

ADS - Written evidence (IUD0005)

Implications of the War in Ukraine for UK Defence – ADS Submission to UK House of Lords International Relations and Defence Committee, April 2024

1. About ADS

- 1.1. ADS is the trade association for the UK's aerospace, defence, security, and space industries, representing more than 1,300 members. We work with those sectors to secure the UK's advantage, enhance our international positioning as a go-to destination for innovation, and deliver on our sustainable leadership goals.
- 1.2. Whether representing industry, connecting our members with business opportunities, or driving forward innovation and growth, ADS is at the forefront of an array of activities, events and programmes that benefit our members. ADS members are the custodians of a world-leading advanced engineering and services workforce, fuelling UK prosperity, and providing more than 417,000 jobs to the UK each year.

2. Executive Summary

- 2.1. The war in Ukraine has provided valuable lessons to the UK and to NATO on the changing character of warfare, such as how traditional tactics have intersected with emerging technologies and hybrid tactics. Fundamentally, the importance of deterrence has been shown, and the lack of understanding of the level of risk that sits within the military-industry nexus in current military planning has been laid bare.
- 2.2. Investing in and supporting the defence industrial base must now be seen as a strategic imperative by the UK and by NATO. The current security context highlights the importance of international cooperation to this end, and the UK must work alongside allies to innovate at pace, increase defence production, ensure interoperability, and understand supply chain dependencies.
- 2.3. Currently UK and wider European and NATO production capacity for munitions and weapons is inadequate to meet the needs of Ukraine, or to maintain sovereign stockpiles. Progress has been made by NATO and by the UK to set up joint procurement initiatives, and to make progress on standardisation and interoperability of equipment and munitions. However, there is still a lot of work that needs to be done to ensure that efforts by NATO countries are coherent across the alliance, and that collaboration across the Trans-Atlantic Defence Technical Industrial Base is promoted.
- 2.4. The UK must transform the relationship between the government, industry and armed forces to coherently and effectively address the lessons from Ukraine.

The post-Cold War peace dividend can no longer be relied upon, and so the UK must fully understand where risk currently lies in military planning, and develop a fully resourced strategy in consultation with industry to address this.

3. What does the war in Ukraine tell us about the changing character of warfare? To what extent are the lessons from the war in Ukraine applicable to UK Defence?

- 3.1. The conflict in Ukraine has been closely followed by military strategists and governments across the world seeking to learn lessons about the future of warfare. While some aspects of war have not changed that much, such as the battle for territory being dominated by artillery, trenches, and infantry troops, other aspects have changed hugely with the impact of emerging technologies writ large across Ukraine. However, fundamentally, the war has illustrated the credibility of the threat that Russia poses to the UK and NATO, and therefore reinforces the need to review both our national requirements and to set them against NATO expectations.
- 3.2. The conflict offers the UK a broad array of lessons, ranging from the tactical, to the operational, to the strategic. On the tactical, these include the increasing hybridisation of warfare, the importance of technological innovation, and the evolving tactical use of certain capabilities such as drones, Electronic Warfare, and space-based assets. The operational lessons include the importance of security of supply chains and stockpiles, and the criticality of timely, networked ISR.
- 3.3. The strategic lessons from Ukraine cover the importance of allies, the enduring need and huge challenges associated with achieving air supremacy, the accelerating pace of warfare, and just how vital it is to have a resilient, prepared, military-industrial base with a skilled and adaptable workforce. This latter point, and the basic need for industrial production capability in a state level, peer-to-peer high intensity conflict, reflects perhaps the most significant lesson. There is the need to understand and mitigate the dependency on industry that sits within NATO planning.

4. Is there a need for the UK to increase investment in integrated air defence and missile defence in light of the war in Ukraine?

- 4.1. Russia's use of missile and air power has highlighted the importance of air defence in protecting critical national civilian and military infrastructure. ADS members have asserted that the risk the UK has taken against Integrated Air Missile Defence (IAMD) is one of the lessons that should be learned from the war in Ukraine. Layered IAMD is an important capability for any country to counter sophisticated missiles and drones, as well as those that are more basic but plentiful and cheap to produce.
- 4.2. The UK has reduced its air and missile defence in the last decades, relying on the US to be the major contributor to NATO IAMD assets. Potential impacts of a

change in US attitudes and behaviour challenge assumptions that underpin previous Ground Based Air Defence Policy. At a NATO level, and at a national level, there is therefore a need to thoroughly address these assumptions. This applies to homeland defence as well as to the deployed environment.

5. To what extent should the UK seek to increase its weapon stocks as a result of the war in Ukraine? What kind of weapons should it focus on procuring in greater quantities?

- 5.1. One of the most obvious lessons that is being discussed in capitals around the world is the realisation that NATO countries have not invested in the stockpiles, or the industrial capability, to fight a prolonged war. The duration and rate of consumption of munitions and wear on gun barrels have exceeded all recent peacetime and counter-insurgency experiences. The demands of a peer-to-peer conflict have been made clear, and current NATO stockpiles and rates of production are too low to meet such a conflict. In the UK, and across NATO, defence industrial policy must establish how industry can act in a state of 'continuous mobilisation', to ensure that the capability to scale up production at speed is always present and at readiness. The UK must both provide immediate support to Ukraine to ensure Russia does not obtain victory and must invest in long-term preparedness. Focusing on identified battle-winning assets and maintaining adequate stocks is essential for national security, and for the collective defence of NATO.
- 5.2. Risk has knowingly been taken against stockpiles in the UK for quite some time, as the UK has optimised its forces for expeditionary warfare. Arguably, this risk has been taken as far back as the Cold War, when assumptions were made that if the UK were forced to go to war, conflict would be short and sharp, and probably escalate very quickly to nuclear conflict. Having said that, UK stockpiles and the size of our Armed forces were still far more significant during the Cold War. The war in Ukraine has shown that the risk currently taken against stockpiles and industrial capacity needs to be urgently addressed, at a NATO and a national level.
- 5.3. Whilst land munitions are the near-term priority given their intense use in Ukraine, the UK must also conduct a comprehensive review of all weapon stocks with a particular focus on weapons that assure control of the air and those that allow us to hold at risk targets deep within potential enemies' territory. The maritime domain must not be overlooked here either, given the successes of Ukraine against Russia in the Black Sea despite possessing a smaller Navy. The ability to leverage new technologies, such as laser technologies, should also be looked to as an additional way to strengthen capabilities. In the medium-term there are long lead times in supply chains such as complex weapons and fighting vehicles that must be addressed. Over a long-term horizon there are persistent risks to supply chain security such as semiconductors and raw materials.

- 5.4. To build UK capacity and stockpiles, the MOD must undertake an assessment of the capabilities that the UK needs, and where the gaps are. This must then be paired with investment in the UK defence industrial base, and acquisition reform to energise current processes. The publication of the new Integrated Procurement Model is a welcome step to address this, and industry looks to see how we can work with the MOD in the swift implementation of the new model to ensure that these issues are addressed at speed. Industry will need a clear dynamic demand signal to respond to this at speed. It is important that time taken to complete acquisition reform does not delay the start of urgent and necessary steps being taken to close immediate gaps in capability and capacity. It is also vital that the National Armaments Director has all the necessary levers at their disposal to work with industry and with NATO allies to increase production and deliver international collaboration.

6. What steps should the UK take to strengthen its military-industrial base and upskill the relevant workforce in light of the war in Ukraine? What are the main challenges, and how can these be overcome? How does the UK's approach compare to that of its European allies?

- 6.1. The war in Ukraine has underscored the importance of a robust military-industrial base and a skilled workforce to support it. The UK must better articulate the risk held against the workforce, both civilian and military – the total defence concepts adopted by countries such as Finland and Sweden could act as an example of this for the UK. These concepts include the skills needed by the entire country to meet current needs, and to meet future threats in areas of emerging technologies.
- 6.2. The UK must also engage with non-traditional defence industry players and encourage them to participate in defence industrial activities. Ukraine have demonstrated that innovating and failing fast provides capabilities far faster than the traditional procurement methodology in the UK. At present, there are companies in the civil sector (for instance in areas such as quantum computing and AI) who could play a key role in our national security needs, but either do not currently find the defence sector a particularly attractive or easy commercial prospect or are unaware that their products have potential transferrable benefits in a defence context.
- 6.3. The military-industrial base is one of the interlinked 13 Critical National Infrastructure sectors. The skills needed to mitigate risks posed to critical national infrastructure through direct conflict, or through sub-threshold warfare are therefore also critical to military planning. Steps that could be taken to enhance the military industrial base, and its workforce, should include investing in R&D; promoting collaboration between industry, academia, government and allies abroad; supporting SMEs to grow; boosting defence exports; and addressing the skills gap and workforce shortages the UK faces.
- 6.4. Vitally, when looking to strengthen the UK military-industrial base, UK government must look to international collaboration. The current security

context highlights the importance of international cooperation, and how important it is to work with European partners and NATO allies for European security. The recent publication of the European Defence Industrial Strategy (EDIS) shows the growing need for UK-EU cooperation in the defence sphere, given the increasing EU ambitions to create EU defence industrial policy, and to grow the European Defence and Technological Industrial Base. This must be paired with EU-NATO cooperation to ensure that work is not being duplicated, and that collaboration projects can strengthen and support the work being done across NATO and the EU.

- 6.5. The momentum of strengthening UK-EU relations must continue, to build strong and mutually beneficial relationships with our European partners. A defence and security pact that validates the existing close industrial relations, while building collaboration, exports and technology transfer will enable the UK and European partners to address common external threats. NATO also has an essential role in this context to aggregate demand, harmonise and standardise requirements, and convene allies for multinational procurements.

A.) How feasible is it for the UK and its European allies to maintain large stockpiles of weapons and munitions, and what are the trade-offs in doing so?

- 6.6. Currently, UK production capacity for munitions and weapons is inadequate to meet the needs of Ukraine, or to rapidly build up or maintain sovereign contingency stockpiles. This is less a question of feasibility, than of necessity. Stockpiles of weapons, ammunition, spare parts, and the full spectrum of equipment for our soldiers (from body armour to radios) must be sufficient to underpin credible deterrence. The existing commercial and industrial arrangements in the UK do not lend themselves to rapid increases in stockpiles. The ability to ramp up production, and test and evaluation facilities, is often measured in years rather than months, and this must be addressed by the UK and by NATO more widely.
- 6.7. There must be a balance struck between stockpile levels and the manufacturing capacity that is required to replenish them, should this be needed. NATO's Defence Production Action Plan (DPAP) looks to address this issue and increase industrial capacity. It is therefore vital that the UK leads in galvanising NATO nations to implement this plan. The DPAP was welcomed by industry as a substantive intervention in the defence industrial ecosystem. The risks and opportunities in the DPAP remain critical to the implementation of NATO's regional plans, and the delivery of new capability targets. This action is also required to sustain the ability of allies to support Ukraine.

7. What progress has been made in increasing joint procurement and harmonising defence systems among NATO allies, especially among our European partners?

- 7.1. NATO has generally and historically set out clear common standards, the difficulty in achieving this harmonisation has been that nations have then deviated from these standards, usually to protect their own sovereign, or defence manufacturing capability. At a NATO level, this depletes interoperability. It can also lead to missed opportunities for manufacturers who are unable to manufacture in the same volume, as each capability is bespoke. Across NATO there is significant fragmentation of industrial strategies and procurement regulations, which disrupt integrated military supply chains and procurement.
- 7.2. Progress has been made both by NATO and by the UK to set up joint procurement initiatives, and to make progress on standardisation and interoperability of equipment and munitions. However, there is still a lot of work that needs to be done to ensure that efforts by NATO countries are coherent across the alliance, and that collaboration across the Trans-Atlantic Defence Technical Industrial base is promoted. The intention in NATO's Defence Production Action Plan to accelerate joint procurement and generate aggregated demand signals is a very positive step. Currently, the defence industrial base cannot justify investing in developing costly (and in some cases hitherto obsolete) artillery capabilities without a clear aggregated demand signal from NATO and allies. Industry needs clear contract orders, backed up with investment to open long-term production lines and commence development to expand capacity.
- 7.3. The US National Defence Industrial Strategy (NDIS) and the European Defence Industrial Strategy (EDIS) are significant interventions that have been published since the Vilnius Summit and the publication of the DPAP. EDIS contains a range of proposals to extend the EU's toolbox in defence and security, but it also boosts the imperative for much more substantial NATO-EU cooperation, rather than these two entities working in isolation. Encouraging closer NATO-EU collaboration and action is therefore essential.

8. How have drones been used by both sides in the war in Ukraine and what has been their impact for the way the war has been fought? What lessons should the UK Armed Forces draw from the use of drones in Ukraine?

- 8.1. In drone warfare in particular, the war in Ukraine has shown how the balance between humans and technology may be shifting. Ukraine has proved itself to be an incubator for innovation in a new style of drone warfare. First-person drones are proliferating, and drones are being made far more cheaply, using a blend of civilian and military technologies. Ukraine has used drones for tactical intelligence, target acquisition, and to detect and track Russian artillery fire. Meanwhile, Russia has employed drones for reconnaissance and targeting, to disrupt supply lines, and for Electronic Warfare.
- 8.2. The use of drones in Ukraine has shown the effect of cheap, disposable weapons used alongside traditional methods such as artillery to enable precision targeting. Drones have also acted as a force multiplier, to extend the

reach of ground forces and amplify the effect of mass by making it more efficient. It has also highlighted the incredibly rapid pace of technological innovation and acquisition that is needed to maintain military advantage – a lesson that the UK recognised in the MOD's new Defence Drone Strategy. The strategy aims to learn lessons from the war in Ukraine to rapidly equip forces with UAVs; to develop and upgrade uncrewed systems rapidly and to increase scalability; and to embrace and adopt technological evolutions.

- 8.3. It is worth noting, however, that Unmanned Air Systems (UAS) have been used alongside, rather than as a replacement, to traditional mass. Whereas Unmanned Surface Vehicles (USVs) have been used as a replacement for traditional mass at sea, with incredible effect. The innovation and exploitation of commercial technology has demonstrated a shift in effective pairings of technology and capability, but its exploitation has ultimately demonstrated that there is still an irreducible requirement for mass, especially on land.

9. What role has the space domain, including satellite communications, played in the war in Ukraine, and how has this differed from previous conflicts? What are the implications for the UK Armed Forces?

- 9.1. The war in Ukraine has illustrated rather than revealed the significance of space in the prosecution of modern conflict. Space is essential to how the 'battlespace' is now made effectively transparent, and to communications and the operation of long-range missiles. This is the case for both Russia and Ukraine.
- 9.2. Space has played a key role in the war in Ukraine in two ways. Firstly, in the expected importance of communications, navigation, and ISR, but secondly in the power of commercial space assets being used alongside military ones to add breadth of capability. Private companies have played a role in shaping conflict dynamics, and the integration of AI into this domain has evolved our idea of multi-domain operations, expanding not just across domains but into the civilian world as well. This has reinforced the criticality of the relationship between military and industry and has shown that this must be extended beyond the traditional defence industry, into critical commercial industries as well. Having said this, the UK will still require military space assets to ensure resilience, and security of systems. The establishment of UK Space Command has been a positive development, as there is now a single point of focus for emerging threats in the space domain.

10. What lessons have the UK and NATO learned from the war in Ukraine about the management of the escalation of force?

- 10.1. The most important strategic lesson by far for NATO is that deterrence is far better and cheaper than having to fight. To be achieve credible deterrence, governments, industry and the armed forces need to work together in a much more integrated way that persuades our adversaries that we can inflict much great loss on potential adversaries than they can on us. Credible defence industrial capacity is an inherent aspect of this, as shown by the attrition rates

of equipment in Ukraine, and the rapid depletion of stockpiles. The UK and NATO must demonstrate that they have the industrial capability, with suitable financial backing, to not only sustain Armed Forces in a time of war, but to do so with equipment and battle tactics that are superior to any potential adversaries.

- 10.2. Ukraine shows the enormous costs incurred if deterrence fails. It is also worth noting that the increased use of Emerging Disruptive Technologies such as autonomy and AI in the battlespace, along with the proliferation of sub-threshold activity, further complicates escalation calculus. This reinforces the need for effective deterrents to be an integrated approach across military, civil and industrial domains.

11. Is the hybrid threat to the UK posed by Russia evolving as a result of the war in Ukraine, and if so, how?

- 11.1. War in Ukraine has illustrated that confrontation between states draws on all levers of power - political, diplomatic, economic, legal, and cultural as well as military. The hybrid threat to the UK is constantly evolving. Firstly, the range of threats the UK face is increasing in line with the increasing number of vulnerabilities. The growth in capability in cyber and space offers our adversaries an increased range of options, which in these areas are made more dangerous given the shortfalls in regulation and international laws and norms pertinent to these domains. Russia has intensified cyber operations over the last few years, while spreading disinformation campaigns both domestically and internationally to shape public opinion or sow confusion.
- 11.2. The increased hybridisation of warfare demonstrates the need for a whole-of-society approach to defence. National security is not just about traditional defence capabilities, and therefore there is a need for the UK to draw together capabilities from the security and civilian industrial base as well, to ensure a blended, total defence of the UK. Closer collaboration between the defence and security sectors should be embedded in UK plans, leveraging the security, cyber and civilian industrial bases.

12. What other lessons can we draw from the war in Ukraine for UK defence? What are the implications for the UK's defence priorities, including manpower?

- 12.1. The primary lesson learned from Ukraine is the cost when deterrence fails - the cost in lives, the environmental cost, and the financial cost. The UK must transform the relationship between the government, industry and armed forces to coherently and effectively address a wide range of issues that impact our commitment to NATO, and our national interest. The post-Cold War peace dividend can no longer be relied upon, and so the UK must fully understand where risk currently lies in national contingency and military deployment plans, and develop a strategy in consultation with industry to address this. A national strategy is needed as defence encompasses all aspects of a State. This plan

should blend regular, reserves, civil servant, and industry resources in the most effective mix to ensure deterrence, mobilisation, and endurance in conflict. A comprehensive strategy, sitting beneath any upcoming Defence Review of a new Government is required to achieve this, including a method to ramp up production capacity in a way that is tested against the demands and attrition of a warfighting scenario, is sustainable, and suitably incentivised.

- 12.2. Finally, the UK must establish how it can be on the front foot of the transformation of defence and security through the application of emerging technologies, and rapid adoption of existing systems. Defence could look to the lessons learned to procurement during the COVID-19 pandemic to implement rapid development and adoption of new technologies. This is necessary to ensure the UK's strategic advantage, and in so doing create the opportunities for prosperity through the rapid development of export-led industrial prowess.

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