

Britain's Security: Labour's Defence Policy Review

Response from Medact to the invitation for submissions

Medact is a registered charitable company (number 1081097) established in the UK to advance the education of doctors, other health professionals and the public in the medical, psychological, social and economic causes and effects of warfare and other violent conflict, poverty and environmental degradation; and to conduct, promote or otherwise further research into these fields their impact on health and human rights, and to publish or disseminate the useful results of such research.

Since the 1950's Medact and its predecessor organisations have consistently called for an immediate global ban on all nuclear weapons and a complete and immediate elimination of the UK's nuclear arsenal, including that currently deployed as 'Trident'. Medact is the UK affiliate of International Physicians for the Prevention of Nuclear War (IPPNW).

This document has been written as a collective output by Medact staff and several of its members. We would like to acknowledge and thank the advice of the Ammerdown Invitation; the British American Security Information Council; International Physicians for the Prevention of Nuclear War (Nobel Peace Laureate, 1985) and the International Campaign to Abolish Nuclear Weapons; and the Oxford Research Group.

Note; some key references in the following document are given, but more are available on request. For further information, please contact Dr Frank Boulton c/o office@medact.org or at the address below

Medact, The Grayston Centre, 28 Charles Square, London N1 6HT

Tel 020 7324 4739

www.medact.org office@medact.org

London: April 2016

Medact, 28, April 2016

Contents

One Page Summary	3
Preamble	4
What role should Britain play in building a world that is more peaceful, more just and safer, how can we make a greater contribution to international peacekeeping and strengthen the capabilities of the under-performing UN system?	8
What values & principles should drive Britain’s strategic defence policy?	9
What objectives follow from these values for Britain’s defence and foreign policy, and how can our objectives best be achieved?	10
What are the strategic assets Britain needs to protect our common security?	13
What are the key security challenges facing the UK?	15
Cyber-security	15
Terrorism	16
The threat of nuclear war	17
Chemical and Biological Weapons	23
What are the more fundamental, long-term threats to our common security, what or who is driving them?	24
Climate Change	24
The erosion of democratic freedoms and civil liberties	24
How can we improve our ability to identify, predict and act upon underlying threats to Britain’s security, and work to prevent them developing?	25
What level of defence spending is required to keep Britain safe and help us promote a more peaceful and safer world? What are the lessons from recent conflicts about the equipment and military capabilities required for the deployments Britain may face in the next few decades? What training do our military and security forces need to carry out operations that protect Britain’s security and pursue the values that guide our defence policy?	27
How can Britain help to effectively stem the flow of weapons – chemical, nuclear, and military – around the world and promote non-proliferation and disarmament? Will renewal of Britain’s nuclear capability aid us in protecting Britain’s security and pursuing the values that guide our foreign and defence policy?	28
What new capabilities will our armed forces require to address the complex and dynamic threats facing our common security, especially the growing threat of cyber-attacks?	29
Protecting British Jobs and Skills	30
Comments on UK Energy supplies and employment prospects	32

One Page Summary

Our submission to inform the Labour Party's defence policy review is based on a holistic approach to the concept of national security.

This includes acting to protect Britain not just from the threat of external military aggression and terrorism, but also from important underlying drivers of violence and war including climate change; ecological degradation; militarisation as a social and cultural phenomenon; increased levels of forced migration; and widening social and economic disparities, within countries, between countries and across an increasingly globalised world.

We also highlight the fact that 'national security' cannot be divorced from the need to secure 'global security'. The threats posed by global warming and ecosystems collapse can only be mitigated through a fair system of global governance. The depth of economic globalisation experienced over the past few decades, coupled with the failure of current systems of economic governance to ensure a fair and sustainable life for all, also demand significant global political, financial and economic reforms as a means to securing the conditions for peace and effective international diplomacy.

We emphasise the risk of nuclear war as an existential threat, and the role of Britain as one of nine nuclear weapon states in the world. In our submission we argue – on the basis of historical evidence and a growing understanding of the likely humanitarian and ecological effects of an even limited exchange of nuclear weapons - that Britain should not replace Trident.

We also draw attention to gaps and weaknesses in the 2014 Arms Trade Treaty that need to be addressed; as well as to the on-going role of British arms companies in the indiscriminate spread of arms which fuels conflict and violence, including to brutal and undemocratic governments.

We argue that a more effective approach to securing both national and global security would be to stress Britain's unique 'soft power' assets and attributes. These include Britain's role as an international centre of excellence for graduate and postgraduate science, education and research; the international admiration and reach of its cultural, public broadcasting and sporting institutions; and its wide array of international non-governmental organisations that are engaged in providing humanitarian relief and enabling international development. By relinquishing its nuclear weapons status and taking a firmer stance on the control of the arms trade, Britain will create even greater opportunity to deploy these soft power assets.

Our approach to national security, and the recommendations we make, do not negate the need for an armed force or a defensive capability able to withstand an attack upon Britain. However, we argue that our armed forces could be more effectively deployed within the context of foreign policy that seeks to advance the pre-requisites for peace, environmental sustainability and human security for all.

Preamble

As humankind spread from pole to pole, adaptive and cultural diversity became inevitable but did not prevent the emergence of several universalities: our rights (freedom from want and fear), and our accountability for each other and for the impact our collective activities have on our shared biosphere.

We – an entrepreneurial and inventive species – have evolved through competition with the environment, other species and indeed each other; but the way we have evolved does not endorse any tendency to live by ‘market neo-liberalism’ because our capacity to recognise constructive and destructive acts allows us to conceive a balanced approach to human relations. Well-regulated constraints on behaviour such as greed and unsustainable over-consumption should allow us to avoid undesirable consequences, be they unintentional (as in anthropogenic climate change) or wilful (as in violent transgression of others’ human rights). These aspects allow us to optimise socially constructive behaviour and envision a beneficent future.

The wide variety of our possible ‘visions’ should be directed towards a collective reconciliation of and respect for our universal but disparate characteristics and traditions, and contain and reverse the effects of the undesirable consequences. These ‘positive’ visions need to be made real.

Medact believes that the UK can and should make major and practical contributions, refining and improving the global acceptance of these universalities, and promoting harmonised, enlightened and responsible practices. The ultimate goal must be a system of global security based upon these values, accepted and regulated by good and just governance.

But the challenges are enormous. They include

- **Global Warming.** Continuing rises in greenhouse gas emissions; from 34,100 million metric tons of CO₂ equivalent in 1990 to 45,900 in 2010. Although emissions have stalled somewhat since 2010, they remain high so that a global temperature rise of 2 °C by the end of this century will be hard to avoid (it has already gone up by 0.85 °C). This will result in;
 - Climate change, altered rainfall patterns, unusual desertification in some places and flooding in others (the latter including in the UK)
 - Global difficulties in expanding annual crop yields to keep up with population rises. The UN FAO predicts that increases in cultivable areas and crop yields may mitigate these if crop distribution and clean water supplies are adequate – but these are very questionable: the FAO also acknowledges competition from bio-fuel production
 - Access to clean water, which is very vulnerable to climate change, is also essential; such access is compounded by ‘fracking’ and by ‘leaching’ geological uranium in searching for more energy sources.
 - Emergence of new or atypical pandemics of infection, compounded by the rise of antimicrobial-resistance (especially in the wake of climate change), altered

human demography and altered patterns of vector biology (e.g. pesticide-resistant mosquitoes).

- The newly launched UK Health Alliance on Climate Change warns about UK events related to climate change;- floods, heatwaves and air pollution: Public Health England has identified areas needing attention for services to cope with climate change effects: and the 2015 *Lancet* Commission on Health and Climate Change describes the implications for a global population of 9 billion which threaten to undermine the last half-centuries' gains in development and global health. The general public is largely unaware of the daunting scale of the oncoming challenges.
- **Unsustainable and irreversible ecological degradation.** In addition to GHG emissions, other pollutants and the global consumption of natural resources threaten to exceed safe and sustainable thresholds. This is compounded by the global population rise and increasing waste and obesity in societies with high Human Development Indices.
 - The world is living increasingly beyond its means. (An important tool to achieve 'sustainable living' across the world is the consistent and universal application of equal human rights)
- **Increasing militarisation and rising levels of conflict.** In 2014, governments spent £1.78 Trillion (2.3% of the global GDP) on their military; nearly 40% of this was by the US. Also (although very difficult to ascertain accurately), the increasing value of the global arms trade must have reached at least \$76 billion in 2013 (SIPRI 2014).
 - Withdrawal of US Allies' forces from Iraq and Afghanistan was followed by a general decrease in global military activity, but this reversed after the 'Arab Spring' of 2011 (SIPRI, 2014); this upward reversal is not confined to 'Arab Spring' nations.
 - The increasing incidence of urban terrorism includes the use of suicide bombers in public civilian areas
 - A considerable global arsenal of nuclear weapons remains. The rising civilian nuclear industry threatens the secure storage of nuclear materials and waste, increases the risks of proliferation and of using nuclear weapons
 - Forces of terrorism and nuclear technology could combine to create 'dirty bombs' which if detonated could cause major societal disruption
 - The increasing deposition of cluster munitions which delay and increase the expense of post-hostilities' clear-up and reconstruction operations
 - Prolonged urban warfare has long-term effects on health, especially in societies with many young people in such urban areas. This has a significant 'knock-on' effect on subsequent generations' health, particularly mental, and their ability to integrate productively when hostilities end.
- **Increasing levels of forced migration and displacement:** Civilians are increasingly vulnerable: We are witnessing extra-ordinary waves of international refugees flooding to Europe. The current wave may well be a mere prelude.

- ***Erosion of universalism.*** The sheer variety of human traditions, reinforced by aeons of cultural developments in relative isolation, often leads to denial of the ‘universal’ values, exacerbated by disparities of religious practices. The hatred manifest in religious ‘civil wars’ shows an aspect of human nature which has to be accommodated psychologically and reversed by good practice.
 - This will undoubtedly take a long time; but humankind’s basic humanitarian values enable us to face these challenges and, with the help of modern technologies, respond accordingly.
 - The many positive values of diversity must be accepted and regarded as potentially adoptable by others
- ***Economic policies and systems aggravating inequalities and high levels of youth unemployment.*** Inadequately regulated consumer-capitalism is widening the ‘wealth gap’ within and between nations, endangering adequate and fair access to resources and widening poverty and deprivation.
 - The rising availability and use of ‘social media’ informs more people who are socially disadvantaged of the gross inequalities of access to resources, aggravating their senses of grievances and hostility, thereby helping recruit terrorist forces.

The challenges described above interact in synergistic ways, as illustrated below

- Increased population movements are expected as people wish to escape starvation and find better living conditions. Droughts in the early 21st century may have severely reduced crop yields and catalysed the ‘Arab Spring’.
- Whether or not this is the case, deteriorating conditions in regions including the UN sub-regions of Northern Africa and Western Asia is undeniable and was aggravated by unaccountable authorities prioritising their own survival (as seen by the use of chemical weapons in Halabja in 1988 and in Syria in 2013). The extra-ordinary twists which saw Syria become the military playground of non-Syrian ‘jihadists’ have displaced 45% of its early 21st century population (21.8 million in 2010) from their homes with about 3.1 million taking refuge outside Syria. By 2015, 6.35 million people were displaced internally and 1.16 million outside the country: 11.5% of the population have been killed or injured due to the armed conflict and life expectancy (70.5 years in 2010) fell to 55.4 in 2015 (Syrian Centre for Policy Research, 2016). Conditions in Syria are behind the influx of civilian refugees overwhelming European borders and the many hundreds dying on their hazardous journeys to Europe; these may be a mere prelude of worse things to come.

To address these matters it is therefore essential to regain a sustainable global economy characterised by a much fairer distribution of wealth and access to resources, and robust enough to support mitigation against climate change. For this, thriving and cost-effective generation and distribution of low-carbon energy throughout the world is needed,

extracting the minimal amount of geologic and fossil fuels from the ground. Sustainable and secure food production, clean water supplies, housing and transport are needed. The demands on human enterprise could provide very productive employment.

Global security requires enforcement to protect against natural and anthropogenic degradation. The laws behind such enforcement must be fair and proportionate. Any detention must be justified, and conditions humane and designed to encourage full rehabilitation. Law enforcement will undeniably require ordnance which should, however, be deployed to minimise harm, preserve infrastructures, and facilitate post-hostilities' reconstruction.

To achieve these goals requires a stable global political infrastructure which is fair and ecologically responsible. Medact believes that the UK could play a leading role by supporting the early realisation of such an infrastructure by facilitating enlightened foreign and defence policies to the potential benefit of all.

MAIN RESPONSES

These are presented in the order of the questions posed in the call for submissions. Because some themes recur in different sections of the review's questions, some of our responses have elements of repetition which will have occasional minor differences of emphasis; but we present them this way for clarity.

Britain's Place in the World: Values, Principles and Objectives

1) What role should Britain play in building a world that is more peaceful, more just and safer, how can we make a greater contribution to international peacekeeping and strengthen the capabilities of the under-performing UN system?

We note that the annual UN peacekeeping budget is c \$8.27bn, of which UK gives 6.68% (\$552mn or about £385mn). The US provides 28.4%, Japan 10.8%, France 7.22%, Germany 7.14% and China 6.64%. We suggest that the UK increases its contribution to at least 10%, i.e. about \$850mn. It should be noted that current UK spending on defence is £44.3bn, so such a contribution would still be less than 2% of the UK Defence budget.

But the military aspect of peacekeeping has, by its nature, a very limited capacity; we believe that it would be more effective for the UK to strengthen its exercise 'soft' power as a means of peacekeeping – that is persuading others by non-coercive and attractive means of encouraging development – cultural exchanges (including sport and other non-military competitive events); the sharing of new scientific and technical ideas; philosophical dialogues; etc. the use of broadcasting media including a well-supported BBC; popular televised presentations of entertainment and of natural astronomical and biological phenomena; and reinforcing Britain's role as a global centre for international graduate and postgraduate education. We have the advantage that our main native tongue has become a major means of global information exchange.

The exercise of soft power should include aiding international development 'without strings', thereby supporting measures to decrease the global poverty gap. We therefore ask that the Labour Party conducts a close inquiry into the degree and types of non-military aid suitable for the UK government to support, with every expectation that this would increase substantially.

The creation of a more socially and economically just world is undoubtedly key to a more secure, safe and prosperous world for both the UK and the rest of humanity. Two obvious targets to focus on are: 1) addressing the democratic deficits of neoliberal globalisation, with particular reference to the problem of illicit financial flows that has been aided by financial deregulation, tax havens and the growth in power of trans-national corporations; and 2) reducing the UK's population disproportionately heavy ecological footprint and working towards a new and more sustainable form of economics.

There are no simple quick-fixes, but there is a need to understand the root causes of widening global social and economic disparities (within countries, and across the world) and of the growing sense of political disenfranchisement and alienation felt by growing numbers of people across the world.

In addition, there is clearly a need to redouble efforts to strengthen the UN as a system of global governance. Here too, there are no quick fixes. Many past attempts to reform and

improve the performance of the UN have met with failure. However, inter-governmental cooperation and diplomacy through the UN remains an indispensable part of any effort to ensure UK security given the global and globalised nature of our threats.

There is no room here to provide a detailed prescription for reform and change to the UN. However, the UK's position as a Security Council member places a significant responsibility on our shoulders. Among other things, the UK should promote the extension of permanent membership of the UNSC to countries with large and potentially highly productive populations, and also be prepared to rotate its own permanent place on the UNSC with other European countries. Further credence to the UK as a 'soft power' would be gained were it to disarm its nuclear arsenal.

As a health organisation, we are also aware of the particular need to address the problems facing WHO. We are concerned that the WHO is far from being the natural 'leader' in promoting global health. The roots of WHO's problems lie in the fact that it is under-budgeted and in the way it is financed (with only 20% of its income being unconditional). Additionally, the independence of WHO (like other specialised agencies of the UN) has become compromised and captured by powerful actors with vested interests. Less than a quarter of the WHO's annual budget of about \$2 billion comes from more-or-less guaranteed 'assessed contributors' which are mainly governments. In 2012, the UK gave \$30.6 million (in \$million, the United States gave \$110, Japan \$58, Germany \$37, Russia \$1.7 and China \$14.8).¹

2) What values and principles should drive Britain's strategic defence policy?

Values

- The universalisms described above, with an appropriate degree of tolerance for diversity
- Equity and social justice
- Respect and care for nature

Principles

- Emphasis on common threats to global humanity – which implies a need for global systems of cooperation and governance
- Place greater emphasis on 'building for peace' relative to preparing for war
- Place greater emphasis on the UK's unique qualities in the effective application of 'soft power'
- Democracy (at both national and global levels) and international humanitarian law as key building blocks for good governance
- Living within the biophysical limits of the planet as a means of producing and sustaining peace between peoples and nations

¹ http://www.who.int/about/resources_planning/2012_2013_AC_summary.pdf

3) What objectives follow from these values for Britain's defence and foreign policy, and how can our objectives best be achieved?

Just as UK citizens have a right to expect an effective system of 'defence of the realm', so should citizens of other 'realms'. While we advocate a strong emphasis on a defence and foreign policy approach that is international and global in nature, we also recognise the pragmatic need for a strategic UK defence policy that is based on well-trained, competent, properly equipped and democratically accountable armed services. The prime purpose of our armed forces should be for true defence; and as a back-up to diplomatic failures to prevent war / conflict. Our overseas commitments should be limited to post-hostilities' reconstruction, and the defence of our embassies and their personnel.

There are no simple injunctions, policies or methods for achieving the objectives outlined below which are ultimately the outcomes of social and political processes. We give a few specific examples for how some of these objectives might be achieved:

Objective A: Actively promote and advance common and universal values (equality of opportunity, universal human rights, free speech internationally)

Ways of achieving this

- Strengthen the UK's diplomatic corps
- Sever relationship between diplomatic services and the promotion of UK arms industry
- Capitalise on UK's unique capacities and opportunities to wield 'soft power' (science, education, culture, public broadcasting etc.)

Objective B: Promote economic and financial reforms aimed at reversing the trend to widening inequalities, and which are not contingent on the premise that on-going 'economic growth' is either ecologically possible or an effective and efficient means for reducing inequity

Ways of achieving this

- Call for and promote a 'new economics' based on the finite limits of the planet and the need to redistribute wealth. This includes tackling the political and economic problems of tax evasion/avoidance; the unregulated financialisation of the global economy; tax havens and the secrecy regimes of banks.

Objective C: Active promotion of the precursors for peace (within and between countries and societies) such as: good governance, gender equity, full employment; a 'public order' system in which the courts and law-enforcement officers are fair and just; equitable access to education and health care.

Ways of achieving this

- Strengthen the UK's diplomatic corps

- Commit to improvements of multilateral forms of development assistance, including improvements in adherence to the principles of the Paris Declaration on Aid Effectiveness

Objective D: Full commitment to the establishment of an adequately resourced, effective, efficient, transparent and accountable UN system.

Ways of achieving this

This objective can only be achieved through a more principled, ethical and consistent foreign policy. For the UN to prosper, the UK must be fully committed to international law; and to ensuring the UN is adequately funded and resourced.

Objective E: Commitment to the establishment of more effective controls over the international arms trade, and to a reduction in the proliferation of weapons and other forms of military hardware. The latter should include being committed to the NPT, choosing not to replace Trident and supporting current international efforts to make nuclear weapons illegal.

Ways of achieving this

- Ensure full implementation of the spirit of the 2014 Arms Trade Treaty (ATT).
- The UK takes 4% of the share of the international arms export's annual value of at least £76billion (i.e. at least \$3billion to the UK); it is the sixth highest arms-trading nation (USA's share was 31.2%, Russia's 27.3%, China's 5.4% Germany's 5.5% and the French took 5.6% (SIPRI, 2015). The UK's ratification of the 2014 Arms Trade Treaty (ATT), which is meant to make the trade in arms more 'ethical', has not prevented it from continuing to supply Saudi Arabia, enabling its bombing campaign in the Yemen in which many civilians have been killed.
- Remove or reduce public subsidies to the UK arms industry.
- The British arms trade is heavily subsidised by the UK taxpayer; the Oxford Research Group in 2004 ('The Subsidy Trap'²) states that the UK arms industry costs the taxpayer £763m per year – such subsidies persist.
- Ultimately, UK companies should be stopped from trading in arms, as such trade is contrary to UK traditions and counterproductive to the role in the world we should be taking.
- Do not replace Trident.

Objective F: Promoting economic and social policies aimed at reversing global warming and environmental degradation trends

Ways of achieving this

- Commit fully to a decarbonised energy system within a shorter timeframe than is currently the case. This means abandoning plans to expand onshore shale gas production and committing much higher levels of investment in RE technologies and reductions in energy consumption.

² http://www.oxfordresearchgroup.org.uk/publications/books/escaping_subsidy_trap_why_arms_exports_are_bad_britain

- In terms of nuclear power, this is a very contentious area. The study of nuclear physics has transformed our understanding of the universe, much to humankind's potential benefit. However, it is very much a two-edged sword, with beneficent and maleficent potentials. The benefits include diagnostic and therapeutic applications through nuclear medicine, which inevitably require isotopic transformations conducted in nuclear reactors to source such materials. We believe, however, that these sources can be provided more safely by using low-enriched uranium rather than highly enriched uranium which so far has been widely used.
- The UK pioneered the generation of electricity from civil-owned nuclear reactors but its designs were inferior to others adopted more widely, so our nuclear expertise has substantially diminished as clearly demonstrated by the fiasco of Hinkley Point C.
- There is no doubt that the global civil nuclear industry underpins the proliferation of nuclear weapons; and the guarding of nuclear materials is taken very seriously by the UK and the US. Reliance is placed on the IAEA to regulate the civil industry globally, in spite of which the IAEA is conflicted by the inherent competition within its remit, and remains so underfunded that its competence must, worryingly, be questioned.
- We believe that a thorough and unbiased re-appraisal of the UK's nuclear industry is overdue. This does not imply its demise as the highly toxic nuclear waste generated so far (which would be much increased were Hinkley Point C to come on line) needs careful and skilful management and planning for its ultimate disposal, as does the disposal of our military nuclear waste (although the innate radioactivity will remain potentially dangerous for many thousands of years). The skills learnt in such a reappraisal could benefit societies overseas. The regulatory work of the IAEA deserves to be supported much more fully in order for its powers for keeping the world safe to be enforced effectively. The UK should consider how best to maximise its support for the IAEA.
- The promotion of not just 'free trade' but also 'fair and sustainable trade' as a means of building peace

Objective G: The promotion of not just 'free trade' but also 'fair and sustainable trade' as a means of building peace

Ways of achieving this

- Recognising the importance of positive trading relations between nations as an important contributor to peace, we believe that a commitment to free trade should be encouraged, but in ways that preserve the sovereign rights to ensure the protection of social, cultural and economic rights and environmental protection; and active policies aimed at promoting more equitable consumption and development. Current negotiations through WTO have stalled and need to be revived. Meanwhile, regional trade negotiations such as TTIP are being conducted in undemocratic and non-transparent ways, seeking to strengthen even further the power of unaccountable and undemocratic transnational corporations and finance capital. While such negotiations are being conducted under the banner of free trade, we believe that the accompanying erosion of democracy and public interest regulation is likely to accentuate various precursors of conflict and violence.

4) What are the strategic assets that Britain needs in order to protect our common security?

Social, cultural and moral assets

In this context we emphasise Britain's 'soft power' assets which are exercised outside formal diplomacy – encouraging development by non-coercive and attractive means. These include cultural exchanges (including sport); the sharing of new scientific and technical ideas and philosophical dialogues, including via Public Broadcasting media; and the close relationships with various public education systems throughout the world. One example is the provision by Britain's undergraduate and postgraduate medical educational services, such as the twenty-two Royal Colleges incorporated into the Academy of Medical Royal Colleges (<http://www.aomrc.org.uk>); the Royal Society of Medicine; and in related fields such as the Chartered Society of Physiotherapists (which is a founder member of the World Confederation for Physical Therapy, a UK-registered charity). This list represents a broad range of quintessential cultural and educational services of which medicine is but one aspect.

The physical assets include diplomats, and materiel.

Britain's diplomatic corps

In 2010 the FCO paid almost £250million in remuneration costs for the UK's 13,200 global diplomatic staff, of which £167million went to about 10,500 local citizens. In addition the FCO held about £1.8billion worth of property around the world. Costs are likely to have risen by up to 20% since.

Costs of this order may be reasonable for a well-educated, socially aware and non-complacent professional and competent diplomatic corps. We need our diplomats to be well educated and have the linguistic and interpersonal skills to advance UK interests; and be exemplary, for example in the face of any unfortunate provocation. We desire that through 'soft diplomacy' British cultural values can be promoted and our reputation enhanced.

We hope – and feel it is likely – that the training of our diplomatic corps is under continual review. Using as a model the UK's training of medical under- and post-graduates, with its increasing emphasis on multi-skilled work teams and respectful and non-judgemental communications with patients and their relatives, we feel that analogous training methods could be applied to the diplomatic corps as its members have a similar need for sensitive inter-personal skills. Precise use of the English language – as written and spoken in the UK – should come naturally to native English and Commonwealth speakers, and be an international asset. American culture has a profound and world-wide influence on the nuances of the English language: UK natives familiar with these nuances can help to obviate misunderstandings and clarify any messages intended.

But our UK-born staff must be reasonably fluent in other languages, especially those used widely in other parts of the world. Such fluency encourages a deeper insight into cultures overseas, facilitating a more profound understanding of issues of concern – for example over legal, property and personal rights which may be dealt with differently under codes outside the UK.

Materiel

This includes equipment, IT systems, ordnance, and infrastructures such as transport and energy systems, as well as demographic features such as the siting of security and military bases and the supporting industries. These should be maintained at the highest operational standards and used responsibly. Military operations may be exempt from restrictions applying in civil life – such as carbon emissions during exercises. We believe that such operations should be more accountable as the long-term effects of climate change pay no heed to whether the emissions were of military or civil origin.

Threats to Britain's Security

This distinction between immediate and long term threats is somewhat arbitrary. However, in this section, we draw attention to three specific threats as follows: a) cyber-security; b) terrorism; c) nuclear war; and d) chemical and biological weapons. We also note the importance of secure and reliable energy as an immediate priority, but refer to this in later sections.

1) What are the key security challenges facing the UK?

The most immediate threats

A. Cyber-security

In January 2013, the US Defense Science Board (DSB) estimated that the annual cost of the more obvious cyber vulnerabilities would be \$500 million. Since this report the Director of National Intelligence made cyber-attack the **highest strategic threat** to the United States, ahead of terrorism. The DSB has appropriated \$1.7bn over the next five years exclusively for cyber warfare. The same principles apply to the UK.

The following systems are susceptible to cyber-attack (the list is not exclusive); some have already been attacked:

- civil, governmental and military information and communications systems including law enforcement;
- stock markets and other financial outlets - banks, shops and retail outlets;
- ports and industrial plants;
- the electric power grid and water supplies;
- oil and gas refineries and power plants including nuclear power plants;
- transportation infrastructure, including by trains or by air;
- hospitals and clinics;
- educational and research facilities – schools, colleges and universities.

The 'Stuxnet worm' attacked programmable logic controllers on machines operating on Microsoft windows, allegedly developed in 2007 against the Iranian nuclear programme. In 2014 a German steel plant suffered physical damage as a result of a cyberattack on its blast furnace controls. In March 2016 a cyber worm was reported to have penetrated Windows network systems around the world in 2008, including the Royal Navy, MoD's administrative systems and the UK's House of Commons. It stated that although cyber tests can identify flaws, it is impossible to attain absolute cyber-security.^{3 4} When the American FBI avoided taking 'Apple' to court to obtain encrypted data for forensic analysis, commentators also indicated the impossibility of complete cyber security and that attempts to do so would be

³ http://www.basicint.org/sites/default/files/BASIC_cyber_vuln_mar2016.pdf

⁴

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/360973/20140716_DCDC_Cyber_Primer_Internet_Secured.pdf

prohibitively expensive however much the authorities claim to prioritise the issue. Of the \$71.8 billion the US Dept of Defence is wanting for 2017, \$1.7 billion is for cyber and electronic warfare.⁵ Nevertheless, ahead of the nuclear security summit of 2016, the UK and US announced plans to test the cyber-security of nuclear power plants: a similar exercise has tested banks' cyber-security (Guardian, 31st March⁶).

On 28th March 2016, hackers attacked the computer system at 'Medstar Health', a non-profit health-care provider in Baltimore, Maryland, which runs ten hospitals. Thousands of its employees had to turn to paper records. To quote local reports;

"unfortunately in today's business environment, IT systems are at risk from cyber criminals intent on causing disruption, financial harm and data espionage (and) the healthcare industry is not exempt from these risks" This attack was not unique; the American Hospital Association gives advice about such cyberattacks, which *"can last up to a week"*. Medact is naturally extremely concerned that UK health services' IT protection systems, within and outside the NHS, can prevent such attacks on UK citizens as much as possible.

In order to maintain the highest standards of conduct while undertaking their security tasks, Staff in the intelligence services have to be highly trained and motivated – ethically, discretely, ideologically and purposively. Military strategy has to adapt to advances in cyber and related technological developments and complex systems which become outmoded may need to be abandoned. For comments on deployment of Trident and of nuclear weapons in general, see later.

B. Terrorism

The security challenge which seems most tangible to the UK homeland, and which may feature prominently for the next few years, are the murderous acts of terrorism currently being promulgated on the near-continent in Brussels and Paris, and recently in the UK, by persons whose evident disaffection with Western and European values is a source of puzzlement to many of our ordinary, concerned and outraged citizens. These concerns are compounded by the perception that these terrorist acts are often led and conducted by persons born and brought up in Europe, including the UK; and whose parents were non-European immigrants, often from North Africa or Western Asia. Somehow these European-born citizens became alienated, the causes of which seemed incomprehensible to other citizens.

So by implication, *immigrants* as a group, particularly those of non-European appearance, mannerisms or attire, are often assumed to support these terrorist acts, covertly if not overtly. These assumptions may be reinforced by those non-State parties, to whom these European-born citizens pledge their loyalty, direct barbarous acts (including cruel executions and 'suicide bombings'). There are also the recent distressing scenes of immigrants from North Africa or Western Asia* seeking refuge in Europe after suffering severe privation and hazardous seaborne travel. It is easy to spread information, false or true, that among these refuges are some terrorists acting 'under cover', thereby adding to the communal paranoia.

⁵ <http://thediplomat.com/2016/02/new-us-defense-budget-18-billion-for-third-offset-strategy/>

⁶ <http://www.theguardian.com/uk-news/2016/mar/31/uk-us-simulate-cyber-attack-nuclear-plants-test-resilience>

Medact pays tribute to the members of our intelligence and security services who often operate in high-risk conditions which are difficult for us to conceive. We also note that 1,500 counter-terrorism firearms officers will be recruited to the police in England and Wales, and 40 new armed response vehicles deployed, along with new counter-terrorism teams outside London. According to the BBC⁷ and quoting government figures of 2015⁸, there are currently 5,875 firearms officers in England and Wales. The increase brings the total armed police back to 2010 numbers.

Medact asks that great priority is given to the standards of selection, education, training (including psychological preparation) and physical fitness of these officers and their directors; and that the information acquired and made available to them is highly reliable and as free as possible from personal bias. (We recall the tragic misidentification of Charles de Menezes who was shot dead by police the day after the failed terrorist bomb attacks in London in July 2005.)

We would also expect that every effort is made to create and maintain good relations with and within the implicated minority communities, and that intercommunal respect and cultural sympathies are fostered in local communities, and funded accordingly. We also favour a generous attitude to refugee relief, including acceptance on UK soil. These points have deep implications which may be beyond the immediate concern of this commentary but are, we feel, of great importance in the short and longer terms.

It is essential to start planning for an active programme of reconstruction of the shattered communities in North Africa and Western Asia **immediately** – with an approach like that of the ‘Marshall Plan’. Conditions allowing free speech and the recognition of basic human rights are more likely to address these peoples’ needs than luke-warm reception of refugees. Repatriation of any diaspora should not be enforced but the conditions at the homelands should be restored, improved and made sufficiently attractive to encourage refugees to return there.

C. The threat of nuclear war and the implications for the UK

Nuclear war has been aptly described as a *low-probability but high impact* event. In spite of the current rhetoric concerning North Korea and Russia (see below), the ‘lowness’ of the probable involvement of the UK in such a war remains – but **so does the high impact**. Recent studies confirm that the impact would be extremely high, justifying the inclusion here of these threats among the ‘most immediate’ as there is the distinct possibility that a nuclear war could be started at any time unintentionally ‘by accident’. Medact therefore believes that the UK should actively and immediately accelerate its diplomatic obligations in this field.

The two areas involved are deployment by the UK of its own nuclear arsenal and active UK support of the international disarmament processes – these cannot be dissociated. Although sometimes referred to respectively as ‘unilateral’ and ‘multilateral’ processes, these terms have fallen into disrepute through narrow interpretations and will not be used here.

⁷ <http://www.bbc.co.uk/news/uk-35940233>

⁸ <https://www.gov.uk/government/statistics/police-use-of-firearms-statistics-england-and-wales-financial-year-ending-31-march-2014-data-tables>

Although the general tone of the 1994 advisory opinion from the International Court of Justice deeply disapproved of nuclear weapons, the opinion failed to conclude definitively whether the “*threat or use of nuclear weapons would be lawful or not in an extreme circumstance of self-defence, in which the very survival of a State would be at stake*”. Some interpret this as legalising the possession of nuclear weapons.

The Nuclear Non-proliferation treaty (NPT) came into force in 1970 and was given a non-time-limited extension in 1995. Its ‘three pillars’ are:

- An obligation on the five signatory States approved by the NPT as holders of nuclear weapons (NWS – nuclear weapons states), to disarm ‘in good faith’
- An undertaking by signatory States not so approved (NNWS – non-nuclear weapons states) never to develop their own nuclear arsenal
- The right of any NNWS to develop a programme of generating electricity from civil nuclear energy programmes so long as the technologies are not diverted to produce nuclear weapons

In addition, any State has the right to withdraw according to an agreed procedure.

The International Atomic Energy Agency (IAEA) has the global responsibility to inspect nuclear installations. Its remit is to promote the peaceful uses of nuclear energy by its member states; to ensure the implementation of safeguards to prevent nuclear energy being used for military purposes; and to ensure nuclear safety by promoting high standards: but which of these potentially competing duties should take priority is unclear and there is no consensus on how to handle violators. Furthermore, the IAEA – arguably the most important global regulatory body - is woefully underfunded.

The NWSs approved by the NPT are China, France, Russia, UK and US. Since the NPT came into force, India, Israel, South Africa, Pakistan and North Korea have developed nuclear weapons: South Africa is the only nation to have developed and then disarmed and dismantled its stockpile. The remaining non-approved four states are excluded from the NPT but the nuclear activities of India and Pakistan are ‘accommodated’ by the NWS, and Israel is able to maintain its nuclear activities without signing the NPT. Israel’s activities have however blocked a UN resolution for a nuclear-weapon-free-zone in the Middle East, a major source of diplomatic frustration. Although the NPT is reviewed at international conferences every five years, ‘preparation conferences’ being held in the periods prior to each Review Conference, most of the NNWS have become impatient with what are rightly seen as delaying tactics by each NWS, all of which – contrary to their ‘good faith’ obligations – are upgrading and modernising their nuclear arsenals, improving their reliability and targeting accuracy. The UK’s MoD paper of 2014 clearly anticipates by 2045 a proliferation in the number of States possessing nuclear weapons – a clear threat to the NPT and the whole UN nuclear-disarmament processes (see below).

It has long been known that a nuclear war involving an exchange of dozens of moderately powerful weapons risks being followed by a ‘nuclear winter’ due to particulate matter from the extensively destroyed and burnt cities ascending into the high atmosphere and obscuring sunlight for many years. More recent climate modelling has confirmed and extended these findings: it is highly likely that a war involving arsenals of the sizes of those

possessed by India and Pakistan could cause years of crop failures leading up to an unthinkable two billion or so people (a quarter of the world population) starving to death, many in countries uninvolved in the hostilities.

The NPT process is answerable to the UN 'Conference on Disarmament' (CD) which is the UN's sole multilateral disarmament negotiating forum; but only 65 nations are members of the CD although 193 nations are members of the General Assembly (UNGA). Consequently many deeply concerned NNWSs, particularly those not in close alliance with any NWS, have identified a 'humanitarian imperative' to remove this risk – a risk not denied by any NWS. So the UNGA called for an 'open ended working group' of all UN member states, which deliberated in 2014 and is re-convening in three sessions during 2016. It will confer on the legality of the possession and use of nuclear weapons, with a view to developing a treaty to ban such possession and use. The five NWS do not support the OEWG process which decides by majority voting rather than the usual consensus. (A consensus process for the OEWG would better suit the aims of the NWS, all five of which are also the sole veto-capable permanent members of the UN Security Council).

The significance of the Electromagnetic Pulse ('EMP', 'NEMP' or 'HEMP')⁹

This is caused by rapidly changing electric and magnetic fields and accompanying voltage surges generated by a very high altitude nuclear detonation damaging electrical and electronic systems, particularly power lines and tele-communications, but causing much less destruction or contamination on the ground. A nuclear EMP is strongest when detonated at altitudes between 20Km and 500Km, and with yields more than 100Kt. Modern national electric supply grids and its dependent sophisticated electronic systems – including those controlling hospital services – are particularly vulnerable.¹⁰

In 2012 a UK House of Commons Defence Committee enquiry¹¹ into nuclear EMP events – described, like nuclear weapons, as 'low probability but high consequence' events – criticised the MoD for secrecy and recommended more be done to protect the nation against a hostile EMP, as electronic systems can be 'hardened' although the technology may be beyond all but the most developed economies. The MoD assured the enquiry that it could deal with a hostile EMP: this claim must be tested more accountably.

EMP has its 'natural counterpart' originating from solar flares (known as 'Carrington events', or more prosaically, 'solar weather'). A solar storm bypassed the Earth uneventfully in 2012, but a very large event occurred in 1859 affecting telegraph lines over America; the Aurora Borealis could be seen in equatorial regions. Lloyd's register estimate that the damage to the US grid following a Carrington event of 1859's magnitude could cost the American economy \$0.6-2.6 trillion.¹² Solar storms are a good reason for national defences to harden

⁹ House of Commons Defence Committee. Developing Threats: Electro-Magnetic Pulses (EMP) Tenth Report of Session 2010–12. 22nd February 2012

<http://www.publications.parliament.uk/pa/cm201012/cmselect/cmdfence/1552/1552.pdf>

¹⁰ Ross LH Jr, Mihelic FM. 2008 Healthcare vulnerabilities to electromagnetic pulse. *Am J Disaster Med.*;3(6):321-5

¹¹ <http://www.publications.parliament.uk/pa/cm201012/cmselect/cmdfence/1552/1552.pdf>

¹² Lloyd's, 2013. Solar storm Risk to the North American electric grid
<http://www.lloyds.com/~media/lloyds/reports/emerging%20risk%20reports/solar%20storm%20risk%20to%20the%20north%20american%20electric%20grid.pdf>

against an EMP whether due to solar weather or a nuclear bomb, although hardening efficacy may be in doubt until tested 'live'. EMP was rarely mentioned in the context of N Korea (the enquiry was more concerned about Iran), but the risk is another reason to promote a global ban on all nuclear weapons.

UK Trident

Trident is the UK's sole means of 'nuclear deterrence' which, however, under the circumstances envisaged in the ICJ Advisory opinion of 1994, the UK is prepared to use as a 'first strike'. UK Trident is based on four nuclear armed and powered submarines one of which is always at sea (Continuous At Sea Deterrence – CASD). Their home port is Faslane on the Clyde. The detonation of one UK Trident warhead at full yield and high altitude would generate an EMP effect.

UK's Trident is due to start becoming obsolete in the 2020's, so Government plans are under way to replace it in stages with a 'Successor' system designed to last into the 2080's. Although it was expected that Parliament would have a single debate to approve the Successor, approval is now likely to be given in a more piece-meal way.

A report from BASIC in March 2016¹³ also stated that a cyber-attack on the UK's Trident systems could stop its missiles being launched; such fears were addressed by the MoD on 30th March in the following statement "*The deterrent remains safe and secure. We take our responsibility to maintain a credible nuclear deterrent extremely seriously and continually assess the security of the whole deterrent programme and its operational effectiveness, including against threats from cyber*". This basis of this statement needs to be examined, assessed and costed most carefully and thoroughly.

Recommendation

Medact recommends UK support for the OEWG process and UK ratification of a treaty for the elimination of all nuclear weapons. This means no replacement of the Trident system on a like-for-like or on any other basis involving the continued possession of nuclear weapons. Furthermore, **the current deployment of Trident should be stopped forthwith**. The first step in this process could be stopping 'CASD'. Far from setting a precedent for a 'dangerous' disarmament, or even prejudicing the place of the UK as a veto-carrying permanent member of the UNSC, such a policy would help to enhance world security by making substantial progress toward the removal and elimination of nuclear weapons from the global stockpile.

Comments on the possible immediacy of a nuclear attack on the UK

North Korea

Recent events on the Korean peninsula have drawn attention to North Korea which detonated a nuclear device for the fourth time in January 2016 and launched a three-stage rocket a few weeks later, claiming that it was becoming capable of launching a nuclear attack against the US mainland. It may also be noted that South Korea's 16 operating nuclear power plants on four sites make them vulnerable to N Korean attack; whereas N

¹³ A Primer on Trident's Cyber Vulnerabilities. BASIC, March 2016
<http://www.basicint.org/publications/aleem-datoo-paul-ingram-executive-director/2016/primer-trident%E2%80%99s-cyber-vulnerabilities>

Korea generates no nuclear electricity. Alarming as such rhetoric is – and not to be taken lightly – we believe that these developments **are not an immediate threat to UK security**, in spite of the possible induction of an ‘EMP’ were the N Koreans to detonate a powerful nuclear bomb at very high altitude (see p 22).

Nevertheless, it is very important that North Korea’s grievances – whatever their nature – be addressed urgently and constructively. President G W Bush’s State of the Union Speech in 2002 in which he included N Korea (along with Iraq and Iran) in an ‘Axis of Evil’ destroyed the South Korean ‘sunshine policy’ and the accompanying ‘Framework Agreement’ between N Korea and the US. Until then, substantial progress in de-escalating tension could have been made. Every effort should therefore be made to recreate the opportunities that Agreement offered, and China encouraged to play a full role in that recreating. Although the people of South Korea need every re-assurance – not least in order to discourage their indigenous pro-nuclear arms advocates from realising their ambitions – the concerns among the North Korean citizenry should be addressed without recourse to the rhetoric of nuclear exchanges within the peninsula. The UK should leave the US to manage its own defence against N Korean nuclear attack, including any EMP effect, although if the N Koreans attempted any such attack, effective US-led counter-measures short of using nuclear weapons could be justified.

Russia

Russia remains a very significant nuclear weapon power and retains a strong sense of grievance against the Western powers. Its annexation of Crimea and support of the separatists in Eastern Ukraine remain matters of very serious concern. Among these concerns is a perceived return to Cold War-style rhetoric which includes references to the use of nuclear weapons. The UK has an understandable grievance against Russia following the death in London in 2006 of Alexander Litvinenko who was administered polonium allegedly by Russian agents. Without in any way discounting the significance of Litvinenko’s death, Medact feels that however valid the concerns about Russia’s increasingly martial stance are, they do not immediately threaten UK security even though Russia is increasing its military activities and exercises in the Baltic. Russia justifies this by citing NATO ‘aggression’ which it sees as a very provocative threat to its own security. The currently and seemingly positive impact of Russian involvement in Syria, although it is yet to be seen whether it will last, make distinctly possible a re-appraisal of UK and US policies in that Region, as well as those of Turkey and Saudi Arabia, adding yet more complexity and requiring yet more delicate diplomacy in this currently most volatile part of the world.

It is very important to realign our relationship with Russia, and to develop cordial relations. An effective Anglo-Russian relationship could strengthen the global resolve to mitigate the very profound effects of climate change.

A nuclear war ‘by accident’

The alarming reports in Eric Schlosser’s book ‘*Command and Control*’ (2013), and the Chatham House report ‘*Too close for Comfort*’ (2014) illustrate clearly that nuclear wars could be started unintentionally in spite of the claims that ever-increasing layers of security are being applied. The Chatham House report states “*the world has, indeed, been lucky, given the number of instances in which nuclear weapons were nearly used inadvertently as a*

result of miscalculation or error” and that “individual decision-making, often in disobedience of protocol and political guidance, has on several occasions saved the day”. It concludes “For as long as nuclear weapons exist, the risk of an inadvertent, accidental or deliberate detonation remains. Until their elimination, vigilance and prudent decision-making in nuclear policies are therefore of the utmost priority. Responses that policy-makers and the military should consider include buying time for decision-making, particularly in crises; developing trust and confidence building measures; refraining from large-scale military exercises during times of heightened tension; involving a wider set of decision-makers in times of crisis; and improving awareness and training on the effects of nuclear weapons.”

Medact endorses these views. Recent events such as the NATO and Russian exercises in the wake of the events in the Ukraine, and US exercises earlier this year in the seas around Korea, ignore these injunctions and are a cause of deep concern. Although the probability may remain low, ‘maverick’ events associated with human frailty, such as revealed by UK Able-Seaman William McNeilly in 2015¹⁴ seem not to be taken seriously enough. It seems highly likely that human frailty, of which Schlosser gives many US examples, applies to all the NWS – NPT approved or not and including Russia although Russia’s prevailing culture of State secrecy makes it very difficult to verify claims of such frailty. Nevertheless it is this human frailty factor which may ignite an unintentional nuclear war **at any time**.

Currently, about **4,000 nuclear weapons** (in Russia, France, the UK and US) are strategically operational – of which about half are on high alert (ready to fire within minutes or hours). If the UK Prime minister gave an order to the UK Trident submarines it would take almost an hour for the nuclear tipped missile(s) to fire, but in the meantime the PM could not change his mind (although the US might intervene as its tacit permission would be required).

It may be noted that China, India and Pakistan claim that their nuclear weapons are not held in ‘high alert’, although China and India are building nuclear-armed submarines which very likely will carry weapons targeted strategically on potential enemy sites.

For these reasons, the International Physicians for the Prevention of Nuclear War (IPPNW – of which Medact is the UK affiliate) regards the possibility of nuclear war as a major threat to world peace, on a par shared only by Climate Change – in spite of the very different dynamics which characterise Climate Change (high probability, high impact).

Chemical and biological weapons

The most notorious recent incidents of chemical attacks were at Halabja in Kurdish Iraq in March 1988, and in Gouta, Syria in August 2013. These were barbaric acts in clear contravention of the Chemical Weapons Convention of 1997. In Halabja, mixtures of mustard gas and nerve agent killed between 3,200 and 5,000, mostly civilians including children some of whom had died in agony. In Gouta, according to MSF, 355 died from the nerve agent sarin. Anthrax spores sent by mail a week after the events of “9/11” killed five

¹⁴ Nuclear Information Service, May 2015 <http://www.nuclearinfo.org/article/uk-trident/submariner-trident-%E2%80%9Cso-broken-it-cant-even-do-tests-prove-it-works%E2%80%9D> - McNeilly commented that safety procedures on the Trident submarine *HMS Vanguard* were regularly disregarded, security procedures were casual and secret information was accessible to unauthorised personnel.

people and infected 17 others. Anthrax was developed in 1943 and 1944 by the British for use against the Germans, but was never deployed.

Nevertheless, these are not regarded as immediate threats to UK security. Chemical weapons are outlawed by the Chemical Weapons Convention (CWC) of 1997 (to which 191 of the 196 States in the UN have signed up). States not signing the CWC include Egypt and Israel: each requires the other to sign first and Egypt will only sign if the Israelis sign the NPT.

The Biological and Toxin Weapons Convention (BWC) of 1972 has been ratified or acceded to by 173 nations including the UK and Taiwan; but 14, including the US have not signed. In 2001, six years of talks collapsed when the US weakened then scuppered agreement on the verification protocol, claiming that 'verification would be inadequate and overly intrusive'. The BWC also allows stockpiling to enable prophylaxis; this is a cause for concern as research programmes known as 'gain of function' (GOF), in which in order to upgrade biosecurity systems viruses are bioengineered to enhance pathogenicity. GOF methods could be used to engineer new bioterror threats. UN bodies are quite effective at enforcing these when violations are detected (as in Syria, 2013); continued vigilance and offender account-ability needs to be sustained, and means of preventing more incidents promoted.

2) What are the more fundamental, long-term threats to our common security, what or who is driving them?

Climate Change

Medact believes that global climate change is having a real impact in the UK even now and that this impact will increase substantially during the 21st century, even in the next decade or two. We anticipate that some mitigation measures will be applied, but are very concerned that the UK makes a real and immediate start to apply those measures in order to save much future costs and suffering. Mitigation measures have been described in some detail by the International Panel on Climate Change.

In the UK, climate change will lead to increased storms, floods and heatwaves. Air pollution will be aggravated, particularly while fossil fuels continue to supply – either directly or indirectly – the energy for our main modes of transport. These will damage our infrastructure and health systems, the latter being also susceptible to infectious pandemics in the wake of insect vectors (which may be resistant to conventional pesticides) moving in from subtropical areas, and compounded in the case of bacterial and parasitical infections by antimicrobial resistance. The UK will also be affected by changes in planetary boundaries such as ocean acidification (which would threaten food security through serious impacts on global food chains) and loss of biodiversity (often a source of new medications), quite apart from greatly increased movements of populations. Other aspects of security which will become threatened include energy security, as climate change may exacerbate the potential for violent conflict thus endangering future energy supplies.

The solutions to these problems lie in prevention – mitigation of floodings, rapid introduction of non-fossil-fuel-based means of transport powered by low-carbon renewable electricity, and wider availability of air-con systems similarly powered by renewable electricity.

One of the recommendations from the 2015 *Lancet* Commission on Health and Climate Change is that, over the next 5 years, the governments of the world encourage a transition to cities to support and promote lifestyles healthy for the individual and for the planet. Some of the challenging steps to achieve this, such as the early phasing out of coal, will undoubtedly be very costly but deserve serious and urgent attention to prevent far greater difficulties and costs in the years to come

The erosion of democratic freedoms and civil liberties

Climate change undermines human security by reducing the quality of and access to natural resources which are important for sustaining livelihoods. This undermining could increase the risk of violent conflict, which highlights the dilemma of how to balance rights of the individual with security against terrorism in a liberal democratic state. Some contend that part of the price might be the curtailment of some human rights and civil liberties,^{15 16} but it would be better to reduce the effects and help maintain liberal democracy by committed investment in appropriate mitigation.

As the climate changes, there will be major adjustments of the world's political power structures. Although the US is likely to remain a major power throughout the 21st century, the position of the UK is much more vulnerable to the rising powers of China and – although probably more delayed – of India. Russian leaders, with their access to an extensive land-mass, will continue striving to retain their power-base, but 'real-politik' may limit their ambitions although they can be expected to forcibly exert international influence wherever they can.

The danger is the acquisition of more automated systems of warfare which may involve unethical and unconstrained 'swarm attacks' operating outside conventional 'Command and Control' structures and being used by leaders with a 'siege' mentality driven by an erroneous concept of 'security' bolstered by force against the will of the populace and in contravention of fundamental human rights. The political sequelae of inequity and the democratic deficits arising from current patterns of globalisation need to be anticipated and addressed by strengthening human rights which in the UK, however, are under threat from the present government's policies. Governmental accountability through democratic processes is a better guarantee of reaching a constructive and socially rewarding society.

3) How can we improve our ability to identify, predict and act upon underlying threats to Britain's security, and work to prevent them developing?

To summarise the above descriptions of the threats to Britain's security: the most immediate threats are from cyber-attacks and violent terrorism on the nation's streets. A conventionally-armed invasion of the UK seems highly unlikely; but a nuclear war, more probably by accident, must remain a concern of high priority. Chemical and biological warfare are not seen as immediate threats, but vigilance and counter-measures must be maintained.

¹⁵ Jon Barnett J, Neil Adger W., 2007 Climate change, human security and violent conflict. *Political Geography*: 26, issue 6; Pages 639–655 <http://www.sciencedirect.com/science/article/pii/S096262980700039X>

¹⁶ Christopher C. Joyner, 2004. The UN and Terrorism: Rethinking Legal Tensions Between National Security, Human Rights, and Civil Liberties. *International Studies Perspectives*; 5: pages 240–257 August 2004

Behind these threats is the actuality of climate change which will directly affect

- the nation's infrastructure and security
- through global processes which are accelerating, heighten international tension which may well result in more global violence and warfare, and population movements, and an increase in persons seeking refuge in what they see as more secure societies such as the UK.

Hence we must

- maintain and further develop our security services,
- harden our services against hacking and cyber-attack,
- retain and sustain low-technology alternatives in the event of 'outages' etc.;
- rapidly develop low-carbon renewable sources of energy to become self-sufficient in energy requirements, accompanied by efficient ways of storing energy + decreasing overall energy consumption
- maintain our industries and develop new ones in order to foster international trading,
- secure adequate supplies and stockpiles of materials including food
- have a well-trained and dedicated military capacity which can be used for international security and post-hostilities reconstruction activities overseas.

We therefore require a well-trained diplomatic corps dedicated to improving relations especially with Russia and with China, collaborating in trade, cultural exchanges and educational scholarships. This would require new policies on UK university funding, allowing access to bright but relatively deprived UK citizens as well as encouraging international student exchanges. The UK needs to develop expertise in Artificial Intelligence and engineering, including nuclear engineering in order to cope with the waste arising from the 70 years of military and civil nuclear industry

We need to work with allies to reform NATO so that expansion is not seen to be threatening or hostile; which addresses fundamental issues such as Missile Defence and the avoidance of civilian war-casualties; and can command world-wide confidence. If necessary, NATO should be disbanded and re-created as a new UN-controlled world 'police force'

Britain's Military and Security Forces: Capabilities, Spending, and Choices

Note: the answers are not given in the exact order given in the call for submissions.

1) What level of defence spending is required to keep Britain safe and help us promote a more peaceful and safer world?

2) What are the lessons from recent conflicts about the equipment and military capabilities required for the deployments Britain may face in the next few decades?

4) What training do our military and security forces need to carry out operations that protect Britain's security and pursue the values that guide our defence policy?

As a general point, we think it's vital to draw attention to the quality of military and security funding; and not just to its quantity. Much of what we have presented here refer to the need to shift some spending from 'hard power' capabilities towards 'soft power' capabilities.

Medact cannot claim any expertise in the details of military planning or forces' deployment but can comment that the UK should recognise that its imperial past is in just that – the past. This does not, however, excuse it of responsibility for past misdemeanours, such as at Basra in Iraq, 2003, when just one out of seven UK servicemen charged with inhumane treatment – which led to the death of Baha Mousa, an innocent Iraqi civilian – was found guilty; and one UK Army medical officer was struck off the Medical Register when reporting Baha Mousa's injuries dishonestly. The UK's present government is attempting the impossible when trying to combine cuts to its services including its personnel but continuing to deploy ill-equipped front-line servicemen overseas. The US had to bail out UK forces in Basra and in Helmand because of poor leadership and politicians kept in ignorance.¹⁷

Medact believes that the UK should not to try to emulate 'past glories' but accept a diminished role in world military affairs. At present we have an unacceptable situation in which our military's desires cannot be met because the resources available are much too small. The defence of our realm is not well served by airstrikes over North Africa or Western Asia using aging and declining airpower which we cannot afford to replace. Such actions are counterproductive anyway, often acting as a 'recruiting sergeant' for the forces of Daesh. The UK should consider most carefully any future action overseas which risk overcommitting our forces' personnel and materiel, reserving its contribution for more realistic targets such as disaster relief, post-hostilities' reconstruction, and securing non-proliferation, as is addressed briefly in the next section.

3) How can Britain help to effectively stem the flow of weapons – chemical, nuclear, and military – around the world and promote non-proliferation and disarmament?

¹⁷ <http://www.scotsman.com/lifestyle/book-review-losing-small-wars-british-military-failure-in-iraq-and-afghanistan-by-frank-ledwidqe-1-1794121>

5) Will renewal of Britain's nuclear capability aid us in protecting Britain's security and pursuing the values that guide our foreign and defence policy?

We address these concerns together here, having already addressed them to some extent. Full and active support and compliance with the Chemical Weapons Convention, the Biological and Toxin Weapons Convention and the Arms Trade Treaty would go some way to address the proliferation of these weapons. The Submission from the Campaign Against Arms Trade to the Committees on Arms Export Controls¹⁸ in the run-up to the Arms Trade Treaty in December 2014 points out "*an inherent conflict between strongly promoting arms exports to authoritarian regimes whilst strongly criticising their lack of human rights at the same time.*" Many items subject to export licensing can be used for repression and increase the military authority of authoritarian regimes. UK governments have a long and shameful record of prioritising arms sales over human rights: it is still the case that the Arms Trade Treaty is more likely to confer legitimacy on arms exports, than to prevent them.

Renewal of Britain's nuclear capability will not help to protect our security or to pursue any sensible foreign and defence policy. Retaining any stocks of nuclear weapons will entail increasing risks and uncertainties into the foreseeable future, particularly as cyber technologies advance (see page 18). Honouring to the full our 'good faith' and legal obligations to the NPT would go a long way to address the global risk of nuclear weapons' proliferation; and supporting the OEWG processes whole-heartedly would, by promoting a 'ban treaty', be even more effective in stopping more nations from acquiring or developing their own arsenal of nuclear weapons. However, the regulatory regimes, particularly of the IAEA need to be properly supported and regularly reviewed and the skills required to operate these maintained through the recruitment of personnel given appropriate and adequate training.

The threat of nuclear attack from Russia or North Korea is relatively low but the threats of accidental launch of nuclear weapons or one triggered by cyber warfare are increasing. There is an urgent need to develop effective counter-measures against a possible EMP event caused by a hostile NWS detonating nuclear weapons at very high altitude. In this regard North Korea, or any other 'emerging' nuclear weapons state, must be of concern (see page 22), but retaining our own nuclear arsenal would not help to deter such nations.

Furthermore, national and international regulatory bodies, particularly the IAEA, need to be properly supported and given a clear mandate prioritising the elimination of diversion of civil nuclear technology for military purposes. The operative skills of their staff must be reviewed regularly and newly recruited personnel be appropriately qualified and adequately trained.

6) What new capabilities will our armed forces require to address the complex and dynamic threats facing our common security, especially the growing threat of cyber-attacks?

Again, Medact claims no expertise in quantitative assessments of military capability. We have noted in some detail the dangers from cyber-attacks and the government's claims to be developing cyber-protection. We urge the Labour Party to develop an expertise in the

¹⁸ Submission from the Campaign Against Arms Trade to the Committees on Arms Export Controls, October 2012 <https://www.caat.org.uk/resources/publications/government/caec-oct12.pdf>

dangers of cyber-attack taking advice from various sources to enable it to come to a balanced view. Given the high and comprehensive vulnerability of UK infrastructure to cyber-attacks, a similarly comprehensive approach to cyber-protection is needed. The costs involved may well lead to a thorough re-appraisal of our modern security needs, including military deployments. Abandoning Trident replacement would be amply justified.

Protecting British Jobs and Skills

- 1) Are the UK's armed forces equipped with the full range of skills they need to tackle the threats Britain faces in the 21st century? Or do we need to do more?**
- 2) What are the central economic challenges our domestic defence industry will face in the next few decades and what must be done to overcome them?**
- 3) What implications would any changes to current policy have in terms of jobs and the wider economy? Where jobs are lost, how could the impact best be mitigated?**
- 4) How can we combine value for money on all military spending programmes with secure and sustainably high-skilled jobs?**
- 5) How can we protect the wider supply chain required for our domestic defence industry to flourish?**

Medact appreciates that these questions are central to the Labour Party's review and indeed its philosophy of governance.

Medact's expertise is directed toward relieving the medical effects of war rather than the conduct of war and, by applying *prophylaxis*, a well-established medical principle, to anticipate and prevent the diseases resulting from war. Our principal approach is to address the fundamental causes of war including greed, fear and corruption.

We see war as a major '*social determinant of health*' and therefore address these questions generally by observing that

1. We suspect that the UK forces are not well-equipped and do not possess the full range of skills needed to tackle the threats we faces in the coming century. Furthermore, it is essential to recruit personnel capable of high standards of performance and who are well trained, including an understanding of the conventions on the conduct of war, of the need to respect the rights of civilians and of enemy combatants, and of the need to tackle corruption in high places
2. Among the central economic challenges must be the development of effective measures to detect and forestall cyber-attacks. Our forces need adequate body armour and equipment, for example in the detection of IEDs. All military materiel and vehicles on land, at sea or in the air must be fully maintained and fit for purpose. We appreciate that the required costs may be considerable but cannot offer realistic estimates.

There should also be a thorough re-appraisal of the current and future requirements for our military vehicles, and a consideration of how best to downsize our military to levels that the nation can afford. This should include abandoning Trident replacement – furthermore, the current Trident fleet should be de-commissioned at the earliest opportunity, possibly starting with the abandonment of CASD.

3. The prospect of job losses in relation to such downsizing should be confronted honestly and constructively. Jobs in the defence industry are heavily subsidised by the taxpayer, so the economic consequences of associated job-losses may be less daunting than is often feared and it is unnecessary to sacrifice the nation's welfare to costly militarisation. Jobs in new industries such as the renewable energy sector would combine addressing the nation's energy needs with gainful employment. The financial

centres in the City of London can be reformed by addressing malpractice (such as those evident in the manipulation of LIBOR) and creating a much better regulated banking and investment system.

An example of the unfortunate consequences of ‘global forces’ is the soul-destroying prospect at Port Talbot. Gluts in the international market may be difficult to anticipate and even more difficult to control; but it is somewhat ironic that some in the UK expect foreign owners such as Tata who are citizens of a developing nation (India) to rescue an industry in an advanced nation which, through national and governmental mismanagement has become over-reliant on it. Port Talbot could have been foreseen much earlier and more timely contingency planning exercised. Well-conceived contingency plans should be made for the ship-builders of Barrow and their dependent subcontractors in the wake of abandoning Trident replacement. It would be pointless and inappropriate to maintain a ‘shadow’ defence industry there without developing a real alternative.

Regarding the industrial and employment prospects around the Clyde in a nuclear weapon free ‘post-UK-Trident world’, the Campaign Against the Arms Trade has described how investment in renewable energy technology using wave and tidal power could more than fill the employment gap.¹⁹

Medact is also concerned about over-reliance on other industries, especially the finance sector: it will be very interesting to see the effects of the proposed merger of the London Stock Exchange with Deutsche Borse, the prospects of which are being re-appraised by shareholder (Financial Times, 27 March.²⁰ Discussion of the prospects of UK withdrawal from the EU is beyond our remit here, but is a matter of profound national concern.

The answers to questions 4 and 5 are beyond our remit but we feel that our domestic defence industry should have highly trained staff and leaders, and take advantage of Britain’s skills in Artificial Intelligence and related sciences. High standards of ethics and accountability should be observed.

As health professionals we can also comment that the UK’s health and health-care industries can take a leading and beneficent role in global health, and UK employment prospects in health and welfare could be excellent.

Comments on UK Energy supplies and employment prospects

We are very aware that any threat to the UK’s total energy supplies is a threat to national security, and that the energy industry also supplies employment for skilled people. About 20% of the UK’s total energy supplies come from electricity generation, but a general failure in the national electricity supply grid would be a national emergency. The grid’s managers have the job of balancing the UK’s electricity power supply and demand, but are not responsible for ensuring the building of new capacity: that is the sphere of government.

¹⁹ <https://www.caat.org.uk/campaigns/arms-to-renewables/clyde-case-study.pdf>

²⁰ <http://www.ft.com/cms/s/0/78f91576-f278-11e5-aff5-19b4e253664a.html#axzz44ZRgPF00>

The grid is designed to operate across the whole country, supplying the vast bulk of the nation's electricity for which it relies on high Giga-Watt capacity power plants with a total capacity of about 45GW.

Some environmentalists are concerned that the 'national' feature of the Grid's operations make it too reliant on a centralisation which is not well suited to accommodate the more variable characteristics of renewable electricity generation. Instead of criticising the sun for not shining at night, or the wind for not blowing constantly enough to 'feed the grid' at a steady rate, one alternative design concept envisions many community-owned 'mini-grids', some along the lines of the Coalition Government in 2011 (Alan Simpson²¹). Putting such revolutionary ideas into practice would be extremely expensive, but such is the importance of developing a sustainable low-carbon energy supply, and the virtual elimination of fossil fuels, that it is very important to keep open minds while thoroughly exploring future low-fossil fuel energy-generation scenarios. In 2015 the UK consumed 50 million tonnes of solid fuel (35 million tonnes of oil equivalent) mostly as hard coal. Whether by 2025 the UK DECC target of 14 million tonnes of hard coal (10 mtoe) remains to be seen.²²

Shale gas is not a clean energy source and will hinder transformation to a decarbonised energy system - see Medact's report on fracking.²³

The total need and demand for energy must be reduced: inefficiency of energy production alone could well encourage less efficient use thereby negating any beneficial effects. This would undoubtedly require a fundamental change in the mindset of a public which has become used to profligacy.

Job losses from the current fossil-fuel dependent system of UK energy supply could be more than compensated for by new jobs in a vibrant renewable energy system.

²¹ 21 Community Energy Strategy: DECC consultation - Alan Simpson (former MP for Nottingham South) <http://www.communityenvironment.org.uk/cms/wp-content/uploads/2013/08/Community-owned-energy-generation-Alan-Simpson.pdf>

²² Department of Energy and Climate Change Statistical Updated energy and emissions projections 2015 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/501292/eepReport2015_16_0205.pdf

²³ Health & fracking: The Impacts & operational costs. Medact, April 21 2015. <http://www.medact.org/resources/health-fracking-report/> For a rebuttal of criticisms, see also <http://www.medact.org/news/medact-rebuttal-fracking-and-health/>