

# The Future Strategic Context for Defence

## A Lesson from History

In 546BC, Croesus, King of Lydia, was considering the possibility of mounting a pre-emptive attack across the River Halys against his increasingly threatening Persian neighbours. Undecided how to act, he consulted the Oracle of Apollo at Delphi on his prospects for success. "*Croesus, if you cross the Halys you will destroy a mighty empire*" came the divine response. Delighted, Croesus proceeded to launch his attack, only to suffer a shattering defeat. His empire was annexed by the Persians.

Accurately predicting the future course of military events is a tricky business.

## Introduction

1. The Strategic Defence Review (SDR), which was published in 1998, was foreign policy-led. It sought to assess our essential security interests and defence needs in the light of changes in the international strategic environment. In the first stage of the Review, conducted jointly by the Foreign and Commonwealth Office (FCO) and the Ministry of Defence (MOD), a "Policy Framework"<sup>1</sup> was produced, which sought to analyse the world as it was then and as it would develop in the future, looking forward to 2015, and to define Britain's place within it. This framework informed all subsequent stages of the Review.
2. This paper represents an update of the analysis which underpinned the SDR Policy Framework, placing particular emphasis on the implications of recent events or emerging trends. It also seeks to extend the assessment, where possible, to cover a period of 30 years. This is in recognition of the fact that the impact of many decisions we take today, particularly equipment procurement decisions, will still be felt in 30 years' time and beyond.
3. It is in the nature of such an exercise that the further one looks ahead, the less confident it is possible to be in the robustness of the analysis. The paper will, therefore, where it is helpful to do so, distinguish between near term and long term trends, and offer more robust analysis of the former. It is not, in any event, the intention of this paper to be precisely predictive. (It is worth noting in this context that even short term predictions cannot be reliable - the two years since the SDR have been even more busy than predicted.) Many of the developments postulated will be generic ones which will unfold gradually across the period. 2030 simply represents the farthest limit of the analysis. We recognise that the paper will contain judgements about the future with which many will disagree. Inevitably events will prove some of our judgements to have been wrong (perhaps this is the only truly certain prediction which we can make). We will need to update our analysis on a regular basis and ensure that our planning processes are sufficiently sensitive to respond to changes.
4. The nature of such analysis tends not to identify the possibility of "shocks", low-probability events with a dramatic impact. Examples might be the emergence of a new deadly disease, global economic

depression, collapse of international political institutions or major shifts in patterns of alliances. Not all shocks have a negative impact of course, as the recent removal of the Milosevic regime has demonstrated. But it is in particular the potential negative impact of shocks that we need to be aware of for purposes of contingency planning. Across a 30-year period we must expect a number of such shocks, even if we can't predict their nature, which have the potential fundamentally to disrupt our carefully laid plans.

5. The purpose of this paper is to provide a strategic context which will influence our internal planning for defence. The paper does not represent a statement of Government policy and should not be so construed. The paper does not attempt to address directly all the factors that will drive the development of defence planning and activity in the shorter term - for example the pressures of current operations and commitments. It is more concerned with guidance on, for example, long term trends which will guide priorities for development of our capabilities.

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1. Supporting Essay 2 to the Strategic Defence Review.

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## Outline

6. The main body of the paper seeks to identify developments and trends by subject area. For each area, it considers recent events and developments which have changed or are changing the shape of the world; considers how these, and other trends, might develop in the future; and analyses the implications for the United Kingdom's security and wider interests. In particular it seeks to draw out broad potential implications for defence which should influence our planning, but does not seek to identify specific impacts on defence activity or make proposals for action in response. Specific impacts are being considered further as part of departmental and inter-departmental planning processes.

7. For ease of presentation, subjects are divided into seven broad groupings or "dimensions" as follows:

- Physical (e.g. environment/resources/demography)
- Technological
- Economic
- Social and cultural
- Legal, moral and ethical
- Political
- Military

8. This compartmentalised approach is not intended to suggest that these areas are distinct and can be considered in isolation. Clearly these dimensions are inextricably linked and some of the most important inter-relationships will be highlighted in the discussion. Unsurprisingly, much of the analysis focuses on political and military factors. That these are placed last is to allow a logical flow which demonstrates the important ways in which developments in the other dimensions influence the politico-military environment.

9. The final part of the paper seeks to summarise and further analyse some of the main factors, including key security judgements, which emerge from the main body of the paper. It identifies those factors which will be the key drivers of future defence policy. Recognising that the future is not just something which happens to us, it also considers some of the ways in which UK defence and wider policy can and should be seeking to shape the future international security environment.

# The Physical Dimension

## The Environment

10. Global warming is already happening and attempts to stabilise or reduce emissions of greenhouse gases have so far proved ineffectual. [Average global temperatures could rise by between 2°C and 4°C in the course of the next century. 2](#) The trend may not be linear, however, and the current gradual rate of warming could shift into a much faster rate or even a temporary period of decline.

11. Among the effects, we can expect to see rising sea levels and extensive flooding of coastal areas (which could cause serious practical and safety issues for some key UK defence facilities and lead to increasing requests for military assistance at home), changes in flora and fauna by region (with implications for traditional agricultural practice), the increased geographical spread of certain types of infectious disease and an increased incidence of natural disasters associated with extreme weather conditions. Pressure on fresh water and agricultural land will grow, especially in Africa and the Middle East, and can be expected to exacerbate existing tensions and instability in those regions. [If present consumption patterns continue, by 2025 two-thirds of the world's population will be living in "water-stressed" conditions 3.](#) At the same time, widespread degradation of renewable resources (for example forests, fisheries, soils and water) is likely to continue in the developing world.

12. Water and other resource scarcities may become a source of tension and conflict. Resource scarcities and flooding are likely to prompt population migrations which may place unmanageable burdens on recipient states, many of whose economies are already stressed, whilst inflaming existing ethnic, cultural or religious tensions. It is possible that global warming will become an increasing source of tension between industrialised countries, which are seen to be the primary source of the problem, and developing countries which bear the brunt of the effects.

## Resources

13. We are becoming better at finding, producing and recycling materials. Diversifying sources of supply and the development of synthetic substitutes and alternative production technologies will continue to weaken the concept of strategic resource dependencies for developed countries. In a crisis, most resource choke-points can already be by-passed. There is little risk that the fundamental interests or security of Western nations will be jeopardised through actions directed against resources or trade. The possible exception is the oil market which, although other sources of supply will become more important, is likely to continue to be largely dominated by the Gulf. Disruptions to Gulf oil supplies could be by-passed in a short term crisis, provided that good relations with alternative suppliers are maintained. In a crisis of longer duration, alternatives would be difficult and prohibitively expensive. Only towards the end of the period are alternative energy sources likely to be beginning to challenge the dominance of hydro-carbons.

14. Reserves of fossil fuels are not expected to be nearing exhaustion by 2030, or for some time thereafter, but will become increasingly geographically concentrated. The UK will probably become a net importer of gas during the next decade, and by 2020 we could be importing as much as 90% of

our gas supplies. The main sources of supply will include Russia, Iran and Algeria.

15. Offshore resources are likely to become a growing source of international dispute and potential conflict, particularly in the Asia-Pacific region. In the developing world, there is potential for aggressive competition for resources as nations seek to industrialise, to cope with population growth and to meet expectations of an improved standard of living. Increasing industrialisation, often without effective health and safety or environmental controls, will pose significant hazards both to people and to the environment through accidental or indirect damage. Deliberate damage to the environment may also be used as a strategic tool by adversaries.

## Demographic Trends

16. World population has risen rapidly to 6 billion. As a result many developing countries have large numbers of people aged under 30, who may be more liable to provoke, and more able to participate in, conflict. But dramatic falls in fertility rates have led the UN to adjust its population projections downwards twice in the past 3 years. [Current UN projections suggest a population of around 8 billion by 2030, with the increases almost entirely in the developing world 4. The UK population is predicted to rise gradually but steadily across the period to 64 million \(from 59 million\), primarily as a result of increasing life expectancy. 5](#)

17. Europe's population is getting older. Currently 21% of the population of the EU are over 65. [This is expected to rise to 34% by the middle of the century 4, meaning that around two-thirds of the population of European countries will not be "economically active"](#). Accordingly, tax revenues will come under pressure, whilst there will be increased demands on health and welfare spending. In particular, most European Governments (although the UK is not as badly placed as some) are faced with pension liabilities which are projected to rise substantially as a percentage of GDP, making them progressively more difficult to fund from available revenues.

18. In the UK the number of people below the age of 20 is likely to fall by around 500,000 (3.4%) by 2010 and by 900,000 (5.9%) across the 30 year period. The number of people in the 20-40 age range will fall by 1.3 million (7.9%) by 2010 and 1.8 million (10.3%) by 2030 5. Other European countries will undergo even more dramatic demographic change. We will therefore face an even more difficult challenge in recruiting and, particularly, retaining sufficient high quality people in a highly competitive employment market. Within the UK, ethnic minorities will make up an increasing proportion of the population, rising from 6% to about 10% by 2030. The Armed Forces must ensure that they can attract recruits from all groups within the reducing recruitment pool.

## Infectious Disease

19. Since 1973, thirty previously unknown infectious diseases have emerged, notably AIDS, hepatitis C and Ebola. Other familiar diseases, including tuberculosis, cholera and malaria, have spread geographically or emerged in new, drug-resistant forms. These trends will continue. AIDS is most obviously prevalent in Sub-Saharan Africa. In countries of Eastern and Southern Africa, the percentage of the adult population infected with the disease varies between 10% and 26% and these

numbers continue to rise. But AIDS is expected to develop into an even more serious problem in Asia where the incidence of cases will overtake Africa by about 2010. AIDS and related infections, notably tuberculosis, are reducing life expectancies in Africa. They also have a serious impact on the development of national economies in the region. HIV/AIDS and other infectious diseases are as prevalent in the armed forces and recruiting pools of African countries as in the general population, and this can affect, for example, the ability of these countries to contribute to peacekeeping operations. The problem of guarding against infectious disease will become an increasingly important consideration for our own forces engaged in such operations.

## **Urbanisation**

20. Already more than half of the population of the developing world lives in urban or semi-urban environments and this proportion continues to rise rapidly. Increasingly, therefore, we can expect peace support and humanitarian assistance operations to involve operating in urban areas. Achieving military objectives whilst minimising collateral damage and casualties, both amongst our own forces and non-combatants, will present significant challenges.

## **Physical Dimension: Implications for Defence**

- Environmental stresses and resource shortages can aggravate social and political tensions, and policies and preventative measures which address these stresses have a role to play in conflict prevention.
- Calls on Western forces to contribute to humanitarian assistance and disaster relief efforts will increase.
- Maintaining influence in the Gulf and safeguarding the security, and promoting the internal stability of regional allies there remains important.
- Demographic changes will mean that we will have to work even harder to recruit and retain sufficient good quality people from a smaller pool, against strong competition.
- An aging population will add to financial pressures on Western Governments, particularly elsewhere in Europe.

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2. Climate Change: An update of recent research from the Hadley Centre. November 2000

3. Represents less than 1,700 cubic metres of water per capita per year

4. Source: United Nations, World Population Projections

5. Figures for UK taken from 1998-based population projections by the Government Actuary.

# The Future Strategic Context for Defence

## The Technological Dimension

### The Technological Environment

21. Historically, a large proportion of the world's leading edge research has been funded by Government defence budgets, and a significant proportion of that has been used to sustain networks of Government research laboratories. In some cases the technology emerging from these laboratories subsequently found application in the civil sector. Over recent years the situation has changed. Defence research and development budgets have fallen and the commercial sector now leads the military sector in research investment and in the development of certain critical technologies.

22. This is most obvious in the area of Information Technology, Electronics and Communications (ITEC), where the rate of technology advance and innovation is driven by a world economy increasingly dependent on knowledge and information. In the context of defence, advances in civil ITEC will have a major impact on future Command, Control, Communications and Intelligence (C3I) systems, and will also be significant in such systems as new sensors and weapons. Another field of relevance to defence where there is substantial civil activity is biotechnology, where advances will have broad significance in the areas of chemical and biological defence, human performance and medical treatments. And the development of space-based systems, originally driven by the US and others (notably Russia and China) for defence purposes, is now becoming a commercial activity, potentially bringing significant capability to a wider range of nations and organisations.

23. The primacy of the civil sector in some areas provides opportunities but also potential threats. ITEC products, for example, will be widely available to potential adversaries. Technological advance will increase the range of military options available to potential adversaries, some of whom may be prepared to adopt alternative weapons or unconventional strategies based on more widely available technology. Maintaining an edge in the field of ITEC will require our own unique, intelligent and inventive use of architectures, mathematical algorithms and programmes to be as advanced as possible.

24. The US will continue to be the major centre of technological innovation across the period. Japan also has the ability to exploit novel technologies. In Europe, the UK will continue to be a leading innovative centre. Other countries may develop significant research and/or production capabilities, either generally or in niche areas. India, which has emerged as a significant player in the field of software, and China are the most obvious candidates. Increasingly, also, we can expect research and development to be conducted by supra-national organisations.

25. World-wide research and development expenditure of nearly £50 billion per annum supporting the rapidly changing civil sector markets dwarfs that of defence. Whilst many aspects of the civil sector effort will have relevance to defence, key defence technologies such as stealth, electronic warfare, sensors capable of operating effectively in spite of countermeasures, precision guided weapons, armour and protection systems will only advance through a defence specific research effort.

26. The rapid pace of development of civil technologies and in particular ITEC will introduce significant "technology turbulence". This will lead to rapid obsolescence of many equipments embedded in defence systems, resulting in more technology insertion and upgrade in weapons, sensors and C3I systems, and consequently there may be fewer resources devoted to other areas such as equipment platforms where technological changes take place more slowly. Greater availability of technology is likely to result in an acceleration in the rate at which new threats develop. It will be important to minimise the lead time between the emergence of a new weapon or threat and the development of counter-measures (or counter counter-measures), and to be able rapidly to amend military doctrine, concepts and training as necessary.

27. In the current and future strategic environment, equipment is much more likely to see operational use than during the Cold War, and in a wider range of circumstances and environmental conditions. As a result, equipment will need to be designed with utility for a wide range of circumstances. Additionally, capability gaps and risks of being out-matched will become apparent more quickly. This will provide opportunities for technology to be developed or adapted accordingly, as long as sufficiently responsive acquisition processes are in place.

28. New technology will offer the potential to achieve military objectives in different ways and indeed provide means to do completely new things (e.g. unmanned systems might be used for operations deemed too risky for humans). Consequently new technology will, in some cases, require the development of new doctrine and concepts of operation. Military advantage will rest with those who most effectively identify and exploit technology. This will place a premium on the ability to generate and identify opportunities, adapt them for military use and integrate them rapidly into equipment platforms, weapons systems and force structures.

### **Collaboration and Access to Technology**

29. In absolute terms, the US spends ten times as much as we do in the UK on defence research, whilst Europe as a whole spends four times as much as us. Maintaining close collaboration with these partners, and with the civil sector, will be vital in order to maximise the benefits of our research investment and maintain a technological lead over potential adversaries whilst minimising costs. We will need to recognise that we cannot do everything ourselves, and that we must be selective in how, when and where we invest defence research funds and how we make use of civil derived technology.

30. The mismatch in research expenditure between the US and Europe may lead to a widening technological and capability gap. This could have implications for the ability of NATO to conduct effective multinational operations. Access to US technology will, therefore, continue to be of particular importance. To maintain access we can expect to need something to offer in return.

### **Availability of Technology**

31. The level of technology available to many states (and other entities) has already increased, partly due to increased availability of sophisticated military equipment. Networks of technological co-operation already exist between potentially hostile states and may develop further. Adoption of the Internet Protocol has enabled cheap and effective communication between different electronic

systems. Dual-use technologies are becoming increasingly available. As a result of these trends, we can expect future adversaries to possess individual technologies and equipments which, if they were able to utilise them effectively, would give them similar capabilities to NATO in certain areas, although not across the full spectrum of military technology.

## **Future Developments in Technology**

32. Moving further into the future, there are a number of areas that will offer potential for significant technological advance. The defence implications of these must be somewhat speculative at this stage, particularly since major advances often arise from a combination of developments in more than one technology area and development of some applications discussed may be constrained by political or ethical considerations. We should, however, be alert to the risk that new military capabilities will be developed in countries where similar constraints do not apply or through alternative advanced technological routes. Speculatively, the technological possibilities and their implications might include:

- **Computer processing power:** Increases in processing power will continue apace. Moreover, quantum processing, if successful, will revolutionise computer processing power to a staggering degree, with implications for weapons, sensors, communications, and information operations and countermeasures. This increase in power does not just mean that we can do the same things faster, but that a number of things hitherto regarded as quite impossible will be attainable, for example the fusion in real time of multi-sensor information to enable high assurance recognition of hostile targets. Another use may be quantum cryptography, offering the prospect of perfectly secure communication.
- **Propulsion systems and power generation:** Further significant advances will be made in alternative propulsion systems and power generation, such as electric and solar power and improved energy storage based on nanotechnology. Long endurance remotely deployed systems and micro unmanned airborne vehicles (UAVs) will be possible.
- **Bionics:** Direct and indirect electronic-brain links to improve the performance of the brain to handle, perceive or view data, originally driven by medical considerations such as treatment of sight and hearing defects, will emerge. Techniques will include both implanted equipment and surface or remote equipment.
- **Artificial intelligence:** By 2030 machines will be developing which have an advanced ability to gather information on their surroundings, and which, acting autonomously, can make intelligent judgements (including judgements on risks) in response to that information. This will have obvious implications in many areas especially for military intelligence, surveillance, target acquisition and reconnaissance (ISTAR) and support to military decision-making, and may improve our ability, in certain circumstances, to remove personnel from the front line.
- **Genetics:** Our understanding of the function of specific genes will improve dramatically. It is possible that some might attempt to harness this for genetic warfare or biogenetic terrorism, such as targeting food sources, against which we would need to develop defensive measures. It is also possible that new antibiotic-resistant diseases could develop or be developed, increasing levels of sickness and likelihood of death.

- Nanotechnology: Nanotechnology will allow the miniaturisation of sensors and equipment. This will affect many technologies, and opens up a wide range of new possibilities. Postulated systems, some possibly further out than 2030, include nano-solar cells offering more efficient electricity generation than present systems, and nano-robots for many potential purposes, but including medical robots that can fight diseases internally in humans, remove or replace defective DNA, and even possibly treat injured personnel. Combined with increases in processing power these systems will have widespread application including in micro-platforms for reconnaissance.

## **Technological Dimension: Implications for Defence**

- Revolutionary changes in technology (or the application of technology) will require matching changes in military doctrine, culture and structures to realise their full potential
- MOD's research investment strategy must be better matched to the technological environment of the future, aiming to achieve excellence in certain selected areas and responding to changing circumstances
- MOD's research and development effort should emphasise relevant technology areas that will not interest the civil sector and closely monitor the possible development of alternative advanced military capabilities in other countries. As sensitive technologies become more widely available, we must seek to preserve our edge in key technology areas
- Generally, we must exploit civil research and development to the maximum and ensure ready access to the technology of other nations, in particular the US, and we must seek to bring greater cohesion to the European defence research and technology programme. All this is linked to a need to make the procurement system more responsive to rapid technological change
- We will require greater technological capability amongst our personnel

# The Economic Dimension

## Trade

33. The volume of international trade will continue to increase, both in real terms and as a proportion of global GDP. Tariffs and other barriers to international trade are likely to reduce. Falling costs of transport and communications and better availability of information through the Internet will facilitate international trade.

34. The UK is and will remain more dependent on international trade and investment than most. Exports make up a higher proportion of our GDP than France, Germany, Japan or the US. Foreign investment in the UK accounts for more than 20% of manufacturing jobs. A higher proportion of our GDP is invested abroad than that of any other Organisation for Economic Co-operation and Development (OECD) country. Our economy may thus be more susceptible than most to disruptions to the secure supply of strategic commodities, or to the stability of financial markets, trade routes and communications.

## Economic Performance

35. The world is likely to get richer. Even relatively pessimistic forecasts assume average annual growth of 3% in the period to 2030 (although a major economic dislocation cannot be ruled out entirely). This means that, globally, economic growth will outstrip population growth, and average income per capita will double, in real terms, during the period. Developing countries will expand their share of world output, but massive regional disparities and inequalities will remain. There is a possibility that dependencies on developing countries for certain types of manufactured goods may develop. Economic migration will continue, and migrants may introduce their domestic conflicts into recipient states or provoke new conflicts. The ageing of populations in Western countries is likely to make them more dependent on such migration in order to maintain their workforces at the required level. Economic exclusion, either of countries or within countries, is likely to be a cause of tension. Economic policies therefore have an important role to play in conflict prevention.

## Globalisation

36. The world is rapidly becoming more interconnected economically and culturally. Recent years have seen massive increases in the volume of telecommunications and internet traffic. All aspects of economic infrastructure are becoming increasingly interconnected. Transnational corporations and the restructuring of industries across national boundaries are becoming more common. In the longer term, these trends could come to weaken the sense of nationality of the individual. This trend could be more pronounced amongst "elite" groups in society, and particularly perhaps in Europe. Globalisation is leading to a weakening of Government control over some aspects of industry and technology. A small number of commercial organisations are already more powerful (and much richer) than many nation states.

37. Systems which are more interconnected will also be more complex and the impact of conflict on

them will be harder to predict. They may create more opportunities for adversaries to gain access indirectly to sensitive information. Increasingly conflict will impact economically on states not party to the conflict. This might create pressures on those states to intervene but, conversely, might deter intervention as the consequences of intervention may be more widespread and unpredictable. Greater interconnection will increase the scope for information operations that disrupt key areas including logistic support. It may also lead to networks of critical dependencies being created which can be exploited by adversaries. But adversaries will also, to some degree, be tied into such networks themselves, and so the disruptive impact of conflict on them will also increase.

38. The volume of information available to states, commercial organisations, non-governmental organisations (NGOs) and the individual will increase dramatically. This may act as a positive force promoting global "culture" and ethical, moral and political standards. Increased access to information may make it harder for oppressive or corrupt regimes to control their populations. We must ensure that we, along with other Government Departments, take full advantage of the opportunities offered by information communication technologies to promote defence and wider Government aims and objectives. Conversely, more information will mean that more people on the wrong side of the economic divide will know what they are missing. Hostile regimes may be able to exploit this to foment anti-Western sentiment. The proliferation of sensitive technologies will become increasingly difficult to control.

## **Defence Expenditure**

39. There is a broad consensus across domestic public opinion about the importance of defence and the need to maintain high quality armed forces. Nevertheless, a number of factors are likely to combine to maintain budgetary pressures. These include defence cost pressures, demographic trends (in terms both of pressure on tax revenue and greater demands on health and social security spending), increased expectations of Government (again particularly in the area of health) and the absence of a strategic threat to the UK or its Overseas Territories.

## **Economic Dimension: Implications for Defence**

- Pressures on defence budgets will continue. Value for money and the maintenance of public and political support for defence will continue to be of great importance. These pressures are likely to encourage more serious consideration of role sharing and specialisation amongst allies
- Economic factors and inequalities are likely to aggravate tension and economic policies have a role to play in conflict prevention
- Globalisation of industry will significantly reduce the ability of Governments to exercise control over their suppliers

# The Social Dimension

## Foreign Travel

40. International contacts are increasing and people in the UK are becoming more knowledgeable about foreign countries. International travel continues to grow, fuelled by increasing affluence. [British citizens make around 60 million foreign trips each year, and more than 13 million British nationals live and work overseas 6.](#)

## Education

41. The proportion of people with higher or further education continues to grow, both in the UK and world-wide, as does access to secondary education in developing countries. By 2025 there will be more than 2 billion graduates in the world. The idea of a transnational educated elite, who identify more with their peers in other countries than with their compatriots, may become more of a reality. Better educated (and more affluent) people will be more likely to question all aspects of Government policy including the role of the Armed Forces. They will also expect employers, including MOD, to offer them more in terms of conditions of service and career opportunities. Families of service personnel are likely to be less willing unquestioningly to accept mobility and other disruptions to family life.

## Attitudes

42. Within the UK intolerance and discrimination are becoming less acceptable to domestic opinion. This should reinforce our determination to tackle vigorously examples of discrimination within the Armed Forces if we are to have access to the widest possible recruiting pool. The role of women in society as a whole and in the workplace continues to be the subject of debate and, in conjunction with recruitment/retention concerns, is likely to lead to continuing internal and external scrutiny of the roles performed by women in the Armed Forces.

43. Trust and respect for institutions generally is in decline and the Armed Forces and MOD are not immune. Adverse media coverage of aspects of defence activity may encourage such attitudes. Projecting an image to potential recruits of military service as a rewarding career may become more challenging. Other changes in society and culture, especially where these are reflected in domestic legislation, such as employment or health and safety law, will also affect many aspects of the future Armed Forces. We will need to respond to such changes in ways that preserve operational effectiveness.

## Public Support for Military Action

44. The Armed Forces, both in peacetime and on operations, will come under greater public and pressure group scrutiny. We need to be aware of the ways in which public attitudes might shape and constrain military activity. Increasing emotional attachment to the outside world, fuelled by immediate and graphic media coverage, and a public desire to see the UK act as a force for good, is likely to lead to public support, and possibly public demand, for operations prompted by humanitarian motives.

45. Public support will be vital to the conduct of military interventions. Support will depend in large measure on the success of such interventions. If a military operation were seen to result in defeat, this would seriously undermine public support for future operations. The way in which operations are conducted will also be vital to maintaining public support, particularly where our participation in an operation is discretionary. Potential adversaries may seek to undermine public support to delay or derail intervention. Effective communication strategies to promote wider understanding of the rationale behind the conduct of operations will be vital if we are to avoid constraints which compromise our ability to achieve military objectives. The ability of the media to affect the public and political agenda on a national and global scale is likely to increase, and may have a major impact on where, how and when the UK and others react to natural disasters, humanitarian crises and conflicts.

46. Casualties to our own forces will only be acceptable to public opinion if they are seen to be proportionate to what is at stake in the campaign. The critical factor will be the extent to which the public feels the UK national interest is engaged or the scale of the wrong being righted. The degree of public aversion to casualties can be expected to vary between members of an alliance, and this may have an impact on operational planning.

47. Recent experience has shown that, once we are committed to an intervention, extracting ourselves from that commitment can be extremely difficult, and even scaling down our commitment can present significant difficulties. Whilst it will remain highly desirable to devise a post-operational strategy before committing forces to an operation this will continue to be difficult to adhere to in practice. Peace support operations are prone to be protracted. Involvement in such operations, when memories of the original justification for intervention are fading and any gratitude has been exhausted, may in themselves be a source of regional tension. Public support for protracted involvement in seemingly insoluble crises may wane over time, although levels of public awareness may also fade, at least until some new development propelled the operation back into media headlines.

### **Social Dimension: Implications for Defence**

- Social factors and change will be a major influence on defence. We will need to respond to changes in society and domestic legislation in ways that preserve operational effectiveness
- Proactive communication strategies will be required to maintain the status and relevance of defence in the public eye, and to attract into the Armed Forces sufficient people of the right calibre.
- Pressure to mount military operations for "moral" reasons will increase, although over the life of protracted operations support may wane. Where possible, we need to develop a clear post-operational strategy before engaging in operations
- It will be essential in all military operations that damage inflicted is seen to be proportionate both to the issues at stake, and the military advantage gained, and that collateral damage is minimised. Weapon systems will need to be developed and procured with this in mind
- Rapid and accurate information on the progress of operations will be essential to an effective

information strategy

- Systems, strategies and force protection measures which allow us to minimise casualties without prejudicing the achievement of military objectives will be essential to maintaining freedom of action
  - The need to protect UK citizens overseas (including by evacuation in the event of conflict) is likely periodically to place demands on UK forces
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6. This is the FCO estimate for the number of people entitled to consular protection. It includes dual nationals, amongst whom are 3.6 million UK passport holders in Hong Kong.

# The Legal Dimension

## International Law

48. International law governs both the ability of states to resort to armed conflict, and the way in which they conduct it. The obligations of states in their conduct of armed conflict are derived from customary international law, and relevant international conventions to which they are party (in particular the Genocide Convention (1948), and the Geneva Conventions (1949)). States can expect that their actions will be the subject of ever increasing judicial scrutiny by international courts in coming years. Furthermore, the International Criminal Court (ICC) is likely to be established within the next few years focusing on the criminal responsibility of individuals rather than states.

49. Development of the ICC reflects a growing awareness and acceptance of the need to have an enforcement mechanism that can address serious violations of human rights and international humanitarian law. International law may develop in ways that impose further limitations on methods of warfare, and this may impact on the development and procurement of weapon systems. We will also need to be alert to the possible impact of other aspects of the development of international law, such as the Law of the Sea, and of domestic legislation.

## Ethical Considerations

50. In defence, as in other areas, recent years have seen increasing scrutiny of the ethics and morality of Government policy, partly fuelled by the dramatic proliferation of specialist pressure groups and NGOs. Both at a national and an international level, such organisations have proved increasingly influential in shaping policy, the most notable defence example being the accession of many countries to the Ottawa Convention banning anti-personnel land mines.

51. Other areas of international defence activity are coming under scrutiny, including: the rights of civilians in conflict; the morality of certain types of weapons; the use of child soldiers; defence exports; and small arms proliferation. Interest in these and other areas of defence activity will increase and pressure on Governments will become more vociferous. More effort will be required to ensure that such public debate is properly informed, particularly where there is a possibility that these pressures will affect our ability to fulfil military objectives.

52. It is in the interests of the MOD, and Government as a whole, to be on the inside, helping to shape these debates, rather than outside looking in. There are a number of areas where Governments and NGOs will be able to work together to enhance international security and stability. These may include: tackling the funding of conflict through illicit trade; improving democratic accountability in the defence and security sphere; combating small arms proliferation; disarmament, demobilisation and re-integration; controlling the activities of private military companies; and efforts to relieve potential aggravators of instability such as poverty and resource shortages.

## Legal Dimension: Implications for Defence

- The MOD should work hard for a positive international legal framework aimed at conflict prevention and support of human rights but which does not result in unreasonable operational restrictions. We should seek to co-operate with other Government Departments and NGOs on such an agenda
- Greater transparency about defence activity is required to convince the public that defence policies are responsible
- Service training must address requirements of international law, including the ICC regime

# The Political Dimension

## International Relations

53. In the period to 2030, the US is almost certain to remain the world's only military and economic superpower. Because of its military, technological, intelligence and economic dominance the US, amongst our Allies, will continue to have the most to offer in military terms. At the same time relations with European partners will become more important, and military co-operation within Europe will develop through the evolution of European defence.

54. Regional security organisations such as NATO will continue to have an important role. We will continue to see NATO as the cornerstone of our collective security, and as a means of the United States and European nations furthering their mutual interests. However, this will require that NATO continues to adapt its role and capabilities to remain relevant in the face of future changes in the security environment. Crisis management now appears as a fundamental task in the NATO Strategic Concept, alongside traditional roles of security consultation and deterrence. The Combined Joint Task Force concept has been introduced to give Alliance forces greater utility in peace support/crisis management operations.

55. The Washington Summit confirmed that NATO would remain open to new members who shared its aims and philosophy and were in a position to further the principles of the North Atlantic Treaty. Further enlargement of NATO is, therefore, in prospect but will require that Alliance structures continue to evolve to maintain their effectiveness. Without internal reform enlargement has the potential to complicate decision-making within the Alliance. Managing complications in relations between NATO and Russia will be a key consideration in the Alliance's review of enlargement at the next NATO summit. The challenge for us will be in finding ways to expand our dialogue with Russia while handling the legitimate aspirations of those seeking to join the Alliance.

56. We are also committed to implementing new arrangements for European defence that will both strengthen NATO and strengthen Europe's Common Foreign and Security Policy by enabling the European Union to draw from a pool of deployable units to undertake crisis management operations where the Alliance as a whole is not engaged. Our primary objective is to strengthen military capability. European partners will need to continue to improve the flexibility, deployability and sustainability of their armed forces. Restructuring and enhancement by the European nations of their defence capabilities in response to NATO's Defence Capabilities Initiative (DCI) and the EU's Headline Goal will demonstrate their commitment to effective participation in Alliance military operations and their willingness to assume a greater share of the security burden. It is essential that the two organisations develop a close relationship, allowing consultation, co-operation and transparency on matters of common interest. In particular, the DCI and the EU's Headline Goal must be mutually reinforcing.

57. Accession negotiations are already underway with 12 candidate countries for EU membership. A thirteenth country - Turkey, an important NATO partner - has also been declared a candidate. Several other European countries have made clear that they see their future as EU members. By the middle of this decade, a first wave of enlargement will probably have taken place. Thereafter, further

enlargements are likely to take place at regular intervals. By 2030, we might expect the EU to have well over 30 members.

58. For the foreseeable future NATO will be the indispensable anchor of US engagement in European security. The United States will continue to be the largest individual contributor to NATO's defence. It will continue to look to form coalition-based operations if it decides to undertake military action, although it might choose to act on its own where this is not possible.

59. The US drive for technological edge will continue, as will steps to ensure that Allies remain interoperable. There is enthusiasm in the US for leaping a generation of technology in the equipping of their Armed Forces, but there will be a need to retain current capability so that the Armed Forces can meet extant demands. The next US Quadrennial Defence Review is scheduled to take place this year, and this is expected to set the pattern for US force development over the medium term. The changing strategic environment could drive further refinements to the size and structure of the US Armed Forces. The potential threat of ballistic and theatre missile attack from "states of concern" will continue to exercise the US Congress and Administration, and Ballistic Missile Defence (BMD), both for the US itself and for deployed forces, will continue to be seen as a capability which should be pursued. Meeting all competing requirements would be extremely demanding in resource terms, hence the current US debate on defence funding.

60. Russia does not pose a conventional military threat to NATO, though it will remain a significant strategic power. Democracy is not yet fully developed and Russia remains economically weak. Its conventional military capacity has continued to decline which has led to greater reliance on nuclear deterrence as the ultimate guarantee of its territorial integrity. Its defence industrial base has atrophied - although Russian military research and technology remains at the leading edge in some fields, this is not being translated into a new generation of equipment.

61. Whilst the new Government has expressed the desire to increase Russian forces' ability to meet post-Cold War challenges, the obstacles to achieving a step-change in conventional capability are immense. Even starting to reverse the decline will be difficult in the face of resource constraints. Although there has been a limited increase in this year's defence budget this will only address some of the short term problems.

62. Whilst we want to see Russia develop into a stable democracy, and would like a constructive foreign and security policy partnership, we cannot take this for granted. Russia is insecure about its place in the world and perceived threats to its security. Its particular concerns are the spread of Islamic fundamentalism and instability in areas on or near Russian borders. Western policies which appeared to marginalise Russia or add to perceived threats would exacerbate this sense of insecurity. President Putin's aim is to rebuild Russia's status as a great power. The key to this, for any Russian leadership, is the achievement of a sustained economic recovery. Although disagreements between Russia and the West may arise, attempting to rebuild Russia's economy will be easier with Western co-operation, investment and technology. These factors, combined with conventional military weakness which Russia is unlikely to be able to remedy in the foreseeable future, make it improbable that Russia would undertake policies which consciously risked military confrontation. For at least the earlier part of the period, Russia's ability to generate forces, project power or sustain operations beyond its borders will remain limited. In the unlikely event of a conflict arising (which would probably

be through miscalculation) it would be limited both geographically and in scale. Other risks to international security might arise if instability inside Russia were to grow, from the export of Russian organised crime and "leakage" of military and WMD-related technology and expertise.

63. The internal political, social and economic issues facing China over the next 30 years are so complex as to render forecasting internal developments hazardous. Despite these internal challenges, China sees itself as the region's natural leader and wants to have military force to match. Nonetheless, China's defence policy is likely to remain focused on ensuring territorial integrity and internal stability to encourage the continuing development of its economy and society, although it does not rule out the use of force to resolve the Taiwan dispute. China's Armed Forces are meanwhile seeking to improve their technology and force projection capability, whilst streamlining their structures. This will be a long term process and China has a long way to go to match Western capabilities. China possesses a limited strategic nuclear capability which could reach the UK, but maintains a policy of no first use. China does not currently have the ability to pose a conventional military threat to the UK, nor do we expect them to be able to do so (in the unlikely event that they should wish to do so) for the next 20 years at least. However, regional instability could impact on the wider interests of the UK and its allies.

64. No conventional military threats to the UK are likely to emerge over the period to 2030. Whilst the Argentine claim to the Falklands, South Georgia and South Sandwich Islands remains a national cause, recent elected Governments of Argentina have eschewed a claim by force. There are no current or emerging military threats to our Overseas Territories, although we need to retain the ability to defend those territories, even if no threat is predictable. We cannot afford to be complacent about the potential risk, over this period, posed to the UK by unconventional threats (see paragraph 89 below).

## **International Organisations**

65. With continuing globalisation, effective multilateral organisations are likely to become more important, with growing expectations and demands placed on them. The UK will need to continue to play an influential role within organisations such as the UN, NATO, EU, World Trade Organisation, G7 and G8, OECD, Organisation for Security and Co-operation in Europe, and international financial institutions to secure our national and international interests and act as a force for good.

66. We will want to continue to contribute to crisis management operations under the auspices of the UN. We will, therefore, wish to encourage and assist the UN to introduce integrated planning, develop doctrine, improve and standardise training and promote a more efficient logistics management system. There will continue also to be an emphasis on the need for regional organisations, including NATO and the EU, to develop their capacity to mount peace support operations, and to engage and co-operate in practical measures to prevent and resolve conflict. We will wish to encourage improved UN links with NATO and the EU.

## **Threats and Challenges**

67. Some states (not necessarily the same ones as today) will pursue policies directly harmful to the

interests of the West and the wider international community. Many analysts believe, however, that "countries of concern" will gradually, though belatedly, adapt to the post-Cold War security environment and become less of an overt menace. The demise of existing leaders and regimes may accelerate this trend. Policies of constructive engagement will be important to take advantage of these crucial periods of change.

68. Nationalism, religion and single-issue activism will continue to produce extremists prepared to use terrorism to achieve their aims. Use of improved communications and information systems will enable some groups to better co-ordinate their activities. Such groups may pose the most immediate, if small scale and localised, threat to UK interests, as they are less likely to be constrained from acting by political considerations or threat of retaliation. (In some cases, of course, they may act as agents for or be funded by sovereign states.)

69. Increasing volumes of international travel and trade have been mirrored by an increase in international crime. The drugs trade is widespread and growing, and money laundering and corruption related to drug trafficking are also on the increase. There are growing levels of violence amongst those involved. Drug-related crime will continue to be a significant threat to the stability of our Caribbean Overseas Territories. Criminal organisations are likely to become more sophisticated and better organised, which may mean that a military element to the Government response to crime will become more common.

70. Where internal divisions and dissent have been suppressed by autocratic rule, violent disorder can flare when central control weakens. Exclusion, economic or political, of sections of the population has been the root cause of many recent internal conflicts. Ineffective or corrupt government increases the risk of instability, as do economic inequalities more generally. Together with the various environmental and demographic trends discussed earlier, such factors are likely to lead to increasing instability in many regions, and increasing calls on international bodies to intervene to manage crises and prevent human suffering.

71. The UK's direct national interests will often not be at stake in such crises, but our wider interests, together with a political desire and public pressure for the UK to act as a force for good, are likely to lead to increasing involvement. It is clearly preferable to act, in concert with the international community, to treat causes of conflict before they arise, and so we will increasingly work, in partnership with the FCO and the Department for International Development, towards preventing the development of conflict, including through the Government's cross-cutting initiative for conflict prevention. But we must also expect and prepare for further activity in coalition peace support and related operations requiring a robust military component, where peace has failed.

72. Ethnically motivated conflicts are likely to be characterised by fanaticism that is difficult to temper and combatants in such conflicts are likely deliberately to target civilians. Refugees and displaced persons may be a growing phenomenon, presenting major challenges and increasing the requirement for co-operation and interaction with other Government Departments and civilian aid agencies.

73. The size of the UK contribution to individual peace support operations will generally be relatively small in scale but there is a likelihood of increasing concurrency of operations. Force structures

geared towards a larger scale of operations may not always be best suited to peace support tasks. Multiple operations of this kind, even if on a small scale, will be particularly demanding on certain elements of enabling forces.

74. The Balkans remains an unstable region and for the foreseeable future there will be a potential for further conflict in the area. The legacy of the regimes which ruled in the area for nearly 50 years and the nationalist Governments of Milosevic and Tudjman which followed cannot be erased overnight. Many of the current causes of tension can be expected to persist in the short to medium term: serious unresolved political issues; economic weakness; intolerance of different communities and traditions; many thousands of refugees and displaced persons; excessive armed forces; and a serious problem of organised crime. The challenge of rebuilding stable, democratic, inclusive and multi-ethnic societies able to join Europe after a decade of ethnic hatred and political and economic isolation will be a demanding one.

75. There are other sources of potential insecurity on the periphery of Europe. The Caucasus and Transcaucasus, areas of potential long term economic significance, are also major areas of instability. There may be risks from spill-over from conflict in this area. Instability in North Africa could generate a range of problems (such as mass exodus of refugees) affecting European security. These are likely to be of particular concern to the European Union. The Middle East remains a region where there are risks of conflict. Tensions over scarce resources could add to long-standing sources of confrontation. Iraq is likely to continue to defy the UN and to present a military threat to other countries in the region for some time. Although UN restrictions continue to hamper Iraq's strategic weapons programmes, it is likely that some aspects of these programmes will continue to be developed covertly. If the restrictions were removed these programmes would proceed apace. It is not clear how political developments inside Iran will progress, but it is likely that the country will be preoccupied by internal events for the immediate future.

76. In South Asia, there seems little immediate prospect of a resolution of the dispute over Kashmir or the acceptance of international arbitration. Clashes between Indian and Pakistani forces along the Line of Control are likely to continue for the foreseeable future. There remains a risk that these could escalate to wider conflict between the two countries, both of whom are assumed to possess nuclear weapons.

## **Political Dimension: Key Implications for Defence**

- Maintenance of NATO's military effectiveness will provide a powerful conventional deterrent to expansionist behaviour from any quarter
- We must continue to structure our forces so that they are capable of being successful against all likely opponents in a single warfighting operation of a similar scale to the Gulf War, but we cannot foresee circumstances requiring a British military contribution on a significantly larger scale than the Gulf War
- On the periphery of Europe (and in the Balkans) instabilities and tensions are likely to remain as potential sources of problems for European security requiring British troops to be deployed

- Sustained international civil and military engagement in the Balkans will be necessary to deal with tension and flashpoints, to foster co-operation across the region and to build a lasting and stable peace
- European nations need to improve their military capability both to strengthen their contribution to NATO and to give the EU the capacity to act where the Alliance is not engaged
- The UK has an important role to play in preventing misunderstanding between the US and European partners
- Access to US military technology will be crucial
- Intelligence effort to identify adverse political, economic, environmental and social trends, as opposed to more traditional military factors such as force build up, can give a better focus to conflict prevention measures
- Crime, terrorism and political extremism may increasingly require a military element to the Government response

# **The Future Strategic Context for Defence**

## **The Military Dimension**

### **Coalitions**

77. In the multipolar world of the future, threats will become more diverse, less predictable and probably less challenging in terms of conventional warfare. Conflicts may be prolonged, but at lower levels of intensity. For nearly all warfighting operations, the UK will be acting as a member of a coalition force. These coalitions may not always precisely reflect existing alliances. We should look to encourage capable and willing nations to develop complementary military capabilities, and develop training and other links with probable partners. Such coalitions of the willing may take longer to form and react, creating a period of indecision which adversaries will seek to exploit. Coalitions may include countries with disparate interests and perceptions. Decision-making processes during such operations may be slower and rules of engagement limited by public opinion across the coalition.

78. We would expect NATO to provide the framework for a response to any crisis with significant implications for European security and we would also expect the US to provide the framework for other major, high-intensity coalition warfighting operations, where it chooses to become involved. The UK and France are the only European countries capable of providing a warfighting framework, but for operations which are more limited in scope and scale. In time, strengthening of NATO through the Defence Capabilities Initiative, together with the evolution of the EU's Common Security and Defence Policy, should lead to one or two other European nations developing some such capabilities and to an improvement in Europe's military capability as a whole. Other countries will continue to lead less demanding peace support missions in a regional context.

### **Host Nation Support (HNS)**

79. For most deployed operations we should anticipate some degree of host nation support and assistance. The degree of co-operation and the standard of facilities available will vary, however, and adversaries are likely to seek to use political or military coercion to curtail availability of HNS to coalition forces even where there is political support in the region for our intervention. The ability to share or transfer logistic resources between national elements of deployed coalition forces will be an important force multiplier in environments where HNS is limited, slow in materialising, or non-existent.

### **Nature of Warfare**

80. In recent conflicts opponents have opted to avoid air-to-air combat in the face of superior coalition forces. In the short to medium term at least, this trend may become more pronounced, as allied platform and weapon performance continues to improve. The decline in the number of submarines held by potential adversaries is likely to continue, although modern, quiet submarines are becoming more widely available. Naval mine countermeasure warfare will become important as naval forces move their operations into the littoral in support of land operations. On land the fundamental requirement for a balance of mobility, protection and firepower will remain. Air manoeuvre and rapid

deployment capabilities will become more significant.

81. The most potent threats to allied forces across this period are likely to come from attack helicopters, long-range indirect fire, mine and torpedo warfare and ground-based air defences. Advanced explosives may also be an increasing threat. The future battlespace will be inherently joint and multi-dimensional, encompassing space, cyberspace and the electro-magnetic spectrum, as well as air, maritime and ground elements. The use of directed energy weapons in the battlespace seems likely to increase.

82. In future conflicts we will wish to fight from a distance for as long as possible, in order to preserve the force. Capabilities which enable us to prepare and deploy force rapidly in order to create an early effect will be important. Although the build-up to crisis and the need for coalition forming theoretically allows considerable time for force preparation, the precise role and composition of an intervening force will not be known until the last minute. Even with total combat superiority, inadequate deployment and support capabilities may threaten the achievement of operational goals.

83. The pressures from public opinion and the media for minimum casualties (on both sides) and for reduced damage to the environment and infrastructure during limited wars will increase the need to find non-traditional methods of achieving military objectives. Greater precision in kinetic attack, non-destructive targeting and information operations are likely to become progressively more important in response to this trend. These are already making new demands on intelligence as an enabling capability.

84. Maintenance of information superiority will be vital. ISTAR will act as an important force multiplier, reducing the size of force required, and will increasingly become the key to success in operations. Sensor technology will therefore be critical. More information will mean that headquarters' tasks will become more complex. Headquarters' organisation and procedures may need to be adapted radically to respond to this. The phenomenon of data overload is becoming a real threat. Inter-operability will be critical in this as in other fields.

85. We need to improve our battlefield damage assessment capabilities, in terms of speed and quality, both for operational reasons and to provide information to the public and the media. Rapid collection, control and dissemination of information to front-line weapon systems will be vital to the achievement of military objectives.

## **Asymmetry**

86. In the face of continuing NATO superiority in conventional military capabilities, adversaries are likely increasingly to seek to pursue unconventional strategies and tactics to negate this advantage. They will focus on perceived weaknesses and vulnerabilities, such as the sensitivity of public opinion to casualties, and other cultural, legal and ethical constraints. Pervasive use of propaganda can be expected with the intention of constraining Alliance rules of engagement or seeking to detach wavering Alliance members. Some adversaries will themselves tend to ignore international law and ethical standards, including by deliberate targeting of civilian populations, including expatriates, or deliberate siting of military targets in proximity to civilian infrastructure or cultural sites. Adversaries

may seek to exploit growing reliance on information systems through offensive information operations. Weaknesses or delays in decision-making processes and command and control structures will be exploited to the full.

87. Civilian infrastructure and information systems may be targeted and such attacks may not always be traceable. Terrorist attacks might be launched either in the territory of Alliance members or against their interests overseas. Adversaries may be prepared to sustain military set-backs in the short term in the pursuit of longer term strategies.

### **WMD Proliferation**

88. We can expect some states to continue to pursue programmes to develop nuclear, biological and chemical (NBC) weapons, and associated delivery systems, particularly missile delivery systems, in the face of international condemnation. The relative cheapness and simplicity of initiating biological warfare (BW) and chemical warfare (CW) programmes may prompt others to follow suit. Where states develop such weapons, this is likely to be primarily with a view to limited regional or internal use. Detection and prevention of trade in WMD-related technologies, particularly those relevant to CW and BW, has proved difficult. The expansion of electronic communications and the Internet and continuing growth in the volume of international trade will make it increasingly difficult to contain the spread of relevant technology and know-how. The likelihood of non-state actors, including terrorist and criminal groups, having access to CW or BW will increase. Developments in BW may make them more deployable, whilst better systems for dispersal of CBW are likely to be developed.

89. At present the UK remains out of the range of missiles and aircraft from proliferating states. At current rates of progress, it seems likely that, well before 2030, one or more of these states will have ballistic missiles capable of reaching the UK carrying chemical or biological payloads and, potentially, nuclear weapons. Other unconventional strategies for delivery could also be developed. There are already capabilities in the hands of proliferators which could be used to threaten British forces deployed overseas and parts of NATO's southern flank. The risk of air-launched WMD attacks will remain very low. The possibility of terrorist use of WMD over the 30 year period is less easy to assess.

90. Deterrence policies may not prove effective against small scale use of CW or BW, especially attacks on deployed troops or "untraceable" terrorist attacks. Proliferation of WMD and missile-related technologies will be difficult to prevent, especially as for some regimes they represent a rare opportunity to generate foreign income. We should also be aware that some states may not respond to deterrence as we might expect, and that technological developments will affect both offensive capabilities and the active and passive counter measures available.

### **Proliferation of Conventional Weapons**

91. Sales of advanced conventional weapons from Russia, and on a smaller scale other states of the Former Soviet Union, continue to a range of countries. Russia has sold KILO class submarines to Iran, Algeria, India and China and SMERCH (long range rocket artillery) to Algeria. Russia has been prepared to sell highly capable aircraft and air defence systems (such as the SA-20) to a number of countries, seemingly without concern for their impact on regional stability. Russia is marketing its next

generation submarine, AMUR, whilst a number of countries are interested in acquiring SMERCH. Russia is likely to offer thermobaric munitions (which have enhanced blast and thermal effects) for sale, which is of particular concern as this is a field in which Russia has a technological lead. China, Israel and North Korea are all likely to continue to develop their weapon export business. Such sales may lead to a narrowing of the technological gap between NATO and some potential adversaries. Western defence sales may also contribute to this phenomenon, particularly where it is not possible to prevent subsequent retransfer or the possibility of reverse engineering.

## **Arms Control**

92. Arms control agreements can significantly reduce risks, or make them more predictable, and limit the means by which conflicts can be waged, allowing defence resources to be concentrated on other areas. The overall effect of arms control agreements on our national security will almost invariably be positive, although they place some restrictions on the activity of UK forces and may thus increase risks. Some adversaries will not be party to arms control agreements and thus will not be operating under the same restrictions. We may need to develop new tactics or capabilities to overcome restrictions on our own forces.

93. Ingenuity will be required to improve the effectiveness of arms control and export control agreements, including through compliance monitoring and verification, in a world where advanced dual-use technologies are increasingly accessible. Recognising that sometimes, even where there is a political will to exercise control, there are not the practical means or resources to do so, more thought will need to be given to programmes of practical advice and assistance to receptive countries. Many non-aligned states view export controls as an attempt to limit their economic development, however, and may increasingly resist attempts to improve the effectiveness of export control regimes.

## **Personnel**

94. The character of conflict will continue to present a physical and moral challenge to service personnel: extreme danger, rapidly changing circumstances in conditions of chaos and uncertainty, and severe physical and mental demands. The requirement to engender and foster fighting spirit is enduring. Maintaining fighting ethos may be difficult in the light of social and legal changes and the possibility of increasing attention to, and criticism of, defence activity.

95. Despite technological change, in most areas it will still be people who give us the critical edge that leads to success. The welfare, training and retention of personnel will be vital to success. Adherence to conditions of service, particularly guidelines on acceptable levels of separated service, will be important for retention and morale. Service personnel are likely to want to be more permanently based in the UK.

96. We must be aware that in the more technologically sophisticated armed forces of the future a greater proportion of personnel will have skills which are marketable in the civil sector. If we make unreasonable demands on them they will leave. We should also be alert to the fact that the best operators of increasingly IT/computer-based future equipment systems may be rather different from the traditional picture of the Service recruit. Combined with changes to public attitudes previously

discussed, these developments will have implications for recruiting strategies and for terms and conditions of service.

97. Recruiting and retaining a high quality of civilian personnel may also become more difficult in a more competitive labour market. Concerns about instability in the structure of the Civil Service, or a lessening of the importance placed on the work of civil servants would exacerbate the position. The development of initiatives such as flexible working practices and interchange with the private sector (and OGDs) will help. Achieving a better representation of women and members of ethnic minorities, both in the MOD as a whole and at senior levels, will remain a priority, for practical reasons as well as reasons of principle.

### **Military Dimension: Implications for Defence**

The ability to mount rapid and effective military operations in challenging circumstances will be crucial not only to respond to a wide range of potential crises but, through deterrence, to contribute to conflict prevention

We will need to adjust the balance of capabilities over time to exploit new methods of operating and counter equipment and strategies being adopted by potential adversaries. Similarly, military doctrine must be flexible and able to adapt to changing threats

The ability to deploy forces rapidly and sustain them in theatre will remain vital

Maintenance of information superiority will be imperative, and information operations will become more important. We must maintain a capability to counter information operations, and design systems and strategies to resist such threats. Cryptography and information protection will be vital, and increasingly difficult to achieve

There will be a growing requirement for real time surveillance (across the electro-magnetic spectrum) both to support operational decisions and to inform the international, public and media audience

Joint (and coalition) thinking must be the foundation of doctrine, with a shift in emphasis over the period from joint to fully-integrated, inter-agency operations, involving OGDs and NGOs. Inter-operability will be vital

Deterrence policy needs to be developed to focus on threats below the strategic level, and UK policy on BMD will need to develop in response to changes in the nature of the threat and the defensive capabilities available. Doctrine, planning and training and exercise policies must prepare to deter and defend against the use of NBC

Western defence sales need to be managed carefully to avoid creating long term threats to the security of forces engaged in crisis management operations. We should seek to encourage others not to permit sales of defence equipment where these damage regional stability

Personnel policies and practices will play a crucial role in generating future military capability and we may need to shift investment towards people (or towards technologies and procedures that enable us to make better use of people). We must be prepared to review levels of activity, including operations, in order to avoid placing unreasonable demands on service personnel.

## Summary Analysis

98. Our re-assessment of the international security environment and experience since the SDR confirms that we have entered a period of rapid change which will bring new and more diverse risks, challenges and opportunities. These are likely to give rise to a wide range of operational challenges, although there continues to be no direct military threat to the UK itself.

99. There is no sign that operational demands are likely to diminish. On the periphery of Europe (and in the Balkans) there are instabilities and tensions which are likely to remain potential sources of problems for European security. At the same time, environmental, demographic, economic and social changes will affect the security situation, potentially causing or aggravating conflict or giving rise to continuing and, quite likely, increasing pressures for humanitarian assistance and disaster relief operations.

100. The 'worst case' single military contingency for which we need to plan is the participation of British forces in high intensity warfighting operations in a regional conflict, requiring deployment of forces at a similar scale to the Gulf War. It is very unlikely that any potential adversary would risk a direct military confrontation with NATO provided that the Alliance maintains the effectiveness of its conventional forces as a deterrent, but we cannot rule out the possibility of such a conflict arising through miscalculation or accident.

101. We must therefore continue to structure our forces so that they are capable of being successful against all likely opponents in a single warfighting operation broadly on the scale of the Gulf War. In the light of increasing demands to contribute to peace support and humanitarian operations we need also to take account of the likely requirement to mount concurrent operations at smaller scales.

102. Forces engaged in peace support operations will need to be rapidly deployable, sustainable in theatre, and may sometimes need to have (or be backed up by) warfighting capabilities to do their job effectively. Some potential opponents, perhaps fielding individual Russian, Chinese or Western military capabilities and developments in civil technology, could offer significant challenges to coalition intervention forces. Planning capabilities based on warfighting will give us the ability to contribute to other types of operation but the reverse is not true. Optimising the force structure for either a warfighting or non-warfighting role is not the way forward. Building a force by planning for both will produce a more robust force structure with wider utility.

103. Against this background, Europe needs to improve its collective defence capability both to improve its contribution to NATO and to give the EU the capacity to act where the Alliance as a whole is not engaged. Resource pressures are likely to place growing emphasis on effective multinational approaches and consideration of limited role specialisation.

104. We also need to work with other Government Departments and NGOs to alleviate the security risks we have identified, through measures which help prevent or resolve conflict, or which assist security sector reform. In particular, we must work to develop, build and maintain constructive relationships which strengthen European security. We must also work to maintain and improve relations with key players on the international stage, particularly Russia and China, seeking to work in

partnership in responding to regional crises.

105. Our Armed Forces will need to be versatile, adaptable and deployable. Military concepts and doctrine will need to evolve to keep pace with trends in the future operating environment. Radical changes in the nature of threats will require matching changes in concepts and doctrine. Weapon systems and tactics will need to evolve to cope with limitations on rules of engagement caused by public, international and allied opinion, and by developments in international law. Preserving technological superiority will be vital to success, particularly through maintaining access to US military technology. In key technology areas, we must maintain the capabilities which will enable us to operate effectively alongside coalition partners.

106. Recruiting and retaining sufficient high quality people will be more than ever critical. Demographic and social factors will make this more difficult. It will become increasingly important to maintain the widest possible recruiting pool, by not excluding or deterring certain groups in society, and we will need to place even more emphasis on personnel issues, such as welfare and training, and elimination of unreasonable pressures on service personnel and their families. We also need to consider ways of reducing our requirements for military manpower, such as through equipment design and by greater use of the private sector and manpower substitution, while addressing the problem of augmentation in crises. This may require a shift of emphasis in investment from equipment to personnel, or towards technologies and procedures which enable us to make better use of people.