks in 1984–85 were given in two stages (see note 4); the indices are based on the average rate of pay through the year.
4. In 1983–84, salary increases for general and equivalent were delayed and phased to 1 August 1983 (£40,500) and 1 January 1984 (£42,750). In 1984–85, increases for all ranks were phased to 1 April and 1 November 1984. The 1 November salaries are shown in the table: at 1 April the salary for general and equivalent was £44,030; the salaries for other officers were between 4.2% and 5.3% lower than the 1 November levels; the salaries for servicemen were between 3.5% and 4.3% lower than the 1 November levels. In 1985–86, salary increases for General and equivalent were delayed and phased to 1 July 1985 (£52,750) and 1 March 1986 (£60,000).
5. Includes length of service increments – £328,50 (1980–81), £365 (1981–82), £383.25 (1982–83), £402.60 (1983–84), £401.50 (1984–85) and £456.25 (1985–86).
6. Includes length of service increments – £182.50 (1980–81), £200.75 (1981–82), £219 (1982–83), £237.90 (1983–84), £237.25 (1984–85) and £273.75 (1985–86).

5. Welfare

Social expenditure included in the Defence budget. The Defence budget provides certain social services as specified in Table 5.1 for members of the Armed Forces and their families. These are also of benefit to UK-based civilians serving overseas. The figures shown for Education cover the education of Service personnel, the Service Children's Education Authority and contributions towards the cost of educating Service children in other schools. The cost of Service pensions which do not relate to the current Defence effort, is also shown. Civil superannuation, not covered by the Defence budget is not included in this table.

Service hospitals. Table 5.3 gives the number of hospitals in the United Kingdom and in areas abroad where there is a significant British military presence. These hospitals take as patients members of all 3 Services and their dependants. In the United Kingdom, hospitals take other civilian patients under arrangements agreed with the National Health Service. The hospitals abroad also admit UK-based MOD civilians and their dependants and certain other personnel (eg Hong Kong Government employed personnel and Gurkhas and their dependants).

Sickness, medical discharge and deaths of UK Service personnel. Tables 5.4, 5.5 and 5.6 cover Regular Service Personnel only. The ICD code numbers refer to the ninth revision (1977) of the International Statistical Classification of Diseases, Injuries and Causes of Death. Medical discharges are those invalided out of the Services before the completion of their engagement.

Officer training in selected Service colleges: student numbers and student/staff ratios. The colleges listed in Table 5.8 provide courses of various lengths, largely for basic and higher officer training. Average student population is calculated by dividing the number of days' instruction given during the year by the number of days available for instruction. The student/staff ratios are constructed by comparing the average student population at each establishment with the numbers of staff actually in post. The figures are based on MOD cost accounting methods which differ from those used by the Department of Education and Science (DES). The figures reflect wide differences between the tasks of the various Service colleges whose functions differ from those of civilian institutions of Higher Education so that the use of DES accounting methods would be inappropriate. It is therefore impossible to make comparisons between these figures and similar figures produced by the DES.

Selected qualifications obtained under Service sponsorship. As a result of training and assistance given by the Services to their personnel, skills valuable in later civilian life are acquired and formal qualifications are often obtained. Those given in Table 5.9 are illustrative of the wide range involved.

Not all the degrees are obtained at universities. A number of degree courses are run at the Service education establishments, Royal Naval Engineering College Manadon and Royal Military College of Science Shrivenham.

In Service units and ships, education officers organise instruction for a range of General Certificate of Education and other academic examinations. In addition, Service personnel may attend local education authority and other external courses and will normally be eligible for financial assistance, but these instances are not recorded centrally and are excluded from this table.

Service Children's Education Authority schools. Table 5.10 gives details of the Service Children's Education Authority (SCEA) which administers primary and secondary schools in overseas military commands for the children of serving personnel. The total number of Service children in primary or secondary schooling in the United Kingdom and overseas was estimated to be 145,000 in 1983. The 1983 Armed Forces Accommodation and Family Education survey also revealed a total of 16,500 Service children in nursery schools. Enrolment in SCEA schools also includes children of MOD and other UK Civil Service employees serving overseas.

Service married accommodation. Table 5.13 gives details of the accommodation provided for Service families in the United Kingdom and abroad partly by building to approved standards and partly by renting accommodation. The multiple hirings in British Army of the Rhine (BAOR) and Royal Air Force Germany (RAFG) relate to accommodation built by private developers and leased by the Federal German authorities on behalf of the British Forces. Small numbers of multiple hirings are held elsewhere and are included in the 'hirings' figures.

House ownership by Service personnel. Table 5.14 derives from the Armed Forces Accommodation and Family Education surveys. Information for these surveys is collected by means of questionnaires posted to a random sample of personnel, stratified by rank, from all three Services. The last survey was carried out in 1983 when the sample size was 18,000.

Service entertainment and welfare. Tables 5.17 and 5.18 show a range of the entertainment and welfare services available to HM Forces. The Services Sound and Vision Corporation (SSVC) is a registered charity and a private company limited by guarantee with its head office at Chalfont Grove, Gerrards Cross, Bucks. It incorporates the former Services Kinema Corporation (SKC) and the British Forces Broadcasting Service (BFBS). A Memorandum of Association defines the charitable objects for which the Corporation is established and Articles of Association define the manner in which the Corporation is governed. The Corporation is financially self-supporting and there is no subsidy from Public Funds and the services provided include television and radio broadcasting, training support and audio visual entertainment.

NAAFI is also a registered company limited by guarantee. A Memorandum of Association defines its powers and objects while Articles of Association govern the way in which the NAAFI Council and the Board of Management are appointed and work. Its trading outlets comprise shops and messing issue stores, Junior Ranks clubs and ships canteens. Figures for petrol stations, sub-post offices, bowling alleys and shops attached to Junior Ranks clubs are included but shops and stores opened for military exercises or temporary training camps are excluded.

5.1 Social expenditure included in the Defence budget[1]

£ million

	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Total expenditure	963	1,022	1,118	1,223	1,343	1,436	1,535
Medical services[2]	191	212	207	211	231	228	247
Education[3]	123	131	149	170	164	175	183
Married accommodation[4]	106	76	105	86	117	127	126
Service pensions[5]	543	603	657	755	831	906	979

1. The figures given in this table are based on the original Estimates and reflect the price levels of the Estimates for the years in question.
2. Net of repayments for civilian patients not entitled to treatment in Service hospitals.
3. Comprising education allowances, the cost of Service schools in table 5.10 and adult education. It is difficult to separate the cost of Service schools from the cost of adult education but it is assessed that SCEA schools for approximately one third of the total.
4. Net of rents payable for married quarters.
5. Expenditure on Service pensions is included above as a social payment because it does not relate to the current defence effort.

5.2 Strengths of uniformed medical staff[1]
1 April[2]

Number

	1980	1981	1982	1983	1984	1985	1986
Qualified doctors:	1,176	1,185	1,180	1,165	1,171	1,199	1,211
Royal Navy	272	290	295	285	289	283	292
Army	496	507	493	507	515	539	548
Royal Air Force	408	388	392	373	367	377	371
Qualified dentists:	376	380	399	406	399	400	387
Royal Navy	95	98	101	101	92	92	81
Army	173	173	182	197	197	198	196
Royal Air Force	108	109	116	108	110	110	110
Nursing services:[3]	2,917	3,012	2,976	2,963	2,928	2,896	2,719
QARNNS[4]	586	591	596	583	533	473	421
QARANC[5]	1,402	1,567	1,637	1,682	1,755	1,772	1,659
PMRAFNS[6]	929	854	743	718	640	651	639
Medical and dental support staff:	5,575	5,655	5,808	5,879	5,989	5,943	5,908
Royal Navy	1,253	1,227	1,317	1,280	1,214	1,175	1,103
Army	2,893	2,982	3,051	3,177	3,334	3,349	3,419
Royal Air Force	1,429	1,446	1,440	1,422	1,441	1,419	1,386

1. Includes staff employed at units (including ships) and in hospitals.
2. Figures for the current year are as at 1 January.
3. Comprises trained personnel and personnel undertaking 'on-the-job' training and held against established posts.
4. Queen Alexandra's Royal Naval Nursing Service (from 1983 includes male nurses).
5. Queen Alexandra's Royal Army Nursing Corps.
6. Princess Mary's Royal Air Force Nursing Service (including male nurses).

5.8 Service hospitals

Number

	1980	1981	1982	1983	1984	1985
Number of Service hospitals[1]						
United Kingdom[2]	11	11	11	10	9	9
Overseas[3]	10	10	10	11	11	10
Average number of approved beds						
United Kingdom[2]	2,287	2,290	2,264	2,156	2,056	2,048
Overseas[3]	1,231	1,247	1,240	1,254	1,260	1,255
Average number of available beds						
United Kingdom[2]	..	2,286	2,195	2,113	1,956	1,986
Overseas[3]	..	1,269	1,252	1,261	1,218	1,184
Average number of occupied beds						
United Kingdom	1,504	1,468	1,351	1,302	1,248	1,231
Overseas	749	739	708	694	661	599
Average percentage of beds occupied[4,5]						
United Kingdom	*65.8*	*64.2*	*61.5*	*61.6*	*63.8*	*62.0*
Overseas	*60.8*	*58.2*	*56.6*	*55.1*	*54.3*	*50.6*
Total number of inpatient admissions						
United Kingdom	76,030	75,900	71,310	69,897	71,560	75,084
UK Service personnel	28,208	28,565	26,984	26,926	26,884	27,923
Service dependants	14,620	14,422	14,112	12,825	12,708	12,570
NHS/others	33,202	32,913	30,214	30,146	31,968	34,591
Overseas	43,800	42,330	42,706	43,563	43,469	41,746
UK Service personnel	13,153	12,675	13,566	14,310	14,522	13,767
Service dependants	21,818	21,542	23,191	22,914	22,154	22,058
Others	8,829	8,113	5,949	6,339	6,793	5,921
Average number of admissions per bed[5]						
United Kingdom	33.2	33.1	32.5	33.1	36.6	37.8
UK Service personnel	12.3	12.5	12.3	12.7	13.7	14.1
Service dependants	6.4	6.3	6.4	6.1	6.5	6.3
NHS/others	14.5	14.4	13.8	14.3	16.3	17.4
Overseas	35.6	33.4	34.1	34.5	35.7	35.3
UK Service personnel	10.7	10.0	10.8	11.3	11.9	11.6
Service dependants	17.7	17.0	18.5	18.2	18.2	18.6
Others	7.2	6.4	4.8	5.0	5.6	5.0
Average days in hospital per patient						
United Kingdom	7.2	7.1	6.9	6.8	6.4	6.0
UK Service personnel	8.3	8.0	8.1	7.8	7.4	6.9
Service dependants	5.1	5.2	5.1	5.0	4.5	4.5
NHS/others	7.3	7.0	6.7	6.7	6.2	5.8
Overseas	6.2	6.4	6.1	5.8	5.6	5.2
UK Service personnel	7.0	7.0	6.6	6.2	5.8	5.5
Service dependants	5.0	5.2	5.0	4.8	4.5	4.0
Others	9.0	8.6	8.9	8.5	8.4	9.0
Outpatients: total attendances						
United Kingdom	377,531	401,370	399,672	369,398	381,640	373,653
UK Service personnel	118,394	133,048	134,342	118,020	123,095	119,295
Service dependants	69,305	67,864	65,129	58,543	54,262	48,653
NHS/others	189,832	200,458	200,201	192,835	204,283	205,705
Overseas	223,119	228,985	232,115	241,068	235,654	229,605
UK Service personnel	60,488	65,468	68,735	73,427	68,019	64,418
Service dependants	96,529	111,808	111,478	116,162	108,160	102,921
Others	66,102	51,709	51,902	51,479	59,475	62,266

1. As at 31 December of each year.
2. Nocton Hall closed March 1983. Louise Margaret Maternity Hospital became a part of the Cambridge Military Hospital, Aldershot in October 1984.
3. The British Station Hospital Falkland Islands is not included until 1983. The British Military Hospital Iserlohn closed in September 1985.
4. The 1982 figures reflect the restriction of non-urgent admission during the Falklands campaign.
5. The 1980 figures are based upon the average number of approved beds. From 1981 they are based on the average number of available beds.

5.4 Sickness of UK Service personnel: selected diagnoses of cases[1]

Number

	ICD Codes[2]	1979	1980	1981	1982	1983	1984
Average strength (thousands)		316.2	325.2	333.8	325.0	322.4	326.3
Male		300.7	308.7	317.1	309.5	306.6	309.8
Female		15.5	16.5	16.7	15.5	15.8	16.5
Royal Navy and Royal Marines		71.9	72.1	74.3	72.2	71.4	71.0
British Army		157.5	162.5	166.8	162.4	160.4	162.4
Royal Air Force		86.9	90.6	92.7	90.4	90.6	92.9
All causes	001–999 & V01–V82	54,763	55,453	53,746	52,535	51,798	52,821
Male		49,749	50,362	49,013	48,232	47,540	48,275
Female		5,014	5,091	4,733	4,303	4,258	4,546
Royal Navy and Royal Marines		13,165	12,014	12,268	10,768	11,329	11,706
British Army		24,460	26,280	25,225	25,207	24,842	26,030
Royal Air Force		17,138	17,159	16,253	16,560	15,627	15,085
All diseases	001–799	42,569	42,807	41,114	39,524	40,114	41,868
Infective & parasitic diseases	001–139	4,038	3,806	3,252	2,963	3,245	3,360
Neoplasms	140–239	559	506	557	607	656	735
Endocrine, nutritional & metabolic diseases	240–279	367	391	469	407	393	351
Diseases of blood & blood forming organs	280–289	114	118	76	90	89	88
Mental disorders	290–319	1,384	1,467	1,313	1,109	1,165	1,025
Diseases of the nervous system & sense organs	320–389	1,243	1,230	1,177	1,117	1,126	1,059
Diseases of the circulatory system	390–459	1,671	1,673	1,439	1,510	1,655	1,606
Diseases of the respiratory system	460–519	12,133	11,762	10,094	9,624	9,003	10,159
Diseases of the digestive system	520–579	7,451	7,982	8,208	7,840	7,709	7,651
Diseases of the genito-urinary system	580–629	2,249	2,247	2,371	2,401	2,493	2,474
Complication of pregnancy, childbirth & puerperium	630–676	180	217	270	207	152	149
Diseases of the skin & subcutaneous tissue	680–709	2,138	2,254	2,255	2,146	2,059	1,948
Diseases of the musculoskeletal system	710–739	5,971	6,130	6,763	6,974	7,682	8,381
Congenital anomalies	740–759	304	320	369	266	285	272
Symptoms & ill-defined conditions	780–799	2,767	2,704	2,501	2,263	2,402	2,610
All injuries[3]	800–999	9,845	10,410	10,357	10,725	9,585	9,049
Aircraft accident injuries		158	123	132	121	139	91
Training & exercise injuries		693	972	1,148	934	1,283	1,257
Road traffic accident injuries		1,595	1,799	1,813	1,702	1,340	1,141
Sports injuries		1,673	1,951	1,965	1,800	1,746	1,693
Accidents due to falls or jumps		1,777	1,762	1,626	1,734	1,745	1,710
Other injuries		3,949	3,803	3,673	4,434	3,332	3,157
Supplementary classifications[4]	V01–V82	2,349	2,236	2,275	2,286	2,099	1,904

1. Based upon spells of off-duty sickness lasting 2 days or more terminating during the year. Sickness of Army personnel not requiring admission to a medical unit is excluded. Includes all cases whether occurring on or off duty.
2. See third note on page 41.
3. Where an injury could be classified under more than one cause (eg aircraft crash during an exercise) then the injury is shown under the first listed cause (ie in the example 'Aircraft accident').
4. Used where no classifiable diagnosis is reported or where the person is not sick, eg admission for investigation preventive measure or elective surgery.

5.5 Medical discharges of UK Service personnel[1]

Number

	ICD Codes[2]	1979	1980	1981	1982	1983	1984
All causes	001–999	1,388	1,010	882	800	794	1,068
Male		1,336	962	836	772	761	1,022
Female		52	48	46	28	33	46
Royal Navy and Royal Marines		248	156	158	142	145	228
British Army		895	622	541	524	511	700
Royal Air Force		245	232	183	134	138	140
All diseases	001–799	1,188	842	738	677	628	838
Mental disorders	290–319	182	163	125	107	114	106
Diseases of the nervous system & sense organs	320–389	273	196	178	152	160	177
Diseases of the musculoskeletal system	710–739	348	218	195	222	164	312
Other diseases	001–799 nes	385	265	240	196	190	243
All injuries	800–999	200	168	144	123	166	230

1. Average strength figures are given in Table 5.4.
2. See third note on page 41.

5.6 Deaths of UK Service personnel[1],[2]

Number

	ICD Codes[3]	1980	1981	1982	1983	1984	1985
All causes	001–999	365	368	596	349	332	314
Male		362	362	592	345	325	309
Female		3	6	4	4	7	5
Royal Navy and Royal Marines		77	69	161	77	61	56
British Army		193	203	336	167	164	148
Royal Air Force		95	96	99	105	107	110
All diseases	001–799	118	137	119	129	120	113
Neoplasms	140–239	44	54	48	49	54	62
Heart and Cerebrovascular disease	390–438	56	65	56	63	56	46
Other diseases	001–799 nes	18	18	15	17	10	5
All injuries	800–999	247	231	477	220	212	201
Road traffic accident injuries		141	130	115	115	113	111
Other injuries[4]		106	101	362	105	99	90

1. Includes all deaths whether occurring on or off duty. Latest year figures by cause are provisional.
2. Average strength figures are given in Table 5.4.
3. See third note on page 41.
4. The 1982 figure includes UK Service personnel killed in the Falklands Campaign: All services 236; Royal Navy and Royal Marines 113, Army 122, Royal Air Force 1.

5.7 Service aircraft: accidents involving loss or serious damage, rates and casualties

	1980	1981	1982[1]	1983	1984	1985
Number of accidents						
All Services	37	32	45	40	27	24
Helicopters	12	10	16	10	6	8
Fixed wing aircraft	25	22	29	30	21	16
Royal Navy	5	8	14	10	6	6
Helicopters	3	7	10	6	3	5
Fixed wing aircraft	2	1	4	4	3	1
Army	9	1	6	6	2	2
Helicopters	7	1	6	3	2	2
Fixed wing aircraft	2	–	–	3	–	–
Royal Air Force	23	23	25	24	19	16
Helicopters	2	2	–	1	1	1
Fixed wing aircraft	21	21	25	23	18	15
Rates per 10,000 flying hours						
Royal Navy	*0.56*	*0.86*	*1.14*	*0.98*	*0.61*	*0.62*
Helicopters	*0.46*	*1.01*	*1.07*	*0.79*	*0.43*	*0.71*
Fixed wing aircraft	*0.81*	*0.42*	*1.36*	*1.56*	*1.10*	*0.37*
Army	*0.99*	*0.11*	*0.63*	*0.62*	*0.20*	*0.20*
Helicopters	*0.84*	*0.12*	*0.68*	*0.33*	*0.21*	*0.21*
Fixed wing aircraft	*2.63*	–	–	*4.08*	–	–
Royal Air Force	*0.48*	*0.50*	*0.49*	*0.48*	*0.38*	*0.33*
Helicopters	*0.33*	*0.32*	–	*0.14*	*0.13*	*0.13*
Fixed wing aircraft	*0.50*	*0.52*	*0.57*	*0.54*	*0.42*	*0.37*
Casualties to personnel[2]						
Killed	23	11	35	19	10	17
Royal Navy	3	5	4	1	1	7
Royal Marine	3	–	1	–	–	–
Army	3	–	20	–	3	1
Royal Air Force	12	6	7	16	4	9
Allied and foreign[3]	1	–	2	1	–	–
Civilians	1	–	1	1	2	–
Seriously injured	12	10	17	21	14	10
Royal Navy	2	–	2	6	1	3
Royal Marine	–	–	–	–	–	–
Army	1	–	6	1	1	4
Royal Air Force	9	10	8	14	12	3
Allied and foreign[3]	–	–	1	–	–	–
Civilians	–	–	–	–	–	–

1. Figures in this column do not include details of aircraft lost to or casualties caused by enemy fire in the Falklands Campaign. Aircraft accidently lost in the Falklands Campaign are included.
2. Service casualties are identified to their serving department and not to the parent service of the aircraft involved.
3. These are officers on exchange from allied and foreign forces.

Officer training in selected Service Colleges: student numbers and student/staff ratios

	1979–80	1980–81	1981–82	1982–83	1983–84	1984–85
Average student population						
Royal Navy						
Britannia Royal Naval College, Dartmouth	545	526	478	357	399	513
RN College, Greenwich.	150	158	161	144	136	159
RN Engineering College, Manadon	347	350	441	423	372	382
Army						
Royal Military Academy, Sandhurst	575	638	655	618	621	781
Staff College, Camberley	159	170	166	170	178	170
Royal Military College of Science, Shrivenham[1]	497	494	492	450	434	*
Royal Air Force						
RAF College, Cranwell[2]	340	570	572	449	600	577
RAF Staff College, Bracknell	94	87	86	84	91	97
Joint Service						
Royal College of Defence Studies[3]	76	76	76	75	76	79
Ratio — students: instructional staff						
Royal Navy						
Britannia Royal Naval College, Dartmouth	7.0	7.2	7.4	7.0	6.4	6.8
RN College, Greenwich.	2.4	3.0	3.8	3.3	2.8	3.2
RN Engineering College, Manadon	2.8	2.8	3.4	3.4	2.9	3.3
Army						
Royal Military Academy, Sandhurst	2.9	2.8	3.4	3.1	3.2	3.6
Staff College, Camberley	5.1	5.9	5.7	5.9	5.9	6.0
Royal Military College of Science, Shrivenham[1]	1.9	2.0	2.1	2.6	2.6	*
Royal Air Force						
RAF College, Cranwell[2]	2.2	2.7	3.0	2.6	3.0	3.0
RAF Staff College, Bracknell	5.2	4.6	3.9	3.8	3.8	3.9
Joint Service						
Royal College of Defence Studies[3]	6.9	7.6	7.6	7.5	7.6	7.9
Ratio — students: other staff[4]						
Royal Navy						
Britannia Royal Naval College, Dartmouth	1.1	1.1	0.8	0.7	0.9	1.3
RN College, Greenwich.	1.0	1.0	0.6	0.5	0.8	1.0
RN Engineering College, Manadon	1.0	1.0	0.9	1.0	1.2	1.9
Army						
Royal Military Academy, Sandhurst	0.8	0.8	0.8	0.8	0.8	0.9
Staff College, Camberley	0.9	1.1	1.1	1.1	1.1	1.1
Royal Military College of Science, Shrivenham[1]	0.7	0.7	0.7	1.1	1.2	*
Royal Air Force						
RAF College, Cranwell[2]	0.6	1.0	0.9	0.7	0.9	1.0
RAF Staff College, Bracknell	0.5	0.5	0.5	0.6	0.6	0.8
Joint Service						
Royal College of Defence Studies[3]	2.7	2.7	2.7	2.8	2.7	2.9

1. Training at the Royal Military College of Science, was contracted out to the Cranfield Institute of Technology, from 1984–85.
2. Excluding that part of RAF Cranwell devoted to flying training. The large increase in the average student population at RAF Cranwell in 1980–81 resulted from the concentration of all RAF initial training at that station (previously a proportion was conducted at RAF Henlow).
3. Figures on a calendar year basis.
4. 'Other staff' include those in direct support of training as well as cleaners, cooks etc.

5.9 Selected qualifications obtained under Service sponsorship

Number

	1979	1980	1981	1982	1983	1984
Degrees[1]						
Postgraduate degrees	94	72	91	90	79	113
Royal Navy and Royal Marines	20	14	17	19	22	28
Army	62	51	53	48	39	56
Royal Air Force	12	7	21	23	18	29
Medical and dental degrees	118	101	126	87	90	85
Royal Navy and Royal Marines	29	21	23	32	17	22
Army	60	58	56	40	47	53
Royal Air Force	29	22	47	15	26	10
Other first degrees	397	349	365	413	445	434
Royal Navy and Royal Marines	125	123	135	142	165	151
Army	204	162	179	207	191	199
Royal Air Force	68	64	51	64	89	84
Higher National Certificate[2]	44	29	64	26	2	25
Royal Navy and Royal Marines	–	–	–	–	–	–
Army	44	29	64	26	2	25
Royal Air Force	–	–	–	–	–	–
Ordinary National Certificates[2]	247	134	7	7	–	15
Royal Navy and Royal Marines	123	–	–	–	–	–
Army	46	6	7	7	–	15
Royal Air Force	78	128	–	–	–	–
General Certificate of Education[2]						
Advanced level[3]	58	48	29	23	26	53
Royal Navy and Royal Marines	8	26	7	4	7	30
Army	32	8	12	11	5	13
Royal Air Force	18	14	10	8	14	10
Ordinary level[4]	2,936	2,726	2,837	2,611	2,971	4,116
Royal Navy and Royal Marines	1,240	1,198	1,091	1,013	1,206	2,318
Army	511	461	506	300	435	374
Royal Air Force	1,185	1,067	1,240	1,298	1,330	1,424
City and Guilds of London Institute						
Operator certificates[2]	604	819	288	258	161	254
Royal Navy and Royal Marines	202	661	2	8	3	–
Army	402	158	286	250	158	234
Royal Air Force	–	–	–	–	–	20
Craft certificates[2]	5,231	2,911	7,486	6,524	9,794	9,596
Royal Navy and Royal Marines	737	570	2,194	2,767	3,675	2,849
Army	2,424	1,607	2,635	2,148	2,412	3,338
Royal Air Force	2,070	734	2,657	1,609	3,707	3,409
Technician certificates[2]	1,025	374	283	211	104	718
Royal Navy and Royal Marines	46	–	4	–	–	–
Army	635	374	279	211	104	138
Royal Air Force	344	–	–	–	–	580
Technician Education Council						
Higher certificates/diplomas[2]	15	60	178	328	658	569
Royal Navy and Royal Marines	–	–	–	168	340	278
Army	15	7	34	42	101	106
Royal Air Force	–	53	144	118	217	185
Certificates/diplomas[2]	843	1,575	1,749	2,386	2,350	2,390
Royal Navy and Royal Marines	362	611	480	621	884	639
Army	–	139	195	584	463	386
Royal Air Force	481	825	1,074	1,181	1,003	1,365
Heavy Goods Vehicle driving test passes[5]	9,046	16,151	13,964	11,726	11,804	11,689
Royal Navy and Royal Marines	41	131	30	175	295	294
Army	7,611	14,173	12,292	10,129	9,665	10,290
Royal Air Force	1,394	1,847	1,642	1,422	1,844	1,105

1. Includes degrees obtained by serving personnel and University Cadets at Universities and Service educational establishments.
2. Includes only candidates studying for and/or taking examinations directly through their Service.
3. Taken at grade 'E' and above.
4. Taken at grade 'C' and above.
5. All heavy goods vehicle classes combined.

5.10 Service Children's Education Authority

	1980	1981	1982	1983	1984	1985
	Thousands					
Pupils enrolled in Autumn term	33.7	33.3	32.5	31.0	29.2	28.5
NW Europe (including BAOR)						
5–11	20.5	20.2	19.3	18.3	17.3	16.8
11–19	8.0	8.1	8.3	8.0	7.5	7.2
Elsewhere overseas						
5–11	3.8	3.7	3.5	3.3	3.1	3.3
11–19	1.4	1.4	1.4	1.4	1.3	1.2
Teachers	2.0	2.0	1.9	1.8	1.7	1.6
NW Europe (including BAOR)	1.7	1.7	1.6	1.5	1.4	1.3
Elsewhere overseas	0.3	0.3	0.3	0.3	0.3	0.3
	Number					
Schools	120	117	118	115	114	112
NW Europe (including BAOR)						
First and primary	83	81	82	80	79	74
Middle and secondary	16	15	15	14	14	14
Elsewhere overseas						
Primary	18	18	18	18	18	21
Secondary	3	3	3	3	3	3

5.11 Strengths of male UK Service personnel and numbers married[1] : by age

Mid-year

Number

	1980	1981	1982	1983	1984	1985
Male Officers:						
Strengths						
All ages	39,810	40,721	40,515	39,910	39,857	40,038
17–19	870	971	763	721	814	834
20–24	5,248	5,709	5,724	5,494	5,440	5,544
25–29	5,237	5,401	5,613	5,920	6,265	6,491
30–34	6,893	6,632	5,909	5,365	5,080	5,030
35–39	6,753	7,076	7,509	7,612	7,475	7,204
40–44	5,702	5,557	5,536	5,577	5,865	6,289
45–49	5,510	5,507	5,428	5,198	4,971	4,794
50 and over	3,597	3,868	4,033	4,023	3,947	3,852
Numbers married						
All ages	30,135	30,504	30,363	29,734	29,317	29,231
17–19	–	2	2	–	1	–
20–24	521	600	607	592	556	510
25–29	3,053	3,191	3,236	3,228	3,305	3,434
30–34	6,075	5,797	5,133	4,630	4,330	4,260
35–39	6,313	6,640	7,032	7,105	6,986	6,741
40–44	5,457	5,318	5,276	5,324	5,597	6,014
45–49	5,284	5,275	5,220	5,007	4,762	4,586
50 and over	3,432	3,681	3,857	3,848	3,780	3,686
Servicemen:						
Strengths						
All ages	267,154	276,929	268,452	266,206	269,740	269,391
16–19	64,220	64,848	50,565	41,876	41,158	42,500
20–24	83,306	89,109	91,938	94,717	95,180	90,850
25–29	43,828	46,254	48,964	53,096	57,528	60,682
30–34	34,959	34,655	32,573	31,395	30,972	31,307
35–39	25,475	26,593	28,784	29,608	29,658	29,044
40–44	10,129	10,006	9,959	9,808	9,559	9,515
45–49	3,434	3,482	3,584	3,641	3,685	3,471
50 and over	1,803	1,982	2,085	2,065	2,000	2,022
Numbers married						
All ages	133,567	137,589	140,668	142,644	143,222	142,269
16–19	1,591	1,677	1,497	1,009	664	550
20–24	28,602	30,384	31,519	31,803	30,828	28,829
25–29	33,643	35,107	37,059	39,595	42,243	44,032
30–34	31,485	31,139	29,194	28,123	27,635	27,857
35–39	23,746	24,720	26,757	27,560	27,563	26,910
40–44	9,572	9,421	9,323	9,179	8,935	8,920
45–49	3,233	3,281	3,373	3,435	3,474	3,277
50 and over	1,695	1,860	1,946	1,940	1,880	1,894

1. Widowed and divorced personnel are excluded from the numbers married, except those in the Royal Navy, the Royal Marines and the Army with dependent children.

5.12 Strengths of male UK Service personnel and numbers married[1] : by rank[2]

Mid-year

Number

	1980	1981	1982	1983	1984	1985
Male Officers:						
Strengths						
All ranks	39,810	40,721	40,515	39,910	39,857	40,038
Major General and above	228	216	221	218	216	207
Brigadier	384	387	391	382	375	382
Colonel	1,458	1,485	1,484	1,476	1,437	1,429
Lieutenant Colonel	4,516	4,654	4,590	4,479	4,407	4,375
Major	11,614	11,860	11,837	11,659	11,546	11,467
Captain	14,100	14,125	14,262	14,088	14,076	14,085
Lieutenant and below	7,510	7,994	7,730	7,608	7,800	8,093
Numbers married						
All ranks	30,135	30,504	30,363	29,734	29,317	29,231
Major General and above	219	204	209	211	208	204
Brigadier	373	376	383	373	365	373
Colonel	1,385	1,394	1,415	1,398	1,378	1,379
Lieutenant Colonel	4,307	4,388	4,374	4,250	4,219	4,210
Major	10,797	11,067	11,076	10,913	10,739	10,645
Captain	11,237	11,212	11,152	10,793	10,614	10,579
Lieutenant and below	1,817	1,863	1,754	1,796	1,794	1,841
Servicemen:						
Strengths						
All ranks	267,154	276,929	268,452	266,206	269,740	269,391
Warrant Officer	11,219	11,557	11,565	11,441	11,485	11,397
Staff Sergeant	22,930	23,160	23,076	23,174	23,454	23,254
Sergeant	34,651	35,066	35,403	35,148	34,779	34,640
Corporal	48,440	50,484	51,439	51,842	52,156	53,131
Lance Corporal	21,693	22,757	23,211	23,078	22,824	22,972
Private (including juniors)	128,221	133,905	123,758	121,523	125,042	123,997
Numbers married						
All ranks	133,567	137,589	140,668	142,644	143,222	142,269
Warrant Officer	10,860	11,163	11,177	11,055	11,096	11,003
Staff Sergeant	21,305	21,488	21,346	21,468	21,660	21,369
Sergeant	30,581	30,797	30,998	30,753	30,320	30,100
Corporal	35,329	36,397	37,314	37,434	37,671	38,237
Lance Corporal	11,631	12,358	13,178	13,500	13,540	13,475
Private (including juniors)	23,861	25,386	26,655	28,434	28,935	28,085

1. Widowed and divorced personnel are excluded from the numbers married, except those in the Royal Navy, The Royal Marines and the Army with dependent children.
2. In Army terms.

5.13 Service married accommodation

January

Thousands

	1981	1982	1983	1984	1985	1986[1]
United Kingdom	88.7	87.5	87.0	85.9	85.3	84.3
Permanent holdings	88.3	87.2	86.6	85.7	85.0	84.0
Furnished hirings	0.3	0.3	0.3	0.3	0.2	0.3
Royal Navy:						
Permanent holdings	15.4	15.1	14.9	14.8	14.6	14.5
Furnished hirings	0.1	0.1	0.1	0.1	0.1	0.1
Army:						
Permanent holdings [2]	42.1	41.6	41.5	41.0	40.7	40.2
Furnished hirings	0.1	0.1	0.1	0.1	0.1	0.1
Royal Air Force:						
Permanent holdings	30.8	30.5	30.2	29.9	29.7	29.3
Furnished hirings	0.1	0.1	0.1	0.1	0.1	0.1
Vacancies summary (United Kingdom only)						
Total vacant	15.8	13.6	14.2	14.3	14.2	14.0
Vacancies as a percentage of holdings	*17.9*	*15.6*	*16.4*	*16.8*	*16.7*	*16.7*
Overseas	46.4	46.0	46.0	46.0	47.6	50.3
Permanent holdings)	21.4	21.4	21.4	21.4	21.5	21.6
Hirings)	25.0	24.5	24.6	24.6	26.1	28.7
Royal Navy:						
Permanent holdings	0.6	0.6	0.6	0.6	0.7	0.7
Army:						
Permanent holdings	16.4	16.4	16.4	16.4	16.3	16.3
Multiple hirings in BAOR[3]	17.5	17.3	17.4	17.4	17.7	20.1
Other hirings	2.0	1.7	1.6	1.6	2.1	2.1
Royal Air Force:						
Permanent holdings	4.4	4.4	4.4	4.4	4.5	4.6
Unfurnished hirings in RAF Germany[4]	4.5	4.6	4.6	4.7	5.4	5.5
Other hirings	0.4	0.3	0.4	0.3	0.3	0.4
Tri-service hirings	0.6	0.6	0.6	0.6	0.6	0.6

1. Figures for 1986 are taken as at November 1985, due to a change in reporting dates.
2. Including a small number of unfurnished hirings taken on from local authorities and the Scottish Special Housing Association, which are not recorded separately.
3. Figures for 1986 are provisional.
4. Includes multiple hirings.

5.14 House ownership by Service personnel[1]

	1970	1973	1977	1978	1980	1983
	Thousands					
Estimated number of house owners[2]						
All ranks	45.6	55.0	55.2	54.8	59.2	65.8
Royal Navy and Royal Marines	20.7	21.1	20.8	20.7	21.2	23.1
Army	11.0	14.1	15.1	15.5	17.2	20.3
Royal Air Force	14.0	19.8	19.4	18.6	20.7	22.5
Officers	14.7	19.9	19.8	20.0	21.7	21.9
Royal Navy and Royal Marines	5.4	6.0	5.9	5.9	6.0	5.8
Army	4.1	6.1	6.8	6.9	7.6	8.1
Royal Air Force	5.2	7.8	7.0	7.3	8.1	8.1
Servicemen	30.9	35.1	35.4	34.8	37.5	43.9
Royal Navy and Royal Marines	5.3	15.1	14.9	14.9	15.2	17.3
Army	6.9	8.1	8.2	8.7	9.7	12.2
Royal Air Force	8.8	12.0	12.3	11.3	12.7	14.4
	Per cent					
Percentage of personnel owning their own houses[2]						
All ranks	*22*	*26*	*31*	*33*	*36*	*38*
Royal Navy and Royal Marines	*45*	*50*	*57*	*60*	*64*	*66*
Army	*12*	*15*	*17*	*19*	*22*	*24*
Royal Air Force	*19*	*27*	*36*	*36*	*41*	*43*
Officers	*40*	*54*	*62*	*66*	*73*	*75*
Royal Navy and Royal Marines	*69*	*80*	*83*	*85*	*90*	*88*
Army	*30*	*45*	*54*	*57*	*65*	*70*
Royal Air Force	*34*	*50*	*57*	*63*	*70*	*73*
Servicemen	*18*	*21*	*24*	*25*	*28*	*31*
Royal Navy and Royal Marines	*40*	*43*	*51*	*53*	*57*	*60*
Army	*9*	*10*	*11*	*12*	*14*	*17*
Royal Air Force	*15*	*22*	*29*	*29*	*32*	*35*
Percentage of families by type of accommodation occupied[2]						
Officers						
Royal Navy and Royal Marines						
Own home	*55*	*65*	*70*	*73*	*74*	*73*
Married quarters	*30*	*28*	*26*	*21*	*20*	*22*
Rented accommodation	*13*	*5*	*4*	*5*	*5*	*3*
Other accommodation	*2*	*2*	*1*	*1*	*1*	*2*
Army						
Own home	*19*	*26*	*31*	*32*	*33*	*32*
Married quarters	*75*	*69*	*66*	*64*	*64*	*65*
Rented accommodation	*5*	*4*	*3*	*2*	*2*	*2*
Other accommodation	*1*	*1*	*1*	*1*	*1*	*2*
Royal Air Force						
Own home	*26*	*34*	*44*	*48*	*50*	*49*
Married quarters	*65*	*60*	*53*	*49*	*46*	*48*
Rented accommodation	*8*	*5*	*2*	*2*	*2*	*2*
Other accommodation	*1*	*2*	*1*	—	*1*	*1*
Servicemen						
Royal Navy and Royal Marines						
Own home	*38*	*40*	*48*	*51*	*53*	*58*
Married quarters	*36*	*46*	*45*	*42*	*40*	*38*
Rented accommodation	*19*	*11*	*6*	*5*	*5*	*2*
Other accommodation	*7*	*3*	*2*	*3*	*2*	*1*
Army						
Own home	*7*	*6*	*7*	*8*	*9*	*10*
Married quarters	*77*	*82*	*84*	*85*	*85*	*84*
Rented accommodation	*10*	*8*	*6*	*4*	*3*	*4*
Other accommodation	*6*	*3*	*3*	*3*	*3.*	*1*
Royal Air Force						
Own home	*15*	*18*	*25*	*25*	*27*	*29*
Married quarters	*69*	*71*	*71*	*70*	*69*	*69*
Rented accommodation	*14*	*8*	*3*	*3*	*3*	*1*
Other accommodation	*3*	*2*	*1*	*2*	*1*	*1*

1. These figures derive from surveys and are thus subject to sampling error. Surveys were conducted only in the years shown. House is taken to include flat and maisonette but to exclude caravan or mobile home.
2. Married male personnel only.

5.15 Land and foreshore holdings: location[1]

1 April

Thousand hectares

		1980	1981	1982	1983	1984	1985
United Kingdom							
Land:	Freehold	220.2	220.1	217.8	215.9	215.0	211.1
	Leasehold	11.9	11.9	11.9	11.9	11.6	11.4
Foreshore:	Freehold	13.2	13.2	13.2	13.1	13.1	13.1
	Leasehold	4.9	4.9	4.9	4.9	4.9	4.9
Rights[2]		31.1	36.7	36.7	36.7	36.0	36.0
England							
Land:	Freehold	179.9	179.6	177.7	175.9	174.9	172.7
	Leasehold	8.0	8.0	8.0	8.0	7.7	7.6
Foreshore:	Freehold	10.5	10.4	10.4	10.4	10.4	10.4
	Leasehold	4.6	4.6	4.6	4.6	4.6	4.6
Rights[2]		27.1	27.1	27.1	27.1	26.4	26.5
Wales							
Land:	Freehold	20.2	20.2	19.9	19.9	19.9	19.4
	Leasehold	0.7	0.7	0.7	0.6	0.6	0.6
Foreshore:	Freehold	1.1	1.1	1.1	1.1	1.0	1.0
	Leasehold	–	–	–	–	–	–
Rights[2]		1.2	1.2	1.2	1.2	1.2	1.1
Scotland							
Land:	Freehold	17.8	17.9	17.9	17.8	17.8	16.7
	Leasehold	2.5	2.5	2.5	2.5	2.5	2.5
Foreshore:	Freehold	1.6	1.5	1.5	1.5	1.5	1.5
	Leasehold	0.2	0.2	0.2	0.2	0.2	0.2
Rights[2]		2.7	8.4	8.4	8.3	8.3	8.3
Northern Ireland							
Land:	Freehold	2.3	2.3	2.3	2.3	2.4	2.3
	Leasehold	1.0	1.0	0.8	0.8	0.8	0.7
Foreshore:	Freehold	0.2	0.2	0.2	0.2	0.2	0.2
	Leasehold	0.1	0.1	0.1	0.1	0.1	0.1
Rights[2]		0.1	0.1	0.1	0.1	0.1	0.1
Defence land used for agricultural purposes (freehold and leasehold)							
Used for grazing only		60.2	59.8	58.8	58.8	58.8	58.6
Full agricultural use		53.6	52.0	50.3	50.9	51.2	50.5
Total		113.8	111.9	109.1	109.7	110.0	109.1
England		88.4	86.9	84.8	85.8	85.0	84.2
Wales		15.3	15.2	14.8	15.0	15.0	14.8
Scotland		9.0	8.8	8.5	8.3	9.3	9.5
Northern Ireland		1.1	1.1	1.1	0.6	0.6	0.6

1. Comprises land and foreshore owned by the Ministry of Defence and land and foreshore over which it has limited rights under grants or licences. It also includes land declared as surplus to Defence requirements. During the year to 30 November 1985, the size of the Defence Estate was reduced by 1210 hectares. At that date, 2000 hectares were awaiting disposal by the Property Services Agency. MOD office buildings which are held by the Department of the Environment as part of the Civil Estate, are excluded.

2 About 90% of this land is held under licences.

5.16 Land and foreshore [1] holdings: type of use

1 April

Thousand hectares

	1980	1981	1982	1983	1984	1985
Freehold	233.6	233.3	231.0	229.0	228.1	224.2
Royal Navy	11.9	11.9	11.8	11.7	11.6	11.5
Airfields etc	1.5	1.5	1.5	1.5	1.4	1.3
Naval bases	1.1	1.1	1.1	1.0	1.0	1.0
Training areas and ranges	1.8	1.8	1.8	1.8	1.8	1.8
Barracks and camps	1.4	1.4	1.4	1.4	1.4	1.4
Storage and supply depots	3.6	3.6	3.5	3.4	3.4	3.4
Radio and W/T stations	1.3	1.3	1.3	1.3	1.3	1.3
Miscellaneous	1.3	1.3	1.3	1.3	1.3	1.3
Army	149.9	149.5	149.0	149.0	148.0	147.4
Airfields etc	0.4	0.4	0.4	0.4	0.4	0.4
Training areas and ranges	133.7	133.8	133.6	133.7	133.4	133.2
Barracks and camps	9.4	9.2	9.0	8.9	8.8	8.7
Storage and supply depots	5.0	4.8	4.7	4.5	4.3	4.1
Radio and W/T stations	0.3	0.3	0.3	0.3	0.3	0.3
Miscellaneous	1.0	0.9	0.9	0.8	0.8	0.7
Royal Air Force	39.8	39.6	39.0	38.1	38.0	38.1
Airfields etc	27.3	27.0	26.6	26.1	25.9	25.9
Training areas and ranges	3.7	3.6	3.6	3.6	3.7	3.8
Barracks and camps	1.1	1.1	1.0	0.9	0.9	0.9
Storage and supply depots	3.0	2.9	2.8	2.8	2.8	2.8
Radio and W/T stations	3.8	4.2	4.1	4.0	4.0	4.0
Miscellaneous	0.8	0.8	0.8	0.8	0.7	0.7
Procurement Executive establishments	32.0	32.3	31.3	31.0	30.5	27.2
Leasehold	16.9	16.8	16.8	16.8	16.5	16.4
Royal Navy	2.6	2.6	3.2	3.2	2.6	2.6
Airfields etc	0.1	0.1	0.1	0.1	0.1	0.1
Training areas and ranges	2.3	2.3	2.9	2.9	2.3	2.3
Miscellaneous	—	0.1	0.1	0.1	0.2	0.2
Army	4.6	4.6	4.0	4.0	4.6	4.3
Training areas and ranges	4.3	4.2	3.7	3.7	4.2	3.9
Barracks and camps	0.3	0.3	0.3	0.3	0.3	0.3
Miscellaneous	0.1	0.1	0.1	0.1	0.1	0.1
Royal Air Force	8.4	8.4	8.4	8.4	8.1	8.4
Training areas and ranges	7.9	7.8	7.9	7.8	7.8	7.9
Storage and supply depots	0.1	0.1	0.1	0.1	0.1	0.1
Radio and W/T stations	0.4	0.4	0.4	0.4	0.2	0.4
Procurement Executive establishments	1.2	1.2	1.2	1.2	1.2	1.1
Rights held [2]	31.1	36.7	36.7	36.7	36.0	36.0
Royal Navy	13.7	13.7	13.8	13.7	13.7	14.0
Training areas and ranges	13.3	13.3	13.3	13.5	13.4	13.6
Barracks and camps	0.2	0.2	0.2	0.2	0.2	0.2
Radio and W/T stations	0.1	0.1	0.1	0.1	0.1	0.1
Miscellaneous	—	0.1	0.1	0.1	—	0.1
Army	13.7	13.7	13.5	13.5	12.9	12.8
Training areas and ranges	13.5	13.0	12.8	12.9	12.3	12.2
Barracks and camps	0.1	0.1	0.1	0.1	0.1	0.1
Miscellaneous	—	0.5	0.5	0.5	0.5	0.5
Royal Air Force	2.5	8.2	8.2	8.2	8.1	8.0
Airfields etc	0.9	0.9	0.9	0.9	0.9	1.0
Training areas and ranges	1.2	6.9	6.9	6.9	6.8	6.6
Radio and W/T stations	0.2	0.3	0.3	0.3	0.3	0.2
Miscellaneous	0.1	0.1	0.1	0.1	0.1	0.2
Procurement Executive establishments	1.3	1.2	1.1	1.2	1.3	1.2

1. The overall split between land and foreshore is given in table 5.15.
2. About 90% of this land is held under licences.

5.17 SSVC Broadcasting Division (BFBS)

		1980	1981	1982	1983	1984	1985
		Hours/week					
SSVC TV	Live/recorded[1]	56	60	60	61	60	63
	Recorded[2]	—	—	—	—	—	28
	Cassette[3]	—	21	21	21	21	21
BFBS Radio[4]							
Cologne:	Total (1 Stations .3 satellite stations)	168	168	168	168	182	188
	Produced locally	76	76	76	78	92	93
Cyprus:	Total (2 Channels)	168	183	183	168	194	233
	Produced locally	94	94	94	113	113	109
Gibraltar:	Total (2 Channels)	177	177	177	212	213	216
	Produced locally	102	102	102	132	119	120
Hong Kong:							
English:	Total	30	80	99	99	135	126
	Produced locally	3	39	42	44	45	59
Nepali:	Total	60	72	76	76	76	96
	Produced locally	52	64	72	73	72	87
Brunei:							
English:	Total	*	*	..	71	72	72
	Produced locally	*	*	..	20	14	14
Nepali:	Total	*	*	..	21	44	46
	Produced locally	*	*	..	18	26	28
Falkland Islands:							
	Total	—	—	—	—	—	..[5]
	Produced locally	—	—	—	—	—	27
Belize:	Total	—	—	—	—	—	137
	Produced locally	—	—	—	—	—	70
		Thousands					
Estimated target audiences[6]							
	SSVC TV (Germany/Cyprus)	145	154	156	160	165	175
	Cassette	*	*	*	8	15	20
	BFBS radio	196	200	200	202	208	218

1. Drawn proportionately from ITV and BBC channels to provide a service in the Federal Republic of Germany.
2. As in (1) to provide a service in the Cyprus Sovereign Base areas.
3. Drawn from (1) to serve British Forces personnel in Belize, Sardinia, the Falkland Islands, Nepal, Brunei, Sinai and HM Ships.
4. In a typical week, BFBS London supplies up to 50 hours of packaged programmes, some of which are requested the same week. Programmes are also supplied to HM Ships, Sardinia and Dharan.
5. The BFBS station in the Falkland Islands operates in support of the Falkland Islands Broadcasting Station which is managed by the Falkland Islands government. By agreement between the Military and Civil Commissioners the responsibility for broadcasting hours is divided approximately on a fifty-fifty basis between BFBS and FIBS although some London-produced BFBS programmes are used to supplement other sources of material during hours for which FIBS is nominally responsible.
6. Comprising UK based civilians, Service personnel and their dependents.

5.18 Service entertainment and welfare

	1980	1981	1982	1983	1984	1985
	Number					
Services Sound and Vision Corporation (SSVC)[1]						
Cinemas	60	59	55	36	25	21
United Kingdom	10	10	9	5	5	4
Overseas	50	49	46	31	20	17
of which: Federal Republic of Germany	45	39	37	22	10	10
Combined Services Entertainment Productions of stage and cabaret shows (for Northern Ireland and overseas)	44	51	57	54	50	48
Trading outlets	80	78	78	79	81	77
Video libraries	—	—	40	40	70	76
of which: Federal Republic of Germany	—	—	25	25	36	36
NAAFI trading outlets	1,147	1,112	1,122	1,087	1,060	1,067
United Kingdom	690	682	690	682	675	685
BAOR/RAFG	280	260	256	253	243	244
Elsewhere including HM ships	177	170	176	152	142	138
	Thousands					
Circulation of Service journals[2]						
Navy News (monthly)	85	86	91	97	102	103
Soldier Magazine (fortnightly)[3]	35	32	30	30	29	30
RAF News (fortnightly)	32	34	33	34	33	31

1. Incorporating the former Services Kinema Corporation and BFBS. See notes on page 41.
2. The figures quoted give the average per issue for each year.
3. Soldier News ran parallel with Soldier Magazine until 1981.

5.19 Service pensioners[1]

1 April

Thousands

	1980	1981	1982	1983	1984	1985
All pensioners	221.7	220.4	219.9	220.3	221.9	222.9
Male	219.5	218.2	217.7	218.0	219.6	220.5
Female	2.2	2.2	2.2	2.3	2.4	2.4
Officers	59.3	59.1	59.0	59.1	59.6	59.8
Male	58.1	57.9	57.8	57.9	58.4	58.5
Female	1.2	1.2	1.2	1.2	1.3	1.3
Others	162.4	161.3	160.9	161.2	162.3	163.2
Male	161.4	160.3	159.9	160.1	161.2	162.0
Female	1.0	1.0	1.0	1.1	1.1	1.1
Age of pensioner						
under 40	7.8	7.2	6.8	6.6	6.7	6.6
40–49	47.5	46.5	45.8	45.4	45.7	46.0
50–59	61.2	59.1	58.1	58.4	59.4	60.7
60–69	59.8	60.7	61.2	60.5	59.5	57.5
70–79	36.3	36.5	37.0	38.0	38.8	39.8
80 and over	9.1	10.3	11.0	11.4	11.8	12.3
Pension commenced[2]						
pre 1945	15.4	13.8	12.4	11.0	9.8	8.7
1945–1955	36.7	34.3	31.9	29.5	27.2	25.2
1956–1961	36.4	35.3	34.2	33.1	31.9	30.9
1962–1969	52.1	51.1	50.1	49.3	48.2	46.8
1970–1974	38.2	37.8	37.3	37.2	36.8	36.4
1975–1979	42.7	42.3	42.1	41.9	41.7	41.4
1980–1984	*	5.7	11.5	18.3	26.4	33.5

1. Comprises recipients of Service retired pay (officers) and pensions (servicemen/servicewomen) and invaliding and attributable retired pay and pensions but not purely disability pensions.
2. Financial years beginning 1 April, except 1945 when the effective date was 19 December.

6. Defence services

Armed Forces and security in Northern Ireland. Table 6.1 gives annual figures of the Regular Forces in Northern Ireland in terms of major units of the combat arms, eg battalion or regiment, the size of which may vary according to the primary role. Figures are also given of the number of deaths of Service personnel resulting from violence attributable to terrorist activity in the province.

Search and rescue operations at home. Table 6.2 covers incidents in which Rescue Co-ordinating Centres (RCCs) in the United Kingdom co-ordinated search and rescue (SAR) actions in which elements of the Armed Forces were involved. The table also includes urgent medical incidents in which the Forces SAR facilities gave assistance (eg inter-hospital transfers).

6.1 Armed Forces and security in Northern Ireland

Number

	1980	1981	1982	1983	1984	1985	1986
Regular Army[1]							
Force level at 1 April:[2]							
Major units of the combat arms[3]	12	10	9	8	8	8	9
Resident units	6	6	6	6	6	6	6
Roulement units	6	4	3	2	2	2	3
Total units which served in the province during the year	32	24	22	18	15	18	..
Ulster Defence Regiment at 1 April[2]							
Full time	2,554	2,738	2,739	2,793	2,683	2,717	2,765
Males	2,416	2,580	2,561	2,601	2,483	2,522	2,560
Females	138	158	178	192	200	195	205
Part time	4,819	4,741	4,391	4,342	4,094	3,732	3,743
Males	4,267	4,159	3,893	3,798	3,563	3,224	3,218
Females	552	582	498	544	531	508	525
Deaths							
Service personnel	16	23	28	15	19	6	..
of which serving in the Ulster Defence Regiment	8	13	7	10	10	4	..
Security							
Bombs neutralised	120	132	113	101	55	67	..
Weight of explosives (Kgs):							
Neutralised	2,905	4,159	3,311	3,403	2,774	3,500	..
In explosions (estimated)	4,108	4,364	5,080	3,140	3,875	5,312	..
Finds:							
Explosives (Kgs)	821	3,419	2,297	1,707	3,871	3,345	..
Firearms	203	398	321	199	197	238	..
Ammunition	28,078	47,070	41,453	32,168	27,211	13,748	..
Persons charged with serious security-type offences	550	918	686	613	528	522	..

1. Includes Royal Marine commandos in the Infantry role.
2. Figures for the latest year are as at 1 January.
3. Excludes temporary deployments.

6.2 Search and rescue operations at home

Number

	1980	1981	1982	1983	1984	1985
Incidents[1]	1,070	1,097	1,111	1,146	1,145	1,129
Royal Navy	310	280	254	299	237	250
Army	5	3	3	6	1	–
Royal Air Force	768	850	893	864	915	890
Call outs[2]	1,230	1,285	1,291	1,350	1,331	1,314
of Royal Navy helicopters	347	324	285	324	265	272
of Army helicopters[3]	8	3	3	7	1	–
of Royal Air Force helicopters	735	841	876	893	945	943
of Royal Air Force Nimrod aircraft	55	56	55	70	56	62
of other fixed wing aircraft[3]	13	2	4	3	–	–
of Royal Air Force Marine craft[3]	9	6	8	7	8	1
of HM Ships & Auxiliary Vessels[3]	18	10	2	–	–	3
of Royal Air Force Mountain rescue teams	45	43	58	46	56	33
Persons rescued[4]	859	864	898	969	1,061	883
by Royal Navy helicopters	190	236	127	235	190	195
by Army helicopters	3	1	–	2	–	–
by Royal Air Force helicopters	644	603	707	711	838	674
by Royal Air Force Marine craft	1	–	1	3	2	–
by HM Ships & Auxiliary Vessels	–	5	–	–	–	–
by Royal Air Force Mountain rescue teams	21	19	63	18	31	14

1. Since more than one arm of the Services may be involved in some incidents, the total may not be the sum of the incidents attended by the Services separately.
2. More than one element of the Search and Rescue services may be called out to a reported incident.
3. Not on permanent standby.
4. Figures for persons rescued relate only to those who were actually removed (alive) from a hazard or who were transported for urgent medical attention.

6.3 Military aid to civil ministries during industrial disputes: involvement of Service personnel

	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86
Disputes requiring involvement of Service personnel:[1]	*Prison officers*	*Ambulance drivers*	*Ambulance drivers Railway workers Water workers*	*Fire Service*	–	–
Deployment						
Period (weeks)	17	–	1	–	–	–
Number of personnel	1,000	18	305	–	–	–
Total estimated effort (man weeks)	17,000	3	305	–	–	–
Standby[2]:						
Total estimated effort (man weeks)	60,000	54,000	59,000	23,000	–	–

1. Details for the latest year are provisional.
2. Covers Service personnel at 72 or less hours notice to deploy.

6.4 Expenditure on offshore tasks included in the Defence budget[1]

£ million

	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Total expenditure on offshore tasks	26.60	37.00	43.14	45.99	44.75	46.41	48.20
Offshore protection[2]	14.50	21.60	27.24	32.12	32.17	33.98	30.23
RN Fishery Protection Squadron[3]							
Offshore[4]	3.80	7.90	8.30	20.53	20.76	19.50	24.70
Coastal	5.20	6.80	9.30				
RAF Nimrod aircraft[5]	4.90	6.30	8.99	11.21	10.87	13.83	4.80
RN Sea Devon aircraft	0.20	—	—	—	—	—	—
RN Sea King helicopters	—	0.20	0.20	—	—	—	—
Headquarters of Captain Fishery Protection	0.40	0.40	0.45	0.38	0.54	0.65	0.73
Hydrographic surveys of home waters[6]	12.10	15.40	15.90	13.87	12.58	12.43	17.97

1. The figures given in this table are based on the original *Supply Estimates* and reflect the price levels of the Estimates for the years in question.
2. Includes protection of fisheries and oil and gas installations.
3. There is no longer a division between the offshore and coastal responsibility of the RN Fishery Protection Squadron.
4. Certain of these costs are recovered from the fisheries development and the Department of Energy.
5. Certain of these costs are recovered from the fisheries departments, and up to 1985–86, from the Department of Energy. During 1985–86 aerial surveillance of energy installations ceased.
6. Department of Transport contributed towards these costs.

6.5 Fishery protection[1]

Number

	1980	1981	1982	1983	1984	1985
Vessels boarded	1,508	1,548	1,869	2,102	1,858	1,687
In sea areas[2]						
IV North Sea	638	770	1,087	1,223	882	762
Vb Faroes / VI West of Scotland/Rockall	26	21	10	10	3	5
VII Irish Sea/Celtic Sea/Bristol Channel/ Western Approaches/English Channel	844	757	772	869	973	920
Convictions arising from RN boardings[3]	22	43	27	18	19	29
Belgium	—	3	2	—	1	1
Denmark	2	6	2	9	2	6
Eire	1	2	2	—	—	—
France	8	7	1	2	1	2
Holland	—	4	1	—	1	2
Norway	—	1	—	—	—	—
Spain	1	7	6	—	6	9
United Kingdom	10	13	13	7	8	8
West Germany	—	—	—	—	—	1

Source: Ministry of Agriculture, Fisheries and Food

1. This table relates to activities of the RN Fishery Protection Squadron operating within the total UK fishing limits. Boardings carried out by vessels of the Department of Agriculture and Fisheries for Scotland are not included.
2. Sea areas as defined by the International Council for the Exploration of the Sea.
3. Comprises convictions obtained from prosecutions initiated by all United Kingdom Fisheries Departments.

6.6 Hydrographic services

	1980	1981	1982	1983	1984	1985
	Number					
Surveying vessels						
Ocean	4	4	4	4	4	4
Coastal	4	4	4	4	4	4
Inshore	4	3	3	4	4	—
Survey Launch	—	—	—	—	—	1
Charts and publications produced						
New charts	226	143	163	226	198	152
Navigational	108	89	127	157	144	101
Lattice	61	35	32	65	32	41
Miscellaneous	57	19	4	4	22	10
New editions of charts	254	300	372	277	280	266
Navigational	194	220	281	211	214	206
Lattice	53	70	76	55	53	46
Miscellaneous	7	10	15	11	13	14
Small corrections to charts	5,279	5,632	5,883	6,392	6,842	6,633
Notices to Mariners	3,287	3,491	3,734	3,998	4,108	4,003
Block corrections to charts	158	171	305	246	232	266
Radio Navigational Warnings	723	860	929	1,075	1,314	1,862
Revised volumes:						
Sailing Directions (a series of 75 books)	4	4	4	5	6	1
Lights list (a series of 12 books)	8	9	8	8	8	7
Admiralty list of radio signals (6 volumes)	5	6	6	6	6	5
Tide tables (3 volumes)	3	3	3	3	3	3
Supplements to Sailing Directions	37	46	49	35	27	31
	Thousands					
Sales and issues						
Charts printed	3,522	3,587	3,546	2,769	3,185	2,761
Charts sold	2,772	2,845	2,686	2,334	2,354	2,221
Charts issued to government departments	610	511	636	549	528	499
Books sold	575	613	571	502	524	504

DEFENCE SERVICES

6.7 Meteorological Office: finance

£ million

	Outturn[1]					Estimates	
	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87
Expenditure[2]	43.77	49.33	51.06	59.96	63.13	66.68	67.88
Receipts	17.14	19.17	17.01	18.93	20.92	19.09	23.28
Civil Aviation Authority[3]	12.23	13.42	11.70	14.26	15.43	14.50	–
Gas and Electricity Boards	0.33	0.35	0.33	0.35	0.39	0.35	–
Oil Industry	0.75	1.01	1.08	1.31	1.20	1.20	–
Automatic Telephone Weather Service	0.19	0.30	0.23	0.24	0.27	0.24	–
General public and local authorities	0.16	0.13	0.13	0.13	0.15	0.15	–
Commerce and industry	0.51	0.85	0.68	0.68	0.80	0.80	–
Others	2.97	3.11	2.86	1.96	2.68	1.85	–
Net Expenditure[4]	26.63	30.16	34.05	41.03	42.21	47.59	44.60
apportioned to:							
Defence	16.14	18.33	21.54	26.00	24.82	27.98	26.22
Civil: free service to the public	5.45	5.21	6.03	7.03	16.67	18.80	17.62
on repayment[5]	5.04	6.62	6.48	8.00	0.72	0.81	0.76

1. These figures combine actual expenditure, where known, and the original Estimates where Meteorological Office expenditure cannot be distinguished from that of other establishments. Common supporting services expenditure is excluded
2. Works expenditure is included.
3. Adjusted annually for recoveries in arrears from the Civil Aviation Authority.
4. The division of Net Expenditure from 1984–85 is in accord with the Sharp/Hansford recommendation in an internal report on the sharing of overheads.
5. Net of recoveries made.

6.8 Meteorological Office: activities

	1979–80	1980–81	1981–82	1982–83	1983–84	1984–85
	Thousands					
For aviation						
Meteorological briefings in UK	368	370	373	353	325	353
Forecasts in UK	2,124	1,761	1,704	1,795	1,940	2,293
Other than for aviation						
Forecast enquiries answered	2,253	2,008	2,008	1,794	1,715	1,579
Automatic Telephone Weather Service-calls made	25,567	26,350	30,600	24,600	25,100	26,700
Climatological enquiries	36	40	37	34	33	53
	Number					
Local radio stations for which Meteorological Office staff broadcast forecasts[1]	19	22	24	30	41	41

1. Scripts are also provided for both national and local radio services.

Bibliography

Additional information may be found in the following publications. Many of these are referenced in the CSO Guide to Official Statistics which also gives details of more general defence interests.

Annual Abstract of Statistics, HMSO (The Defence chapter includes longer runs of data for some of the tables included here).

Appropriation Accounts: Class 1 Defence (in Volume 1)

1979–80	HC 96 15 January 1981	1982–83	HC 881 26 October 1983
1979–80	HC 96 15 January 1981	1982–83	HC 881 26 October 1983
1980–81	HC 76 9 December 1981	1983–84	HC 614 23 October 1984
1981–82	HC 42 17 November 1982	1984–85	HC 592 23 October 1985

Armed Forces Pay Review Body reports

Ninth	1980 Cmnd. 7899	Twelfth	1983 Cmnd, 8880
Tenth	1981 Cmnd. 8241	Thirteenth	1984 Cmnd, 9255
Eleventh	1982 Cmnd. 8549	Fourteenth	1985 Cmnd, 9526

Civil Service Statistics HMSO; annual

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Economic Trends, HMSO; No 382 August 1985, contains an article entitled 'Research and Development in the United Kingdom in 1983.'

Government's Expenditure Plans 1986–87 to 1988–89, Cmnd. 9428.

Guide to the Classification for Overseas Trade Statistics 1986; obtainable from the Controller, Statistical Office, Customs & Excise, Southend-on-Sea, SS2 9AL.

Hydrographer of the Navy; annual report; obtainable from the Hydrographic Department, MOD, Taunton, Somerset.

International Statistical Classification of Diseases, Injuries and Causes of Death: Ninth Revision (1977); World Health Organisation.

Lloyds Register of Shipping Statistical Tables: Lloyds; Annual.

Meteorological Office–annual report, HMSO

Navy, Army and Air Force Institutes (NAAFI)–annual report and accounts; obtainable from NAAFI, Imperial Court, London, SE11.

Overseas Trade Statistics of the United Kingdom, HMSO; monthly and annually

Reports on the Armed Forces Accommodation and Family Education surveys. Details of the material available may be obtained from Ministry of Defence (Stats Surveys), Tavis House, Tavistock Square, London, WC1H 9NL.

Reports on the health of the Armed Forces. Details of the material available may be obtained from Ministry of Defence (Medical Statistics), Government Buildings, Stanmore, Middlesex, HA7 4PZ.

Standard Industrial Classification: Revised 1980; HMSO

Statistical News, HMSO; No 51 November 1980, contains an article entitled 'Employment and Defence' by Chris Pite.

Supply Estimates, Class 1 Defence

1979–80	HC 244	1983–84	HC 237–I
1980–81	HC 469–I	1984–85	HC 292–I
1981–82	HC 190	1985–86	HC 239–I
1982–83	HC 214–I	1986–87	HC 284–I

United Kingdom National Accounts, HMSO; annual

References are to table numbers.