



PRO PATRIA

Journal of Defence UK
2020 Volume 2

**The Armed Forces
Covenant in the
Time of Covid**

**A 21st Century
Training Ship**

The ABC of the F35

China's 'Long Game'

**The Integrated Review
- A Special Report**



DEFENCE UK - AN INTRODUCTION

Defence UK was formed in 2007 as the United Kingdom National Defence Association (UKNDA) to make the case for increased investment in defence, at a time when the UK's Armed Forces - then engaged in two major conflicts - were chronically underfunded and overstretched. Led by Founder-CEO Cdr John Muxworthy RN, a veteran of the 1982 Falklands conflict, and founder-President Winston S. Churchill, grandson of Britain's wartime leader, the UKNDA set about building a nationwide association to provide an effective and independent voice for the nation's military, veterans and the wider defence community. By holding conferences and public events, publishing a series of reports and commentaries, lobbying MPs, writing articles and broadcasting, the UKNDA has kept up a constant pressure on those in power, opposing defence cuts and highlighting threats to national security.

Now, in 2020, the UK's forces are no longer committed to extended military operations in Afghanistan and Iraq, but there are still numerous threats to national and international security, from a range of terrorist networks and rogue states, leaving our borders, shipping, energy supply and trade routes all at risk. Despite the growing threats, there are glaring holes in our nation's military capabilities, and our Armed Services are seriously depleted by ill-conceived cuts to the defence budget, by successive Governments, leaving the UK increasingly vulnerable in a dangerous world. Defence funding has been a victim of political short-termism and the austerity agenda. There is an urgent need to bring renewed pressure to bear on the UK Government and Parliament, to significantly boost resourcing for the Royal Navy, Army and Royal Air Force. In particular, we argue for an increase in the defence budget to *at least* 3% of UK GDP.

Our association, under its new name **Defence UK**, continues to campaign vigorously on behalf of Britain's Armed Forces, providing serving and retired military personnel with an effective voice and seeking to make the case for strong national defence and a properly-resourced military. Our journal, *PRO PATRIA*, has been established to stimulate debate and discussion on all matters of UK defence and security.

All contributions are those of the authors and do not necessarily reflect the official policy of Defence UK.

© *PRO PATRIA* is the Journal of Defence UK and all material published here is the copyright of Defence UK unless otherwise stated.

Front Cover Image: The new Royal Marines Commando Uniform 2020. The Future Commando Force programme will see an overhaul of the way the Green Berets operate. It will involve more Royal Marines operating from the sea as high-readiness troops, forward deployed and always ready to react, whether for war-fighting, specific combat missions such as commando raids, or providing humanitarian assistance. (Crown Copyright: Ministry of Defence)

Contents

Editorial	2
<i>By Andrew Smith</i>	
The Armed Forces Covenant in the Time of Covid	4
<i>By Dr Sarah Ingham</i>	
The Tiger is Out of the Cage	9
<i>By Fred Dupuy</i>	
The ABC of the F35	13
<i>By Graham Edmonds</i>	
Shipbuilding: A Tale of Three Countries	16
<i>By Steve Coltman</i>	
The Future of UK Commercial Shipbuilding?	19
<i>By Andy Askham</i>	
The Face of British Foreign Aid: A Justification for Dedicated Disaster Relief Ships	22
<i>By Fred Dupuy</i>	
A 21st Century Training Ship	30
<i>By Kevin Slade</i>	
Fishing for Finance? Turning a Threat into an Opportunity for Britain's Maritime Industries	34
<i>By Tom Awty</i>	
THE INTEGRATED REVIEW OF SECURITY, DEFENCE, DEVELOPMENT AND FOREIGN POLICY - A Special Report	38
The Anatomy of an 'SDR'	39
<i>By Tony Edwards</i>	
Prepare for the Worst, Hope for the Best: No Wishful Thinking Allowed in the 2020 Integrated Review	53
<i>By Dr Victor Madeira</i>	
Defence Priorities in the Coming Decade	69
<i>By Christopher Watts</i>	
What's Round Goes Around - Producing Turnover: A Good Time to Invest in the UK Defence Industry	72
<i>By Jock McCody</i>	
Britain's Fall: Defence Cuts and the Decline of a Great Power	82
<i>By Dr Arrigo Velicogna</i>	
Contributors to this Issue	95

Editorial



Defence UK was formed in 2007 as the United Kingdom National Defence Association. Its aim from the start was to encourage the rebuilding of our Armed Forces and defence capabilities. It was relaunched in 2019 under the shorter title 'Defence UK' but, in reality, Defence UK is nothing new. Campaigns for stronger military forces have been a feature of British political life for more than a century.

In 1894 the Navy League was formed to promote public awareness about Britain's reliance on the sea and to show that the only safeguard for this was to have a powerful British

navy. It also aimed to convince the public of the justification for adequate expenditure and maintenance of the navy to enable them to fulfil their role properly. The League is best remembered for its high-profile campaign in 1908 to persuade the then Liberal Government to strengthen the Royal Navy by ordering eight of the new Dreadnought type battleships ('We want eight and we won't wait!' was the Navy League's catchy slogan). It was not, however, the only pressure-group making the case for strong national defence. The National Service League, founded in 1902, argued that the British Army was too weak to fight a major war in Europe (conflict with Germany was already seen as likely if not inevitable) and that some form of national military service should be introduced. Under the presidency of Field Marshal Lord Roberts, the NSL called for four years of compulsory military training for all British men aged between 18 and 30.

Neither the Navy League nor the National Service League attained all of their goals but they kept up the pressure on the nation's leaders and they did a good job educating the public about the parlous state of national defence, to such an extent that in 1908 the Territorial Force was created as a new part-time volunteer component of the British Army, designed to augment British land forces without resorting to conscription, the Dreadnought programme was expanded and in 1911 the new First Lord of the Admiralty, a young Winston Churchill, announced that for every new battleship built by the Germans, Britain would build two.

By the time Europe slid into war in 1914, the United Kingdom had, thankfully, ramped up its military expenditure and had prepared the nation for the possibility of such an existential threat as we faced at that time from Germany. Prime Minister Asquith called upon Britain's most celebrated general, Earl Kitchener of Khartoum, to join the Cabinet as Secretary of State for War – the first and only time that the British



HMS *Dreadnought* (1906): The Navy League campaigned for more Dreadnoughts under the slogan 'We want eight and we won't wait!'

Cabinet minister responsible for the Armed Forces has been drawn from the Forces themselves, and from outside the world of politics.

Whilst the war that followed was undeniably a greater challenge than even Kitchener or Churchill could have envisaged, it is certainly the case that without these two great Britons, and without organisations like the Navy League and the National Service League, the UK would have found itself in an infinitely weaker position in 1914. The British Expeditionary Force (usually considered the best-equipped and best-trained army ever to leave these shores) was severely tested in the mud and blood of Flanders and France (not to mention the sweltering heat and disease of Arabia and East Africa), and the British fleet suffered terrible losses at Jutland, but neither was defeated. Final victory in 1918 would not have been remotely possible without the foundations laid by the campaigners for military preparedness in the late-Victorian and Edwardian period.

As the 'sifting team' at Downing Street works its way through the mountain of responses to its consultation on the Cabinet Office's 'Integrated Review of Security, Defence, Development and Foreign Policy' – to which, you will not be surprised to know, Defence UK has made a series of robust and cogent contributions – we must hope that Number Ten are keeping in mind above all else the need to find tangible solutions to the problem of Britain's current military weakness and lack of preparedness, because that is precisely our situation. As the diverse contributors to this issue of *PRO PATRIA* all make abundantly clear, much needs to be done to rebuild our Forces.

The United Kingdom has for decades been gambling away the legacies of military victories won in 1918 and 1945 (and the 'close-run thing' in 1982) and has run-down the Royal Navy, the British Army and the Royal Air Force to the extent that, far from being able to meet any new threat to our overseas interests, it is debatable whether they could even provide effective defence of our British homeland. If you think this is an exaggeration, please read on! The following pages tell a disturbing story, from a variety of different angles.

There is only one way the Integrated Review can go without the Government losing whatever credibility it has left: it must point to an urgent ramping up of defence expenditure and the expansion of our Armed Forces so that we are properly prepared for any eventuality in this increasingly dangerous world.

Andrew Smith FCIJ
Editor, *PRO PATRIA*



Lord Kitchener, Secretary of State for War, on his way to Parliament to address MPs

The Armed Forces Covenant in the Time of Covid

By Dr Sarah Ingham



Covid-19 has delivered a strategic shock to the United Kingdom. Since March 2020, an invisible microbe has brought all normal life to a halt, destroyed the country's finances and laid waste to whole sectors of the economy. The official death-toll is known, but other human costs, for example in terms of missed education, are incalculable. Only the future knows the long-term impact on citizens' hard-won rights and civil liberties.

The Armed Forces are among just a few of our national institutions to have emerged with any credit from the coronavirus crisis. Some 20,000 service personnel were placed on standby and have visibly played a key role in

the country's response to the pandemic, whether by building the Nightingale hospitals, flying in and distributing Personal Protective Equipment for frontline NHS staff, or setting up and running regional and mobile test centres. Behind the scenes, members of 77 Brigade worked with the Cabinet Office to counter misinformation.

As the Armed Forces rose to what the Chief of the Defence Staff, General Sir Nick Carter described as the 'single greatest logistic challenge' he had come across in 40 years of service, their value to the nation was once again underlined. The Covid response is the latest example of Military Aid to the Civilian Authorities. It has reminded the public of the Forces' versatility and can-do, whether in dealing with floods, the near collapse of the Whaley Bridge dam in 2019 or security at the 2012 Olympic Games. Just as there was a weekly Clap for Carers, many would surely have joined in Applause for the Army (and Royal Navy and Royal Air Force) in recognition of their vital role.

It is likely that the pandemic will boost the Armed Forces' already stellar public approval ratings. The Hansard Society's 2019 *Audit of Political Engagement* found that, in response to the question 'How much confidence, if any, do you have in each of the following to act in the best interests of the public?' the Armed Forces came out on top with 74 per cent. MPs and Parliament inspired the confidence of just one third of those polled, while social media stood at 20 per cent. We'd rather trust the Forces than Facebook; the military over Ministers.

One question for CDS Carter and other senior commanders is whether they can mobilise all this public goodwill to the advantage of the Armed Forces, which are at present facing an uncertain future. Even without the complications caused by the impact of the pandemic, the Prime Minister stated on 26 February this year that the forthcoming Integrated Review of Security, Defence, Development and Foreign Policy will 'reassess our priorities and our approach to delivering them.'

Although the Government is committed to exceeding the NATO target of spending 2 per cent of GDP on defence, GDP itself has taken a massive hit since the Covid

Lockdown was introduced in March. Defence is going to have to fight for its share of depleted Treasury funds. In the dog days of the 2020 summer, the press speculated about cuts to the Forces: *The Sunday Times* suggested that the Army's manpower could be cut by a quarter, down to 55,000 soldiers, while the BBC mooted that tanks might be axed altogether. Commentators predicted the mothballing of one, if not both, of the new aircraft carriers.

Should Britain's top brass need allies in fighting for the Armed Forces, recent history shows they need look no further than the British public, whose support is the most potent weapon in their armoury.

No Votes In Defence?

Just over a decade ago, the Military Covenant became an issue in the 2010 General Election, with David Cameron's Conservatives pressing it into service in their campaign. They issued a separate 27-page manifesto, *A New Covenant for Our Armed Forces and their Families*. The first paragraph of the Gordon Brown-led Labour Party manifesto surely confounded the political wisdom that there are no votes in defence. It stated that Britain's Service personnel 'bring great pride and credit to our country: we honour and will always support them'.

This demonstration of Forces'-friendliness by Britain's two main political parties – who cares wins – was the successful conclusion of an operation began by General Richard (now Lord) Dannatt when he became Chief of the General Staff in 2006. Wanting to convey the pressure soldiers and the Army were under on combat operations in Iraq and Afghanistan, the general deployed the Military Covenant.

Few civilians had ever heard of the Covenant and assumed it was an antique compact, perhaps written on parchment, dating back to Wellington or even Cromwell. In fact, the Covenant came out of military doctrine drawn up in the late 1990s, formalised in *Soldiering: The Military Covenant* as part of the Army's 'moral component'. Few soldiers had ever heard of it either. They would have known *Values and Standards of the British Army*, also published in 2000, to which *Soldiering* was an esoteric background essay. It was never expected to have a wide readership. No sooner printed, it can be imagined gathering dust and forgotten about in unvisited corners of military libraries.

The Military Covenant is an understanding based on trust: in exchange for soldiers' military service, which includes a readiness to make the ultimate sacrifice for the nation, the nation will support soldiers. This practical and moral support – from Government and public – will extend to soldiers' families and veterans.

General Dannatt became CGS as British soldiers in Afghanistan were facing some of the toughest fighting since Korea and all was far from well in Iraq. Undermanned and



General Sir Richard (later Lord) Dannatt, Chief of the General Staff 2006-2008



under-resourced – fighting Blair’s Wars on Brown’s budgets, as analyst Paul Cornish observed – soldiers were also the scapegoats for conflicts that were deeply unpopular among the public. Despite some being paid less than traffic wardens and enduring shoddy accommodation – ‘from

Helmand to Hell-hole’ according to *The Sun* – soldiers continued to serve the nation, seen all too clearly as their coffins were transported through Wootton Bassett.

CGS Dannatt was determined to galvanise support for soldiers, get them a better deal and protect the Army, which he feared might break. Tearing up all civil-military conventions that Service chiefs should be above politics, he went to the press. With calculated understatement he warned that the Military Covenant was becoming ‘out of kilter’. Within months, the Covenant began its migration from military doctrine to the civilian sphere, helped by Prime Minister Blair’s commitment in early 2007 to renew it. Unwittingly, the PM boosted the legitimacy of what was nothing more than a recently invented tradition. This was followed Royal British Legion’s *Honour the Covenant* campaign. Soon, soldiers’ welfare was seen in the Covenant context, including operational matters such as the use of ‘snatch’ Landrovers.

The Covenant enabled the public to decouple the men (and women) from the mission. The interventions in Iraq and Afghanistan remained controversial, baffling and unpopular, but the public began to show their appreciation for soldiers, including turning out at homecoming parades and donating record sums to Forces’ charities, such as the newly-launched Help for Heroes. The Armed Forces began topping successive opinion polls as the country’s most trusted institution which is where they have remained. Military morale rocketed.

Politicians all scrambled to catch up with the public mood and show their support for our boys and our girls, with a belated focus on welfare issues. Although the Brown Government made good progress, the narrative had solidified that Covenant was shattered and troops betrayed. David Cameron’s Conservative Opposition found the Covenant a useful stick with which to beat Labour. If elected, the Tories promised they would ‘enshrine’ the Covenant in law. Once they came to power in May 2010, they realised this was easier said than done.

The Military Covenant was quite deliberately designed by those who formulated doctrine in the late 1990s not to be a legal contract. Indeed, it was part of unsuccessful efforts to avoid the Army being embroiled in the Human Rights legislation that was due to come onto the statute book. If the existing Military Covenant had been given legal recognition in 2010, what would lawyers have made of the statement that soldiers and their families ‘will be sustained and rewarded by commensurate terms and conditions of service’ in exchange for making sacrifices ‘including the ultimate sacrifice’ in the

service of the Nation? Civil servants in particular realised the Government could be entering a legal minefield. It is little wonder that the Coalition back-tracked, watered down the Military Covenant and replaced it with the more anodyne – and litigation-proof – Armed Forces Covenant.

The Armed Forces Covenant was given legal recognition in the 2011 Armed Forces Act. Today, personnel from all three Services, their dependents and veterans now come within its scope. It states they should be treated fairly and not be disadvantaged, and in some cases, such as being wounded, be entitled to special treatment. The Government now has a legal obligation to present an annual Covenant Report to Parliament, which gives an overview of welfare matters relating to the Forces’ community, ranging from the education of Service children to the provision of veterans’ mental health treatment.

The Covenant is now seen as integral to Britain’s civil-military relationship. Although combat operations in Iraq and Afghanistan are the stuff of memory, public support for the Forces continues. For example, more than 5,500 companies having signed up to the Corporate Covenant, pledging to do their bit for the Service community, in particular for veterans.

Politicians have been keen to tap into the Forces’ prestige and regard. Giving legal recognition to the Covenant is one example of this, another is former Chancellor George Osborne’s donation of LIBOR fines to Forces-related charities. ‘It is right that money paid in fines by people who demonstrated the worst of the values in our society is now being used to help and support those who demonstrate the very best.’ In 2015 a further £284m was added to the £688m LIBOR fine pot, bringing it close to £1billion. However, mystery surrounds exactly what happened to all the money, especially the estimated £750m given to Forces’-related charities. The riddle was not exactly solved by the National Audit Office which investigated in 2017.

Vexatious Claims

While efforts to uphold the Covenant are surely welcome, they should not excuse Government inaction in key areas affecting the well-being of the Forces’ community. For example, many veterans, both of recent conflicts and of Northern Ireland, have been subjected to years of uncertainty as they faced possible prosecution for alleged war crimes. The majority of claims against them later turned out to be vexatious. In addition, an online petition linked to Military Covenant has, at the time of writing, garnered some 60,000 signatures in six weeks. Claiming that ‘too many veterans have taken their own lives in recent years’, it calls for the statutory provision of housing and mental health support.

Reflected by the LIBOR-related largesse, too many easy assumptions have been made that Forces’ charities are the solution, when they might turn out to be part of a problem. Since 2008, some have been keen to promote the trope of veteran as victim, feeding a negative civilian view of military service. With relentless ‘bad, sad or mad’ messages – all veterans end up in prison, depressed, suffering PTSD or committing suicide – it is hardly surprising that recruitment is in trouble.

A 2018 military cohort study by the King’s Centre for Military Health Research found that although the incidence of PTSD is higher than previously expected among veterans

who served in Iraq, Afghanistan or both theatres – 6.2 per cent compared with 4.4 per cent among the general population – it ‘does not yet seem to justify the “bow-wave”, “tsunami” or “time bomb” metaphors that appear in the popular press.’

If the nation’s obligations to the nation’s veterans are not fulfilled, the Covenant becomes frayed. But just who is a veteran? The public assumes he or she is someone who has served for several years or who has been in combat, but the Ministry of Defence definition is ‘anyone who has served at least one day in Her Majesty’s Forces (regular or reserve)’. Would today’s pensioners who undertook National Service consider themselves veterans and part of the ‘Forces’ community’?

The Military Covenant’s trajectory from an obscure corner of Army doctrine to statutory recognition reflects the deep bond between the Armed Forces and the nation. As it stated, there is ‘an unbreakable common bond of identity, loyalty and responsibility which has sustained the Army throughout its history.’ The public’s appreciation for the job that Servicemen and women do will have been enhanced by the Forces’ higher public profile as a result of Covid-19.

But what might be called the ‘Covid Conundrum’ is emerging to challenge Britain’s Forces. Although the virus has given them the opportunity to demonstrate their expertise as they aid the civilian authorities, it is also calling into question the country’s longstanding defence and security assumptions.

At the turn of the 21st century, *Soldiering: The Military Covenant* reminded readers that the British Army is, above all, a fighting force: ‘The purpose and measure of the British Army is military effectiveness: success in war and on other operations.’ However, whether the Forces’ primary focus will still be on combat by the end of the Integrated Review process is surely open to question.

The coronavirus crisis has highlighted the issue of homeland resilience. We are slowly waking up to the vulnerability of our critical national infrastructure to cyber attack and the malign impact of disinformation. The Salisbury poisonings brought biological warfare to the heart of middle England. Public transport’s relentless ‘see it, say it, sorted’ messages are a continual reminder of the terrorist threat.

The public’s perception of security and defence will be changing thanks to the Covid-19 pandemic. Inevitably, this could force a rethink of the UK’s defence posture. To put it simply what good are aircraft carriers, fast jets, tanks and all the other billions of pounds of war-fighting expeditionary kit when the security of the nation and the well-being of its people have been compromised by a new coronavirus, one whose impact was as unforeseen as the terrorist attack on 9/11?

Symbolic of the Covid Conundrum is Britain’s latest warship, the £3.1bn 65,000-tonne *Queen Elizabeth*. In September, training exercises were delayed because of a Covid outbreak among her crew.

With defence likely to be in the financial firing line in the next few months and the Armed Forces perhaps facing an existential threat, it is time for senior commanders to consider ‘doing a Dannatt’ and casting aside civil-military conventions. They should capitalise on Service personnel’s current visibility and take their case for well-funded Armed Forces directly to the voting public. ■

The Tiger is Out of the Cage

By Fred Dupuy



At a June 2018 meeting between President Xi Jinping of China and US Defence Secretary James Mattis, Xi is reported to have said that ‘we cannot lose even one inch of the territory left behind by our ancestors, what is other people’s we do not want at all.’ Many people would suggest that was a reasonable stand, until they think about the reference to ancestors! A lot of water has passed under the bridge since some of President Jinping’s ancestors were around and now, what he believes belongs to China is at odds to what his neighbours and the rest of the world think.

The Chinese civilisation and culture is over 4,000 years old but in the context of foreign relations, the period 1840 to 1950 is impinged upon the Chinese Psyche as their Century of Humiliation. During that period, starting with the first opium war of 1839/42, the force of arms wielded initially by Britain and then the other European powers, the United States and Japan, resulted in what became known as the Unequal Treaties. These opened China up to foreign trade at great disadvantage to herself, forced her to pay reparations for that privilege and undermined the traditional Government, the Qin Dynasty, which eventually fell. Thus one can deduce that President Jinping is intent on restoring the hegemonic position China held in the region, before the advent of those foreign incursions.

That the Chinese are prepared to play the ‘Long Game’ is apparent from the philosophical utterances that have come from some of their senior people but also from the way they plan, prepare and then execute; e.g. the Belt & Road project and the tentacles of influence derived from fiscal investment in strategically important countries. The extended time span that China is prepared to endure in the pursuit of her ambitions should be taken into account when considering her present expansionist agenda. If that is done, an observer will notice similarities to the events now being played out in Asia to what happened in Europe during the first half of the 20th century.

For the June 1919 Treaty of Versailles, which separated sections of the German speaking peoples and imposed crippling reparations upon Germany, read for China, the Unequal Treaties and the Century of Humiliation. Both etched a feeling of subjugation on the afflicted populations with a desire to throw off the perceived oppression. With that in mind, for the re-occupation of the Rhineland by German forces in March 1936, read for the Chinese, the annexation of Xinjiang province, located to the north of Tibet, in 1949. For Anschluss, the German annexation of Austria in March 1938, consider the invasion and occupation of Tibet, by Chinese forces, in 1950.

Even the 1938 agreement between Adolf Hitler and Neville Chamberlain for the German annexation of the Czech province of Sudetenland, which Chamberlain had no right to

give but which was done in exchange for the promise that Germany would make no further territorial claims within Europe, has parallels with what has recently happened in Hong Kong. When the annexation of Sudetenland in October 1938, was followed in March 1939 by a German invasion of the rest of the Czech republic, Chamberlain knew that he had been duped, and so it was over the Hong Kong agreement between Britain and China. At the end of the first opium war in 1842, Hong Kong island, was ceded to Britain in Perpetuity, by the Qing Dynasty. Following the second opium war in 1860, the Kowloon peninsula, opposite the island, was also ceded to Britain, in Perpetuity. In 1898 the New Territories, which extended the area held by Britain, was leased from China for 99 years. Thus when Britain handed the whole of Hong Kong back to China in 1997, it was only the New Territories that legally had to be returned. Hong Kong island together with the Kowloon peninsula was handed back under a treaty that allowed for a 50 year gentle transfer of Hong Kong from a British to a Chinese administration. Under the one country but two systems, agreed between Britain and China, individual freedoms, within Hong Kong, would be safeguarded and commercial business would continue to flourish. China reneged on this agreement when she recently imposed draconian restrictions on the liberties of the Hong Kong people. The fact that China was not prepared to wait the remaining 27 years it would take for the treaty to run its course, after which laws that are in force in the rest of China could have been imposed on the former British colony, without justifiable international objection, may be an indication that the Chinese Communist Government is becoming more confident in its actions and impatient with the Long Game.

Additionally, there is a recently realised and troubling parallel with Europe in the 1930s; for the Jews in Nazi Germany, read the Uyghur in Xinjiang!

Chinese Lebensraum

Leaving aside the question of Taiwan for a moment, consider the situation developing in the South China Sea. China claims virtually the whole of it, together with the East China Sea, as her own. In that context, think of the area as Lebensraum (living space), which Adolf Hitler tried to annex by the German invasion of Eastern Europe and Russia. China claims that her jurisdiction of the island groups within the South China Sea, such as the Paracels, Spratlys, Scarborough Shoal and others, go back to the 13th century and beyond. In fact some claim that the Jin Dynasty exercised authority over the region as far back as the 3rd century BC. The fact that some of these islands now fall within the Exclusive Economic Zones (EEZ) of neighbouring countries, which are recognised by the United Nations Law of the Sea, is disputed and ignored by China. Thus, the push for Lebensraum, into areas believed by others to belong to them, will inevitably lead to conflict and, just as the German invasion of Eastern Europe in 1939 and following that into Russia did in Europe, possibly to war. Anyone believing that such a war with China will remain in the South China Sea had better think again!

Xinjiang gave China a buffer against the southern republics of Russia. Tibet gave her a buffer against India and safeguarded the water shed that feeds some of her major rivers. The South China Sea promises to be rich in mineral wealth and sea food stocks; plus the annexation of the area as an effective territorial province, albeit a maritime



Taiwan and the USA are longstanding allies but how strong is America's commitment to Taiwan's defence?

one, gives China control over one of the most traversed commercial areas in the world and thus a potential choke on world trade. The effective influence this will give China in international relations is not lost on her Government or those of other nations.

So, what of Taiwan? The Chinese Communist Party has never considered Taiwan as anything other than a runaway province of China. Beijing has used her increasing influence to shut that democratic island nation out of many international institutions, to the point that most countries in the world do not officially recognise Taiwan as a sovereign entity. In recent years, by holding out the principle of 'one nation, two systems', China's outward face towards the people of Taiwan has softened in an attempt to lure her back under Beijing's umbrella of authority. But the latest events in Hong Kong have destroyed the notion of that system working for any length of time and the Taiwanese have recoiled from any suggestion of a reunion with China. If reunion is to take place any time soon, China will have to fall back onto her longstanding threat of using force.

The 1954 Sino-American Defence Treaty, between Taiwan and the US, was unilaterally replaced by the US in 1979 with the Taiwan Relations Act. A much watered down and ambiguous commitment to Taiwan's defence. Thus, in the face of a full Chinese invasion of that island, backed up by her ever increasing navy and air force, nobody is quite sure how far America will commit in Taiwan's defence. To that possible end, China has been expanding her naval infantry (marine) units and the vehicles needed to deploy them in an amphibious assault. The Taiwanese islands of Quamoy (Kinmen), Matsu and the Dongsha Pratas group may be the first target for the Chinese, just to test the resolve of others in resisting her aggression. If they succeed with that, and appeasement is the response of the international community, will Taiwan be next and will her invasion be the Poland that sparks off World War 3?

Will China dare? Consider this: wrapped up with the Chinese feeling of injustice, stemming from the century of humiliation, with her increasing industrial and military capability, is a rising feeling of nationalism that is being massaged by the Government in

Beijing. This is being further fuelled by a surfeit of the aggressive element that is coming from having an excess of unattached young males. Because of the single child policy followed by China for three decades (two in country areas if the first is female), families have opted to have sons; female fetuses have been aborted. Thus there is a shortage of women, which in most societies have a softening effect on aggressive young males. When I read reports of American aircraft being engaged by Chinese weapon grade lasers, I wonder if those attacks are orchestrated by an official Rules of Engagement policy or just by trigger-happy soldiers ready to have a go? If it is the latter, then Beijing and the Chinese military have poor control at the lower levels of their military and the opportunity for unplanned incidents to spark a major conflict is much increased.

In the face of an aggressive power, as we saw with Germany in 1939, appeasement doesn't work. So what should the international community do? We can either step back and let the Chinese have their way, or we can step forward and deter her from any further territorial adventures. If we step back, Japan will know that in the extremis, she is on her own and as she realises that she cannot depend upon her friends for protection, may become the world's next nuclear power. If we step forward, as with all postures of deterrence, a half-hearted effort will not impress and it will not work. Deterrence requires enough power, and the overt readiness to use it, to impress on those being deterred, that if they step over the line of acceptability, unacceptable destruction can and will be inflicted upon them.

By necessity, America will be the main player in that deterrence but she cannot be left to do that on her own. A full international commitment will be required to restrict China's aggressive ambitions and Britain has a part to play in that. Together with other allies, such as Australia, Japan and South Korea, a full naval force should be deployed, with a long-term commitment to maintain it. Britain has two new aircraft carriers that can, as her contribution to the combined effort, be rotated through the region on a regular basis to form a UK-centred battle group, that will be accompanied by UK and allied escorts.

While I suggest that such a move would be an appropriate contribution for the UK to make towards the common good, I will utter a word of caution. Britain has a habit of under-arming her warships and then, with disastrous results, sending them into harm's way. The new Queen Elizabeth (QE) class aircraft carriers are, as far as defensive arms are concerned, under armed and the UK has not built enough escorts to fully protect them. Any deployment of these carriers, preferably with a mixed UK/US and possibly other allied nation air group, into the now contested area of the China Seas, must be accompanied by escorts from our allies in the region, in order to bolster the few British vessels available. Failure to ensure the full protection of these carriers may result in one of them, HMS *Prince of Wales* for example (or her sister QE), joining her namesake, the battleship HMS *Prince of Wales*, who, together with her consort, the battlecruiser *Repulse*, now rest at the bottom of the Gulf of Thailand after having, in December 1941, been sent into danger without sufficient protection. Be warned!

China has embarked upon an expansionist programme, the likes of which we saw play out in Europe in the 1930s. The Western democracies tried to control the European dictators with appeasement. It did not work then and it cannot work now. We've been here before, so get ready! ■

The ABC of the F35

By Graham Edmonds



In December 2016 a briefing on the introduction into service of the F35B and Queen Elizabeth Class aircraft carriers was delivered at the Commando Training Centre, Lympstone (CTCRM) to a large group of retired Royal Navy and Royal Marine Officers.

What was said by the briefing team (RN/RAF/MoD) generated considerable interest in the audience, many of whom were experienced carrier and Fleet Air Arm (FAA) officers. Clearly the briefing team were hugely enthusiastic about the project and the return of carrier strike, which would support global Britain and underscore a return of a national maritime policy.

It was made clear that the long term plan was to purchase 138 F35 aircraft of which the initial outlay would be on at least 48 F35B. It was also stated that at any one time there would be only 70 aircraft in the operational fleet, the remaining 68 to be purchased over a number of years to replace older, severely damaged or destroyed aircraft.

Seventy aircraft would allow for four operational squadrons (2 FAA and 2 RAF) with 22 aircraft for the Operational Conversion Unit (OCU) and operational reserve. Each carrier, when at sea, would embark at least one squadron and this would be the case always even when both carriers were operational. With one carrier at sea and the other in refit or maintenance, then two or even three squadrons could be embarked in the at sea vessel.

In the question period after the briefing it was queried that the RAF with just eight squadrons of Typhoon Tranche 2 and 3 aircraft might wish to focus on land-centric warfare and purchase the F35A once 48 F35B were in service. The response was: 'Of course!' Watch this space!'

Unofficial 'leaks' in advance of the 2020 Integrated Defence, Security and Foreign Affairs Review suggest that the number of F35B purchases might be limited to just 70 and that the RAF will be pressing to purchase the F35A – presumably at least 22. However, 42 aircraft have been 'fast tracked' to be in service by 2023 when 809 NAS will be re-formed. This will give 617 Sqn and 809 NAS 12 aircraft each with 18 for training and operational reserve.

It makes sense for the RAF to seek the F35A to complement its 'swing role' Typhoons and has already had success pairing F35Bs with the older 4th generation + aircraft. In comparison (see table overleaf) to the 'B', the F35A is land based, has greater endurance and range, has a heavier weapon load and an internal cannon.

The 'A' has, unlike the 'B' and 'C', no capability to operate from carriers, and the 'B' additionally can operate from amphibious 'flat tops' (sometimes called mini carriers) such as LPDs, LHDs and LPHs. The Spanish, Italian, Japanese and South Korean navies

Differences between variants			
	F-35A CTOL	F-35B STOVL	F-35C CV
Length	51.4 ft (15.7 m)	51.2 ft (15.6 m)	51.5 ft (15.7 m)
Wingspan	35 ft (10.7 m)	35 ft (10.7 m)	43 ft (13.1 m)
Height	14.4 ft (4.39 m)	14.3 ft (4.36 m)	14.7 ft (4.48 m)
Wing Area	460 sq ft (42.74 m ²)	460 sq ft (42.74 m ²)	668 sq ft (62.06 m ²)
Empty weight	28,999 lb (13,154 kg)	32,472 lb (14,729 kg)	34,581 lb (15,686 kg)
Internal fuel	18,250 lb (8,278 kg)	13,500 lb (6,123 kg)	19,750 lb (8,958 kg)
Weapons payload	18,000 lb (8,160 kg)	15,000 lb (6,800 kg)	18,000 lb (8,160 kg)
Max take-off weight	70,000 lb (31,800 kg) class	60,000 lb (27,200 kg) class	70,000 lb (31,800 kg) class
Range	>1,200 nmi (2,200 km)	>900 nmi (1,700 km)	>1,200 nmi (2,200 km)
Combat radius on internal fuel	669 nmi (1,239 km)	505 nmi (935 km)	670 nmi (1,241 km)
Thrust/weight			
• full fuel:	0.87	0.90	0.75
• 50% fuel:	1.07	1.04	0.91
g limit	+9.0	+7.0	+7.5

intend to operate or are operating the ‘B’ from their smaller carriers. It remains to be seen if the RAN, with two Canberra Class LHDs follows suit.

Given the UK’s move to a global and, therefore, maritime policy it can be argued that the RAF should choose, instead, the F35C, an aircraft the capabilities of which are much the same as the ‘A’ and whether or not the QEC are retrofitted with ‘cats and traps’ at long refit. Because the aircraft is designed to operate off USN CVs does not mitigate against it being used primarily as a land based aircraft. It should be noted that the F/A 18E/F Super Hornet is operated by air forces whose navvies do not have aircraft carriers

The benefits for UK armed forces is that maritime operational skills would be sustained amongst RAF F35B pilots. A greater flexibility in operations world-wide could be achieved by operating with and from USN CVs, thus not having to rely on ‘benign’ foreign land based – and therefore vulnerable – air bases.

This is the 80th anniversary of the Battle of Britain and the 81st year since the start of the Battle of the Atlantic – the longest single campaign of WW2 in which aircraft carriers and land based Maritime Patrol Aircraft (MPA) played a significant role ensuring



F35B after vertical landing

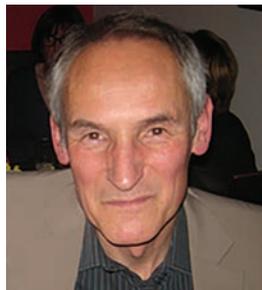
that military and vital food and supplies reached the UK to sustain the war effort. The capability to guarantee essential and critical imports safely by sea in the face of any opposition is a capability that must not be lost.

It is planned to build a UK 6th generation aircraft / UCAV, the Tempest. It seems that there is not to be a maritime version for operating off aircraft carriers. It is to be wondered if this is a deliberate decision or an oversight given, again, the increasing importance militarily and economically of the world wide maritime domain. To pin what will be an expensively developed aircraft only to land centric warfare and vulnerable land bases seems to deny an essential maritime capability. In 1940 the Luftwaffe nearly defeated the RAF by concentrating their early campaign on the airfields and radar sites – by switching to bombing London and other cities gave respite to enable the RAF to recover.

The French armed forces have both land and carrier based versions of the Rafale, a fine aircraft, why not the FAA and RAF? ■

Shipbuilding: A Tale of Three Countries

By Steve Coltman



Currently the United Kingdom has two or three shipyards to build destroyers and frigates, and one to build submarines (Barrow-in-Furness). The small shipyard, Appledore, in Devon, has recently closed down after its workload dried up. I say ‘two or three’ because the two shipyards on the Clyde (Govan and Scotstoun) might be considered one yard in two parts, with one specialising in construction and the other in fitting out. The other yard is at Rosyth.

The Royal Navy has just 19 ‘escorts’ – six destroyers and thirteen frigates. They each have a life expectancy of about 25-30 years (although by spending enough money this can be stretched to 40 or so). This equates to a building rate of less than one new ship a year, assuming the ships are built to a steady ‘drumbeat’ and not (as is Britain’s case) built in cycles of famine and feast. This is barely enough to keep just one warship shipyard in business. It is certainly not enough to sustain any meaningful competition between shipyards.

The Australians have two shipyards to build everything they need apart from big ships like their helicopter carriers. They bought those from Spain. They have one yard¹ to build the bigger and more complex vessels (destroyers, frigates and submarines) and another² to build patrol craft and suchlike. There is no pretence at competition.

Some might argue that comparison between the RN and the Royal Australian Navy is not appropriate, but the RN has been steadily declining and the RAN steadily growing, so the two navies will not be so very different in size in the medium term. The biggest difference is that Australia does not design its own ships; it builds foreign designs under licence, and does not export warships, only small patrol craft. To be fair though, until the orders for the Type 26 were won from Australia and Canada – to be built under licence in those countries – the UK did not export any new-build warships either, only patrol craft. The last major export orders for proper warships (Niteroi class, Brazil and Type 42, Argentina) were won over 40 years ago. All other warship exports have been RN vessels sold second-hand. Given that the RN is now getting a Danish-designed frigate (the Type 31) that will be built under licence in the UK, the comparison between the UK and Australia is getting even more valid.

Australia’s three Hobart class destroyers were built over the period 2012 – 2020 and as work on those ships finished work on the nine new Type 26 (Hunter-class) frigates starts. Sometime in the mid-2020s work will start on the first of twelve new Short-Fin Barracuda class submarines. Thus, the Osborne shipyard will have had a predictable workload extending over more than two decades. They won’t have to make their workforce redundant when the work runs out then re-hire them (if they can) at a later date. No manager of any manufacturing enterprise would want to run a business in such a chaotic fashion, but the poor soul who managed the Barrow submarine yard had



Type 23 frigate HMS *Sutherland*

to do just that. The last of the Vanguard class ballistic missile submarines was launched in 1998 but work did not start on the first of the Astute class boats until 2001, during which time the workforce at Barrow dropped from 13,000 to 3,000. When work on the Astute started they were dogged with troubles, many of the lost employees had left the area or retired, there was a shortage of both craft and management skills. Barrow needed US help to get the Astute built. There is a lot to be said for contriving to keep a steady drumbeat of work at a shipyard (indeed at any manufacturing organisation) but the British Government has not only failed to do that, there is little evidence they have even tried.

Building Frigates

It’s not much better with building frigates. The last of the Royal Navy’s Type 23 frigates was launched in 2000, but the first of the replacement Type 26 was not ordered until 2017. In between, the shipyards on the Clyde made components for the new aircraft carriers and, when that work ran out, they built three River class patrol vessels, ostensibly to replace three earlier ships that were little more than 10 years old. The MoD spent £350m on three craft it did not really need³ just to keep the shipyards ticking over. Indeed, it paid well over the odds for these ships because it was paying the overheads of the Clyde shipyards as well.

The Royal Navy’s thirteen Type 23 frigates are getting old, they will each be about 34-35 years old by the time they are progressively replaced from 2023 onwards. It costs a lot of money to keep ships in service this long; they have all needed expensive refits to keep them competitive. There comes a point when it makes more sense to replace a ship rather than keep it in service. Their replacement has been delayed so long that we now need a crash-programme of frigate building to stop overall ship numbers declining. Not one but two frigate-building programs have been started, running simultaneously with the Type 26s being built on the Clyde and the Type 31s at Rosyth. In the World Naval Review of 2010 it stated that the in-service date for the C1 Future Surface Combatant (as the Type 26 was called then) would be 2019. It’s a pity it was not. This crash programme of frigate building begs a question of what happens to the Clyde and Rosyth yards when the frigate programs end. It’s hard to see where

the work will come from to keep them all afloat. Workers hired today will be made redundant in the future and the whole cycle will go around again.

Canada has a different story to tell. The last of their 12 Halifax class frigates was built in 1996 and even the last of their 12 Kingston class patrol vessels was built in 1998 and since then, nothing. Most Canadian Coastguard vessels are even older than the RCN's ships. In the words of the Government's own shipbuilding strategy: *'From the mid-1990s to 2010, Canada's shipbuilding industry had slowed down significantly. There had not been any substantial new orders to construct vessels for many years. Compared to other countries, Canada's shipyards were out-dated and there was no easy access to equipment, supply lines and skilled workers. It was time for a new approach.'* In 2010 the Canadian Government took stock of the situation and resolved to re-build their shipbuilding industry. They went on to say: *'The strategy allows the Government and the shipyards to make significant investments in Canada's marine industry, such as developing and maintaining expertise and creating sustainable employment across the country. It brings predictability to federal vessel procurement and aims to eliminate the boom and bust cycles (this author's highlight) of vessel procurement that slowed down Canadian shipbuilding in the past.'* (The Australian Government has made similar pronouncements on the desirability of avoiding boom and bust cycles).

So: *'Following a competitive, fair, open and transparent process, the Government established long-term strategic relationships for the construction of large vessels with two Canadian shipyards,'* the Canadians have ended up with a solution that looks very much like the Australian one, namely two shipyards that will specialise in different sorts of ship and not compete with each other. The Irving shipyard in Halifax, Nova Scotia, will make 15 Type 26 frigates as well as patrol vessels for both the Navy and Coastguard. The Seaspan yard in Vancouver will make two Navy support ships, a number of science research vessels and a fleet of patrol vessels for the Canadian Coastguard.

So, compare and contrast: The British way is chaos and waste, making shipyard workers redundant only to re-hire them later (and the reverse), adding unnecessary cost to the shipbuilding programme in the long term. It is subjecting the shipbuilding industry to cycles of feast and famine, boom and bust, and at the same time subjecting the Royal Navy to unnecessary stress (and the MoD to unnecessary cost) by keeping old frigates in service beyond what is sensible. It would have been cheaper in the long run to bring forward the Type 26 programme so that it dovetailed with the end of the aircraft carrier work.

Short-termism seems to be endemic in the British way of government; the only way to combat it is to confront the political class with the consequences of their own shortcomings. The Ministry of Defence / Treasury / Cabinet Office (or whoever is responsible for this mess) have not even come close to emulating the rational, sensibly-planned approach taken by the Australians, and now being emulated by the Canadians. Things can be done better. ■

¹ The Osborne shipyard near Adelaide.

² Henderson shipyard in Western Australia.

³ Ostensibly the Batch 2 River class were to replace the Batch 1, but these were little more than 10 years old and obviously did not need replacing. In the event the Batch 1 vessels have been retained and both batches will come in useful even if the lack of a helicopter makes them unsuited for an overseas role.

The Future of UK Commercial Shipbuilding?

By Andy Askham



An interesting position was posted on the Gov.UK Civil Service Jobs page at the beginning of August. Acknowledging that 'the UK has major capabilities in naval shipbuilding', the preamble goes on to observe that: 'The National Shipbuilding Strategy exists to secure the future of the UK's shipbuilding capability.' In the new role, the Maritime Sector Senior Shipbuilding Strategy Manager will deliver a strategy for exports of commercial vessels, promote commercial shipbuilding in the United Kingdom and focus on selling the UK offer to a global market.

This is good news for UK shipbuilding. It echoes the promises made by the Prime Minister when he pledged to bring shipbuilding back to the UK. Whilst the thrust of his promise centred around vessels for the Royal Navy, in particular the Type 31e frigate, the Government has emphasised a commitment to realising the UK as a world leader in commercial shipbuilding, particularly in cruise ships, ferries and yachts. Whilst the cruise sector has suffered a major setback due to the coronavirus epidemic, the potential for ferries, yachts and indeed, bespoke Expedition Cruise vessels, is still very much alive.

UK commercial shipbuilding has struggled to be competitive in a global market. There are few commercial shipyards with the experience and capability to compete with well-established and often Government-subsidised shipbuilders in countries such as Turkey, Korea, and China. It is difficult to maintain a skills base against a small number of newbuild orders. Investment stalls as prospects diminish.

However, all is not gloom and despair. Cammell Laird's Birkenhead shipyard has recently delivered a highly efficient freight ferry for UK owner Red Funnel. The 'Red Kestrel' was designed in-house and the project was largely delivered by a young and very capable team. The project used the services of 45 British supply chain businesses and involved thousands of man-hours of work for shipyard apprentices.

The Polar Research Vessel RRS *Sir David Attenborough* has captured the public's imagination. Nearing completion at Cammell Laird, the vessel has carried forward a history of innovation and proven that UK shipbuilders can construct the most advanced commercial vessels. The exceedingly complex *Sir David Attenborough* sits at the cutting edge of technology and has been a steep learning curve for the shipyard.

That experience and those skills need to be nurtured if the UK is to meet its commitment to sustain a viable commercial shipbuilding capability in line with Maritime 2050 aspirations. Defence Secretary Ben Wallace has been appointed as Shipbuilding Tsar to work across Government to ensure that Further Education, skills apprenticeships and graduates are harnessed to achieve a sustainable skills base for shipbuilding across the United Kingdom. When demand is high, the UK's commercial shipyards are very capable of collaborating to meet module-build defence requirements such as the

Aircraft Carrier Alliance programme. Whilst building the Fleet Solid Support ships in the UK would follow the recommendations of Sir John Parker's National Shipbuilding Strategy Review and be very welcome, the industry cannot afford to put all its eggs in one basket and depend entirely on UK MoD orders – diversity is a necessity to iron out the peaks and troughs of naval procurement and ensure a skilled workforce able to operate across both sectors. Expertise must be maintained in the commercial markets to avoid going back to a boom and bust model.

The modular build concept has proven an efficient way of spreading a project across several shipyards. The stern block for the RRS *Sir David Attenborough* was built by A&P Tyne and shipped by barge to Cammell Laird on the Mersey to be integrated in the vessel build. Other than Cammell Laird and the A&P Group shipyards, there are other potentially viable contributors to such commercial modular build projects across the United Kingdom, including Harland & Wolff in Belfast and Ferguson's on the Clyde.

With a commitment to an ever-decreasing dependency on fossil fuels, there is a demand for vessels with a lower environmental impact. Future newbuilds will be more energy efficient and incorporate emerging technologies.

They may well lead the way to an invigorated coastal shipping industry that sees freight movements transferred from road haulage to energy efficient coastal feeder vessels, all of which will open opportunities for a new breed of advanced – possibly autonomous – ships. Much of maritime energy efficiency technology resides in these islands – what better way to meet our global carbon reduction targets than investing in British designed and manufactured, environmentally advanced ships?

Ship building margins are low and risk is significant. Projects should be considered a shared risk and a buyer-builder partnership. This is particularly important where a ship is a first of class or a one-off, as a bespoke product is always going to be more costly to design and build than one of a series. And a series of vessels – even if the platform is modified or adapted between vessels – is an opportunity to reduce costs and de-risk a newbuilding project.

Cammell Laird has worked with a forward-thinking ship designer to develop an adaptable and efficient platform with a number of advanced propulsion solutions. The potential applications range from a 135m short-sea RoRo or RoPax ferry to an innovative and versatile Humanitarian Aid/Disaster Relief (HADR) ship tailored for training and ocean advocacy duties. Such a vessel could revitalise shipbuilding across the United Kingdom and the HADR could be financed with no additional cost to the taxpayer through Overseas Development Aid funding. Shovel ready? Pretty much.

Perhaps the rapid development of technology will see less focus on ships built to naval standards, but commercial platforms adapted to deploy boats, UAVs and UUVs in a variety of scenarios as required. A STUFT HADR would be a valuable asset as an LSS, anti-piracy mother vessel or similar role in times of crisis.

So, what part can the UK Government play in stimulating and supporting the commercial shipbuilding industry, help in levelling a somewhat inequitable global playing field, and assist commercial shipbuilding towards efficiency, sustainability, and exports?

The domestic demand for vessels is centred around ferries (we are, after all, an island nation) and particularly Government controlled or influenced assets, ranging from

ferries to Buoy and Lighthouse tenders. The Scottish Government's requirement for renewal of the domestic ferry fleet alone is enough to sustain a substantial part of the UK commercial shipbuilding industry for decades.

Government tenders could take into consideration the true cost of building ships in the United Kingdom. It has been calculated that around 35 percent of the contracted value finds its way back into the Treasury through the tax system, making the lower purchase price of a foreign build look like a cheaper option for the budget holder, but ultimately it is more expensive for the taxpayer. It doesn't demand a great deal of creativity to ensure that tenders place an emphasis on social responsibilities and local content, including the positive impact on long term skills and employment in the deprived areas where many of our shipyards are located. And given that around a third of the value of a newbuild ship resides with the shipyard, there is two thirds that goes to benefit the supply chain. Every job created in the shipyard creates multiple jobs elsewhere.

Competing for tenders is a costly activity both in terms of time and resource, and public sector tenders are often complex and weighty. Commercially focussed shipyards do not have the resource to dedicate to anything but the least risky projects and least onerous tender processes. In contrast, a non-Government commercial newbuild project rarely carries anything like the same demands on shipyard resource prior to a contract, nor during the design and build programme. Commercial shipyards are agile and less bureaucratic than the large defence contractors, ideally suited to the faster pace of the commercial market, and Government tenders should reflect that.

Should the UK Government choose to place its own requirements with domestic shipyards, it would send a positive message to the international markets.

A 'Home Shipbuilding Fund' could underwrite shipyard borrowing and refund guarantee commitments for domestic contracts. Whilst UK Export Finance can assist in bidding for export orders, overseas shipyards are often supported by their Governments and thus have an advantage in competing in the UK market where UK shipyards enjoy no such support. Whilst R&D aid has been deployed for innovative ships in EU shipyards, UK R&D cash has largely been swallowed by low-TRL research projects and not at the 'Valley of Death' where it is needed to bridge the gap between prototype and production. It could be argued that ships being built at the cutting edge of today's technology are essentially pushing the boundaries, and funding some of their design development would be a responsible action.

It is possible to compete with lower cost base countries in select markets, particularly where the product is a complex, high quality and high value asset. Developing the experience gained from the RRS *Sir David Attenborough*, there are export opportunities for British-built Research vessels in a growing market. The Britannia Maritime Aid HADR vessel has great export potential as global warming exposes shortcomings in disaster response, be it coastal flooding, hurricanes, or other catastrophes.

The British commercial shipbuilding industry needs certainty of orders to invest in infrastructure and people. The right products can both satisfy domestic demand and open up the international market for exports, particularly in a post-Brexit world where the United Kingdom is able to explore new horizons. Nobody is looking for handouts, but such a 'leg-up' would create that certainty and confidence and would repay the Treasury many times over. ■

The Face of British Foreign Aid: A Justification for Dedicated Disaster Relief Ships

By Fred Dupuy

On 6 February 1975, Hurricane Gervaise swept over the island of Mauritius, causing widespread destruction, killing ten of the inhabitants, injuring many more and making thousands homeless. Two days later, on 8 February, the American fleet support ship USS Camden arrived and immediately sent teams ashore to help recover the situation. Two days after that the French aircraft carrier Clemenceau arrived and offered help followed the day after, on 11 February, by the nuclear-powered aircraft carrier USS Enterprise, which took control of the disaster relief operation from the Camden.

As the 1st mate aboard a British cargo ship, I visited the island a few months later and spoke to several of the locals about the effects of the Hurricane and the efforts required to put things right. They regaled me with the way the Americans had come in with their combat helicopters, re-installed the toppled communication masts, distributed food, fresh water and other aid around the island and how teams of American sailors came ashore to help with medical aid and the reconstruction effort to house the displaced. Even the French had offered a hand. Then with a curl of the lip they described how, several weeks after the event, a lone British frigate had turned up and asked if they could be of any assistance! I still remember that my feeling at the time was one of shame.

For an island nation that had, until seven years previously, been a British colony, was then a member of the Commonwealth and still recognised our Queen as their head of state, we Brits had not been there to help in their hour of need. If Great Britain had retained any semblance of respect and, dare I suggest, affection from the Mauritians, she lost it in that second week of February 1975.

The Americans at the time were building their Indian Ocean base at Diego Garcia, an island not far away, and so they had naval units in the area. The French carrier Clemenceau had been stationed in the Indian Ocean for a year, primarily because of issues in the Horn of Africa, but at that time she was visiting Reunion, an island that is an administrative, if not a geographical, part of France. So, each of those two nations had ulterior reasons for having assets in the area but the fact remains that they were there – and we were not.

We Cannot Be Everywhere At Once!

Disaster relief aid has often been sent from the UK by air, but the uplift capacity is by necessity limited and local airport facilities and overland routes have frequently been made unusable by the disaster. Thus, access by sea is often the fastest and best way of getting aid into troubled coastal areas and in the past naval units have been used for that. We cannot be everywhere at once of course, but some of the notable operations in recent decades have involved:

1995: The destroyer HMS *Liverpool* standing by the Caribbean island of Montserrat to evacuate people in the face of a volcanic eruption.

1998: The helicopter carrier HMS *Ocean* off Honduras and Nicaragua after Hurricane Mitch (locally known as Mitch the Bitch) had ravaged their coastlines.

2004: The forward repair ship RFA *Diligence* and the frigate HMS *Chatham* off the East Coast of Sri Lanka to assist with relief efforts in the wake of the Indian Ocean Tsunami.

2013: The destroyer HMS *Daring* off the Philippines after Typhoon Haiyan had devastated areas in the South East of those islands. *Daring* was later replaced by the aircraft carrier HMS *Illustrious*.

2014: RFA *Argus* off Sierra Leone to act as the base for British medical staff helping to counter the Ebola outbreak in the area.

2017: HMS *Ocean*, again, engaged with RFA Mounts Bay in disaster relief operations, this time in the British Virgin Islands, after Hurricane Irma had swept across the area.

2019: RFA *Mounts Bay* rendering assistance again; this time in the Bahamas after Hurricane Dorian had trashed the Islands.

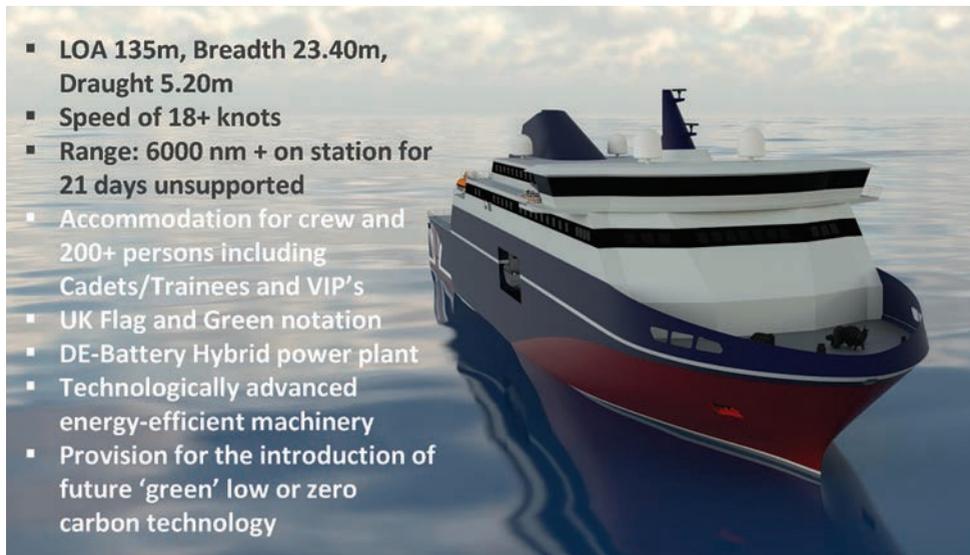
In this year, 2020, RFA *Argus*, with her 100 bed hospital has been sent to the Caribbean to act as the UK's guard ship. The point of *Argus* being there instead of any other UK naval unit is her medical facility and the Covid-19 pandemic.

For UK-delivered aid, however, a problem is looming. HMS *Ocean*, a very useful vessel, is gone, sold to the Brazilians. *Diligence* is up for sale and may already have been disposed of. HMS *Argus*, at 39 years old, is at the end of her operational life and because of financial restrictions there are no plans at present to replace any of these vessels. The navy does have some amphibious assault ships, five in total, which have proved useful in such situations and an ever-decreasing number of destroyers and frigates. The destroyers and frigates, while useful, are not, however, vessels of great burden and so they do not bring a lot of aid to the situation. Usually their embarked helicopter is the most useful asset. There are of course two new aircraft carriers and if they are available and able to get into the area fairly quickly, will make excellent deliverers of aid.

However, the list above, of past aid operations, shows that disasters can strike at any time and at any point on the globe. Because of cost and manpower shortages, UK naval deployments are reducing all the time, and while we can agree that we Brits cannot be everywhere all of the time, we are rapidly approaching a point when we will hardly be anywhere, at any time!

Amalgamation

The Department for International Development (DfID) part-funded many of the aid operations carried out by the Royal Navy and when people asked what they had done with 0.7% of the UK's GDP, they were often not given credit for that. For the reasons mentioned above, the new Foreign, Commonwealth and Development Office (FCDO), an amalgamation of the former Foreign and Commonwealth Office (FCO) and the DfID,



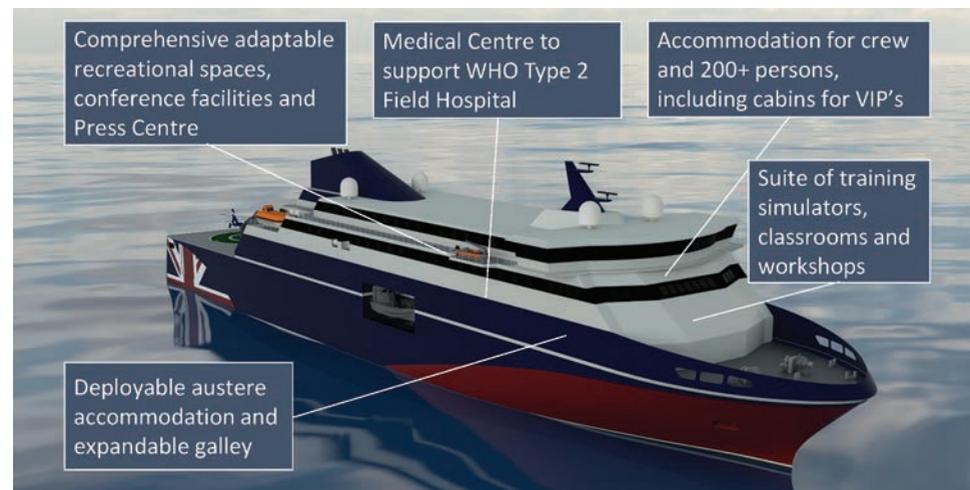
will increasingly find it difficult to deliver aid by sea, regardless of how much funding they have at their disposal. There is, however, a solution; one that covers the points above and which will deliver a flexibility that services other of the FCDO's operational requirements at a lesser cost than that for commissioning warships.

The charity **Britannia Maritime Aid (BMA)** has teamed up with the shipbuilder **Cammell Laird** and together with **Leadship**, a pan-European naval architect and design bureau with one leg firmly based in London, and **Woodbank Marine Limited**, a British marine technology and engineering consultancy based in Liverpool, they propose that the UK builds dedicated **Disaster Relief Ships** that can be stationed in areas of the world where natural disasters frequently occur. They hope to build three, which will be constructed in the UK, crewed by British merchant seamen and fly the Red Ensign. Based upon an existing commercial RoRo ferry design, these vessels of burden will have many of the attributes possessed by the naval auxiliaries that have in the past been used to deliver aid, but their utility will provide additional benefits. The range of operations that they can support and the benefits that utility will bring are:

1. **Disaster relief, medical intervention and rescue**
2. **Act as a base for various aid programmes**
3. **Be a training and research hub**
4. **Act as a Royal Yacht when required**
5. **Support a military campaign in a STUFT condition**
6. **Stimulate the Home Industrial Base**
7. **Operate at reduced costs**
8. **Appeal to and massage the public mood**

1. Disaster Relief – Their prime purpose; as vessels of burden their large cargo spaces will enable the stowage and delivery of a multitude of support equipment and supplies in standard ISO 20ft containers, including prefabricated medical units. Additionally they will have landing craft to provide an over the beach ability when ports are not available, and will be able to deploy items such as mechanical diggers for clearing rubble to recover buried victims, several small boats to rescue people in flooded areas, off-road vehicles to deliver aid teams, fresh water, food and material when roads have become blocked, tents to provide temporary accommodation and possibly an extensive field hospital to complement the on-board medical facilities. They will be able to accommodate and operate unmanned air vehicles (UAV-Drones) for reconnaissance and helicopters to access those areas that cannot be reached overland. The accommodation will be more than sufficient for all of the people required to deliver these services and also to provide temporary succour and medical attention for distressed individuals. By the use of their Dynamic Positioning (DP) control systems, they will be able to hold position close to the shore, without having to anchor and so will be able to crawl into small sheltered bays to more easily deliver their aid.

Disasters, however, are not always caused by natural disturbances. They are occasionally man-made. When war or civil insurrection has developed in a particular country, and where non-combatants are at risk, the UK Government has, on occasion, sent a warship to evacuate our citizens and those of other nations. Where a Royal Navy warship is not available, or even where it is, in addition to such a vessel, the BMA ships can carry out the same task. While holding position offshore and possibly out of sight, just over the horizon, their embarked UAVs will be able to monitor the situation ashore while their helicopter(s) are used to bring the vulnerable to the vessel; which in that instance will be used as a safe haven and refuge. If it is decided that the ship can safely hold position closer to the shore, her landing craft may be used to evacuate large numbers of people from secluded bays and over the beach, so that they do not have to travel through built up areas and use port facilities, where fighting might be taking place.

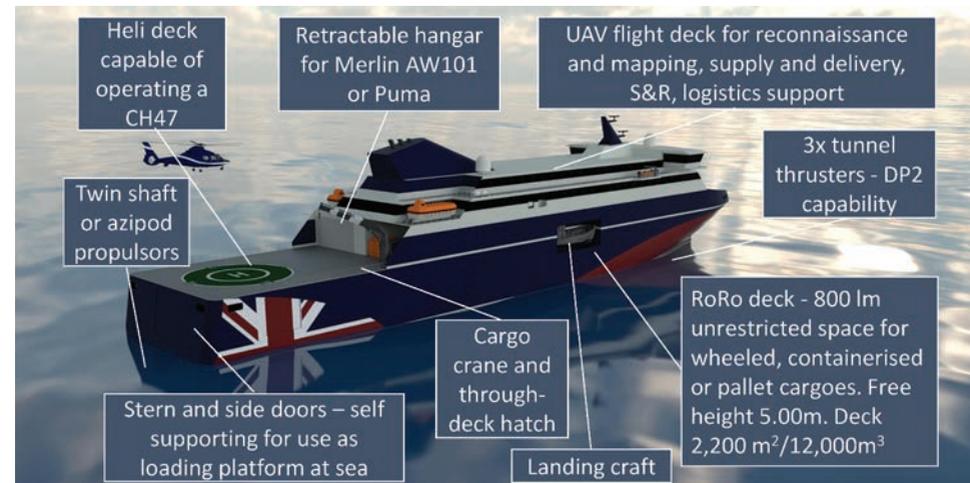


Additionally, in certain circumstances, a warship might be seen by one or other of the combatants as a threat and thus become a target. As merchant vessels, the BMA ships may be able to blend with others in the area and go relatively unnoticed.

2. A Mobile Base – For other UK aid programs, including those delivered by Non-Governmental Organisations (NGOs). The deployment of RFA *Argus* to Sierra Leone in 2014 and to the Caribbean this year has been due to her on-board hospital facility, that can support a medical intervention programme. There was a suggestion that the DfID, before their amalgamation with the FCO, was planning to fund the construction and operation of a hospital ship. China supports such a vessel, the *Peace Ark*, and the US operates two called the *USS Mercy* and the *USS Comfort*. They however are pure hospital ships and so lack many of the facilities that can bring different types of aid to distressed communities. While the BMA vessels will possess well-equipped medical facilities and can operate as temporary hospital ships, because of their additional attributes, they can also provide excellent operating bases for other than just medical intervention teams.

3. Training and Research – Another function of the BMA vessels will be to act as training hubs for British and Commonwealth seamen. This profession is rapidly disappearing as an employment option for young people throughout the Commonwealth but particularly from the developed parts. Many countries support training vessels, some of them under sail; the UK has a few but those are primarily aimed at adventure rather than professional training. As a trading nation it is time that Global Britain again looked towards the sea and supported her maritime base. Environmental research is another activity that these vessels can support, particularly marine research and ocean advocacy, liaising with local organisations for beach and ocean clean ups, etc. To this end, teams from our universities can deploy from these mobile and well-equipped bases to collect the data required to write their theses.

4. Royal Yacht – The suggestion that the UK should again have a Royal Yacht is supported by many like myself. Others, however, would see it as a waste of money that could otherwise be spent on social programs. Those of us however that know something of the Royal Yacht *Britannia*, now a well preserved museum piece in Leith Docks, will also realise that, based upon the design of a cross Channel and North Sea ferry, it was intended that in time of war she could rapidly be converted for use as a hospital ship. They will also know that as a conveyor of the ‘Marque UK’ she was an unparalleled ambassador. She was the only ship in the world that did not have a name or pennant number painted on her side or stern. It wasn’t needed because most of those who saw her knew immediately that she was the Royal Yacht *Britannia*. Additionally, they will know just how much money she generated for the UK; a sum that far outweighed her building and operating costs. Many will raise an eyebrow at this claim but that will only be because they will not have realised that when the Royals visited foreign countries in her, they often had alongside them, people who represented British business interests and when the local dignitaries and commercial elite were invited on board, they were for a time captive and exposed to these other individuals. The *Britannia* was a vessel that promoted the UK in a way that resulted in many commercial contracts coming to Britain. On the diplomatic front the Royal Yacht offered unparalleled security for the royal party and imposed only limited responsibility on the host country for their accommodation and safety. She also afforded the ability



of the Royals to play host to their hosts and provide, with the occasionally embarked Royal Marines band, a little colour and pageantry to brighten their visit. With the secondary role of the, now decommissioned, *Britannia* being that of a hospital ship, it would surely be appropriate for the BMA vessels, disaster relief and hospital ships combined, to have secondary roles as Royal Yachts. What better way of celebrating the forthcoming Royal centenaries than for these ships to actively facilitate Royal charities with international branches such as the Duke of Edinburgh Youth schemes and the Prince’s Trust. Should the Royal Party, when visiting a foreign country, use one of these vessels as an operating base, it will be a further sign of their widespread support for charitable works. How nice that they should be using a base that has been provided by the British establishment, primarily for the benefit of others.

5. The Military – The DfID and the aid ministries that preceded it, occasionally part financed aid delivered by naval vessels. In effect they chartered those naval vessels and commissioned the navy to deliver aid to stricken communities. With the BMA vessels the opposite can apply. As British registered and manned merchant vessels, in time of war or national need, they can be quickly ‘taken up from trade’ (STUFT) and pressed into service. Their on-board hospital and helicopter handling facilities make them the ideal vessels to use as casualty receiving stations. Beyond that, their ability to carry large amounts of equipment and the personnel to go with it, together with their across-the-beach capability, make them ideal supplementary logistic and amphibious assault vessels. In effect they can become additions to the Royal Navy’s two Albion class and three Bay class dock landing ships. These ships, together with the four Point class logistic support vessels, owned by the Ministry of Defence but operated commercially, can be quickly gathered into a squadron to transport an expeditionary force, such as the Royal Marines together with the Army’s new Strike Brigades and other supporting units. The military benefits do not end there. As merchant vessels, they will easily enter foreign ports by merely turning up and requesting ‘Free Pratique’ (literally, intercourse with your port and its facilities), where a warship would require diplomatic clearance

to gain access. As civilian vessels and crews, bent on training to deliver charitable aid in the event of a natural disaster, they will be able to request low key access to the emergency reaction services of the countries visited and build up a data base on how they work. Thus, they will gain an insight into how the administration of those countries perform, in a way that is often not possible through diplomatic channels. The military have a long history of gathering intelligence during peacetime for use in any future conflict. The data gleaned via this avenue can be used to enhance their data base and possibly used to advantage for either military or diplomatic purposes. Additionally, data gathered during marine research projects, where it might have a hydrographic or defence application, can also be recorded for possible future use. For those that think this might be a rather weak consideration, consider this; when British forces travelled south, in 1982, to retake the Falkland Islands, they were bereft of good information about the bays, coves and beaches that might be suitable for amphibious landings. They relied initially on the diaries of Ewen Southby-Tailyour, a Royal Marine and amateur yachtsman who, a few years previously, had sailed around that archipelago when stationed there and had recorded the coastal conditions during his sailing expeditions.

6. Supporting the Home Base – The saying ‘charity begins at home’ can be applied to the construction of these vessels in the UK and their operation by British management and seafarers. In no way, however, does this conflict with the fact that these ships are intended to bring charitable relief to others. Other countries that possess the skills, infrastructure and the ability to construct vessels such as these are not generally those that require development aid. Many of them already have vibrant shipbuilding industries. This latter point however cannot be applied to the British shipbuilding industry, which is surviving on a trickle of Government contracts and whose very future is hanging by a thread. Leadership are industry leaders in the design of RoRo ferries and passenger ships. The building of these ships, which will be based upon one of their standard designs, at Cammell Laird’s yard in Birkenhead, will, it is hoped, attract follow-on commercial orders from this niche section of the market, and bring volume ship building back into the Mersey. The boost this will give to the ship building industry in that part of the country will strongly support the Government’s intention to encourage commercial activity in the area. The involvement of component manufacturers and suppliers across the region and through the country in general will have a beneficial effect on the UK marine industrial base and the consequential skills retention and expansion will give a further and longer term benefit to the country as a whole but specifically to the North West of England. It will be a very powerful sign that the Government really do mean it when they say that they will promote the Northern Powerhouse.

7. Cost – Because these vessels will be built to Lloyd’s commercial standards, their construction will cost less than would be the case for a warship. Unlike a warship, they will not be built to sustain battle damage and will not require many of the systems that would be the norm for a vessel designed to venture into harm’s way. Likewise, the helicopters and UAVs they operate will not have to be of a military standard, although they can of course handle those aircraft if required. Commercial helicopters will be sufficient for most of the emergency aid interventions they might be involved with, and so with these, as with other equipment types, the operating costs will generally be less than those of the military alternatives. As civilian vessels these ships will qualify

for funding from the Overseas Aid Budget and thus will not impact upon sparse MOD allocations. Overall therefore operating costs for these vessels will be considerably less than those for pure warships or naval auxiliaries, and additionally they will be offset by income from commercial activity and charitable donations.

8. Public Perception – When an area is devastated by storm, earthquake or volcanic eruption, warships and naval auxiliaries are often used to bring much needed aid into the area. Because they may not already be stationed in the area, however, and may have to be loaded with appropriate equipment before they proceed, it is often some time before that aid reaches the needy. While the aid they bring is always welcomed with open arms, people know that, except in that instance, those ships are not really intended to be Angels of Mercy. They are warships and they are only helping out because at that present time they are not involved in conflict elsewhere. Also, when they cruise a certain area, they are generally seen as instruments to further the interests of their home country, not that of those they visit, or the populace therein. None of those negative points will be the case with the BMA ships. As pure merchant vessels, with civilian crews, pre-loaded with disaster relief equipment and stores, they will be based in the areas where environmental disasters might be expected and so will be on hand to react immediately and dispense aid. As overt symbols of benevolence, they will in fact be seen as the angels of mercy, which warships are so obviously not, and will be accepted as such when they cruise their allotted areas. Additionally, as the world’s first purpose-built humanitarian aid vessels, these ships will be visible evidence of the UK’s commitment to combating the consequences of climate change, a great opening for the COP26 conference, to be hosted by the UK in November 2021.

The media love a disaster and, when an area is devastated by a natural upheaval, they flock there with their satellite communication links. When their cameras sweep over the bay showing the ships bringing aid, to the general public, one grey hull will look like any other. The one that will stand out will be the BMA ship, which, as a commercial vessel, will so obviously differ from the others and with the Union Jack so prominently displayed on her side, will metaphorically shout to the world, we Brits are here and lending a hand.

Britannia Maritime Aid and Cammell Laird are ready to proceed with this project. All that is required now is the cash to procure the materials and start construction. If UK foreign aid is used to finance this project, as I hope it will be, when people ask, what on earth is the FCDO doing with all of this aid money, they will be able to point to these ships and say that is one of the things we are doing. **British aid delivered directly in British ships by British professionals.** Nobody – NOBODY – will be able to say that we Brits were not there to lend a hand in their hour of need. **These ships will be the face of British overseas aid.** ■

Readers of *Pro Patria* are encouraged to sign the petition calling for the UK Government to build ships in the UK with a dual purpose of providing disaster relief and training the next generation of British and Commonwealth seafarers. These ships will help regenerate the UK commercial shipbuilding and maritime industries. The petition needs 10,000 signatures to obtain a response from the Government, so please give support by signing the petition, which may be found on the UK Parliament website: <https://petition.parliament.uk/petitions/549072>.

A 21st Century Training Ship

By Kevin Slade



This article describes how the challenge of providing quality sea service to future generations of UK seafarers can be addressed by the building of new Humanitarian Aid and Disaster Relief (HADR) ships with a dual role as a training platform – the 21st Century Training Ship.

The evolution from the static floating classrooms of previous centuries to a dynamic, sea experience platform required to meet the needs of a 21st Century trainee is explored, with focus on how this can be achieved in a cost effective and innovative way.

Training Ships

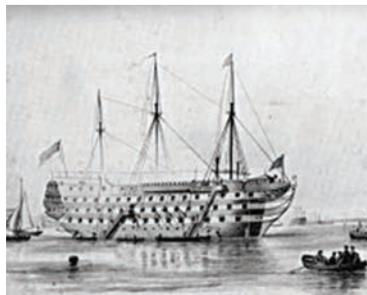
The importance of training at Sea was first recognised in 1702 when the Admiralty established the rank of Naval Schoolmaster – at the princely salary of £20 per annum. In 1830 the first Training Ship, HMS *Excellent*, was established and since then over fifty such UK vessels have been recorded, for both Royal Navy and Merchant Navy seafarers.

Over time the burden of the reduction of the British Merchant Navy, and the expense of operating these ships, was too much and they gradually closed down with the last UK dedicated cadet Ship, the MV *Global Mariner*, ceasing in 2000. However, dedicated training ships still exist; there are currently over 100 Government-supported training ships for naval trainees, registered in Countries such as Russia, Poland, Japan, Korea, Croatia and the USA.

The USA has a small worldwide trading fleet but a significant requirement for qualified mariners, not least of which is the significant number required to crew their large reserve merchant fleet if called upon to support the US armed forces.

This requirement is being addressed by a huge expansion in sea service provision, with the introduction of up to five multi role vessels (NSMV) – **each** costing approximately USD315m and with state-of-the-art training facilities for up to 600 marine cadets at any one time.

The contract for the first two ships has been signed with PHILY Shipyard in Philadelphia, and they will be delivered in spring and autumn 2023. Work begins early 2021. The US vessels are being financed by MARAD, the civilian organisation responsible for the US Merchant Marine, and these vessels will have a dual role of operating as disaster response vessels, with the capability of providing Aid and housing up to 1,000 emergency personnel.



HMS *Excellent*



The USA NSMC ship type

Sea Time

There is an increasing concern over the availability within the UK to provide sea time placements for all future officer and rating trainees, and other personnel new to the Industry and requiring maritime experience. The lack of trainee accommodation on board specialised vessels requiring certificated seafarers, the decrease in the UK fleet, the need for third party berths and the lack of any other effective means of providing sea berths are restrictive factors which inhibit and cap the number of berths available.

All UK trainee seafarers now have to depend on using commercially trading ships for the sea time required for a STCW certificate, and with a diminishing UK controlled fleet this lack of training berths is becoming acute and needs to be addressed – or the supply of qualified seafarers needed to support the huge UK Maritime Industry will become severely restricted. This shortage of training berths is also applicable for trainee mariners from UK Overseas Territories and the Commonwealth.

Quality Sea Service

Quality sea time should not be the luck of the draw – it should be a given. We need to ensure our future seafarers are equipped for a global market and part of our responsibility is to ensure they have the right skill set. The UK invests huge amounts of money in Maritime Training Establishments, but we need to get better at providing and policing the onboard training experience.

Sea time must expose cadet and rating apprentices to a wide range of experiences to reinforce the underpinning theory taught in the classroom. Being exposed to the every-day operational challenges of a busy vessel at sea or in Port, familiarisation of new bridge and engine room technology, and working alongside professional crew on board will make for a more well-rounded comprehensive sea time experience.

We therefore require to provide a base whereby a large number of trainees can be assigned to a ship that is engaged in continuous activity – capable of giving work experience and not simply be a floating classroom.

The 21st Century Training Ship

The proposed Britannia Maritime Aid (BMA) concept ship is the solution, a vessel designed to be continuously engaged in onboard and off-ship activity with sufficient accommodation for a large number of trainees.

The ship will be equipped with the means to deliver humanitarian and medical aid ‘across the beach’ and is therefore eminently suitable for carrying out a host of other activity when not on Disaster Relief work e.g. regional training exercises, safety training, ocean and beach clean-ups, medical support programmes and providing a supply and people base for large scale humanitarian projects such as rebuilding

devastated communities. A principal objective will be that 50% of the entire onboard complement will be UK and Commonwealth trainees and apprentices, both maritime and non-maritime.

It is intended that each vessel will incorporate a maritime skills academy, focusing on safety and boat work training for local and regional participants, as well as being an educational centre for all maritime and other trainees onboard. The vessel will carry seconded Lecturers from UK Maritime Colleges who, as well as refreshing their own seagoing experience, will be able to provide each maritime trainee a proper structure on which to base future sea going postings, a personal development plan and education on mental health issues, mentoring, cultural awareness and other specialised subjects.

We will set a target – let's be ambitious – of eventually providing every UK cadet with the opportunity of two months quality sea service. Every BMA ship will be able to provide berths for approximately 300 cadets per annum (two month tours), 25% of the UK projected annual intake of 1200 cadets. Berths can also be made available to RN/RM/RFA cadets, midshipmen and junior officers seeking Merchant Navy experience and awareness, to the mutual benefit of both MN and RN, especially when the ship is engaged in Disaster Relief duties where liaison with military vessels will be critically important.

The increasingly poor onboard cadet training environment, on ships with non-UK crews, unable or unwilling to provide quality time to cadets, may well make a period of two months in a properly structured sea time regime a necessity, not simply an advantage!

Unlike other training ships the BMA vessel will not be dependent upon cadet income alone, with the ship using its unique capabilities to generate funding and income from other activities. This income stream will subsidise the cost of each training berth. Consideration should also be given to the cadet berth fee being met or matched by UK Government SMART PLUS funding, or even subsidised by organisations such as the Maritime Educational Foundation (MEF).

In summary, the ship will enable the following;

1. To provide value plus STCW compliant sea time for maritime trainees
2. To deliver Learning in a dedicated and structured marine environment
3. To provide a personal development plan for every trainee
4. To allow MET Lecturers to update on maritime awareness
5. To have no adverse impact on operational crew
6. To provide optimum simulation opportunities within a real time environment
7. To be a Cultural Awareness platform for international student exchange
8. To enable Mentoring & Personal Development planning
9. To provide an Induction and awareness base for those requiring maritime experience – maritime studies students, port operations staff – support staff engaged in associated maritime industries, insurance, legal, shipbroking procurement, ship owning, ship management, ferries, etc
10. To have every trainee involved in a meaningful working experience

Supplementary Training Activity

Training of onboard personnel is not the only designed training activity, these vessels will be utilised as a mobile training base for other skills delivery, including but not limited to;

1. Undertake and support Commonwealth maritime education and training activities.
2. Provide a 'mobile' Faculty or Campus for regional colleges e.g. Caribbean Maritime University.
3. Work with and possibly act as a regional HQ and activity centre for UK based youth initiatives such as the Duke of Edinburgh Awards scheme and the Princes Trust.
4. Promote Health & Safety by operating as a safety training centre for local small craft, fishermen and passenger ferries
5. Maritime courses from an integrated commercially operated Maritime Skills Centre for UK courses ranging from computer simulation to basic seamanship
6. Engaging in ocean advocacy and environmental awareness activities such as beach and ocean clean ups, in association with local youth associations.
7. Aspiring to be a MNTB recognised Maritime and Education Training (MET) centre.
8. Inspiring young people in working for disadvantaged communities
9. Utilising the integrated medical centre for medical training and awareness programmes.

Building in the UK

Building of these ships in the UK will result in a significant increase in regional shipyard activity – and apprentices, an essential component in any plan to rejuvenate UK shipbuilding, especially if we are to meet the shipbuilding aspirations of 'Maritime 50'. The concept of using a standard commercial Ro-Pax hull and simply fitting out according to customer requirements enables significant export opportunities for the UK Shipbuilding Industry, presently hugely reliant on domestic warship projects. The relatively simple construction of these ships complements the concept of multiple yard construction, enabling Yards in every region of the UK to participate.

Conclusion

UK seafarers are highly valued due to the quality of their training, work ethic and native proficiency in English. They are an investment, not a cost, and it has been estimated that each new officer brings a gross value added (GVA) to the UK economy of £17,532 per annum (at 2015 prices) – well worth the investment in training!

The BMA vessels will be the world's first ships specifically designed to deliver Aid – and related training. The ever increasing damage resulting from climate change, (mainly caused by the developed world but inflicted on newly developed nations with poor resources), calls for innovative and dedicated solutions, and not the 'first aid' approach currently used by assigning warships with limited time and facilities. This is a great opportunity for the UK to lead the way in dealing with the consequences of climate change, and what a great announcement to make next year when we host COP26 – Walking the Talk!!!

Fishing for Finance? Turning a Threat into an Opportunity for Britain's Maritime Industries

By Tom Awty

Negotiators for the European Union (EU) have, in the ongoing EU/UK trade talks, threatened to ban access into the Union for British financial services if EU boats are banned from fishing in the UK Exclusive Economic Zone (EEZ). The Fishing Industry produces tens of millions of pounds for the UK economy and Financial Services produce tens of billions of pounds, thus in the forthcoming UK/EU trade negotiations it surely makes sense to trade EU fishing boat access into UK waters for UK financial service access into the EU; or does it? Critical examination indicates that the answer is not as clear-cut as it might appear, and that fishing has the potential to be a mighty revenue promoter in its own right.

Whilst acknowledging the size of the financial sector, one has to realise that the City of London is a global player and the second largest financial market in the world. It deals far more in dollars than it does in euros. One has to ask, therefore, what proportion of those many billions is tied up in European business and, of that, what proportion will be blocked if the EU carries out its threat to obstruct certain transaction types? Unlike that for manufactured goods, the EU has never had a completely open market for financial services. Some non-tariff national barriers still exist and while the EU Commissioners have progressively worked to remove them, they have not yet fully succeeded, which rather indicates that as far as finance is concerned, they are not yet all-powerful!

Regulated Environment

When considering the power, or in some cases the impotence, of politicians to control financial affairs, consider the situation on 16 September 1992, when our Government had to pull the UK out of the Exchange Rate Mechanism (ERM). Both the Bank of England and the Deutsche Bundesbank had poured billions into the market to support Sterling but when the currency dealers of the world decided not to play ball both Governments had to bow to the inevitable and accept defeat. Over 50% of the EU derivatives market is held in the City of London, and institutions on the continent have already pressed the Commissioners in Brussels to come to an arrangement that will allow that business to continue. Frankfurt and Paris will of course try to take business away from London but they always have and now that we are out of the EU they will probably have a little more success but they operate in what is increasingly a heavily regulated environment so it is questionable how successful they will be. Will the EU really turn its back on the second largest financial market in the world? I suspect that it will not, except in some sectors, and business men have proved themselves adept at finding ways around inconvenient blockages. **Thus, in considering the question, 'fishing for finance', one has to realise that it is not the many tens of billions that are at stake but a much smaller amount than that.**

The British fishing industry used to be huge but the Icelandic section was progressively lost between the late-1950s and mid-1970s, while, also in the '70s, the bulk of what

would become the UK EEZ was handed to the European Economic Community (EEC). Since then the UK fishing industry and its supporting services have withered to a shadow of their former self, along with the rest of our maritime industry. Many people perhaps do not appreciate how complimentary the different parts of our marine industries are and that fishing acts as a training base for maritime expertise. As a merchant seaman for forty five years, I sailed with many people who had started out as fishermen. Some of those took their skills and migrated to other parts of the marine industry, with a few becoming the marine consultants that the shipping sections of the City of London financial services require for expert advice. Thus, the separation between fishing and the City is not as clear-cut as some imagine.



Wind Turbine Maintenance Vessel

As a merchant seaman for forty five years, I sailed with many people who had started out as fishermen. Some of those took their skills and migrated to other parts of the marine industry, with a few becoming the marine consultants that the shipping sections of the City of London financial services require for expert advice. Thus, the separation between fishing and the City is not as clear-cut as some imagine.

Access to British Waters

European fishing boats take two thirds of the catch in British waters and most of that is landed in continental ports. Additionally, some UK operators have sold their quota to EU companies, mostly Spanish, who register their boats in the UK but land their fish on the continent; a practice which I believe should be banned under the proposed UK fishing licence regime. Other UK fishing boat owners have also habitually landed their fish in Europe. It is estimated that about 80% of the take from UK waters is landed directly into EU ports. Is it any wonder that our fishing industry produces such a small return for the economy and the EU are desperate to retain access to our waters?

The few thousand British fishermen and their boats are only the front men and women of the industry, the tip of the wedge. Behind them are the fish processing and distribution companies that are currently being starved of product. Further back is the victualling, chandlery, engineering back-up, servicing and refit work. Even further along the line is the boat and ship-building industry, with the supply of steel and other materials used in the construction of those vessels. More is required to build and maintain the buildings and the docks. Marine equipment is required to outfit the vessels and refrigeration equipment is required both afloat and ashore. All of these services require skilled personnel and so training establishments and apprenticeships are needed to supply them.

Re-Growing the Industry

Threatening that UK boats will not be allowed to land their catch in European ports if the EU does not have access to our waters should actually be welcomed. The fish can instead be landed here in Britain, and British processors will get the work that they have been denied for too long. The finished product can be sold to the EU by the container load via our ferry ports and the channel tunnel. Lorries already come from the continent to pick up Scottish farmed salmon from the west coast and they can do the same for white fish and its products. If they do not want to buy it the rest of the world is hungry for protein and new markets can be pursued. It will of course take time to re-grow the industry so that it can take advantage of a possible fourfold increase in production. By taking back our entire fishing area however, the potential increase in revenue will mean that new and bigger boats become financially viable and by tying the permits



75 metre Pelagic Fishing Boat

into the Government's ship building strategy, UK construction can be made a condition of issue. In a parallel case, the construction of the latest generation of wind turbine maintenance vessels can be tied to the sale of future offshore wind farm licences.

The tying of ship building into permits and licenses for operations in the UK exclusive

economic zone will give a shot in the arm to our faltering ship building industry, which at present is barely surviving on an ever dwindling flow of naval orders and a few commercial contracts. At 70+ metres for the latest Pelagic fishing boats, and 80+ metres for the wind turbine maintenance vessels, these boats are in fact small sophisticated ships, but they are currently built in Norway and on the continent for operations in UK waters. Babcock's Appledore ship building yard near Bideford, North Devon, closed two years ago for the want of orders, after completing the last of four offshore patrol boats (OPV) for the Irish Navy. Our Government, which recently signed a fishing agreement with the Faeroe Islands Government, had been attempting to find new owners for the yard so that boats could be built there for the Faeroes fishing industry. Had orders for British boats been available two years ago, that yard need not have closed, the skill base would have been retained and the valuable employment it provided would have continued. The Appledore yard, which had one remaining employee, the manager, has now been purchased by Infrastrata which owns Harland and Wolff (H&W) at Belfast. If Harland get the order to build the Navy's proposed three Fleet Solid Support (FSS) ships, and some of the modular work spills over to Appledore, they may be able to attract back some of the original work force and rebuild their skill base in order to attract further commercial work.

Vibrant Ship-Building

The stimulating effect that encouraging the building of fishing boats in the UK, instead of abroad, will have on our ship building industry, coupled with the strategic sprinkling of military contracts to fill some of the gaps in building projects, will help to rebuild and retain the capacity and skill base, that is essential if we are to attract further commercial work. That capacity and skill base is essential if we are to retain the ability to build both civilian and military vessels in this country. The bottom line is that if you want to retain a ship-building industry you have to build ships or like a fishing industry being starved of fish, it will wither and die. The recovery of our entire fishing area and the tying of boat-building into the issuing of permits will help to provide the steady drum beat of construction that the Government's ship-building strategy hopes to encourage. A vibrant ship-building industry is a magnet for other potential clients and in itself will help to stimulate other industries and maintain the nation's industrial base.

There is a suggestion that because of historical agreements, culminating in those of the 1970s, it is not now possible for the UK to take control of her 200-mile EEZ beyond the 12-mile limit. The suggestion claims that the agreement on the extended fishing area was totally tied up in the original UK/EEC/EU negotiations, is dependent upon EU agreement and so cannot be cancelled after our departure from the European Union.

It partly rests on the fact that other nations have traditionally fished in our waters and that they were a part of that agreement. British fishermen had fished in Icelandic waters since the 15th. Century but they were still forced to leave. Incidentally, as early as 1893, the Danes, one of the traditional fishers of British waters, claimed a 50-mile exclusive fishing area around Iceland and the Faeroes, which they governed at the time. The first 200-mile EEZs were claimed by Chile and Peru in 1947, but it was not until 1982 that such areas were officially recognised by the United Nations Convention on the Law of the Sea (UNCLOS). Article 50 of the Lisbon Treaty (originally drafted by Scottish Peer, Lord Kerr of Kinlord) did not come into effect until 2009 and before that date there was no instrument that enabled the UK to leave the EU, let alone withdraw from any of its treaties.

Much has changed since the '70s and it will now be hard to argue, on behalf of the EU which defends its own EEZ, against the right of an independent UK to hers. This is especially so as such zones have become common around the world and it would appear that the EU negotiators recognise this or they would not be threatening punitive action in other areas in order to retain the *status quo*.

Economic Resilience

While considering the question of whether the UK should sacrifice the fishing industry in order to safeguard what might prove to be a very small part of our financial services within the EU, one should take their mind back to the financial crises of 2008. At that time there was much comment about the UK being too dependent upon finance through the City of London and the need to re-balance the economy by stimulating our traditional industries. You don't get much more traditional than fishing; an industry that can stimulate so much more of our industrial base. So should we continue to dig an even deeper hole and hope that we can weather the next financial storm and the one after that, or should we invest in a little contingency by ensuring that we still produce things, in this case things that people eat, and broaden the base and resilience of our economy?

When considering how large our fishing industry used to be, and what it could and would stimulate if it were allowed to rebuild, I am reminded of the poem, 'For the Want of a Nail'. It has been told in many ways over the years but the basic goes:

*For the want of a nail the shoe was lost
 For the want of the shoe the horse was lost
 For the want of the horse the rider was lost
 For the want of the rider the charge was lost
 For the want of the charge the battle was lost
 For the want of the battle the war was lost
 For the want of the war the nation was lost
 And all for the want of a nail*

By sacrificing fishing, we would not only throw away the nail but the shoe and possibly the horse as well. The industry really is the tip of a wedge for a rejuvenated industrial base. We should give it a hefty kick and encourage the rebuilding that will follow. Treaties and agreements come and go but they stopped making areas of the earth a long time ago. I suggest that we hang on to what is ours and let the financial businessmen take their fight to the EU. ■

THE INTEGRATED REVIEW OF SECURITY, DEFENCE, DEVELOPMENT AND FOREIGN POLICY

— A Special Report —

In this Special Report we look at how the Government can and should approach the subject of UK defence policy and, crucially, the resourcing of Britain's Armed Forces. The keynote article is by Defence UK Vice-President Tony Edwards.

Lessons can and must be learned from the last six defence reviews since the end of the Cold War. The author describes the context of the previous reviews and draws out the aspects which worked and those which did not. Both an opportunity and a threat exist for the United Kingdom from the current Integrated Review of Security, Defence, Development and Foreign Policy. There is the opportunity to rebuild both the Armed Forces and their associated industries and to match them to the needs of post-Brexit Global Britain. The threat is the continuation of the spiralling downward of both the Armed Forces and the defence industries.

While rebuilding the Armed Forces there is the commensurate need to invest in the defence and aerospace Industries in order to provide from the UK the equipment the military will require. This would represent good value investment for the UK because the equipment can also be exported to our allies and thereby return the investment many times over. Team Tempest, a new aircraft programme, represents one such opportunity to invest and export.

Achieving the correct level of investment commitment to defence will not be easy to accomplish and in order to build support across Parliament and the country as a whole the Ministry of Defence ministerial team should be able to call upon the combined resources of the various House of Commons select committees and the back benches.

THE BATTLE OF BRITAIN ... THE ALTERNATIVE ENDING



Date: 31 October 1940
Place: The Prime Minister's Study
Scene: The PM is sitting at his desk and Air Chief Marshal Hugh Dowding, Head of Fighter Command, stands before him.
Churchill: Well, Dowding, what have you got for me?
Dowding: Prime Minister, I have some good news and some bad news.
Churchill: Give me the bad news first.
Dowding: I regret to inform you, Sir, we have just lost the Battle of Britain.
Churchill: Then, pray, what on earth is the good news?
Dowding: Sir, we have balanced the Defence Budget!

The Anatomy of an 'SDR'

By Tony Edwards



An SDR by any other name is still a Strategic Defence Review. Any complication of the title is merely a recipe for incoherence. What is more, such a review is of vital importance to the security of the Realm and is the direct personal responsibility of the Prime Minister.

An SDR needs to include the following features:

- An inspirational **vision** for the United Kingdom. What does the Prime Minister mean by 'Global Britain'?
- A **mission** for the Armed Forces to support the vision for the country. For example, does Global Britain imply that we would send Armed Forces to support our allies in the Asia-Pacific region – as the ANZACs did for us in earlier times?
- The **process** for the SDR needs to be intellectually honest and transparent and with appropriate involvement at all stages of all stakeholders to ensure buy-in.
- The conclusion to the process needs to be revealed and explained to the nation in a deliberate way showing how UK defence cost-effectively supports the overall vision for the United Kingdom.

Only one defence review in the last 30 years has included all these features, and that was the Strategic Defence Review 1998.

The Six SDRs in the Past 30 Years

- **1990 Options for Change**

Following the end of the Cold War, the Government decided to take advantage of the situation by declaring a 'peace dividend'. This was intellectually dishonest as the peace dividend had already been enjoyed. It was 40 years of successful deterrence and peace in Europe.

- **1992 Frontline First**

The Major Government decided to take a second bite of the cherry by emphasising the front line and at the same time shrinking the support functions. The impact of this reduction was felt in later operations.

- **1998 The Strategic Defence Review**

Tony Blair's Government came into office in 1997 with a clear vision and well prepared for office. The very strong defence team under George Robertson embarked on a thorough and intellectually honest review. Although not perfect, this review has stood the test of time and has become a case study of how reviews should be done.



- **2002 SDR New Chapter / 2003 Delivering Security in a Changing World**

Under pressure from the Treasury the Ministry of Defence was forced to update the 1998 SDR. The defence budget was cut under the cover of the trite phrase 'Getting more defence from less'. Emphasis was put on expeditionary capability led by the two proposed carriers. As Mrs Thatcher had been led to believe in the 1980s that 'manufacturing no longer mattered', Blair's Defence Secretary Geoff Hoon declared that 'ownership no longer matters' – and so the take-over of the UK's defence industry by overseas players was accelerated.

- **2010 Strategic Defence and Security Review**

In 2010 the new Conservative-led coalition Government of David Cameron embarked on its promised Strategic Defence and Security Review (SDSR). This review was carried out under the dark cloud of a statement made by George Osborne when Shadow Chancellor. In 2009 Osborne had stated that there was simply no money available for defence. This statement turned into a mantra repeated by all the Shadow Cabinet and became *de facto* Government policy after the 2010 general election.

In February 2009 the UK National Defence Association (UKNDA), now Defence UK, had presented an analysis to Parliament which set out 'the decision the next Prime Minister must make'. If the new Government wanted to continue with Blair's expeditionary foreign policy, with the ability to fight alongside the United States on Day One of any campaign, then the budget needed to be uplifted to at least 3% of GDP. However, if the Treasury insisted that no more money was available, then the only realistic decision would be to cut the Armed Forces to meet the available funds. At the same time, the strategic intent of defence would have to be trimmed to support lower ambitions for the country.

The UKNDA's analysis in 2009 proved embarrassing for Prime Minister Gordon Brown's Government. However, during the subsequent defence review the analysis was not taken seriously by David Cameron's coalition Government, and so unforgivable decisions were taken to hollow-out the Armed Forces. The security climate was considered so benign that it was decided to take 'capability holidays' – a novel but dangerous concept from which the Armed Forces are still suffering.



David Cameron, whose coalition Government in 2010 raided the defence budget to pay for expenditure elsewhere

The service chiefs of the time still recall the embarrassing sight of Mr Cameron pleading for more options for carrying out his Libyan escapade. They had to remind him that the ideal capability for Libya had either been sold to the United States for a song or had been scrapped as a result of his review. It is ironic that the majority of sorties carried out by US Forces in Libya used AV8Bs, the equivalent of our disbanded Harriers. The French also used their carrier!

- **2015 Strategic Defence Review (update)**

The problems thought to have been resolved by the 2010 SDSR still persisted. This was because the uninformed solutions determined by Philip Hammond, merely came from scrapping equipment and rearranging the deck chairs on his spreadsheet. He prematurely boasted that he had closed the funding gap. In 2015 minor corrections were made to the 2010 actions and a slight real uplift in the budget was promised. However, the uplift did little to correct the damage caused by the 2010 review.

Management of Decline

Over the past 30 years, with no clearly stated vision for the United Kingdom, defence capability has been allowed to decline. The resulting impact on morale has meant that all three Services have suffered from chronic under-manning, made worse by inadequate contracted-out recruiting.

The total complement of defence equipment in service with the Armed Forces is now seriously out of balance. At one extreme, there are two oversized and almost defenceless aircraft carriers, without sufficient operational aircraft, unable to be sent into harm's way with UK resources alone. Russia, China and Iran see these ships as relatively risk-free targets for embarrassing Britain. At the other extreme, the UK has some exquisite defence systems and items of kit, but not in sufficient quantity. Overall, the Armed Forces are now 'unsynergetic', i.e. the whole is less than the sum of the parts.

- **The British Army**

The Army remains seriously undermanned. It has to manage with quantities of legacy equipment, much of which needs serious updating. This refurbishment and upgrading

have been delayed for more than a decade in some cases. The Army would find it exceedingly difficult to mount a sustainable long-range overseas operation at the division level. Yet this is what America would expect. The US Department of Defense no longer counts on the Brits as they used to.

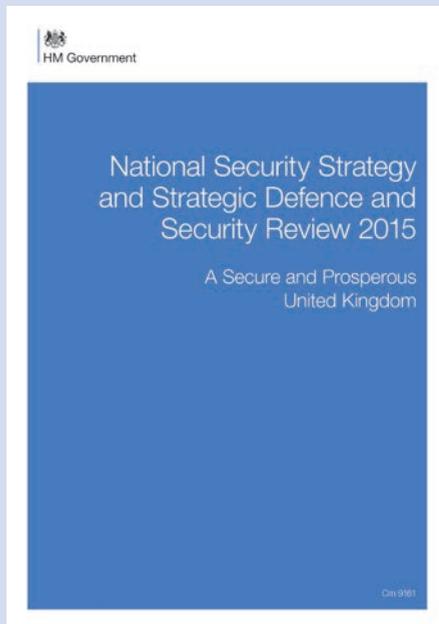
- **The Royal Navy**

The Royal Navy with serious under-manning of critical functions and with an insufficient number of vessels finds itself now seriously out of balance.

The two new carriers have emerged after a long production time. The cuts in their protection and support vessels were not anticipated and so there is a danger they may end up being objects of ridicule. They do not have sufficient aircraft or manpower. The Royal Navy and the Royal Air Force together cannot provide sufficient protection for the carriers to go into harm's way. The Navy simply does not have sufficient frigates, destroyers, submarines and air cover to protect the carriers and to fulfil all of the other naval commitments around the world. The only way for the Royal Navy to enter into harm's way, especially within range of Russia, China or Iran, in an operation led by the carriers would be as part of an allied fleet. In other words, the essential protection would come from another country, probably America.

The pivotal decision which caused this unenviable situation was the selection of the F-35B Short Take-off/Vertical Landing aircraft for the carriers which were sized for 'cats and traps', i.e. for aircraft with conventional landing and take-off. The fact that so few F-35Bs have been ordered probably reflects the fact that they are too expensive, too complex and with too little performance for practical and flexible operation from the new carriers. The king of carrier landings, Capt Eric 'Winkle' Brown, following his visit to America to fly the F-35B simulator, said privately that on reflection and all things considered the F-18 would have been a better choice for the UK. The carriers would then have been in operation earlier and interoperable with both the US and French fleets. This could have been achieved from a design and economic point of view, but the decision window was missed early in the programme.

General Jim Mattis, US Secretary of Defense, was a great fan of the new British carriers. He thought that the design could teach the US Navy a great deal especially in terms of automation and efficiency. Understanding the British dilemma about how to deploy the carriers and how to afford them he offered a simple solution... Reverse Lend-Lease. In other words, he proposed the US fleet leasing the two carriers from the Royal Navy



The Strategic Defence and Security Review 2015 was another missed opportunity

perhaps with White Ensigns and British Captains. This would solve the British budget problem and allow the carriers to be exploited to their full potential with sufficient aircraft, manpower and funding. At today's level of defence funding this might be an attractive alternative and would do much for the 'special relationship'.

- **The Royal Air Force**

The RAF remains remarkably busy and perhaps overstretched, with a series of operations and commitments around the globe. The well-proven Tornados have been scrapped prematurely and some of their capability is not yet being replicated in the replacement aircraft. Because of funding constraints and the limitations of the European joint programme, the Typhoons have yet to achieve their full potential. The number of RAF F-35Bs is still too small to constitute an effective Force. Although more aircraft and equipment are being promised to the RAF, the critical manpower shortages mean that the capability will not mature for many years.

- **Cyber and Intelligence**

The UK has been active in cyber and intelligence for as long as any country. The special relationships with the other English-speaking nations (e.g. 'Five Eyes') are critical, but the UK must continue to be reliable and to pull its weight. The demands are growing disproportionately because potential enemies see the field as 'legitimate for aggression' and almost risk-free for them. Funding will need to be increased continuously to provide for sophisticated hardware, software and specialists.

The vulnerability of the UK to cyber-attack is becoming increasingly evident and the hardening of our defence inevitably expensive. However, funding of cyber and Intelligence is not an alternative to funding of conventional defence. All potential adversaries are increasing their conventional defence capability at the same time they are exploiting cyber.

- **The Space Force**

In the 1950s, the UK was keeping up with the Americans and the Russians in terms of the space race. British aerospace companies had important links with relevant American corporations. Ironically, the UK Government decided to pull out of the space race just as JFK issued his moon-shot challenge.

Fortunately, British industry has kept up with the technology of a particularly important niche – small and medium satellites. However, a large slice of this sector has already been abdicated to European ownership.

Post-Brexit, Britain needs to invest in critical aspects of the space race. This goes beyond satellites to a global positioning and communications systems, to satellite protection and back-up. Britain cannot compete with the big spenders but needs to develop the important niches.

Defence Industrial Policy

Until recently, the United Kingdom was one of the few countries which did not treat industrial policy as part of their strategy to achieve their national vision. In the 1990s, the British Government's approach to industrial policy was to have no policy. Much

has improved since then and there is now a functional dialogue between industry and Government on the subject of industrial policy. Industrial organisations such as ADS (Aerospace, Defence and Space) have developed co-operative programmes with the Government which are replenishing the technology baskets in the aerospace and defence sectors. However, time is running out...

The two Western countries which give industrial policy the highest priority are the United States of America and France. In both countries they have striven to nurture the defence and aerospace Industries to great effect. France is now the leading aerospace country in Europe, centred at Toulouse (it could have been Bristol, given full support from the UK Government) and the United States is the leading defence and aerospace country in the world.

The UK Government's reluctance to provide continuous support to Britain's defence and aerospace industries persisted until the late 90s. Since then much progress has been made but not enough to catch up with France and America. In many respects, our defence and aerospace companies have been hollowed out and much of what has been retained is owned by Foreign companies. The UK has given up much of its sovereign capability to foreign takeovers or abandonment. The privatisation of the Defence Evaluation and Research Agency (DERA) was part of the story.

Important technology remains in the UK defence and aerospace sector, but it essentially contributes to component and subsystems design and manufacturing. We have become suppliers of 'bits and pieces' to the rest of the world. It is not possible to continue at the forefront of the technologies involved in aerospace and defence and maintain a cadre of experienced people if there are no systems to work on. Systems engineering is one of the gold standards of engineering. It is difficult to learn the skills of systems engineering and experience must be gained by participating in real systems design, development, test and manufacturing.

Technology demonstrators are an exceptionally good focus for developing new defence and aerospace technologies. Demonstrators provide a vehicle for engineers to design and develop components, subsystems and systems. The real value-added is the development and optimisation of the complete system.

Team Tempest is so important to the future of British defence and aerospace engineering. Tempest is the name of the next generation fighter for the RAF and will be the follow on to Typhoon. The aircraft design, including both manned and unmanned aircraft, is a complete system and even more importantly it is led by a single country, in this case Britain. This is important because the experience of several European joint programmes is that they take 50% longer to carry out and cost 40% more to complete.

Team Tempest is a partnership between BAE Systems and the British Government. It has already signed-up several critical UK-based companies and it has already attracted two valuable partners, namely Sweden and Italy. This promises to be the most efficient way to develop the aircraft system. Its importance to the future of British industry cannot be overstated.

Eighty per cent of British defence exports depend upon the aerospace sector. Even allowing for considerable investment by the UK Government in various aerospace



Tempest: Is this the future of combat aircraft?

projects, both commercial and defence, the returns to the Exchequer have been vast. Examples include British investment in the Hawk jet trainer, Harrier vertical take-off aircraft, the Tornado and the Typhoon in addition to the complete Airbus family of aircraft. They have returned the original investment by the British Government many times over. No other Government investments can claim this record.

By way of contrast, the British Government has invested hugely in the ship and submarine building sector. This was done for reasons of sovereign capability. However, Britain lost its shipbuilding competitiveness many decades ago and the volume of shipbuilding has not been sufficient to maintain skills. It has taken a great deal of investment to build the current shipbuilding and submarine building capability. Modern approaches and technologies have been adopted and expensive American expert manpower has been procured. Although the overall design of the vessels is good, the lack of design experience and volume production leads to reliability problems when the vessels enter service.

The tragedy is that very few of these vessels designed for the Royal Navy have ever been exported. In other words, the shipyards are not globally competitive in supplying vessels the world wants to buy.

By way of contrast, the UK aerospace sector has maintained a quite different record. Eight tenths of the output is exported, either directly or indirectly. This is the ultimate proof that the aerospace sector is globally competitive. The challenge is growing the sector and keeping it competitive. It is not very often that the Government can make an investment and expect a vast positive return from it. This results from satisfying a vital national requirement for defence equipment by production in the UK and then from subsequent exports.

The temptation will occur for civil servants to recommend Team Tempest to engage with France and Germany in order to form a European joint programme. This might have short-term benefits but will cost the UK dearly in the long run.

On the subject of industrial policy, the question should be raised as to why so many foreign companies have seen fit to buy UK defence and aerospace companies. They were obviously attractive Investments and moreover provided access to the British Government in terms of procurement. But why has this happened to such an extent in the UK... far more than it has happened in other countries. Countries such as France and Germany and even America would not allow such a high proportion of national assets to become foreign owned. This trend accelerated after the Hoon statement two decades ago that ownership no longer mattered.

The recent Huawei episode possibly gives a clue as to what has been going on. Twenty years ago, Huawei deliberately set a strategy to penetrate the UK telecoms market. At the outset, they offered products and systems at deeply discounted prices which, naturally, caused the only British supplier to go out of business. Then, they amassed a whole array of prestigious advocates in the highest places. On what terms these individuals were retained is not at all clear. The Huawei strategy was remarkably successful and nearly achieved complete dominance of the UK telecoms market.

Yet some time ago, the former Australian Prime Minister, Kevin Rudd, divulged that his Government was persuaded to exclude Huawei components and systems from the Australian telecoms market based upon input from the Government Communications Headquarters (GCHQ). Mysteriously, GCHQ then advised the British Government that they considered the risk from Huawei could be managed adequately via a Huawei-funded technical audit office.

Based on this endorsement, Boris Johnson was persuaded to carry on with Huawei, with minor limitations. Just a few months later GCHQ changed its position and recommended against giving Huawei any access to the British telecoms market and even recommended removing the existing installed products. How could GCHQ change its position twice? Could it be that even certain individuals associated with GCHQ have been influenced by Huawei?

This raises the question about how much support foreign companies have enjoyed from British Government officials in order to acquire so many British companies and contracts. Questions could be raised regarding how a French company, bought British defence and aerospace companies with the aim to become a UK resident competitor to BAE Systems. Questions could be raised regarding how an Italian company came to buy the only British helicopter company and other defence and aerospace assets. These acquisitions were not normal commercial transactions as they entailed intense involvement with British officials. Were these acquisitions really in the long term British national interest?

These examples suggest that it is critical that the SDR defines clearly what is and what is not in the British national interest.

Defence Equipment Procurement

In recent memory, there have been at least 14 attempts to overhaul and redefine the defence equipment procurement process. Yet, every year the National Audit Office report shows lengthy overruns in both cost and schedule in so many major programmes.

The most enduring defence equipment procurement reform took place in the mid-eighties under Lord Levene. Although many gains and improvements were made in the short-term, including breaking of the virtual stranglehold by one powerful industrialist, the enduring effects of the reforms have not always been positive. The enduring strapline which came out of the Levene reforms was that 'value for money' comes only from competition. Superficially this is correct, but in practice over many decades the inherent contradictions become apparent. True competition is not always possible with a monopoly customer and a very small number of potential suppliers.

This situation can lead to phoney competitions. Eventually the players rumble the situation and demand compensation either in cash or in later contract awards. Further, the competitions, either real or bogus, lead to changes in the procurement organisation. For instance, reliance on competition and the selection of the lowest-cost compliant bid leads to a false impression of what contracts 'should cost'. Finally, the cost estimators in the Ministry are made redundant as the competitions substitute for their contribution. After decades of this process and reliance on competition any idea at the outset of what a contract 'should cost' is lost. In the cut-throat arena of 'must-win' competitions some contractors bid low and quite often too low. This results in the procuring organisations misunderstanding the true cost.

Whatever the contract says, the initial pain is absorbed by the contractor, but the eventual cost is borne by the taxpayer. This is where the phrase 'conspiracy of optimism' is generated. It is not in the interest of the contractor nor that of the Ministry to own up to what they know about the real costs. In general, this encourages the Ministry to believe it can handle more contracts than the overall budget would allow. Over time a 'black hole' develops of unfunded programmes. This has been evident for the past 15 years.

I have experience in controlling the cost of both development and production programmes. I was director of Design to Cost / Life Cycle cost for the F404 General Electric jet engine for the F/A 18 aircraft. My starting point was the 'should cost' estimate for the whole engine before it was designed. This estimate was constructed by my team of Value Engineers who worked alongside the Design Engineers on the drawing boards. This process harnessed the collective experience of both design and manufacturing engineers. During the design process, we updated our production unit cost estimate every week. In this way we used trade-offs to make sure we met sometimes conflicting targets of performance, weight and cost. When the first engine went to test, we had a 7% positive unit production cost margin. This allowed for the normal increase in production unit cost during the development phase. The proof of the pudding was the fact this engine was not only successful in operation but also very profitable for General Electric.

Because of this experience, I became fascinated with the cost escalation of the two new aircraft carriers. I learned that the first public estimate for the cost of these carriers was made at the insistence of a Defence Minister. He wanted an estimate that he could reveal to Parliament that same afternoon. A team of four experienced individuals (including one from the Royal Air Force) was assembled to provide the estimate. After frantic phone calls and the use of parametrics a figure of £2.9billion was arrived at. The Minister expressed delight that the estimate was below £3billion. Six months later it had grown by 10% to £3.2billion. After another six months it had escalated by another 10% to £3.6billion.

At this point, I prepared my own estimate. I arrived at a range of £6billion to £8billion for the two carriers. I then met with one of the CEOs involved in the carrier consortium. When I explained my rationale, he admitted that the £3.6billion estimate was based upon three heroic assumptions... any one of which could be wrong and if so, my estimate would be right. The current estimate is north of £6billion.

I would suggest that the defence procurement organisation needs a fully staffed cost estimating organisation consisting of both commercial expertise and value engineering experts. They would have the capacity to make cost estimates in order to establish baselines. In turn, the organisation would develop the confidence to deal with sole-source contracts. A sole-source contract is preferable to having to arrange a phoney competition.

For example, one company for which I was both Chairman and CEO supplied all the landing gear to the Airbus organisation. Airbus ran out of time to arrange a regular competition for the procurement of the landing gear system for the next model. In desperation, they accepted my suggestion of a sole-source contract based upon open books and good faith. This saved the time for conducting a competition and gave Airbus even more assurance of what they were getting.

‘Value for money’ does not only come from competition. Effectively managed sole-source contracts with a thorough understanding of the ‘should cost’ can be equally effective.

Looking back on the evolution of defence equipment programmes over a 25-year perspective does raise troubling questions. In retrospect, a number of critical decisions are hard to understand. Sometimes these contracts were awarded, with fixed prices and firm schedules, to foreign or foreign-owned UK companies. With subsequent overruns in both cost and schedule, it is not clear what the overall advantage was to the Nation for acquiring so much equipment from non-UK owned companies.

I comment on three programmes with which I have some familiarity.

- **Archer / Bowman tactical radio system**

It is hard to unravel the way in which this programme was implemented. One Minister who inherited this troubled programme called for a confidential analysis by his Scientific Advisor. The latter’s conclusion was that the system would never meet its specification and he advised the Minister to continue to invest for another 24 months and then start again. Understanding the reality of the situation, the Minister told him to burn the report. At the time of contract award, Britain had the world’s most successful tactical radio system designer and manufacturer – RACAL. In spite of this, it was decided to rely upon scaling up a relatively small system by a small Canadian company owned by a big American company. In practice, the system did not lend itself to ready scaling.

- **Watchkeeper**

This tactical reconnaissance drone was procured through a French-owned company although the system was based upon an off-the-shelf Israeli product. Whatever advantages that were claimed at the time from this approach, they did not work out in practice. Instead, as all the necessary technology existed in the UK, a small UK consortium could have produced the system required. With the combined expertise of BAE Systems, Qinetiq and Meggitt the system could have been home produced.

It is ironic that the Chief of Defence Equipment procurement for the People’s Republic of China told me that he obtained avionic and other electronic technology, via the

French President, from this same French company. At the same time, he told me that he received aero-structures technology from Italy and a wide range of US military technology from Israel.

- **Armoured vehicles**

The long-awaited upgrade programme for the GKN-produced Warrior armoured vehicles is finally being carried out by an American company with its British subsidiaries. The extensive programme for brand new armoured fighting vehicles is also on contract to an American company with its British subsidiaries.

Yet history shows that Winston Churchill and the Royal Navy invented the tank (land ships). The programmes for upgrades and new armoured vehicles have taken so long that the two British producers have gone out of business.

The Warthog tracked vehicle is a scaled up and armoured version of the vehicle already in service with the Royal Marines. The original vehicle was designed and produced by a Swedish subsidiary of BAE Systems. Surprisingly, the new enhanced version was designed and procured from a Singaporean company. Was this really necessary or even good value for the nation?

- **The Revolving Door**

Much has been written about the revolving door between Industry, the Civil Service and the Armed Forces. All the moves are duly approved by the various committees. However, a 25-year perspective on defence procurement suggests that opportunity still exists for inappropriate placement of contracts to take place, not necessarily in the interest of the Nation, but to personal agendas. Whilst the rules have been tightened there are still too many cases of senior managers who were intimately involved in the procurement process being employed, sometimes much later, by the company that won the contract. Whilst in most cases it is likely to have been the correct decision, it still leaves a bad taste, particularly for the companies who failed to win the contract. In part, it could explain why MOD at times does not achieve value for money.

Warnings from the United States

The US Government and US citizens naturally resent paying the lion’s share of NATO. Many NATO members try to enjoy defence on the cheap. Many refer to the NATO 2% GDP figure as a goal to aim at. However, it should be regarded as the minimum figure... in other words the joining fee. Experience shows that, in practice, 2% or less of GDP merely provides sufficient defence capability for ceremonial purposes and for presenting a minimum contribution to joint operations. It is not, however, anywhere near enough for serious operations on overseas deployment alongside America. Unless NATO members pay their fair share then it is inevitable that America will lose interest in NATO and in protecting its ungrateful allies.

Although the highest levels of the US Forces enjoy collegial relationships with their opposite numbers in the UK it is not so true at the working level, e.g. Colonel level. At this level they have a jaundiced view of the UK’s present defence capability. They believe the Brits bite off more than they can chew.

Following Brexit, the US/UK relationship is bound to assume an even higher importance for Britain, but probably not for the Americans. The United States will always need a junior ally to stand alongside them. There is a real danger their first choice will not be the UK and thus seriously diminish the 'special relationship'.

What to Look For in the 2020 SDR, the 'Integrated Review'

First of all, look at the process:

Does the SDR start with an inspirational vision for the United Kingdom, together with a mission for the Armed Forces to support this vision?

Is the process for developing the SDR intellectually honest and transparent and with appropriate involvement of all stakeholders?

Is the conclusion to the process being revealed to the nation in a deliberate way?

Whatever the supporting text in the SDR, the jugular is inevitably going to be funding. For generic comparison purposes, funding needs to be expressed in percentage GDP to eliminate currency and inflation distortions. Because of the, hopefully temporary, impact of covid-19 the funding needs to be expressed as a commitment three to five years out.

In the 19th century the percentage of UK GDP devoted to defence was around 2%. This was considered sufficient to defend the Empire because the only serious capital expenditure was for ships and the bulk of the cost was inexpensive manpower. The percentage increased in the build-up to war in 1914. After WW1, the percentage of GDP fell back to 2.1% in 1931. It is noteworthy that even in a depression the Government of the day thought it was appropriate to devote 2.1% to defence. By 1936 this was seen to be totally inadequate and the build-up began for the next potential war. By 1945, Britain was devoting more than 60% of GDP to defence, i.e. the economy was on a war-footing. In the 1950s it was still about 9% of GDP. During the Cold-War it was +/- 4% of GDP however, the strategic nuclear deterrent was accounted for outside of the defence budget. By 2008 it had fallen back to 2.1% of GDP. In the 2010 SDR the Cameron-led coalition moved the goal posts and by way of accounting sophistry claimed he reached the NATO minimum of 2% by including the nuclear deterrent and other items in the new defence budget. On the old basis, the new 2% of GDP was probably equivalent to only 1.6% of GDP.

- If the resulting number from the SDR is the same old 2% GDP NATO figure then this is an indication that the strategy is to keep on muddling through. This amount of funding allows for Penny Packet operations but is not sufficient to intervene around the world alongside the United States.
- If the resulting number is plus or minus 3% GDP then operations in Europe and the Middle East would be possible alongside America and other allies. There would be limits to how far these operations could range and for how long.
- If the resulting number is plus or minus 4% GDP then Global Britain, post-Brexit, would be seen to be back in operation. Even the UK commitments to Australia, New Zealand, Singapore, Malaysia and even Japan would have substance, which they do not have now. This commitment would surely enable trade negotiations around the world to proceed much more smoothly. 'Britain means Business, Globally'.

Experience of the 1998 Strategic Defence Review

I was personally involved in, or observed closely, the Strategic Defence Reviews from 1991 to 2001 and have observed the developments since then. I was a member of the National Defence Industries Council (chaired by the Secretary of State for Defence) for the first ten years (1991-2001). I joined as President of the Society of British Aerospace Companies (SBAC) and left as the Head of Defence Export Services, reporting to the Secretary of State for Defence.

In 1991, I led the industry delegation to a joint conference with the MOD. My opposite number from the Ministry opened the conference by declaring that he did not understand why he was at the conference because industry and the MOD had no interests in common! It was not a surprise that the 1992 and 1996 Defence Reviews were essentially Treasury-directed cost-cutting exercises.

However, the 1998 Strategic Defence Review was a completely different exercise. As Chairman of the National Defence Industries Council, the then Secretary of State, George Robinson, kept industry fully informed and fully involved. The process was intellectually honest and transparent, and all the stakeholders felt duly consulted.

It was not a perfect exercise and three limitations eventually became apparent.

The consideration of Military Reserves was probably wrong. They were trimmed and experience since suggests they should have been expanded.

The total funding for Defence was perhaps a billion pounds per annum short of what was necessary. The shortfall could have been corrected in later years if the positive momentum had continued.

The third limitation was the treatment of the Defence Evaluation and Research Agency, DERA. The SoS told us at the beginning of the review that the subject of DERA was so complex that it would be dealt with after the publication of the SDR. A few weeks before the anticipated publication of the SDR document the SoS came to an NDIC meeting looking concerned. He confessed that he had inadvertently misled us regarding the treatment of DERA. He said that he had only just learned from Number 10 that they had agreed to have DERA participate in a Public-Private Partnership (PPP). The SoS was visibly uncomfortable with this decision. Later, one of his Defence Ministers, who was an ardent Atlanticist, was sacked for opposing Number 10 regarding the DERA issue.

The US Embassy called me in for a briefing regarding their views of the PPP of DERA. They had assembled a powerful array of defence industry executives from the US and Pentagon officials. They told me that they had asked me to



Lord Robertson of Port Ellen,
Defence Secretary 1997-1999 and
Secretary-General of NATO 1999-2004,
principal architect of the 1998 SDR

come and listen to their side of the story because they could not get that story heard in the Ministry. They felt that the messages brought back by British officials regarding the US attitude to the PPP were not being fairly presented. In short, the US delegation was strongly opposed to the way the UK proposed to deal with the Government-owned DERA. They said that if the UK proceeded with this plan then doors would close in sensitive areas in the United States that the UK probably did not even know existed. They said they would just not be comfortable continuing the existing relationship with a partially privatised DERA. My report was passed through appropriate channels to Number 10. This report indirectly led to the sacking of the Minister. In turn, I was directed to not discuss the subject anymore, with anyone!

However, the really important story about the conduct of the SDR only came out in non-attributable discussions, but later was described in *White Flag: An examination of the UK's defence capability* (Ashcroft and Oakeshott, Biteback Publishing, 2018).

The powerful MOD ministerial team at the time – Defence Secretary George Robertson and ministers John Reid, John Spellar and John Gilbert – were determined to maintain the integrity of the SDR process. They reluctantly allowed for tight funding in each of the years of the review but, when pressure came from the Chancellor to remove another one to two billion pounds a year, they stood their ground. They had sufficient trust in each other to agree that if they came under ultimate pressure, they would resign rather than succumb. Moreover, they felt that the Chief of the Defence Staff at the time would join them. Even Gordon Brown backed off at that point.

Some historical revisionists have blamed the pain of the budget deficits in the next 10 years (1998–2008) on the outcome of this SDR. This is not fair, because the damage was done in the SDR updates which followed. Under the catchphrase, ‘getting more from less’, the budget was squeezed and not allowed to rise in real terms for the next 10 years. In 2008 the Defence Budget reached a low of 2.1% of GDP and even Gordon Brown agreed this was not sufficient and he allowed it to rise to 2.2% before he left office. During his term, the Chancellor treated the Foreign Office and the MOD as his lowest spending priorities.

Conclusion

Realistically with the economic woes caused by the pandemic and the uncertainty surrounding Brexit, a long-term commitment to defence is essential. Due to the perilous state of defence, the required investment, although needed now, will need to be phased in over a three to five-year period. The Ministry of Defence ministerial team will need a great deal of support to achieve this outcome.

Fortunately, the three relevant House of Commons committees – the Defence Select Committee, the Foreign Affairs Select Committee and the Intelligence & Security Committee – embody unusual and relevant experience and strength. The three chairs of these committees – Tobias Ellwood, Tom Tugendhat and Julian Lewis – have character, experience and resilience. In addition, there are potential reinforcements from the chairs of the Liaison Committee and the Conservatives’ backbench 1922 Committee.

With full support, the UK can continue as ‘a force for good’ in a complex and unstable world. ■

Prepare for the Worst, Hope for the Best: No Wishful Thinking Allowed in the 2020 Integrated Review¹

By Dr Victor Madeira²



I think it time and more than time for us to awake out of our dead sleep, and take heed lest ... mischief ... embrace us [from] which ... we shall not be able to escape.

Robert Beale³

This piece sets out the current and near-future global environment, the problems it already presents and some possible solutions – all of which the 2020 Integrated Review⁴ should consider.

The century's defining dangers are runaway climate change, and the unethical development and use of radical technologies.

These two existential threats will reshape national security in ways that are hard to imagine. But we already have some sense of what coming decades will bring. Both defining dangers must frame the Review's assessment of how ‘Global Britain’ can best navigate and shape the years ahead.

1. Runaway Climate Change

Government now knows it must prepare Britain for a world up to 4°C hotter than pre-industrial levels.⁵ This is over twice the Paris Agreement targets and what an expert panel says will have ‘catastrophic’ and ‘irreversible’ national security consequences.⁶ In Britain, this greatly increases the likelihood of 40°C-summer, making outdoor work impossible for many⁸ – a particular concern for defence planners.⁹ Despite the National Infrastructure Commission's best efforts,¹⁰ coastal erosion is accelerating,¹¹ parts of England are set to run dry¹² by 2040 and the number of houses on flood plains could double by 2070.¹³ Meanwhile, crop failures are rising,¹⁴ and near-term collapse of food and other systems is no longer hypothetical.¹⁵

Globally, we face mass tropical forest ‘die-offs’¹⁶ by 2070 and the death of up to 60% of fish species.¹⁷ Polar regions are in even greater trouble. This summer saw the highest-ever recorded Arctic temperatures,¹⁸ while in the Antarctic, seabed methane leaks appeared¹⁹ and a key glacier is nearing a ‘doomsday’ melt that would raise global sea levels by 2 to 3 metres.²⁰ Antarctic ice melt is already at worst-case scenario rates, which would raise sea levels by 58 metres.²¹ Runaway climate change could by 2070 leave 19% of the world uninhabitable²² and by 2100 cost at least 25% of global gross domestic product.²³ Hence the US Congress²⁴ and presidential candidate Joe Biden²⁵ have boldly called for policy- and technology-driven solutions to lessen the impact of runaway climate change by 2035.

2. Unethical Use of Radical Technologies

Yet technology cannot solve every problem we create; quite the opposite. Over the next 15 years, the unchecked convergence of life sciences²⁶ (especially neuroscience

and synthetic biology, ‘syology’), machine learning and (post-)quantum breakthroughs will radically alter the speed and nature of national security threats. Hostile actors already exploit such developments – for example, ‘deep-fake’ videos.²⁷ But even benign milestones, such as artificial intelligence (AI) writers,²⁸ hint at threats we cannot simply legislate away.²⁹

Britain faces four pressing technological demands. First, lessen the impact of accelerating inequality due to automation³⁰ in the coming post-Covid depression³¹ or, some say, anarchy.³² Second, mitigate the human habit of putting productivity and ‘efficiency’ (i.e. profit) ahead of security, especially with radical technologies that can outpace human control – here, the Huawei 5G fiasco is instructive. Third, re-prioritise our knowledge to solve the right long-term problems, not just our latest self-inflicted crises.³³ And fourth, better understand limitations of data-based insight and decision-making – the average organisation does not use 90% of information it already holds (‘dark data’).³⁴

So, national security in the 21st century needs rethinking.

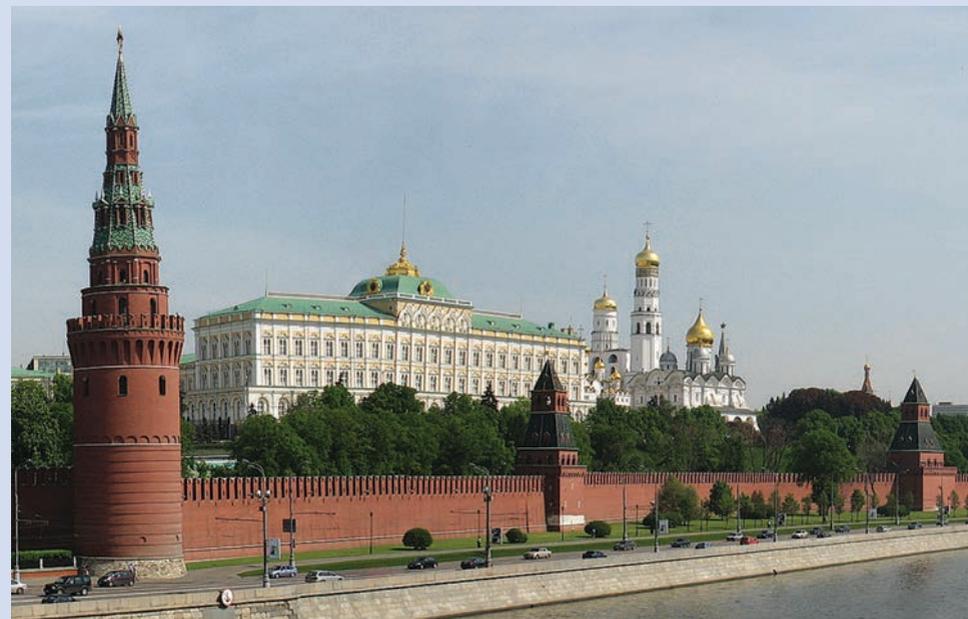
Harnessing publicly available information, reinventing education and changing our mindsets are three key areas that the 2020 Integrated Review should, but might not, consider when assessing how to succeed in the global environment described above.

3. ‘Open-source’ the Information Revolution

Total fusion of publicly available, or open-source, information is key to defeating today’s hostile state activity. Western national security reforms since 1991, even after 2001, have only really tinkered with organisations built in and for the 20th century, instead of transforming them for the 21st. So, national security communities still face two basic problems of 20 years ago, only amplified. They have fallen behind the global data explosion by collecting more but understanding less, thereby becoming reactive and so more vulnerable to deception and surprise.³⁵ And they have been slow to recognise the need to share information faster and more widely with allies, and even the public, to counter subversion of democracies and citizens’ minds.³⁶

Publicly available information can meet at least 90% of Government intelligence needs.³⁷ Yet in an increasingly data-rich but insight-poor world, Governments still concentrate far more on gathering information than on making sense of it to shape future strategies. If we did, this would free up precious classified collection resources for the hardest targets.³⁸ Contrary to claims about the supposed value of open-source, recent downgrades on both sides of the Atlantic – including devastating cuts to BBC Monitoring³⁹ – only reinforce perceptions of open-source as second-rate.⁴⁰ This, despite the explosion in open-source material since the 1990s and its use in generating open-source intelligence.

In 1995, analysts covering a mid-tier country had to read 20,000 words daily to stay current. By 2016 it was 200,000. And it will be an estimated 2m by 2025,⁴¹ when the world will create the equivalent of 213m DVDs of new data daily.⁴² Human knowledge already doubles every 12 hours.⁴³ Our brains cannot process, let alone make sense of, even a tiny fraction of this so national security bodies must widen neurodivergence in key operational and analytical areas.⁴⁴ Maximising human performance naturally



Moscow’s Kremlin – hub of a revised Russian empire

should come first, and cognitive augmentation technologies, from implants to machine learning,⁴⁵ can then tackle the information overload.⁴⁶

This overload allows hostile states to conceal ‘whole-of-society’ attacks on democracies.⁴⁷ With our societies and citizens’ minds already the century’s new battlefields, old attitudes to intelligence collection and sharing must change. Recent Intelligence and Security Committee findings on Russia⁴⁸ hint at this, so we need two vital reforms. First, better exploit open-source to fill gaps in our understanding of national security threats – Bellingcat is a perfect example.⁴⁹ And second, fix the broken intelligence tasking process. If British politicians cannot or will not task agencies appropriately to counter threats where needed, and if agencies (except the Security Service)⁵⁰ cannot self-task on classified collection, then open-source can fill the gap in two ways.

Transforming Government exploitation of publicly available information would remove institutional and national barriers to faster, wider sharing and even public disclosure of information as needed, especially in crises.⁵¹ Full situational awareness, as close to real time as possible, needs a qualitative leap in supercomputing power and all-source information fusion. This awareness becomes more viable if open-source becomes the common currency,⁵² adequately safeguarded, with secret intelligence added where relevant. This can only help crucial bodies such as the Joint State Threats Assessment Team⁵³ perform even more efficiently and effectively.

Because hostile states ‘weaponise’ almost every aspect of daily life, they now exploit seemingly harmless channels such as sport,⁵⁴ history and religion.⁵⁵ Yet this ‘whole-of-

society' attack means that Government cannot tackle it all. This is the second way publicly available information can help. Countries that best understand threats to them routinely 'crowd-source' parts of counter-subversion work – for example, Ukraine⁵⁶ and the Baltic states.⁵⁷ That Britain still does not, even after Russian radiological and chemical attacks twice in 12 years, speaks volumes. If hostile states look to weaken society, then society has to rally and respond. Actively involving citizens generates a sense of shared responsibility and civic duty, giving people a genuine stake in defending the country while also educating them about 21st-century national security threats.

4. Educate All for the 21st Century

Seven years running, Government has significantly missed teacher hiring targets in maths, physics and modern languages. Even dropping numeracy and literacy tests for trainees has not attracted enough.⁵⁸ Meanwhile, English graduates' numeracy and literacy were recently almost three times worse than in the top eight OECD countries, despite England being second in spending per student.⁵⁹

To compete and succeed globally, a post-Brexit Britain must maximise all its potential, especially creative and innovative.⁶⁰ As the country sets out alone, any left-behind group is wasted talent and potential that no self-reliant nation can afford. Equipping marginalised groups to re-engage with society will benefit national security and prosperity directly, by restoring a sense of belonging and giving them a genuine stake in their country's future success.

Working-class children's social mobility and career prospects stalled long ago, especially for white boys in the past 20 years.⁶¹ By age five, this group is already 23% behind others at school, with only one-third of white working-class boys going on to pass their maths and English GCSEs. This makes poor white boys 40% less likely to attend higher education than disadvantaged black boys⁶² (no strangers themselves to difficult early years). The largest group of people in the most employment-deprived 10% of neighbourhoods is white British: over 4m people, or 6% of the population.⁶³ This is unsustainable.

In an increasingly Darwinian world, transforming the state education system from an Industrial Revolution model (rote memorisation, standardised testing) to one closer to public schools' (identifying and nurturing diverse talents from early on)⁶⁴ becomes



Vladimir Putin, *de facto* ruler of Russia since 1999



Congress of the Chinese Communist Party

an imperative, therefore. Much better salaries and work conditions will attract more applicants for whom teaching is a calling, not a fall-back.⁶⁵ Restoring the profession's reputation would attract/retain quality teachers, fostering staff and student excellence.⁶⁶ However, we must also make vocational and technical careers genuinely attractive as fulfilling, reputable alternatives to university.⁶⁷ University is not for everyone and academics certainly do not have all, or often even the best, answers.

Another integral pillar of state school transformation should be quality early education and child care. They unlock/retain talent and potential by ending longstanding poverty and illiteracy cycles, improving lives and civic engagement, unleashing creativity and innovation, and fuelling prosperity. In doing so, they also remove genuine sources of grievance and social exclusion that our opponents so exploit, be they hostile states or extremist groups of all kinds – a clear national security benefit. Interestingly, intelligence⁶⁸ and defence⁶⁹ have taken some steps to improve staff child care provision but, currently, these only tackle short-term concerns over operational readiness and careers. In the national interest, though, we need to take a much broader view.

The long-term benefits of first-rate early education and child care regarding mental and physical development, educational achievement and social mobility are undeniable.⁷⁰ As are the links between illiteracy and innumeracy, and social cohesion, employment, parenting, crime, poverty and health.⁷¹ For example, 20% of Year 6 pupils are obese, with rates over twice as high in the most deprived areas than the least.⁷²

Latest figures also show 63% of adults as either overweight or obese (28%)⁷³ – 33m people⁷⁴ who would either struggle to or could not meet military fitness standards in

a national emergency. Over 7m working-age English are functionally illiterate⁷⁵ while 56% (and rising) of British adults have primary school numeracy levels.⁷⁶ Obesity,⁷⁷ illiteracy⁷⁸ and innumeracy⁷⁹ cost Britain between £69bn and £127bn a year.⁸⁰ This too is unsustainable and explains why, despite marked improvements in recent decades, Britain remains near the bottom of the OECD's 'family-friendly policies' index.⁸¹

5. Mindset Matters Most

In the next 30 years Britain faces four overlapping tests of its resilience and place in the world: ecosystem collapse causing migration and conflict, triggering alliance and regional organisation break-ups; the America-China struggle, and where it leaves them and the global system by 2049;⁸² Russia's accelerating decline and resultant turmoil; and unrest in other hydrocarbon-rich kleptocracies due to decarbonisation, divestment and activism. Meanwhile, our adversaries' 'unrestricted warfare'⁸³ is already exploiting the resulting upheaval. This, at a time when democracies' dated mindsets about their strategic environment mean that most people still do not realise how long they have been at war – albeit a subversive war for their minds.⁸⁴

5.1. Fighting for the mind

Unrestricted – or revolutionary⁸⁵ – warfare has only one rule: there are no rules. The ultimate aim for the Chinese and Russian regimes is political/ideological⁸⁶ victory by disintegrating democracies from within, by any means and ideally without fighting (at least until the time is right). This decades-long process, which is already well underway, has four documented phases: demoralisation, destabilisation, crisis (or conflict) and normalisation (or intervention).

Demoralisation affects areas that shape a target's public opinion, such as education, religion, law enforcement and government. This phase takes 15–20 years – the time needed to educate one generation and shape its outlook through the 'slow substitution (reversal) of basic moral principles'. Hostile states may or may not start the process, but they are 'wholly geared' to exploit and accelerate it.⁸⁷

Destabilisation takes 2–5 years, radicalising normal human relations to a point where compromise becomes impossible, even in families. Society, therefore, becomes antagonistic. Labour and social relations radicalise, society becomes ever more litigious, law enforcement militarises and media seem at odds with the public mood. In this phase, hostile 'agents of influence' take up leadership roles in society, often exploiting minority rights groups so that their grievances dominate mainstream politics.⁸⁸

Crisis (or conflict), usually 2–6 months, happens when legitimate authorities and social structures can no longer function and collapse. Non-elected committees 'inject' themselves into society and claim power/authority, taking it by force if denied. When society can no longer function productively and is 'looking for a saviour', this phase leads either to civil conflict or external intervention.⁸⁹

Finally, normalisation (or intervention) is 'stabilisation' by force. The new authorities remove the former 'useful idiots'⁹⁰ who brought them to power, often physically.⁹¹ Survival of the new regime against all 'enemies', internal and external, becomes the prime aim.

Throughout this four-phase process, our adversaries are 'weaponising' nearly every aspect of daily life. Threats of nuclear-triggered, undersea seismic collapses able to destroy continents.⁹² Fears of modified and 'weaponised' weather patterns over an area six times that of Britain.⁹³ Synthetic drug epidemics deliberately killing tens of thousands a year, ravaging communities and workforces.⁹⁴ Intellectual property theft on a scale that a new counter-intelligence investigation opens every 10 hours.⁹⁵ Indoctrination of students so that society eventually crumbles without a cohesive force.⁹⁶ So, we must reconsider what we, as individuals, communities and nations, do from a wider national security perspective. Only this can equip us for tomorrow's strategic environment – but it is already later than we think.

5.2. The future is already here

Despite warnings as early as 2008,⁹⁷ chaotic responses to Covid-19 are only the latest – and costliest – example that hoping for the best cannot be Government policy.⁹⁸ Resilience cannot happen 'on the cheap', without foresight and without having spare capacity.⁹⁹ We must now prepare not for the next pandemic but for the coming syndemic of simultaneous ones. This will make repatriating various supply chains from abroad essential,¹⁰⁰ reviving domestic industries and communities. Democracy's survival depends on revitalising civic engagement at this local level, including vibrant local media best placed to cover local issues.¹⁰¹ But survival depends also on accepting that no single person, organisation or culture has a monopoly on 'best practice'. Willingness to learn from widely different cultures will be vital in navigating this century.¹⁰²

Special forces, with their learning ethos, are well placed to benefit. In the post-9/11 'forever wars' on terror, these units have excelled at short, sharp tactical actions, though creating cultural and mindset problems.¹⁰³ To counter hostile states fighting for the mind with few constraints, British special forces must speed up reviving their counter-revolutionary warfare and counter-subversive expertise, including learning from peers in former communist-occupied countries. And they should also reassess how and who they now select, to succeed against hostile states operating in the political-psychological domain.

Legislating against hostile state activity also needs tightening. The last Queen's Speech¹⁰⁴ was a good start on national security and investment, espionage and subversion, and related legislation. But it must also cover all (domestic and foreign) donations to and partnerships with universities,¹⁰⁵ or other knowledge- and opinion-creating institutions receiving any public money, such as think-tanks.¹⁰⁶ And of course, compliance and enforcement mechanisms would then be essential.¹⁰⁷ This would help block hostile influence on policy-making at all Government levels, and slow the theft of intellectual property at the research and development stages.

Investing in innovation¹⁰⁸ is wasted unless we protect and create the right conditions for it. Britain's planned high-risk research agency, modelled on America's Defense Advanced Research Projects Agency (DARPA), will thrive only if it learns from their experience.¹⁰⁹ Success flows from having the right culture, to attract the right people, with the right mindset, to solve certain problems. For example, DARPA concentrates on defence, IARPA on intelligence. Similarly, it will be essential that the new agency does

not end up with too wide a remit and no funds to match that ambition. Britain may also like to consider another DARPA-linked initiative, JASON,¹¹⁰ set up so America's most brilliant scientists could solve its toughest national security problems.

To build on outstanding research already done by and for the defence and intelligence communities, the three chief scientific advisers for defence and national security¹¹¹ could collaboratively task the British JASON. Concentrating on defence and national security only, it would complement the Council for Science and Technology,¹¹² the Defence Science Experts Committee,¹¹³ the National Security Strategic Investment Fund¹¹⁴ and UK Research Innovation councils.¹¹⁵ With China racing to deploy human-AI hybrid soldiers and intelligence officers,¹¹⁶ getting British basic and applied science right has never mattered more.

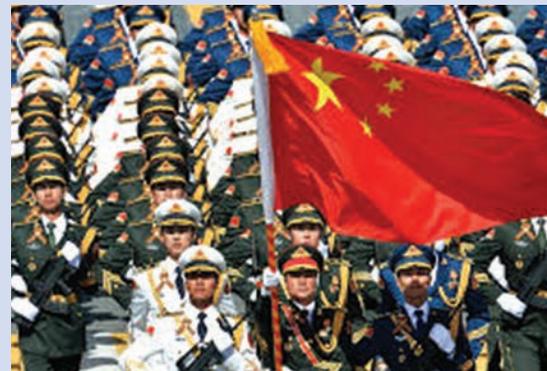
Now freer to plot its course in the world, Britain should embrace proposals for a *Natural Security Strategy*¹¹⁷ of its own: preserving global life-support ecosystems, ensuring food security and improving resilience should be core national security aims. And with runaway climate change an existential threat, especially to island-nations, a National Resilience Act should enshrine in law Britain's commitment to upgrade its infrastructure to withstand coming disruptions.¹¹⁸ Delivering this by 2030 should be a nation-wide priority, just as Bletchley Park was in the Second World War.

Covid-19 has shown that ignoring scientific knowledge for political expedience is a national security vulnerability in itself. But in its entirety, the field of science can offer so much more to the formulation of national security policy. For example, undertaking randomised trials to flesh out what policies will actually work before introducing them;¹¹⁹ crafting public messaging that considers how our cognitive biases prevent us from tackling long-term problems (such as the perception of counter-intelligence threats versus immediate terrorism ones);¹²⁰ and improving policy-makers' second- and third-order thinking¹²¹ to save lives, time and money.

6. No Wishful Thinking Allowed in 2020

Democracies seem paralysed by 21st-century authoritarians partly because, after 75 years of relative peace, we now have generations with no direct experience of war. Many of our politicians, officials and citizens no longer understand, at a visceral level, the language of war – physical or psychological, real or implied – that authoritarians 'speak'. This is troublesome, as Rory Miller explains: 'it is difficult to solve a problem you are almost ignorant about.... To think that there is always a reasonable solution is itself unreasonable.'¹²²

With runaway climate change, and the unethical development and use of radical technologies, politicians and officials conducting the 2020 Integrated Review must avoid thinking this way. As outlined above, harnessing publicly available information, reinventing education and changing our mindsets are three key areas they should consider. Open-source information can meet vast intelligence needs and help engaged citizens to counter hostile state activity. While transforming education would re-engage marginalised social groups, unlock potential and talent, and improve lives. And modifying mindsets, before external forces impose unwanted change on us, can reinvigorate communities and revive civic engagement.



The outward expression of China's growing military power

The biggest failure for policy and expert communities this century has been their inability or unwillingness to communicate (effectively) outside their 'bubbles'. They talk to one another on their own terms while failing to engage/reach the people who should matter most in these conversations. And yet, only an informed population of critical thinkers can resist malign influence, external or internal, something that the policy and expert communities must recognise and redress.

Above all, we need the intellectual humility to see the world as it is, not as we would like it to be.¹²³ Some in America support yet another reset with a KGB-led Russia.¹²⁴ A Russia that around the time of the last reset bombed an American embassy.¹²⁵ A Russia that aggressively recruited spies in American Government,¹²⁶ deployed long-term 'illegal' intelligence officers to America¹²⁷ and almost certainly assassinated American officials abroad,¹²⁸ even as America paid Russian scientists' salaries, helped secure Russian weapons of mass destruction and welcomed waves of post-Soviet immigrants. A Russia over which serious questions still hang about the exact role it played in 1996-97 in steering al-Qaeda towards attacking the 'far enemy', America.¹²⁹

From the 9/11 attacks up to Russia's 2014 invasion of Crimea and the Donbas, the West concentrated on counter-terrorism above all else – including counter-intelligence.¹³⁰ A flood of post-1991 redeployments or retirements had already eroded Russian and Chinese expertise across western Governments, and with it, whatever security mindset we had had. Once our guard was down and our attention elsewhere, Russia and China regrouped, stealing and spying their way to near-parity with the West, ramping up their subversive war.

In the frenzied run-up to November's presidential elections and December's Brexit, America and Britain seem on the brink of the third phase (crisis) of the four described earlier. This is exactly the 25 years we were warned phases one (demoralisation) and two (destabilisation) would take, once our strategic priority was no longer combating communism. Years ago, many laughed off forecasts by a former KGB information warfare expert that America would soon break up due to cultural, economic and political divisions.¹³¹ Given what we now know about Russia's and China's vast subversion of America¹³² and elsewhere¹³³ since the 1990s, and the chaos they have either created or stimulated (even before Covid-19 hit), not many are laughing now.

People and nations cannot just hope for the best as the way forward. If Britain does not prepare for the worst of what is already unfolding, the country as we know it will not exist by 2050. If, however,

you are able and willing to tolerate the ambiguity (and vulnerability) inherent in any true threat assessment process *and* you can briefly set aside what you

are sure you ‘know’ about conflict, you can use this information to dramatically improve the likelihood you will avoid becoming a victim.¹³⁴

As with people, so with nations: prepare for the worst and hope for the best – but wishful thinking cannot be allowed in the 2020 Integrated Review. ■

- 1 I am grateful to an old and much-loved colleague for their outstanding insights and, above all, clarity.
- 2 Dr Victor Madeira frequently briefs decision-makers on hostile state activity and national security transformation; previous audiences include the Defence Select Committee and the NATO-Ukraine Platform on Countering Hybrid Warfare. He writes on geopolitics for The Cambridge Security Initiative and is a former national security columnist for a British monthly. Victor has a Ph.D. in history from Cambridge and is the author of ‘Britannia and the Bear: the Anglo-Russian Intelligence Wars’. His next book assesses how democracies can develop ‘strategic immunity’ against 21st-century hostile state activity. He is a member of Defence UK and a life member of the Keston Institute and the War Memorials Trust.
- 3 ‘The Queen’s Agent: Francis Walsingham at the Court of Elizabeth I’, by John Cooper, page (p.) 97. Faber and Faber Ltd, London, United Kingdom: 2011.
- 4 <https://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2020-02-26/HCWS126/>
- 5 <https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/> The latest science narrows the likely warming range to 2.6°C-3.9°C, with a 10% possibility of warming beyond a catastrophic 5°C by 2100 without urgent action: https://climateextremes.org.au/wp-content/uploads/2020/07/WCRP_ECS_Final_manuscript_2019RG000678R_FINAL_200720.pdf and <https://www.nybooks.com/articles/2020/08/20/climate-emergency-130-degrees/>
- 6 <https://climateandsecurity.files.wordpress.com/2020/03/a-security-threat-assessment-of-climate-change.pdf>
- 7 <https://www.theguardian.com/environment/2020/jun/30/likelihood-of-40c-temperatures-in-uk-is-rapidly-accelerating>
- 8 <https://www.bbc.com/news/science-environment-53415298>
- 9 https://www.rand.org/content/dam/rand/pubs/research_reports/RRA400/RRA487-1/RAND_RRA487-1.pdf
- 10 <https://www.nic.org.uk/wp-content/uploads/NIC-Preparing-for-a-Drier-Future-26-April-2018.pdf>
- 11 <https://www.bbc.com/news/uk-england-53367000>
- 12 <https://www.parliament.uk/business/committees/committees-a-z/commons-select/public-accounts-committee/news-parliament-2017/water-supply-and-demand-management-report-published-19-21/>
- 13 <https://www.telegraph.co.uk/news/2020/07/13/insurance-payouts-flood-prone-homes-include-funds-improvements/>
- 14 <https://www.theguardian.com/environment/2020/aug/17/uk-facing-worst-wheat-harvest-since-1980s-national-farmers-union-nfu>
- 15 <https://theconversation.com/our-climate-is-like-reckless-banking-before-the-crash-its-time-to-talk-about-near-term-collapse-128374>
- 16 <https://www.independent.co.uk/environment/climate-crisis-tropical-plants-die-off-global-warming-research-a9598746.html>
- 17 <https://edition.cnn.com/2020/07/02/weather/fish-vulnerable-ocean-warming-climate-change-scen/index.html>
- 18 <https://www.bbc.com/news/science-environment-53140069>
- 19 <https://phys.org/news/2020-07-leak-sea-bed-methane-antarctica.html>

- 20 <https://www.independent.co.uk/environment/thwaites-glacier-antarctic-melting-doomsday-climate-a9616966.html> Current Government estimates are 1.15 metres in London by 2100: <https://www.telegraph.co.uk/news/2020/07/13/insurance-payouts-flood-prone-homes-include-funds-improvements/>
- 21 <https://news.sky.com/story/ice-sheets-melting-at-worst-case-scenario-rate-research-warns-12060834>
- 22 <https://www.nytimes.com/interactive/2020/07/23/magazine/climate-migration.html> and <https://qz.com/se/green-haven/>
- 23 https://www.ngfs.net/sites/default/files/medias/documents/ngfs_climate_scenarios_final.pdf
- 24 <https://climatecrisis.house.gov/report>
- 25 <https://www.forbes.com/sites/prakashdolsak/2020/07/16/bidens-climate-plan-needs-to-do-better-on-the-just-transition-and-critical-minerals/>
- 26 <https://elifesciences.org/articles/54489>
- 27 <https://www.forbes.com/sites/robtoews/2020/05/25/deepfakes-are-going-to-wreak-havoc-on-society-we-are-not-prepared/> and https://www.belfercenter.org/sites/default/files/files/publication/Deepfakes_2.pdf
- 28 <https://www.forbes.com/sites/robtoews/2020/07/19/gpt-3-is-amazingand-overhyped/>
- 29 <https://www.wilmerhale.com/en/insights/client-alerts/20191223-first-federal-legislation-on-deepfakes-signed-into-law> and <https://www.cjr.org/analysis/legislation-deepfakes.php>
- 30 <https://www.visualcapitalist.com/whats-at-risk-an-18-month-view-of-a-post-covid-world/>
- 31 <https://nourielroubini.com/the-coming-greater-depression-of-the-2020s/>
- 32 <https://www.foreignaffairs.com/articles/united-states/2020-05-06/coming-post-covid-anarchy>
- 33 <https://timharford.com/2020/07/can-the-pandemic-help-us-fix-our-technology-problem/>
- 34 <https://press.princeton.edu/books/hardcover/9780691182377/dark-data> and <https://www.forbes.com/sites/tomtaulli/2019/10/27/what-you-need-to-know-about-dark-data/>
- 35 ‘Global Data Shock: Strategic Ambiguity, Deception, and Surprise in an Age of Information Overload’, by Robert Mandel, pp.1-32, 166-203. Stanford University Press, Stanford, California, 2019: <https://www.sup.org/books/title/?id=30563>
- 36 <https://www.kcl.ac.uk/policy-institute/assets/weaponising-news.pdf>, <https://euvsdisinfo.eu/tracing-five-years-of-pro-kremlin-disinformation-about-mh17/> and <https://euvsdisinfo.eu/conspiracy-mania-marks-one-year-anniversary-of-the-skripal-poisoning/>
- 37 <https://othjournal.com/2019/04/08/publicly-available-information-the-secret-to-unclassified-data-part-i/> One estimate is 95%: <https://www.senternetwork.eu/documents/2018/08/scientific-approach-on-osint-training-program-development-based-on-a-skill-management-system-for-european-law-enforcement-agencies.pdf/>
- 38 https://www.thecipherbrief.com/column_article/use-whats-known-get-unknowns In the mid-2000s, for example, American intelligence spent only about 1% of its annual budget on publicly available information, despite its ability to meet the bulk of requirements: http://juro.uga.edu/2010/boc2010/stevens_2010.pdf or approximately \$635m (£320m) based on 2007 figures: <https://www.dni.gov/index.php/what-we-do/ic-budget> and <https://www.xe.com/currencytables/?from=USD&date=2007-12-31>
- 39 <https://publications.parliament.uk/pa/cm201617/cmselect/cmdfence/748/748.pdf> and <https://www.ft.com/content/99ede9cc-b582-11e7-aa26-bb002965bce8>
- 40 <https://doi.org/10.1080/02684527.2020.1767389>
- 41 https://www.thecipherbrief.com/column_article/how-machine-learning-impacts-national-security
- 42 <https://www.weforum.org/agenda/2019/04/how-much-data-is-generated-each-day-cf4bddf29f/> and <https://www.visualcapitalist.com/wp-content/uploads/2019/04/data-generated-each-day-wide.html>
- 43 <https://www.cio.com/article/3387637/thriving-in-a-world-of-knowledge-half-life.html> DNA will revolutionise data storage: <https://www.popularmechanics.com/technology/infrastructure/a29008852/dna-storage-future/> and <https://www.nature.com/articles/s41467-020-16797-2>

- 44 <https://www.crest-approved.org/2020/07/24/businesses-need-to-harness-neurodiversity-in-the-technical-security-workplace-to-fill-skills-gap/index.html> Estimates vary but up to one in seven Britons is neurodivergent: <https://www.bbc.co.uk/news/uk-51014028> Israel is another country with a history of harnessing neurodiverse national security talent: <https://www.haaretz.com/israel-news/.premium.MAGAZINE-in-this-secret-school-the-israeli-army-is-breeding-future-cyber-warriors-1.7301838>, <https://www.esquire.com/news-politics/a26454556/roim-rachok-israeli-army-autism-program/> and <https://www.timesofisrael.com/spooks-with-earlocks-haredim-to-help-israeli-spy-agencies-think-outside-the-box/>
- 45 <https://doi.org/10.1080/02684527.2019.1579410>, <https://www.frontiersin.org/articles/10.3389/fnhum.2019.00013/full> and <https://thegradient.pub/stanfords-human-centered-ai/>
- 46 <https://iorgforum.org>
- 47 <https://standpointmag.co.uk/issues/december-2019-january-2020/counter-intelligence-needs-a-rethink-catching-spies-is-not-enough/>
- 48 <http://isc.independent.gov.uk/news-archive/21july2020>
- 49 <https://www.bellingcat.com/?s=GRU>
- 50 'Russia': <http://isc.independent.gov.uk/news-archive/21july2020>, p.26
- 51 After the 2018 Skripal/Salisbury attack, British intelligence-sharing led to 29 countries and organisations either expelling or refusing accreditation to 159 Russian intelligence officers. But the woeful 'strategic communications' approach of occasional British announcements, followed by long silences, created a vacuum that the Russian regime eagerly filled, regaining the initiative just when they had become international pariahs.
- 52 <https://www.theverge.com/2019/7/31/20746926/sentient-national-reconnaissance-office-spy-satellites-artificial-intelligence-ai> and <https://www.wired.com/story/darpa-total-informatio-awareness/>
- 53 <https://www.mi5.gov.uk/joint-state-threats-assessment-team>
- 54 <https://www.dailymail.co.uk/news/article-8551715/The-14-Tory-ministers-two-intelligence-committee-MPs-taken-Russian-linked-donations.html>, <https://boec.com/scotlands-president-sambo-cup-has-been-postponed-for-2021/>, [NB: live link] <https://www.rusemb.org.uk/activity/588>, <http://fightland.vice.com/blog/russian-gangsters-and-russian-wrestlers> and <http://www.sambo.com/investigation.html> Russia's military intelligence (GRU) and security service (FSB) actively recruit abroad on the Russian martial arts circuit: <https://www.theatlantic.com/ideas/archive/2018/08/russia-is-co-opting-angry-young-men/568741/> and https://www.ifri.org/sites/default/files/atoms/files/laruelle_russia_militia_groups_2019.pdf
- 55 <https://www.dailymail.co.uk/news/article-6765823/Members-high-society-celebrate-UK-launch-group-accused-links-Russian-spies.html>, <https://www.thetimes.co.uk/edition/news/putins-spies-woo-british-establishment-through-imperial-orthodox-palestine-society-qgsqrfjqb> and <https://www.thetimes.co.uk/article/establishment-flocks-to-dine-at-kremlin-linked-imperial-orthodox-palestine-society-2zmg8dbkb>
- 56 <http://informnapalm.rocks>
- 57 Estonia: <https://www.propastop.org/eng/> and <https://www.kaitseliit.ee/en/edl> Latvia: <https://www.stratcomcoe.org> Lithuania: <https://www.kyivpost.com/technology/lithuanian-creates-artificial-intelligence-with-ability-to-identify-fake-news-within-2-minutes.html>, <https://www.independent.co.uk/news/world/europe/lithuania-elves-russia-election-tampering-online-cyber-crime-hackers-kremlin-a9008931.html> and <https://www.ft.com/content/b3701b12-2544-11e9-b329-c7e6ceb5ffdf>
- 58 <https://www.independent.co.uk/news/education/education-news/government-teacher-training-secondary-school-shortages-education-a9223861.html> and https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/848851/ITT_Census_201920_Main_Text_final.pdf
- 59 <https://www.newstatesman.com/politics/education/2019/08/great-university-con-how-british-degree-lost-its-value>
- 60 See the late Sir Ken Robinson https://www.ted.com/talks/sir_ken_robinson_do_schools_kill_creativity

- 61 <https://www.theguardian.com/commentisfree/2018/jan/07/british-education-failure-white-working-class> and <https://www.telegraph.co.uk/family/schooling/white-working-class-boys-falling-far-behind-peers/>
- 62 <https://hansard.parliament.uk/Commons/2020-02-12/debates/7649792B-6CB3-48A9-872A-6CB6F2B9DCE8/EducationAndAttainmentOfWhiteWorking-ClassBoys> and <https://committees.parliament.uk/call-for-evidence/123/left-behind-white-pupils-from-disadvantaged-backgrounds/> White students in the north-east of England have the lowest academic progress score of all for the 11-to-16 age bracket: <https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/compendium/economicreview/february2020/childpovertyandeducationoutcomesbyethnicity>
- 63 <https://www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity/demographics/people-living-in-deprived-neighbourhoods/latest> and <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/timeseries/ukpop/pop> The latest figures show that the highest number of people living in the most deprived (3,842,000), the most income-deprived (3,671,000) and the most employment-deprived (4,054,000) 10% of neighbourhoods is white British
- 64 <https://www.spearswms.com/choose-school-child-expert/> See also <https://tophat.com/teaching-resources/webinars-and-videos/sir-ken-robinson-excerpt/>, <https://www.thersa.org/discover/videos/rse-animate/2010/10/rse-animate---changing-paradigms> and <https://bigthink.com/politics-current-affairs/finland-education-system-criticisms>
- 65 The economic impact of Covid-19 has caused a 65% increase in teacher training applicants, many of whom will leave for better opportunities as soon as possible – hardly a glowing endorsement: <https://epi.org.uk/publications-and-research/teacher-recruitment-gap-itt/>
- 66 <https://schoolleadership20.com/video/why-finland-s-schools-outperform-most-others-across-the-developed>
- 67 <https://hansard.parliament.uk/Commons/2020-02-12/debates/7649792B-6CB3-48A9-872A-6CB6F2B9DCE8/EducationAndAttainmentOfWhiteWorking-ClassBoys> and David Goodheart <https://www.telegraph.co.uk/books/what-to-read/head-hand-heart-david-goodhart-review-book-every-mp-should-read/>
- 68 http://isc.independent.gov.uk/files/20150305_ISC_Report_Women_in_the_UKIC.pdf and https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/525754/55815_cm_9271_accessible.pdf
- 69 <https://www.gov.uk/government/news/free-wraparound-childcare-for-the-armed-forces>
- 70 <https://www.local.gov.uk/sites/default/files/documents/20190219%20LGA%20Briefing%20-%20costs%20and%20benefits%20of%20free%20childcare.pdf>
- 71 http://www.eli-net.eu/fileadmin/ELINET/Redaktion/Factsheet-Literacy_in_Europe-A4.pdf and https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/891155/Monitoring_report_2013-2020_-Web_version.pdf
- 72 <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/england-2020/part-4-childhood-obesity-copy>
- 73 <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/england-2020/part-3-adult-obesity-copy>
- 74 <https://www.ons.gov.uk/aboutus/transparencyandgovernance/freedomofinformationfoi/projectedukadultpopulationfor2018>
- 75 <https://literacytrust.org.uk/parents-and-families/adult-literacy/>
- 76 <https://www.tes.com/news/poor-maths-skills-cost-economy-ps388m-week>
- 77 <https://www.telegraph.co.uk/news/2019/10/10/britains-obesity-crisis-costs-every-taxpayer-400-year-cuts-life/>, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/895182/Table_2.1.pdf and <https://fullfact.org/health/what-does-obesity-cost-economy/>
- 78 <https://www.tes.com/news/illiteracy-costs-uk-ps36-billion-year> and <https://worldliteracyfoundation.org/wp-content/uploads/2019/06/TheEconomicSocialCostofIlliteracy-2.pdf>
- 79 <https://www.tes.com/news/poor-maths-skills-cost-economy-ps388m-week>

- ⁸⁰ Meanwhile, 50 hours of quality child care per week, at £250 per week for 48 weeks, would be £12,000 per British child per year: <https://www.moneyadviceservice.org.uk/en/articles/help-with-childcare-costs>
- ⁸¹ <https://www.unicef-irc.org/family-friendly>
- ⁸² People's Republic of China centenary, by when it aims to have overtaken America as the global superpower; see <https://thehundredyearmarathon.com>
- ⁸³ https://www.theepochtimes.com/communist-chinas-silent-war-against-america_3412704.html and https://csbaonline.org/uploads/documents/Countering_Comprehensive_Coercion_May_2018.pdf
- ⁸⁴ Former KGB defector and propagandist Yuri Bezmenov on the issue: <https://www.youtube.com/watch?v=KLdDmeyMJIs> and https://www.youtube.com/watch?v=OY_j-1I9-j0. For a more partisan view see <https://unconstrainedanalytics.org/wp-content/uploads/2019/08/Unconstrained-Analytics-Left-Strategy-Tactics-280819.pdf>
- ⁸⁵ <https://standpointmag.co.uk/issues/december-2019-january-2020/counter-intelligence-needs-a-rethink-catching-spies-is-not-enough/>
- ⁸⁶ 'Xi Jinping thought' is 21st-century Marxism and 'the most wonderful chapter of world socialism in 500 years', according to a Chinese Communist Party newspaper: [NB: live link] <https://www.scmp.com/news/china/politics/article/3089163/chinas-socialism-beats-capitalism-communist-party-ideology>
- ⁸⁷ <https://www.youtube.com/watch?v=KLdDmeyMJIs>
- ⁸⁸ Ibid.
- ⁸⁹ Ibid.
- ⁹⁰ <https://unherd.com/2018/06/six-types-useful-idiot/>
- ⁹¹ <https://www.youtube.com/watch?v=KLdDmeyMJIs>. Reversing the full process takes great (military) effort so better to break the subversive chain as early as possible. This rarely happens because either ideological elements divert/block policy attention or it is simply elsewhere. At the crisis point, strong covert action can reverse the process. At the destabilisation point, authorities temporarily need to restrict the liberties of very small groups, such as declared enemies of that society. At the demoralisation point, the answer is to stop importing propaganda and subversive ideas, breaking the subversive chain. Bezmenov's solution: self-restraint and a sense of personal responsibility to pursue a higher purpose actively (never violently). The simplest answer is any socially cohesive force (it could be religion or something else) that helps society revive its spiritual and moral health.
- ⁹² <https://jamestown.org/program/the-hypersonic-hype-and-russias-diminished-nuclear-threshold/> Russia has form in globe-changing projects, such as hoping to melt the Arctic by damming the Pacific ocean: <https://www.smithsonianmag.com/smart-news/russias-cold-war-plan-to-reverse-the-ocean-and-melt-the-arctic-42136682/>
- ⁹³ <https://economictimes.indiatimes.com/prime/economy-and-policy/china-has-built-up-its-muscle-on-how-to-turn-weather-into-a-weapon-can-india-match-up-to-it/primearticleshow/71798844.cms>
- ⁹⁴ https://www.theepochtimes.com/china-is-using-fentanyl-as-chemical-warfare-experts-say_3067392.html, https://www.theepochtimes.com/china-is-deliberately-using-fentanyl-to-destroy-the-us_3058199.html and <https://www.nytimes.com/interactive/2020/07/15/upshot/drug-overdose-deaths.html>. By 2025, estimates predict 500,000 opioid overdose deaths, plus up to \$20,000 (£15,000) per patient per year in care: <https://www.visualcapitalist.com/americas-opioid-epidemic/>, many in poorer areas normally sources of military recruits. As in guerrilla warfare, injuring your enemy actually demoralises and takes up more resources than simply killing him. The fentanyl epidemic is different because Chinese suppliers dictate, not western users: <https://www.rand.org/news/press/2019/08/29.html> China now controls drug syndicates' raw materials and money laundering: https://www.theepochtimes.com/chinese-networks-dominate-chemical-cash-sectors-of-drug-cartel-business_3441317.html
- ⁹⁵ <https://www.fbi.gov/news/speeches/the-threat-posed-by-the-chinese-government-and-the-chinese-communist-party-to-the-economic-and-national-security-of-the-united-states>

- ⁹⁶ https://www.theepochtimes.com/china-influences-higher-education-and-research-in-netherlands-think-tank_3412616.html, <https://www.universityworldnews.com/post.php?story=20200208084957846>, <https://www.theatlantic.com/international/archive/2019/07/chinas-influence-efforts-germany-students/593689/> and <https://standpointmag.co.uk/issues/may-june-2020/letters-priceless-plans-marxist-pedagogy-tibet-and-china-the-name-game/>
- ⁹⁷ https://www.dni.gov/files/documents/Newsroom/Reports%20and%20Pubs/2025_Global_Trends_Final_Report.pdf, p.75
- ⁹⁸ <https://www.telegraph.co.uk/news/2020/03/28/exercise-cygnus-uncovered-pandemic-warnings-buried-government/>
- ⁹⁹ <https://www.telegraph.co.uk/news/2019/03/01/defence-base-closures-abandoned-clear-eyed-assessment-rapidly/>, <https://www.gov.uk/government/publications/mod-estate-rationalisation-plan/mod-estate-rationalisation-plan> and https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/576401/Better_Defence_Estate_Dec16_Amends_Web.pdf
- ¹⁰⁰ <https://itif.org/publications/2020/08/31/competing-china-strategic-framework>
- ¹⁰¹ <https://www.pbs.org/newshour/show/margaret-sullivan-on-what-local-news-means-for-u-s-democracy> and <https://theconversation.com/covid-19-has-ravaged-american-newsrooms-heres-why-that-matters-141955>. To escape national government scrutiny, China, for example, targets local and regional politicians to influence education, land use and other key policies: <https://www.thestar.com/news/canada/2020/08/08/are-canadas-local-politicians-a-target-for-beijings-global-pr-machine.html> and <https://nationalpost.com/news/politics/election-2019/how-to-suss-out-the-pro-china-candidate-new-online-voters-guide-probes-beijings-infiltration>
- ¹⁰² <https://timharford.com/2020/07/what-countries-can-and-cant-learn-from-each-other/>
- ¹⁰³ <https://taskandpurpose.com/news/socom-no-ethics-problem>
- ¹⁰⁴ <https://www.gov.uk/government/publications/queens-speech-december-2019-background-briefing-notes>
- ¹⁰⁵ <https://www.underminers.info/publications/blavatnikputinsoligarch>, <https://www.telegraph.co.uk/news/uknews/11974039/Oxford-University-criticised-for-accepting-oligarchs-75m-donation.html>, <https://questions-statements.parliament.uk/written-questions/detail/2020-05-29/52463#> and <https://www.telegraph.co.uk/technology/2020/06/16/universities-pressure-reveal-details-huawei-funding/>
- ¹⁰⁶ https://www.underminers.info/s/Smagliy_Hybrid-Analytica_10-2018_upd.pdf, <https://www.foi.se/en/foi/reports/report-summary.html?reportNo=FOI-R--4451--SE> and https://www.atlanticcouncil.org/wp-content/uploads/2019/11/Thinking-Foreign-Policy-in-Russia_Think-Tanks-and-Grand-Narratives-Atlantic-Council-11.12.19.pdf One such 'partnership' is the UK-Russia Security Dialogue between the Royal United Services Institute and the Russian International Affairs Council: <https://rusi.org/projects/uk-russia-security-dialogue>
- ¹⁰⁷ <https://cis.org/sites/default/files/2020-06/cadman-foreign-students-20.pdf> and <https://cis.org/sites/default/files/2019-08/cadman-foreign-students-19.pdf>
- ¹⁰⁸ <https://www.gov.uk/government/publications/budget-2020-documents/budget-2020>
- ¹⁰⁹ <https://warontherocks.com/2020/07/a-british-advanced-research-projects-agency/>
- ¹¹⁰ Named after Jason and the Argonauts: <https://www.nytimes.com/2006/04/16/books/review/rentagenius.html>, <https://www.sciencemag.org/news/2019/06/jason-secretive-group-cold-war-science-advisers-fighting-survive-21st-century#>, <https://www.defensenews.com/opinion/2019/04/12/pentagons-jason-group-is-not-worth-mourning/> and <https://fas.org/irp/agency/dod/jason/titles.pdf>
- ¹¹¹ <https://www.gov.uk/government/groups/chief-scientific-advisers>
- ¹¹² <https://www.gov.uk/government/organisations/council-for-science-and-technology>
- ¹¹³ <https://www.gov.uk/government/news/new-chair-of-the-defence-science-expert-committee-appointed>
- ¹¹⁴ <https://www.british-business-bank.co.uk/national-security-strategic-investment-fund/>
- ¹¹⁵ <https://www.ukri.org/about-us/our-councils/>

- ¹¹⁶ <https://www.defenseone.com/technology/2018/10/defense-intel-chief-worried-about-chinese-integration-human-and-machines/151904/> and https://s3.amazonaws.com/files.cnas.org/documents/June-7-Hearing_Panel-1_Elsa-Kania_Chinese-Military-Innovation-in-Artificial-Intelligence.pdf
- ¹¹⁷ <https://morningconsult.com/opinions/the-united-states-needs-a-natural-security-strategy-to-regain-our-global-leadership/>
- ¹¹⁸ <https://www.theguardian.com/environment/2020/aug/15/uk-infrastructure-inadequate-for-climate-emergency-experts-warn>
- ¹¹⁹ <https://timharford.com/2020/07/why-experiments-matter-and-why-we-hate-them/>
- ¹²⁰ <https://www.bbc.com/future/article/20190304-human-evolution-means-we-can-tackle-climate-change>
- ¹²¹ <https://medium.com/mind-cafe/second-and-third-order-thinking-how-smart-people-make-better-decisions-50d0842ac812>
- ¹²² 'Conflict Communication: a New Paradigm in Conscious Communication', by Rory Miller, pp.2-3. YMAA Publication Center, Wolfeboro, New Hampshire, 2015: <https://ymaa.com/publishing/book/conflict-communication--new-paradigm-conscious-communication>
- ¹²³ <https://www.vox.com/science-and-health/2019/1/4/17989224/intellectual-humility-explained-psychology-replication> and <https://www.vox.com/science-and-health/20978285/optical-illusion-science-humility-reality-polarization>
- ¹²⁴ <https://www.politico.com/news/magazine/2020/08/05/open-letter-russia-policy-391434> Opposition quickly followed in America (<https://www.politico.com/news/magazine/2020/08/11/russia-reset-response-open-letter-393176>) and in Europe (<https://www.politico.com/news/magazine/2020/08/31/open-letter-not-time-to-go-soft-on-russia-405266>)
- ¹²⁵ <https://www.dailysignal.com/2011/07/28/america-needs-answers-to-the-u-s-embassy-attack-in-georgia/> and <https://www.washingtontimes.com/news/2011/jul/26/us-report-russia-tied-to-embassy-blast/>
- ¹²⁶ <https://www.justice.gov/usao-edva/press-release/file/1307246/download>
- ¹²⁷ <https://www.fbi.gov/news/stories/operation-ghost-stories-inside-the-russian-spy-case>
- ¹²⁸ <https://www.thedailybeast.com/who-blew-out-a-cia-spys-brains-a-new-book-fingers-his-best-friend> and <https://www.washingtontimes.com/news/2018/nov/7/book-review-the-spy-who-was-left-behind-by-michael/>
- ¹²⁹ <https://www.businessinsider.com/exploring-al-qaedas-murky-connection-to-russian-intelligence-2014-6?IR=T>, <https://en.delfi.lt/politics/putins-russia-why-it-is-worth-to-reconsider-links-between-kremlin-and-international-terrorism.d?id=66687172> and <https://en.delfi.lt/politics/putins-russia-do-traces-of-kgb-fsb-and-gru-lead-to-islamic-state.d?id=66856642>
- ¹³⁰ <http://isc.independent.gov.uk/news-archive/21july2020>
- ¹³¹ <https://www.telegraph.co.uk/news/worldnews/northamerica/usa/3521671/US-will-collapse-and-break-up-Russian-analyst-predicts.html>. See also <https://www.youtube.com/watch?v=3yRzQzOKMyI>
- ¹³² <https://www.theatlantic.com/politics/archive/2010/06/map-of-the-day-ex-kgb-analyst-predicts-balkanization-of-us/58945/>, <https://www.americanprogress.org/issues/security/reports/2018/10/03/458841/origins-russias-broad-political-assault-united-states/>, <https://archive.thinkprogress.org/russia-texas-california-separatism-9809aca9f61d/>, <https://www.nytimes.com/2017/02/21/us/yes-california-calexit-marinelli-russia.html>, <https://www.foxnews.com/politics/thousands-sign-whitehouse-gov-petition-for-alaska-to-secede-to-russia>
- ¹³³ <https://www.holyrood.com/news/view/credible-commentary-suggesting-russia-undertook-indyref-influence-campaigns-report> See also 'Hidden Hand: Exposing How the Chinese Communist Party is Reshaping the World', by Clive Hamilton and Mareike Ohlberg. Hardie Grant, Richmond, Victoria, 2020: <https://www.hardiegrant.com/au/publishing/bookfinder/book/hidden-hand-by-clive-hamilton/9781743795576> and 'Chinese Communist Espionage: an Intelligence Primer', by Peter Mattis and Matthew Brazil. Naval Institute Press, Annapolis, Maryland, 2019: <https://www.usni.org/press/books/chinese-communist-espionage>
- ¹³⁴ Major Gregory Postal, M.D. in 'Conflict Communication', p.ix.

Defence Priorities in the Coming Decade

By Christopher Watts



It is respectfully submitted that defence priorities over the coming decade must include robust air defence of the UK, strengthened coastal defences against limited incursions, protection of infrastructure against physical and (increasingly) virtual attack, and the ability to strike rapidly to eliminate or mitigate threats or provide adequate defence support to Britain's commercial interests overseas.

Some will argue that a minimum level of investment in UK defence should be 2% of GDP, some 3%, but an argument over percentages is, in this writer's view, irrelevant. All countries, and the UK is no exception, face a stark choice: 'Guns or butter'. The less GDP countries spend on defence, the more they have available for infrastructure like schools, hospitals and public transport. Since the end of World War 2, the ability, willingness and capacity of the United States of America to underwrite the defence of Western Europe has meant that countries like Germany in particular, and Britain to a lesser extent, could enjoy the luxury of de-prioritising defence as a demand on public finance. That is a position which an increasingly inward focus by the US may be about to change.

The real choice facing the UK in 2020 is between remaining a global power or focusing on becoming a significant regional one. 'Global Britain' – the message which Boris Johnson's Government portrays as the goal of a post-Brexit UK – is misleading in the defence context. Britain can be both global in outlook and regional in regard to its martial weight. It seems as though this debate (of strategic choices) is a poisoned chalice which politicians are reluctant to grasp. But unless and until this debate takes place in a public forum, with a discernible outcome, setting priorities for defence spending will always be haphazard, with service chiefs screaming 'underfunded' and defence ministers at loggerheads with the Chancellor of the Exchequer and cabinet colleagues.

In the pages of this journal, Defence UK's Patron, Admiral Lord West, has previously documented the present world's trouble-spots, with a burgeoningly affluent and belligerent China, mischievous Russia, unstable North Korea and a perennially chaotic Middle East all potential sparks for flashpoints the world might very quickly regret. Another could be overreaction by the United States to emerging situations deemed not to be in its interests as it grapples with diminishing global hegemony, something it has enjoyed unopposed since the end of the cold war. The distinguished historian, and Defence UK Vice-President, Professor Andrew Roberts, has also argued persuasively – as only he can – how history should shape policy as indeed history shaped Churchill's attitudes and outlook. Britain's historic military ties with the United States, establishing us as America's number one global ally, should not prevent the UK from adopting a more regional outlook for defence as opposed to a global one. The USA and Britain will



remain for the foreseeable future chief protagonists in protecting the strategically vital North Atlantic, and not just the sea lanes but the seabed beneath.

However, what happens outside the sea lanes of the North Atlantic should America retreat from defence of the European mainland, as it speculates on so doing, if European nations – chiefly Germany – do not raise defence spending? In that eventuality, Britain, France and Germany must forge a new military relationship based on closer cooperation and interoperability across each other's defence assets. Not indeed unlike the close mutually beneficial relationship British and US forces enjoy today. An example of closer cooperation and interoperability might be French and German aircraft, say, flying from British carriers and British and German aircraft from French. The UK's decision to exit the European Union, really, should pose no impediment to closer military cooperation between Britain, France and Germany. A case of 'where there's a will'?

Maritime Security

As a maritime nation, it is submitted that future British defence policy should prioritise the Royal Navy as senior service. Deemed 30 to 40 frigates and destroyers light to perform the RN's roaming maritime role robustly, making up that shortfall should be at the apex of defence spending in the near term. Against that background, building the two new Queen Elizabeth Class aircraft carriers, HMS *Queen Elizabeth* and HMS *Prince of Wales*, both displacing 65,000 tons, was perhaps a direct consequence of the failure mentioned earlier to have a national debate about priorities, about 'global' versus 'regional'. Without the requisite supporting screen of frigates and destroyers to ward



An F-35B launches off the 'ski-jump' of HMS *Queen Elizabeth* in 2018

off incoming hostiles in a war at sea, large carriers are vulnerable. Britain's two flagship carriers could put to sea today only as part of a large US or NATO task force. Smaller 'designer' carriers modelled on Japan's new Izumo Class carrier (27,000 tons) – which Japan rather euphemistically calls 'helicopter destroyers' – but which can also pack a hefty punch with a full complement of 5 helicopters and up to 20 Lockheed-Martin F35Bs perhaps offered a less costly alternative. Reported wastage by the MOD of a purported GBP£6.7billion in purchasing equipment – if true – makes reform of defence procurement a huge priority for the UK. With a vibrant defence industry in Britain spearheaded by companies such as BAE Systems and Babcock, UK Governments need look no further than 'buying British' for defence hardware. Advocating a 'Buy British' message should, in this writer's view, become a priority for Defence UK.

It is difficult to be dogmatic about the future of NATO. Unquestionably the single instrument to have guaranteed peace in Europe since the end of World War 2, the United States under President Trump probably correctly asks Western Europe for a greater financial commitment towards NATO's upkeep. Problem is, if Germany and Russia are building pipelines under the Baltic to bring Russian natural gas to Germany, and Germany responds to US criticism of this with animadversions about interference in German sovereignty, and if Turkey (a NATO member state) continues flexing its military muscle in northern Syria and eastern Mediterranean, putting it at odds with fellow NATO Members, can we say the outlook for NATO is rosy? Better then for Britain, France and Germany to look tentatively at possible alternatives to NATO, whilst always keeping the Americans close and onside.

Concluding this analysis, it is submitted that aside from the Royal Navy, the UK's defence priorities should focus on the needs of a reduced but utterly mobile, resilient and rapidly deployable Army; enhanced cyber security; greater adoption of drones; and protection of vital communications assets in Space. A re-evaluation of the UK's defence capability from a 'global' to a 'regional' perspective is essential; otherwise we are at risk of preparing to fight the last war again and not the next one. ■

What's Round Goes Around – Producing Turnover: A Good Time to Invest in the UK Defence Industry

By Jock McCody

On 25 February 2020, the Prime Minister announced an Integrated Review of the UK Government's defence, security, foreign affairs and international development policies. The aim is to cover Britain's 'place in the world' following her departure from the European Union. It will collate the various requirements of several departments, so that a unified operational approach can be maintained across the whole of Government. The Government's claim is that this review will be far more comprehensive than those that have gone before and will result in Britain's defence forces being better structured to handle the perceived threats.

With a Prime Minister who has been quoted as saying 'there are no votes in defence', and with a very influential advisor who has been less than complimentary about the MOD and the defence industry in general, many defence observers and analysts have listened to the claims and are of the opinion that this review could become just another cost-cutting exercise, leaving Britain's armed forces even more emaciated than they are at present. That may indeed be the final result but there is nonetheless some justification for an in-depth review of the MOD's procurement procedures, and a positive outcome might be a ministry that is more dynamic and better suited to providing for the needs of the armed services. The Chilcot Report 2016 stated that: 'The MOD is good at identifying lessons but less good at learning from them.' Also, submissions to this review can claim with much justification that there is a case for more defence spending, not less. An integrated review cannot be considered complete until it has fully considered the effect of investment in defence on the UK's industrial base and the resultant spin off into commercial activity. It should also take note, throughout the whole review that, while our armed forces are the tip of the spear, our industrial base is the shaft that carries that tip to its target.

The 2015 Strategic Defence & Security Review (SDR) required the MOD to include the promotion of prosperity as one of its objectives: 'Seizing opportunities, harnessing innovation to strengthen our national security, and working with industry to ensure we have the capabilities and equipment that we need. Our economic and national security go hand-in-hand.' Consequently, Philip Dunne MP was asked by the Secretary of State for Defence to carry out a review of the contribution that defence makes to the prosperity of the United Kingdom.

The Dunne Report was published in July 2018, eight months after the publication of the UK's Industrial Strategy in November 2017. That Industrial Strategy suggested a plan to bring together the different elements of the UK's industrial base, particularly in the high tech areas, in order to promote prosperity. Dunne states that in 2015 no definition of prosperity was made but that by the time of his report the Treasury's Green Book, a set of procedures for judging the value of commercial contracts, had

in fact produced one but not one that provided clarity across defence! The definition referred to social value and social welfare or well-being. For the purposes of his review therefore, Dunne took that to mean 'the broad economic well-being of the United Kingdom and its people.' At the end of his report, Dunne listed 61 recommendations for the development of defence-industry interface, but of those he highlighted 6 as key. Those 6 key recommendations are taken as the subject headings below and will form the main discussion points of this article.

1. MOD should take the opportunity provided by Brexit to look again at procurement process and culture, including discussion of approach to major procurements during the transition phase

Dunne suggests that, when looking at commercial contracts, the MOD may have been a little over zealous in its interpretation of the EU's competition rules. Article 346 of the Lisbon Treaty gives exemption from those rules for military equipment and thus the Type 31 frigate contract, for instance, did not have to go out for tender to foreign companies. The 3 proposed Fleet Support Ships (FSS) however are classed as merchant vessels, will be listed on the merchant ship register and will be crewed by merchant seamen. This classification gives those vessels certain operational advantages over warships but based upon a pure interpretation of EU competition rules they will not be exempted under article 346 and thus the contract for their build must go out for international tender.

With UK's exit from the European Union on 31st. December 2019 and her release from the bulk of that union's treaty obligations on 31st. December 2020, article 346 no longer needs to apply and the MOD should be free to ensure that those ships are built in Britain, to the benefit of the UK industrial base. The release from article 346 frees up procurement potential right across defence and this should be fully capitalised to support British industry.

Sir John Parker's review, published in November 2016, for the proposed ship building strategy, mentioned a lack of pace from the MOD, when pursuing commercial contracts and the delivery of equipment to the military. A review of procurement procedures, in the wake of Brexit, should be used to ensure that the inertia which often seems to be inherent in large Government organisations and which may have become institutionalised in the MOD, is rooted out so that contracts do not get bogged down in process. That this has already started is apparent when considering the advancement of the Type 31 frigate contract, compared to that of the Type 26, but as will be seen from comment in the later points of this article, there is still some way to go.

2. Proposal for MOD to commission academic work on the UK tax take from Defence work

On 12 May 2020, the House of Commons Defence Select Committee held an on-line investigatory discussion on the subject of 'Defence Industrial Policy, Procurement and Prosperity'. It was chaired by Tobias Ellwood MP, chairman of the said committee, and had a panel to answer questions, made up of Professor Trevor Taylor of the Royal United Services Institute (RUSI), Francis Tusa, a defence analyst and editor of the monthly

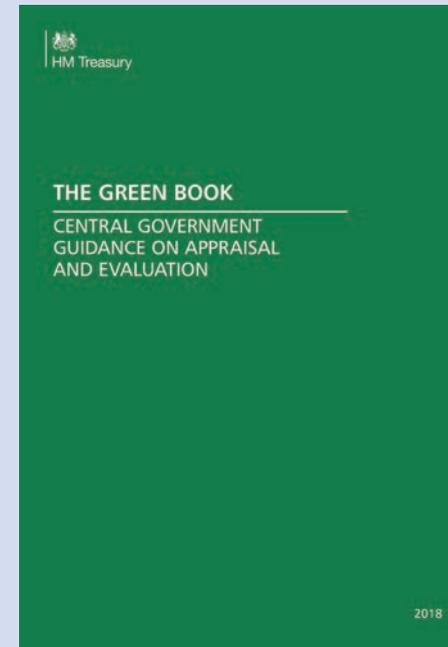


HMS Queen Elizabeth

newsletter *Defence Analysis*, and Lt Gen Sir Mark Poffley. Later in the discussion, those three panellists were replaced by Philip Dunne himself. Facing them, to pose the questions, was an array of people with interest in the defence establishment.

Several items of interest came out of that discussion, which warrant further attention, and one of them was the tax take from defence work. Francis Tusa said that he had calculated the immediate tax return from the Queen Elizabeth carrier contract, which did not include secondary taxation from the likes of the corner shop, etc. He then cut his findings in half and was left with a 20% return. Prof. Trevor Taylor of RUSI, later in the discussion, pointed out that their calculation showed a tax return of between 30% and 37%. Further to their statements, Andy Askham of Woodbank Marine, a Liverpool-based marine technical and project management consultancy, has stated in an article published in this journal that from commercial shipbuilding projects, 35% of the costs are remitted in tax to HMRC. Thus it can be deduced from those three statements that one third of the upfront costs of defence contracts, when they are pursued and carried out within the UK, are returned to the Treasury. This means, for instance, that the cost of £6bn often apportioned to the QE carrier project was actually only £4 billion when the initial tax returns are taken into account and, had the Government not procrastinated in their build, they would have been completed for the original estimate of about £3bn. Each carrier would then have cost, after the deduction of tax returns only £1bn each, which compares favourably with that of a large and sophisticated cruise liner. Further to that, if we look at the proposed budget of £250m for each of the Type 31 frigates, which many people claim is unrealistically low, with one third of the cost being returned to HMRC, upfront cost can climb to £375m and the project will still come in on budget.

Those returns do not include secondary taxation from, as Tusa mentions, the corner shop! VAT payments are due on most goods and services with the main levy being 20%. Presently much of that VAT is remitted to the EU, with the percentage being as high as 75% on some items. This is a direct tax on UK citizens when they buy goods or pay



HM Treasury Green Book 2018

for services and is a drain on the economy. More than 50% of goods imported into the UK come from outside the European Union (EU) and they are subject to EU defined import tariffs. 80% of this import duty is remitted to Brussels as a part of the UK's contribution to the EU (20% is retained as an administrative cost for collection, etc) and this is another tax on the UK populace, which again is taken out of the system. Post 31st December 2020, any import tariff on goods and possibly services, from both outside and inside the EU, can be tailored exclusively and specifically to UK requirements, and will remain in the British economy to help produce turnover and prosperity.

Primary and secondary tax returns to the Treasury are not the end of the benefits gained from investing in defence. The defence industry is generally hi-tech. The skills which that industry requires and develops in the working population does not all stay in defence. People move on and take those skills with them. One could consider this a form of vocational adult education which benefits everybody. They migrate to other industries and help to develop them, which again produces a tax return for the treasury. Many of the companies that accept defence contracts also work in the civilian sector and that defence work helps them to sustain the skills base which they then use to attract commercial work; again, a tax return. Further to that there are the export deals that those companies will attract, for both defence and pure civilian contracts, which will produce another tax return, as well as an injection of foreign currency into the UK economy; but more of that in section 3 below. With all of these people working, they are not being supported by the welfare budget, resulting in less need of treasury support for that Government department.

The message of returns to HMRC from expenditure within the UK is of course recognised by the treasury and in fact, their Green Book states that when considering the approval of Government contracts, the net value (or cost) must be taken into account. To this end I have been advised that the major defence contractors provide an estimate of tax returns as part of their submissions for Government contracts. This information can inform fairly accurately on the returns from Primary taxation (after all, those firms deduct much of the tax from the work force under PAYE), and the VAT collected from their dealings with suppliers, etc, but it can only be a rough assessment of what comes from secondary taxation and other benefits to society as a whole. The information is sent to Defence Equipment & Support (DE&S) at Bristol (a department of the MOD), who then send it on to HMRC. However, I understand DE&S are grossly under resourced

and at times lack the dynamism required to keep up with commercial requirements. Also, the general feeling of the panel answering questions at the Defence Committee discussion in May was that, when considering the funding of defence contracts, not enough emphasis was being placed upon tax returns to the treasury and the benefit to UK society as a whole.

That our continental neighbours have appreciated these benefits and act to fully incorporate them into their defence procurement strategy, was highlighted by Francis Tusa who stated that it is not difficult to calculate the returns and benefits that accrue from defence spending, and that the French, Italians and Germans give it considerable weighting when deciding upon defence expenditure. He said that the difference between them and us is that ‘they do it’, while we only talk about it. To emphasis this point, President Macron of France is quoted as telling President Trump of the USA, that France would increase her defence spending in line with the NATO 2% minimum but that he (President Trump) should not think that they (the French) were going to spend that money supporting the American armaments industry. Therein lays the rub, if you buy your military equipment from abroad, none of the above-mentioned benefits feed back into ‘UK Plc’. The money has to be spent in this country, supporting our industry! It can be seen from the fore-going that the proposal for the MOD to commission an academic study on the tax take from defence work is extremely valid and that it is actually long overdue. This should be recognised by the present review and become one of their prime recommendations.

3. Need to seek greater co-ordination across MOD’s relationship with industry

While interviewing Guy Platten, the CEO of the UK Chamber of Shipping, defence writer Mark Lane realised that ‘Naval procurement doesn’t happen, and the Royal Navy doesn’t exist, in a vacuum; but they both have impacts beyond the military sphere.’

In the article that Mark Lane wrote following that interview, he pointed out that: ‘In 2008, a newly revived Cammell Laird on Merseyside won a Ministry of Defence contract to overhaul the Royal Fleet Auxiliary ship RFA Fort Rosalie and two years later it received a contract for the flight decks of the new aircraft carrier HMS *Queen Elizabeth*. Two years after that complete ship building returned to the yard with two car ferries.’ He quotes Platten thus: ‘Five years ago we weren’t building any commercial ships in the UK and now we are; in my opinion, part of that is due to things like the carrier programme, sustaining that background of skills. Programmes like that help to keep that skills base going and allow for some expansion. What they are doing at Cammell Laird and what they are doing elsewhere are examples of where we haven’t quite lost those core skills. What we need is a sustainable, over all maritime offering; which, to me, does also include an element of shipbuilding.’

Lane also quotes from the Engineering Employers Federation (now renamed Make UK) guide to the Successor submarine programme: ‘The companies that form part of the Successor programme supply chain, both large and small, will also be able to capitalise on the advanced technologies, skills and capabilities they develop as part of the programmes as they seek to grow their businesses across a range of industry sectors.’

The above mentioned article highlights just one aspect of the skills base that military contracts help to sustain and which spill over into the commercial sector. Without such contracts, skills fade and eventually disappear, making further military procurement extremely expensive. As an example consider the Astute submarine programme at Barrow. BAE had not built a submarine there for 10 years, the skills base had withered and expensive assistance had to be brought in to keep the programme on track. Also do not forget that the MOD recently paid £635million for five Batch 2 Offshore Patrol Vessels, that the navy did not really need, at a cost three times that of what it should have been, just to keep that skill base alive on the Clyde, so that later they could build the Type 26 frigates!

In the defence Select Committee discussion on 12th. May, the effect of Sir John Parker’s report for the ship building strategy was mentioned. Lt Gen Poffley commented that we didn’t have a ship building strategy, we had a ‘warship building strategy’ and that the contract for the Type 31 frigates was an attempt to follow that strategy and adopt Sir John’s recommendations. When asked if the MOD actually had a strategy for interfacing with industry, he said not unless there was one sculling around in a cupboard somewhere, that he was unaware of; and this from a man who was the Commander of Force Development and Capability in 2014-2015, Deputy Chief of the General Staff in 2015, and Deputy Chief of Staff (Military Capability) 2016-2018. So we can assume that he knows what he is talking about!

An over-riding requirement of military procurement, is that, regardless of from where equipment is purchased, it must be fit for purpose and provide our front line forces with the kit to do the job. However, once that requirement has been met, it is important to ensure that, as far as possible, our home industrial base is supported and nurtured. I draw your attention back to the tip and shaft analogy, in the last line of this article’s 2nd paragraph. Without industrial back-up, our armed forces will be much reduced in capability, our foreign policy options will at times be hampered and, without that sovereign capability, Government room for manoeuvre in the international theatre will be reduced. As an example of what that can mean, consider the recent situation, where the German Government, because they disagreed with the way Saudi Arabia was pursuing the war in Yemen, stopped the UK from selling Euro fighter Typhoons to that country. They were able to do this because Typhoon is not a totally UK sovereign product.

Another example of how a hollowed out industrial base can adversely affect military operations was relayed to me a number of years ago. I was told that when the UK embarked upon the 2003 Iraq war, the MOD placed an order for 50 Raptor aerial reconnaissance pods, which were to be carried by the RAF’s Tornado GR4 aircraft. The company receiving the order realised that they could not comply with the very tight time frame but accepted the contract anyway. Eventually a reduced number of Raptors did make it into service in time to be used during that war. This resulted from a policy of ‘Just in Time’ delivery, where a company is expected to retain a capability but not produce, at least not in any great volume, until the call comes through from the MOD, who will want the goods yesterday! Maintaining that industrial capability, without production and the resulting revenue flow is very expensive, it is corrosive on a company’s skills base, and in the commercial world it is a nonsense.

That a proper strategy is needed to fully interface the military with industry is realised by just about everybody involved. You only have to look at the outcomes of the 2015 Defence Review, the Chilcot report, the Government's industrial strategy, Sir John Parker's report, the Dunne report and the various findings of the select defence committee, to realise that. Additionally, there has been much comment over the years of a mismatch between the requirements of various elements within the defence establishment and indeed in the interface of Government departments that influence and impinge upon that establishment. That moves are in place to correct some of these weaknesses is apparent, but that afore mentioned inertia of large organisations is still in play, and the moves appear to be a drift rather than a drive!

If this review results in the bringing together of those different requirements and gets the interested parties working cohesively, even if it requires the metaphoric banging together of a few heads, it will have done this country a great service. The development of a proper working strategy between the MOD, industry and the other Government departments that are either directly or indirectly involved, should be one of its main aims. If however, it really is a cost cutting exercise, then it will fail the nation and we will all be poorer and weaker for its passing.

4. Incentivise MOD's high-profile training institutions to market their paid services more widely

Britain's armed forces are respected around the world. Not for their size, power and reach, which in many respects is now lacking, but for their professionalism. Two years ago, I was taken on a conducted tour of HMS *Sultan*, the Royal Navy's engineering training establishment at Gosport, Hampshire. What an excellent and impressive facility. Plenty of space, filled with first class equipment, used by first class instructors, to train young people, many of whom become first class engineers and artificers. The only down side was that it was mostly empty of students! With the ever reducing size of our armed forces, facilities like HMS *Sultan* appear too large to be justified on cost grounds. With training establishments such as HMS *Sultan* however, cost cannot be the only consideration for their existence. The military are basically a contingency service to protect us all and our way of life. They are the fire engine that we hope we will never need and hardly ever do, but we are loath to get rid of it, just in case. HMS *Sultan*, and training establishments like it, may be under-utilised at the moment, but when the call comes to again expand our military foot print, as I believe it eventually will, they will repay the investment in them, with dividend. Having to train and expand the armed forces in the face of a rapidly growing or, worse still, an immediate military threat is bad enough but if first you have to re-establish the training facilities and train the instructors, that task becomes so much more difficult and time consuming. Time that you might not have. Even with the reduced size of our armed forces it is imperative that the MOD's training establishments and their teaching staff are retained. It is they that will allow for a resurgence when that need arrives.

MOD establishments already train many overseas military students. This brings in foreign revenue and helps to sustain those teaching venues. It also bonds alliances; a foreign policy benefit. Philip Dunne is correct in suggesting that the MOD should market their

services more widely. This will help to keep them fully operational and able to react positively should the call come again to support a greater UK military force. There is potential, however, to market them within the UK and in civilian circles. The MOD already encourage and support STEM (Science, Technology, Engineering and Mathematics) courses through our colleges and universities. This support could be further expanded by encouraging some of those students, who may have no aspiration of following a military career, to undertake a short (or prolonged) training course at an MOD establishment. These young people would utilise otherwise unused capacity, see a different side of life, and would develop people as well as technical skills, that they might not otherwise acquire from purely civilian establishments. Those skills will accompany them in their future endeavours and generally benefit the country and industry as a whole.

In addition to those already embarked on an academic and technical training process, the military recruit young people who have no formal qualification and in fact some that are almost illiterate. Without support and direction, many of these would become the lost souls within our society, dependant upon social handouts. A training course in a military establishment could be the lifeline that these young people need. They need not have to follow the course with military service, although some might choose to do so, but the skills they gain, like those acquired by the more academically adept students mentioned above, will help them to develop into well-rounded citizens, with something to offer industry and society in return for the investment in their further education. An investment that can be justified under the requirement for social value and social welfare or well-being, in the Treasury's green book.

Occasionally a call is heard to re-establish some form of national service because it is thought that our young people would benefit from that. Many shy away from that suggestion however and the military themselves are wary of having their professional force watered down by a mass of people who have little interest in the service. For pure training purposes however, a requirement to undertake some form of instruction at a military establishment could be written into the conditions for receiving certain welfare payments. Above all, what military type training gives the student, which is often lacking from civilian establishments, is personal structure, self-discipline and a certain amount of self-esteem. That can only benefit the individual, the business they work in and may eventually run, and by default, the whole of industry and society in general.

5. Look again with Her Majesty's Treasury (HMT) and Her Majesty's Revenue & Customs (HMRC) at reducing the burden of VAT administration

VAT is not the only tax issue that needs looking at with HMT and HMRC. The tax return in its entirety needs to be researched and the amounts calculated should be at the forefront when assessing the cost of military procurement projects. Thus, in accordance with Net Value, laid out in the Treasury green book, the true cost of a programme is the one that should be used.

There are other issues between the three departments, MOD, HMT and HMRC, that also need to be looked at, because it is apparent that there is a mismatch in how they relate to each other, particularly between the MOD and the treasury. In fact, the review may

find that many of the failings laid at the MOD's door can in fact be traced back to the treasury and their operating procedures.

A couple of years ago, someone who had previously been seconded from the army to work with the MOD on a procurement project, told me that he became frustrated, with what Dunne has described as a lack of pace. He further said that he was not alone in feeling that way as many military personnel, who like him had been tasked to work with that department, had felt similarly dissatisfied. When he asked why the department proceeded at such a slow pace and seemed exceedingly, even excessively, cautious in how they progressed with a project, he was told that experience had taught them that it was the best way to proceed. I suspect that a large part of that caution and the afore mentioned inertia, stems from the way the treasury has, for its own accounting purposes, at times withheld funds when they are needed to persecute a certain financial requirement in a large commercial contract.

In his report for the ship building strategy, Sir John Parker suggested that when a large building contract was signed, the money for that project should be ring fenced, so that it is immediately available when require. Many of those contracts (possibly all of them), require a percentage of the final sum to be handed over when certain waypoints in the build programme are reached. If that money is not available, the project will stall, slow down and may even stop until the cash is handed over, and the costs will increase as the time frame is stretched out. Dunne has said that 'landing and spend within end of financial year can lead to inefficient use of resources. Some flexibility over year-end processes for large individual capital procurements might reap efficiencies.' Build projects do not follow the financial year and artificial accounting restrictions, just to keep the books straight, when they halt the flow of money, will invariably induce cost and time over-runs, for which the MOD will get the blame, but the reality is that it is the Treasury's fault.

If this review really is integrated, in that it looks across departments, then it should analyse in depth, the interface between the MOD and the treasury.

6. MOD to continue public information on its regional economic impact

Within our society there are many detractors of defence. They vary from the pure pacifist element to those who think that money spent on arms is money lost and that it should be spent elsewhere. There seems to be a common perception that the defence budget is huge. Whenever the cost of a particular project is made public, the cries always go out, 'How many schools, hospitals, doctors, nurses, policemen, etc, could we purchase with that wasted money?' In fact the defence budget is only one quarter of the welfare budget, one third of the NHS budget and it is only two thirds the size of the education budget. The people in those other services, however, especially the two largest, are never slow to shout about how short of cash they are and the media are very quick to pick up their call. By comparison the financial plight of the armed services is very muted and is usually put down to inefficiencies within the MOD; often without justification. As previously mentioned the defence industry tends to be hi tech. It is an innovator, a technological power house within our industrial base and as such an initiator of further industrial and business activity, that produces turnover beyond the initial outlay from HM Treasury.

Dunne is right to say that the MOD should publicise information on the regional impact of its activities – how, for instance, it directly employs 100,000 people in this country, with the spin-off supporting many more. The people working on the submarines at Barrow, the shipyard workers on the Clyde and at Rosyth, those within BAE and many other companies directly involved in the production of military equipment, all know it, but what about the companies that supply the toilet paper in the toilets of those establishments? They are all in the defence industry supply chain and they should be made aware of it. It is time for the MOD to start blowing its own trumpet and properly informing the public of the facts. When the facts are widely known, then there may turn out to be 'votes in defence' after all!

Conclusion

The Government's Integrated Review, crossing as it does a variety of Government departments, merging their different requirements and getting them working as one team, may be long overdue. In the past, defence reviews have appeared to be narrow in that they have concentrated primarily on defence procurement, manpower and the tasks the military might be called upon to undertake. How the MOD have related to industry in general and the restrictions the treasury put upon the working relationship between the two, seems to have only lightly been touched upon. The current review, covering the Foreign Office, in which the former Department for International Development has recently merged, as well as the MOD, is set to run parallel to the Government's spending review and will conclude at about the same time. Let us hope that it is able to dig deeply into all the issues mentioned above and can come out with a set of rulings that enable the MOD to develop a proper working relationship with the UK defence industry. And it needs a strategy for so doing.

This strategy, which must have the Treasury as one of its main supporters, should ensure that wherever possible military equipment is sourced from within the UK, using the UK supply chain and employing British workers. Evidence of the returns to the UK Exchequer, from such a strategy, are clear to those who wish to look. The spill-over to commercial activity can be seen as considerable and the social benefits huge. When all of this is taken together it will be seen that the net cost of such a process can be no more expensive and in many cases (probably most) less so, than purchasing equivalent equipment from abroad; from which there is no, or very little return to the Treasury.

It can also be seen from the foregoing that defence projects are not as expensive as the upfront costs suggest and further to that, the money pumped into the UK defence industry is a great producer of turnover, which stimulates further growth, prosperity and well-being. As the UK economy recovers from Covid-19, it will act as a metaphoric dynamo that get the lights glowing again.

There is one final point and word of caution; we do not have a crystal ball. Do not try to define too tightly where the threats lie because we will not know them in their entirety. Operational flexibility is a potent weapon in its own right but ensuring that we have that will carry a cost, which we must pay. It has been said many times that the next fight will always be the one we don't expect. So remember, when that fight comes, the votes for defence will be the only ones that matter! ■

Britain's Fall: Defence Cuts and the Decline of a Great Power

By Dr Arrigo Velicogna



Often, the years between London's official decision to withdraw from 'east of Suez' in 1967 and the 'sudden' invasion of British sovereign territory in 1982 are seen as the inevitable decline of a former superpower. This view merely connects a shrinking British economy with shrinking British military expenses and overseas commitments. If such a view is adopted, the decision to retreat from 'east of Suez' and the consequent 'collapse' of British armed forces are seen as the inevitable result of economic trend. This also carries the powerful assumption that military expenses and overseas commitments are merely costly secondary appendages of a modern state. They could be afforded only when money is available.

On the other hand a completely different argument could be advanced. That Britain's military decline was neither inevitable nor the direct product of a collapsing economy. Instead it was the product of political decisions that interacted with economic, political, and military trends. Furthermore these decisions, rather than meekly bowing to the inevitable, instead created more crises and further weakened the United Kingdom's international position, its economy, and its security. Instead of following the common narrative of focusing on Harold Wilson's decision to withdraw from 'east of Suez', this article will focus on the debacle of the TSR-2 programme, the Chieftain-Challenger saga and John Nott's 1981 Defence Review, arguing that these crises were the product of cuts and mismanagement and that defence bungling had a direct effect on Britain's economy.

1945-1967 – A Reappraisal

Before focusing on the three case studies, a brief overview of the situation at the start of the period is necessary. While the 'conventional' view of Britain's imperial fall is oversimplistic, it contains certain elements of truth. While the United Kingdom won the Second World War, it did that at an enormous price, in blood and gold. Despite the victory and the recovery of all the parts of the Empire lost to the Axis, mainly Japan, London was in no position to maintain it in its 1945 form. From an economic point of view, while Churchill is often considered Britain's wartime saviour, his rather unwise squandering of British hard currency in the first year of his administration, and his often misguided military adventures bankrupted the Kingdom.¹ From a political standpoint, processes like Indian independence had already been set in motion before September 1939. The Indian subcontinent departure from the Empire massively reduced available resources, both economic and military. The staunch Army was now part of the Republics of India and Pakistan. The economic and political situation was

compounded by the fact that British homeland manpower had run dry. British blood had been spent in rivers to stop Germany, Japan, and Italy. By 1944 the British Army had to disband divisions to keep replacements flowing to frontline units. By 1945 the Empire was indeed weak. Cuts and reductions had to be made. Yet Britain did not withdraw from the 'east of Suez' in 1945; the decision was announced in 1968.²

The idea that defence and security are 'optional' items in a country ledger is not as obvious as it has been claimed. While economics are important, the global context is important too. September 1945 was not the dawn of a safe and stable world. Threats did not evaporate overnight; if anything the new world became less stable and more threatening. While British Armed Forces suffered massive cuts in 1945 and 1946, Britain's post-1945 story is also one of increasing threats and increasing commitments. By the end of 1967 British troops had helped to stop Kim Il Sung's invasion of South Korea and Chairman Mao's following adventure in the Korean peninsula. British and Commonwealth troops allowed the creation of modern Malaysia, defeating the local communist insurgency. They quelled the Mau Mau insurgency in Kenya. They landed in Egypt in the ultimately confusing and politically unsuccessful operation Musketeer. They tried to keep order and provide an orderly transition for mandate to independence in Palestine. They supported Kuwait against a threatened Iraqi invasion. They defeated Indonesia during the 'Konfrontasi'. Finally, they helped to build NATO deterrence in Germany and at sea. This in a country where meat was still rationed in 1950. For a collapsing empire, the United Kingdom was a busy and successful one.

The answer lay in the combination of global context and wartime legacies. Chancellor Hitler could have laid a posthumous claim to have bankrupted the British Empire but he also left it with a massive industrial capacity. Coupled with US aid, Britain's defence industry played a critical role in the post war economic recovery. An unstable world created a constant appetite for British tanks, warships, and warplanes. One should just look at the mural at the RAF Museum displaying the roundels of all Spitfire operators to realise that. Britain could have been bankrupted of gold and blood, but in 1945 it had a sound industrial base supported by talented minds. This base played an unsung but extremely important role not only in keeping the country afloat but in paving its eventual full recovery. While British troops were an important pillar of NATO, British tanks, guns, and jets were an even more important one.

The period between 1946 and 1967 saw several critical British export successes. The Centurion universal tank, the last wartime tank project, had become the mainstay of NATO troops. Centurion tanks not only formed the backbone of the armies of Canada, Denmark and the Netherlands, but were exported to Austria, Sweden, Switzerland, Egypt, Jordan, Israel, Australia, New Zealand, South Africa, India, Iraq and Kuwait. The Centurion programme itself was a model of NATO unity, with the US funding tank production to provide NATO and other allied nations with tanks that the relatively limited US tank production could not source. In return it kept the Royal Ordnance Factory viable and provided a significant source of revenue for London. Not only tanks, but also aircraft. The Spitfire's legend continued even after 1945, with its Griffon powered variants. On the heels of the Spitfire came Sea Furies, and the first post war jets, Vampires and Venoms.³ Canberra and Hunters followed. Any aviation enthusiast will recognise the

elegant silhouette of the Hawker Hunter, for a while almost the standard NATO fighter bomber aircraft. NATO Hunters flew for Belgium, Denmark, and the Netherlands. Countless Hunters flew for non NATO countries as well. Military exports provided Britain a lifeline that allowed a battered and bombed country to recover. Defence spending was not just a desperate effort to save a falling empire, it was the lifeline of a rebuilding country.

Yet these export successes depended on a healthy defence sector in Britain in the first place, and in the idea that ‘shopping’ in Britain ensured not only quality equipment but also interoperability with a strong and present ally.⁴

Of course there were also sore spots. Wilson’s 1968 decision could have been unfortunate and premature, but it was taken against a deteriorating background. British forces were locked in an increasingly bloody campaign in Aden to protect this key base from both Soviet-sponsored and local threats. The Aden territory was left to its own devices in 1967. This meant the loss of the critical military hub in the region. Cyprus was the scene of a bloody and ultimately successful attempt to remove British control from the island. The undeclared war against Indonesia had been won, but at a significant cost in losses, and, critically, treasure. Even if usually neglected in cold war histories, the ‘Konfrontasi’ saw one of the largest British military commitments to contingency operations, including the deployment of V-Force Vulcan bombers.⁵

Wilson’s Government was shying away from combat commitments. To its credit it did that at least after having secured Borneo and leaving both an alliance, the Five Power Treaty, and Australian troops. From a defence perspective, London’s commitment to build and maintain an independent nuclear deterrent was also placing a strain on defence budgets and personnel and that was creating competition for resources and priorities.

The Death of the Aerospace Industry

Intractably enmeshed with Wilson’s ‘east of Suez’ announcement is the largest failure of Britain’s aerospace industry, the TSR-2 programme. The programme was conceived in 1957 as an answer to the General Operational Requirement 339. GOR 339 envisioned a new fast bomber and reconnaissance ‘light’ bomber (Tactical Strike Reconnaissance, TSR) to replace the new English Electric Canberra. Different from the Canberra in that it was intended to be supersonic at both high and low altitude. Some form of STOL or VTOL capability was also mooted, as typical for the period. GOR 339’s first obstacle was Secretary of State for Defence Duncan Sandys’ 1957 White Paper. In an extremely controversial statement, the White Paper claimed the era of manned aircraft had come to an end, and guided missiles would soon become the only



Harold Wilson (later Lord Wilson of Rievaulx), British Prime Minister 1964-1970 and 1974-1976

player in the air. While the period was dominated by several forms of ‘missilite’, Duncan Sandys’ approach was merely science fiction. Payload, reliability, guidance, and overall capabilities of available missiles were not up to the task, and there was no certitude that the ambitious missile programs of the period would have ever come to fruition. Defence Chiefs vehemently opposed the 1957 White Paper, but Sandys was able to curtail British aircraft developments. It was not the last instance where unproven technology was hailed as a solution to all tactical, operational, and strategic problems by people who had no real competence. Only the development of the Lightning fighter and the TSR-2 and Buccaneer bombers were allowed to proceed.

Raw cost and politics were also important issues. The TSR-2 was an ambitious aircraft. It was something Britain could technically do, but at a significant cost. High and low altitude supersonic speeds, Terrain Following Radar, nuclear and conventional capabilities, and the ability to perform reconnaissance, both photographic and electronic, all contributed to a cutting edge but extremely expensive aircraft. It was also an aircraft designed to fill different roles. While never explicitly stated in GOR 339, the TSR-2 should have been capable by speed and range to replace the V-Force bombers, including the AVRO Vulcan. Government industrial mismanagement also increased costs. The TSR-2 was to spearhead an effort to reorganise the British aerospace industry by cutting the number of companies. Each proposal was to be submitted by at least two companies. The idea was to encourage mergers. A company, British Aircraft Company (BAC), was specifically created for the project by Vickers and English Electric. Yet BAC had to work also with the Air Ministry without anyone being a primary contractor or exercising global overseeing duties. This further increased costs.

Finally, there was political opposition to the programme. The Chief of Defence Staff, Admiral Lord Mountbatten, was a keen supporter of the Royal Navy Buccaneer programme and saw the TSR-2’s increasing costs as a threat to it. Finally, the Ministry of Defence Chief Scientific Advisor, Sir Solly Zuckerman, opposed the programme on the grounds that the British aircraft designs were inferior to the American counterpart. How a zoologist had become an authority on aircraft development is one of those mysteries that punctuated British defence politics. The F-105 and, later on, the F-4 Phantom II were proposed as alternatives. While both were excellent aircraft neither were really in the same league as the TSR-2. Only in 1963, when the US F-111 finally appeared, was there a broadly comparable aircraft across the Atlantic. The General Dynamics F-111 provided the opponents of the TSR-2 with a deadly dagger. In 1963 the Royal Australian Air Force decided to acquire them, thus terminating its interest in the TSR programme. The F-111 appeared cheaper, the development costs were to be paid by someone else, and pleased Zuckerman. Prime Minister Wilson decided to cancel the TSR programme on 1st April 1965 and replace it with the F-111K (K for Kingdom). The date must have been significant because in 1968 the F-111K programme was cancelled before the first two aircraft were ready.

That twin cancellation not only made operations ‘east of Suez’ untenable in a few years, the TSR-2 having replaced the proposed CVA carriers, the F-111K having replaced the TSR-2, but basically upset the whole aerospace industry. The TSR-2 was the flagship programme. With its cancellation, and the further cancellation of more vague



Chieftain tank on exercise

Anglo-French joint long range strike aircraft, UK industries found themselves without anything to develop and sell. The next RAF aircraft, the F-4K and M Phantom II, were not to be produced or built in the UK but in the US.

A Saga of Chieftain and Challengers

Defining the Chieftain tank programme a failure is, by all means, a stretch. Not only, when entering service in 1965, was the Chieftain was the best NATO tank, and possibly the best in the world, but it generated a reasonable amount of foreign sales, helping support the whole UK defence sector. Yet the programme could have been more successful and its legacy created severe strain on the UK tank industry. It clearly illustrates that the relationship between politics and defence industry exists both ways.

Nearly 4,500 Centurion tanks had been produced, with more than half being exported. Estimates point to a return of £200million, plus as much as three times that in spares and ammunition. This for a tank that required £5million to design and develop.⁶ Against this the Chieftain tank, according to Treasury estimates, was tagged at £15.5million in 1966 and more than £20million in 1968.⁷ Exports were seen as a good way to recoup R&D costs and to bring a strong return. But, as a result of British Government decisions, the tank export market was different that it had been in the early 1950s. Several NATO countries formed the FINABEL (France, Italy, Netherlands, Allemagne, BELgium) group. Its aim was to produce a new standard tank for the alliance.⁸ The FINABEL projects had two pillars, one was to produce a light, manoeuvrable, and inexpensive tank, equipped with a 105mm gun firing HEAT rounds. The other was to reduce dependence on the UK and, to a lesser extent, US manufacturing and to develop member nations' industries.⁹ London neither engaged with FINABEL nor understood its objective. It merely assumed that European nations would have simply replaced Centurions with Chieftains when the latter was available.



The Challenger 2 main battle tank

The Government also shot the programme in its proverbial foot when it insisted, late in the development stage, in powering the new tank with a multi-fuel engine, a NATO dream that was technically unfeasible at the time. This did not help with the soaring development costs and, more ominously, delivered a tank with an unreliable engine. Warranted or not, the Chieftain acquired a notorious reputation of being a 'junk hulk'.

On the other side of the channel, FINABEL efforts produced not one, but two, tanks, the French AMX30 and the German Leopard 1. Both tanks were the polar opposite to the Chieftain.¹⁰ Both were cheaper to procure and maintain. According to a contemporary article appearing in the *Daily Mail*, a Chieftain cost £130k, a Leopard 1 £110k, and the AMX30 a mere £100k.¹¹ The prices were off, and the Chieftain was offered for a mere £90k but it failed to secure any European orders. Germany, the Netherlands and Belgium turned the tank down. National interests, a poor reputation, and some misplaced beliefs on the future of armoured warfare, trumped the Chieftain's fearsome 120mm gun, its armour, and its excellent fire controls.¹²

Overseas markets proved an even more complicated topic. The Chieftain had been developed with input from the Israeli Army, especially from General Israel Tal, the commander of its armoured corps. An order for 300 tanks, 100 to be produced in the UK and the rest under license in Israel was proposed. Two prototypes were actually sent to Israel as part of Exercise ADULATE in 1967. Two tanks were loaned again to Israel as part of Exercise HEADSHOT 2, and two upgraded ones as part of Exercise RISSOLE 1. The project continued in 1968, when two more tanks, further upgraded based on Israeli suggestions, were sent there as part of Exercise RISSOLE 2. On 17 October the IDF proposed to buy 250 Chieftains and another 250 Centurions. The Israeli order received agreement in Principle on 13 November of the same year. IDF crews were sent to UK for training expecting deliveries to start in 1969. Then after Kuwaiti objection, the

Labour Government decided to use the contract as a bargaining tool for a negotiated Middle East settlement. As noble as the intent may have been, it was seen in Tel Aviv as duplicity. On one hand London was negotiating and even asking for IDF expertise on desert operations to improve the tank (Exercise BLENNEHIM), on the other London was dragging and looking less and less likely to honour the sale. In late 1969 the deal collapsed opening a period of distrust between the two Governments.

The failure of the Israeli sale made the future of Royal Ordnance Factory Leeds bleak for a while. The Chieftain had a bad reputation and no foreign customers. Libya had been interested in the tank, and in early 1969 a contract for 188 tanks had been signed, but Qadhafi's coup voided it. The Colonel was interested in the tank, he had even dealt with it while attending courses at Bovington Camp, but London was wary of his political stances, despite an advance payment of £9.5million. Other potential buyers came in, like Pakistan that wanted to buy 300 tanks, but, discouraged by the Chieftain's poor operational reliability and Britain's unwillingness to antagonise India, backed off. The real breakthrough came from Iran, courtesy of General Tal. During the Shah's reign, the IDF and the Imperial Iranian Army had close ties, and General Tal persuaded his Iranian counterparts of the Chieftain's virtue. The Shah ordered 707 tanks in 1971. Kuwait followed suit in the same year. The Shah's order was initially only slightly smaller than the total production for the British military. More tanks were ordered in following years. At last ROF Leeds' future seemed assured.

It was not to be. Not only did the big Iranian order basically force ROF Leeds to turn down or delay other potential buyers, it also created a series of unintended consequences that, possibly, led to its demise.¹³

While the Chieftain was a good tank, despite its L60 engine, developments in the Soviet Union soon started to erode its advantage. Discussions about its successor started early but the Government was clearly unwilling to start a serious replacement programme. No General Staff Requirement was formulated at the time. The only serious effort was a joint UK-FRG project. This effort only produced a mock 'jagdchieftain'. Nothing came from that. The programme was terminated in 1977 leaving the British Army without a Chieftain replacement and Leeds without anything after the Iranian order.

At the same time the Government was also under parliamentary scrutiny for the L60 debacle. A formal inquiry was held in 1978. The Government's response was to announce a new tank program, MBT-80. The new programme was supposed to be cutting edge, and extremely well supported, and it was given massive publicity. On the other hand ROF Leeds was working on something new. The Shah and his generals tinkered with their Chieftain and came out with a proposal to solve the big issue, the L60 engine. A new, and more powerful, diesel engine was to be substituted with only small modification to the rear half of the hull. That was the Shir 1 tank. Not yet satisfied with that, the Iranians also worked with ROF to mate the new hull with a newer turret incorporating the advanced Chobam Armour that was not even in service in British Army tanks.¹⁴ That was the Shir 2, ordered in 1974. London's decision to proceed with it was unsound on several grounds, including the fact that it was seen by Washington as a violation of existing agreements with London. But the Shir 2 fulfilled both an immediate economic need, keeping ROF Leeds afloat, and provided a way to 'buttress' the MBT-80.

All the images shown to the press and to the Army, including the infamous 1978 brochure, were either images of Shir 2 prototypes or Shir 2 drawing sketches. The MBT80 was a paper panzer of the worst kind. Not only was it underfunded, if funded at all, but it never left the drawing board.¹⁵ In summary, the Government was using the Shir programme to cover for its lack of support for the MBT-80 hoax and to keep ROF Leeds afloat. This worked until 1979 when the Shah was ousted by a group of radical extremist Islamic clerics that had very little time for London. Now years of musical chairs with tank developments ended abruptly.

The British Army had an ageing tank in need of an upgrade or a replacement. ROF had a large order of upgraded Chieftans (Shir 1) either waiting delivery or partially completed. ROF Leeds' industrial future had been staked on the Shir 2, and now the buyer was a hostile country. Faced with a crisis, a new British Government, Margaret Thatcher and her Conservative Party which had just replaced James Callaghan and his Labour Government, basically muddled things even more, taking the worst possible short cut. Soundly the Shir 1 tanks were sold to Jordan and its armour officer King, Hussein.¹⁶ The Shir 2 was taken over by the British Army and after an essentially cosmetic rework unveiled as the new Challenger I tank. While the Challenger solved the Chieftain's main issues, it also introduced several new ones. Even worse it was ordered in insufficient numbers. Only tanks sufficient to equip four regiments deployed in Germany were procured. The Chieftain was to soldier on with the rest of the army. The MBT-80 was 'kept' alive, as a final replacement for both tanks. To add insult to injury, the Chieftain had to be upgraded. In 1981 Saddam Hussein invited British Army officers to examine captured and knocked out Iranian Chieftains. The investigation established the need to improve armour and firepower. The improvements resulted in the Mk11 'Stillbrew' Chieftain that was the equal, if not marginally superior, to the Challenger.

Margaret Thatcher's tank fudging had not only saddled the British Army with an inferior tank, but also terminally crippled Britain's tank industry. 'The decision to hastily procure the FV4030/3-based MBT [Challenger 1] without major modification would prove to be shortsighted in later years.'¹⁷ The procurement of the Challenger allowed the Government to quietly side-line and then kill MBT-80. While ROF Leeds was saved in the short term, the whole tank industry was without several key programs (optics, electronics, gunnery), falling behind what was done in other allied and hostile countries. When a new British Army tank finally appeared, the Challenger 2, it was a tank with French, American, German and Canadian key components.

As Dr Newsome has stated, buying American M1A1s or German Leopard 2s as temporary stop gaps, while really focusing resources on the MBT-80 or the future Challenger 2, would have been the wiser decision.¹⁸

The tanks saga clearly shows the issues with short-sighted decisions. Problems were merely delayed rather than solved. The Chieftain was indeed a solid tank, possibly an excellent one, but the Government decision to force a specific engine on the designers created serious issues. In turn these issues made the tank less attractive for export. Sales were also hampered by politics. Some, like Qadhafi's coup, were outside London's control, others were not, like the attempt to use the Israel sale as a short-term bargaining tool. Furthermore, the lack of sustained interest in tank development

created a situation where ROF Leeds needed export orders to survive (and avoid an untimely closure), but it had neither the capacity nor the items to really fulfil them. India was basically told to look somewhere else (and ended up shopping in Moscow) to preserve the Iranian contract, but in the end, Iran became an hostile power in the middle of the process. This in turn left ROF Leeds in the short term with a huge unfulfilled order and had to be bailed out by King Hussein. On top of that the Government seized the Shir 2, whose development had been paid for by the Shah, to save the MBT-80 project. In the long term these decisions left ROF with a half-baked design, the Shir 2, that was forced on the British Army merely to save ROF, only for it to be privatised in 1986/87. This also crippled the British tank industry. New Challenger I tanks were never exported, and only Oman bought 38 Challenger IIs.



'Iron Lady' Margaret Thatcher, Prime Minister 1979-1990: It was the Thatcher Government's defence cuts that led Argentine dictator General Galtieri to believe that Britain would not fight for the Falkland Islands

The 1981 Defence Review: The Tatars' Desert

Margaret Thatcher's Conservative Government's bungling did not stop with the Challengers. It was to take a momentous decision that was to plunge the United Kingdom straight over the edge into war. If the previous bungling had created economic crises and parliamentary storms, now it was the time for an existential crisis. The Prime Minister had promised a strong take on defence and had lofty goals for NATO spending and overall defence posture, but after taking power the lofty goals proved just smokescreens. It was a retelling of Edward Heath's approach to defence issues. Strong talk, but gross mismanagement. Despite promises to increase defence spending and reinforce NATO commitment, the 1981 Defence Review resulted only in reductions. On paper the review just re-established the usual commitment to the British Army of the Rhine and the protection of Atlantic Trade. In practice it was an exercise in cuts and sales.

British Army's BAOR was to lose one full armoured division, that would have to be relocated in Britain and converted into an infantry division. How an infantry division only partially mechanised was to cope with fully mechanised Soviet forces, and in a period when all NATO armies had completely mechanised frontline forces, it was left unsaid. As it was left unsaid how an aging tank fleet was to cope with a new generation of Soviet tanks. On the other side of the Iron Curtain, the Group of Soviet Forces Germany had finally resolved the engine issues that plagued its premier tank, the T-64.¹⁹ Not only improved and reliable, T-64Bs were deployed in scores, but a new tank, the T-80, was also entering service. Both were superior to the existing T-62 that was already closing the gap with the Chieftain.²⁰ These issues were not addressed except by the provision that the BAOR would have relied on more anti-tank missiles for ground defence.

The conversion of the 2nd Armoured Division alone would not have been critical if this was offset by increases in other areas. Instead Secretary Nott looked at other 'cost



Port Stanley, capital of the Falklands under Argentine military occupation, April 1982

effective' measures. The Royal Navy was the next target. With Wilson's abandonment of a global naval posture, and its implicit decision to scrap fleet carriers, the Navy had focused on defending Atlantic trade in case of global war, and provide deterrent patrols globally, but it had also been largely underfunded for this reduced mission. Capital ships expeditionary capable were not replaced by new designs, with the rationale that only escorts were needed for the NATO role. Only the new Invincible class, a flush deck cruiser with limited STOL / STOVL capabilities had been introduced into service, and the old fleet carrier HMS *Hermes* 'reconfigured' as one. Nott's axe hit the remaining expeditionary capability hard. The literally brand new HMS *Invincible* was slated for sale to Australia, and the aging HMS *Hermes* was to be transferred to India, a country that at the time was close with Moscow. Even worse, the core of the RN amphibious ability was to be scrapped. The conversion of HMS *Bulwark* to an anti-submarine helicopter carrier in 1979 had left only HMS *Fearless* and HMS *Intrepid* as amphibious assault-capable ships in the fleet.²¹ The two ships, HMS *Fearless* and HMS *Intrepid*, were to be scrapped without replacement. Furthermore escort forces had to lose around 25%, if not more, of their frigates. Cuts were made across the whole spectrum; even the Antarctic icebreaker, HMS *Endurance*, the only RN ship stationed around the Falkland Islands, was to be scrapped. If the 'carrier' force reduction could be 'rationalised' with HMS *Illustrious* completing its commissioning in late 1982, followed by HMS *Ark Royal*, the rest of the cuts lacked any reasons. The elimination of the amphibious capability was done because 'you will not have to amphibiously land anywhere.'²²

Nott's justification was that the fleet would have been better able to perform its assigned NATO missions if slimmer. How that was possible remains a mystery. Furthermore, Nott's decisions were taken just for quick cash boosts and saves and lacked any relevance in the international context. NATO maritime strategy was evolving, with the US Navy shifting from a passive defensive strategy to an offensive one. Not only would the US Carrier Battle Groups not have provided air cover for Atlantic convoys, they would also have moved north, in the Norwegian Sea and beyond, looking for proverbial trouble. USN plans also expected two RN antisubmarine groups, centred on Invincible carriers, to provide support and protection of their lines of supply, and also to continue to ensure protection of Atlantic convoys. All with a Soviet fleet that was increasing in quantity and quality.

If NATO grand strategy could have been defined as hypothetical, being predicated on a general war with the Soviet Union, the Royal Navy also had other commitments. The third 'Cod War' with Iceland had happened between 1975 and 1976, reinforcing the need for more, not less, escorts. At the same time, a crisis with Argentina had just narrowly been averted in 1977. The Cold War was not cooling off, but was heating up.

Furthermore Nott's Defence Review gave the impression of weakness and lack of commitment in several capitals, especially in Buenos Aires. It was the announcement of axing both carrier and amphibious capability that persuaded Argentina's Junta that invading British sovereign territory was feasible. Tensions with Argentina over the Falkland Islands were not new, war had been averted in 1977 by Papal mediation, but in 1982 Buenos Aires was confident of its chances. Planning for the assault started in December 1981, after Nott's Defence Review. Constant reduction in British forces posted overseas had also persuaded the Junta that London was not interested in defending these territories. Finally Buenos Aires planned to launch the invasion later in the year, in late September or early October, after Nott's axing would have taken its toll. In the words of Admiral Woodward:

*'By year-end 1982, our ability to mount the Task Force would have deteriorated to vanishing point from sales and decommissionings of carriers, amphibious warfare ships, surface combatants and support vessels.'*²³

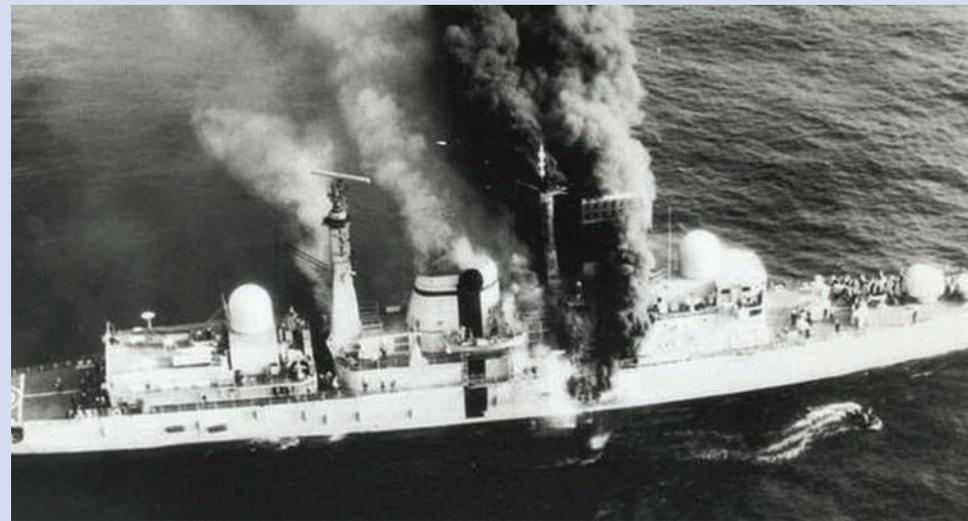
It was only the result of luck and Argentine bumbling and infighting that caught the Royal Navy in a better position to respond. Still it was a close-run thing. It was also expensive in blood and pounds. British casualties were over 1,000. 57,000 tons of shipping were sunk. The cost to the taxpayer was estimated at £2billion. It was the end of 15 years of fudging and bumbling. A defeat would have certainly spelt the end of the Government, and possibly even of the then Government's party. If the previous Governments had faced unemployment, strikes and general malaise, Margaret Thatcher faced the distinct possibility of a lost war.

Looking Back, Looking Forward

15 years of continuous defence cuts not only lacked strategic sense in an increasingly unstable world, jeopardising the UK's security, but also impacted its long term prosperity. Constant cuts and the collapse of several high profile defence programs severely damaged the entire industrial sector. Not only were big names in the defence industry affected but countless of smaller firms serving the larger companies. This was not just as a result of reductions in Government spending, but a steady decline in exports. How could foreign militaries be persuaded to invest in British equipment if the British Government itself was unwilling to do so? From being a world leader in defence exports, Britain fell to a minor player. Even traditionally staunch customers like the Gulf



British troops faced a bitter fight to retake the Falkland Islands from Argentina



HMS Sheffield after being hit by an Argentine Exocet missile

States moved from London to Washington. Kuwaiti Chieftains were replaced by M1A2 Abrams. Saudi Hunters and Lightnings by MDD F-15s.

Another perverse side effect of cuts and impromptu sales was to further alienate long term foreign investment. Why invest in procurement in the United Kingdom when it was cheaper to just wait and grab completed, new vessels like HMS *Invincible* off the shelf? While selling equipment could have appeared a convenient short term solution generating immediate 'cash' returns, it debilitated further an already ailing sector. It is worth noting that after the sale of the former Persian Chieftain tanks to Jordan in 1979, no more high profile foreign sales were generated until the British Army transferred its, now redundant, Challenger I tanks to Jordan, again, in 1999.²⁴

Not only that, but the Challenger I was the last real British weapon system. Challenger II tanks rely on plenty of French components, and never generated sales. Even successful aircraft, like the Tornado and Typhoon (more appropriately referred to as the Eurofighter 2000), were the result of international partnerships. 15 years of cuts fatally damaged the whole defence sector and certainly bankrupted its image abroad. The UK moved from being a sector leader and a prime exporter to being a buyer at worst, or piggy-backing on other programs at best.

Savaging military capability to the point of lacking deterrence also created unwanted crises. Argentina's attempted land grab in the South Atlantic is a prime example. In the end the war boosted the Government's standing, but it was a close-run thing. A defeat would have doomed the Government as would inaction. For all the bluster of her supporters, the Falklands were not Margaret Thatcher's shining moment. She and Nott had created the situation that allowed the Junta to proceed with the invasion in the first place. Only mere luck, competence on the part of the armed forces, and the platform the Government had already marked for disposal saved the day.

The 15 years of constant defence cuts, short term decisions, and plain ignorance did not bring savings. They instead brought crises, industry closures, loss of markets and, finally, real war. ■

- 1 Forczyk 'We March Against England' 2016, pp.90-93.
- 2 It is also worth noting that the decision was supposed first to be 'east of Aden', then 'east of Suez', and it was never completely carried out. British presence in the Persian Gulf continued, as naval presence in Singapore and the Indian Ocean. As a lot of political pronouncements, it was more in form than substance.
- 3 The grandfather of the author trained on Italian Air Force De Havilland Vampires.
- 4 In 1970 the new Conservative Government under Edward Heath, while not reversing Wilson's decision, still deployed forces east of Suez. One of the reasons was to provide 'an excellent platform on which to demonstrate modern technology and generate sales of defence equipment.' Roberts 'Safeguarding the Nation' 2009, p.87.
- 5 Van der Bijl 'Confrontation' 2007, pp.134-135.
- 6 Taylor, 'Chieftain Main Battle Tank' 2016, p.102.
- 7 Taylor, p.102.
- 8 Robinson and Seignon, 'AMX30 Main Battle Tank' p.14.
- 9 Robinson and Seignon, p.14.
- 10 It is worth noting that one MOD report quoted a German office as saying that the Leopard 1 was the tank Germany would have wanted in 1943 Russia, the Chieftain was what they needed. Taylor, p.104.
- 11 *Daily Mail*, 9 September 1965. As usual the *Daily Mail* was wrong. The UK Government was offering the Chieftain at mere £90k. Taylor, p.103.
- 12 It is worth noting that the Leopard, the latecomer to the race, and a product of French overbearing arrogance as of German interests, became the biggest export success, both Chieftain and AMX-30 suffering from it.
- 13 Kuwait's Chieftains, ordered in 1971 started to be delivered only in 1976. In the same year London turned down an Indian proposal for around 800 tanks.
- 14 Chobham composite armour was developed in the sixties in the British Army Tank Development Centre at Chobham. The development was shared with USA and later FRG Governments. Ironically the first operational tank equipped with it was the US M1 Abrams, followed by the German Leopard 2. The first UK tank with it was slated to be deployed in 1989 at the earliest.
- 15 All the MBT80 test rigs were either Shir prototypes, mock ups, or privately funded.
- 16 Both Sadat's Egypt and Assad's Syria had expressed interest. Syria was certainly a suspect buyer, being close to Moscow at the time and receiving T-72, but Egypt had US backing. In the end Jordan was seen as a closer ally than Egypt. Egypt ended up receiving more M60 tanks from USA and finally getting M1A1 Abrams later.
- 17 Griffin, p.16.
- 18 Newsome and Walton, 'M1 Abrams Main Battle Tank' 2017, pp.34-35.
- 19 That were strikingly similar to the Chieftain's problems. In this case, Nikita Khrushchev had forced a weight limit on the tank forcing the designer, Alexander Morozov, of T-34 fame, to use an unproven engine. Zaloga, 'T-64 Battle Tank' 2015, pp 7-8.
- 20 Taylor, pp.56-57.
- 21 HMS *Bulwark* recommissioning as an antisubmarine carrier was due to delays in the commissioning of HMS *Invincible*. Worth noting that Secretary Nott wanted to sell to Australia a ship just commissioned in the Royal Navy.
- 22 Secretary Nott to Major General Julian Thompson OBE, recounted by General Thompson to the Author.
- 23 Woodward in Kettler 'South Atlantic War' 2015, p.3.
- 24 The price was quoted at £1 per tank, but this did not include spares and technical assistance. Griffin 'Challenger I Main Battle Tank, Vol. 2' 2014, p.34.

Contributors to this issue of *Pro Patria*

Andy Askham has had a varied seagoing career as a marine engineer, including positions as an LPG cargo engineer and as a chief engineer. He is the former Technical Director of Seatruck Ferries, where his responsibilities included the design and build of two series of RoRo vessels. With a keen interest in operational efficiency, he created the consultancy Woodbank Marine and works with shipyards, technology developers, ship designers and ship owners in meeting future environmental and operational challenges.

Tom Awty is a member of Defence UK.

Steve Coltman is a Director of Defence UK. He was previously a member of the Liberal Democrats' working group on defence and was involved in formulating the party's defence policy for the 2015 General Election. He is also a former Chairman of the Association of Liberal Democrat Engineers & Scientists (ALDES) and is the author of a book on UK defence policy.

Fred Dupuy has had a 45-year career in the Merchant Navy, spending the first part of his career in general cargo trades, rising to Chief Officer and then transferring to the marine sector of the offshore oil and gas industry. For the last 20 years he has served as Ship's Master on various vessels, with experience in emergency intervention, diving support/construction, survey and wind-turbine installation. He is a director of Defence UK.

Commander Graham Edmonds RN is a Director of Defence UK who served in the Royal Navy from 1966 to 2007 as a seaman officer and above-water warfare specialist, including active service in the South Atlantic in 1982. He has a deep professional interest and expertise in defence affairs and distributes a private e-mail newsletter on worldwide defence and security issues to Defence UK members, academics, politicians, defence correspondents, friends, colleagues and former shipmates.

Tony Edwards has nearly 50 years of experience in defence and aerospace Industries, academia and the Civil Service. After leaving Abingdon School, he completed a five-year apprenticeship with Rolls-Royce Aero Engines. He gained his engineering degree from Birmingham University and subsequently an MBA with distinction from the Harvard Business School, where he was later appointed a Lecturer. He led many aerospace and defence companies while living in four different countries. He has been Head of Defence Exports at the Ministry of Defence and a Visiting Professor at the UK Defence Academy; he was elected President of the Society of British Aerospace Companies and later President of the Royal Aeronautical Society. During his career he was also responsible for raising nearly £30million for charities, mostly associated with the Royal Air Force and the Fleet Air Arm. HRH The Duke of Edinburgh presented him with the Air League Gold Medal for services to the cause of aviation. In 2009 Tony Edwards authored the UKNDA publication 'A Decision the Next Prime Minister Must Make' which was the subject of several major press articles including a *Daily Telegraph* editorial comment urging higher defence spending.

Dr Sarah Ingham PhD gained her doctorate from the War Studies Department, King's College London. Her work, *The Military Covenant: Its Impact on Civil-Military Relations*, published in 2014 by Routledge, has been described by Professor Hew Strachan as 'a pioneering and important study'. A former journalist and political researcher, Dr Ingham is currently working on a history of women's advance to the frontline of combat.

Dr Victor Madeira PhD frequently briefs decision-makers on hostile state activity and national security transformation; previous audiences include the Defence Select Committee and the NATO-Ukraine Platform on Countering Hybrid Warfare. He has a PhD in history from Cambridge and is the author of *Britannia and the Bear: the Anglo-Russian Intelligence Wars*. His next book assesses how democracies can develop "strategic immunity" against 21st-century hostile state activity. He is a member of Defence UK, and life member of Keston Institute and the War Memorials Trust.

Jock McCody comes from an Army family, and all of his childhood was spent around military establishments. On leaving school he joined the Merchant Navy and spent a short spell in the Royal Naval Reserve. He has an ongoing interest in military affairs and supports a strong and capable defence.

Captain Kevin Peter Slade MNM CMMar FNI is a maritime consultant. The founder and Chairman of Britannia Maritime Aid and former Chairman of the Merchant Navy Training Board, he is a Chartered Master Mariner with 22 years' experience at sea including nine years in command, serving on tankers, container and reefer ships, general cargo and passenger ships, followed by 26 years in ship management. As the Personnel Director of Northern Marine Management, he was responsible for 300 shore employees and over 7,000 UK and international seafarers on over 100 vessels. He was awarded the Merchant Navy Medal in 2019.

Andrew Smith FCIJ, a journalist, media consultant and military historian, has been a Director of UKNDA/Defence UK since 2008 and has held various posts with the association. Chairman of the Victorian Military Society and Editor of its journal *Soldiers of the Queen*, he is a Life Fellow and Past-President of the Chartered Institute of Journalists and a member of the Royal Historical Society.

Dr Arrigo Velicogna PhD is a military historian who earned his doctorate in the War Studies Department at King's College London. His focus is the development of military doctrine and technology and how they interact with operations and strategic decision-making. He also specialises in conflict simulations. Arrigo Velicogna has lectured at King's College and at Wolverhampton University, worked for DSTL and the British Army, and presented at several international conferences

Christopher Watts is Co-Publisher of *Future Banking*, a report for senior financial services professionals, and co-presenter of *Future Banking TV*. He is also a fixed-wing pilot with a keen interest in civil and military aviation and is an essayist on military history. Chris Watts graduated in law from the University of London before training as a solicitor. He lives in London and is a member of Defence UK.



Defence UK relies entirely on membership subscriptions and donations. We receive no financial support from the Government, the Ministry of Defence or from the Armed Forces themselves. We invite all those who value the role of Britain's military, are interested in defence and security, and wish to support our work, to become members of Defence UK. So, if you agree with our aims and would like to support or participate in our activities, please join us. Membership starts at just £5 per month.

For an application form, please contact:

Defence UK, PO Box 819, Portsmouth PO1 9FF.

Email secretary@defenceuk.org

Tel 02392 831 728

Website: www.defenceuk.org

Follow us on Twitter @DefenceAssoc

Find us on Facebook

Patrons of Defence UK:

Rt Hon The Lord Campbell of Pittenweem CH CBE

Field Marshal The Lord Guthrie GCB LVO OBE

Admiral The Lord West of Spithead DSC PC

Directors:

Colonel (Retd) Andy Allen MBE

Steve Coltman

Fred Dupuy

Commander Graham Edmonds RN

Andrew Smith FCIJ

David Wedgwood

Colonel (Retd) Peter Walton

Secretary:

David Robinson

Defence UK Ltd Reg No: 06254639



OUR MISSION STATEMENT:

Defence UK is an independent pressure group that campaigns for a strong and well-resourced Royal Navy, Army and Royal Air Force, to ensure the security of the United Kingdom, her Sovereign Territories, trade and commerce, and to protect her citizens wherever they may be. We also call for a greater commitment by the UK Government to the nation's defence industries, and to non-military services such as the Merchant Navy, Coastguard, Border Control and Homeland Security that are essential to the Defence of the Realm.

OUR AIMS:

Promoting effective and efficient Defence of the United Kingdom and the UK's worldwide interests;

Advancing public awareness and understanding of the history and role of the Armed Forces in the life of the Nation;

Commissioning research into the threats faced by the United Kingdom and the military capabilities required to meet these threats;

Seeking to inform debate on all aspects of National Defence and Security.

www.defenceuk.org