RAND EUROPE

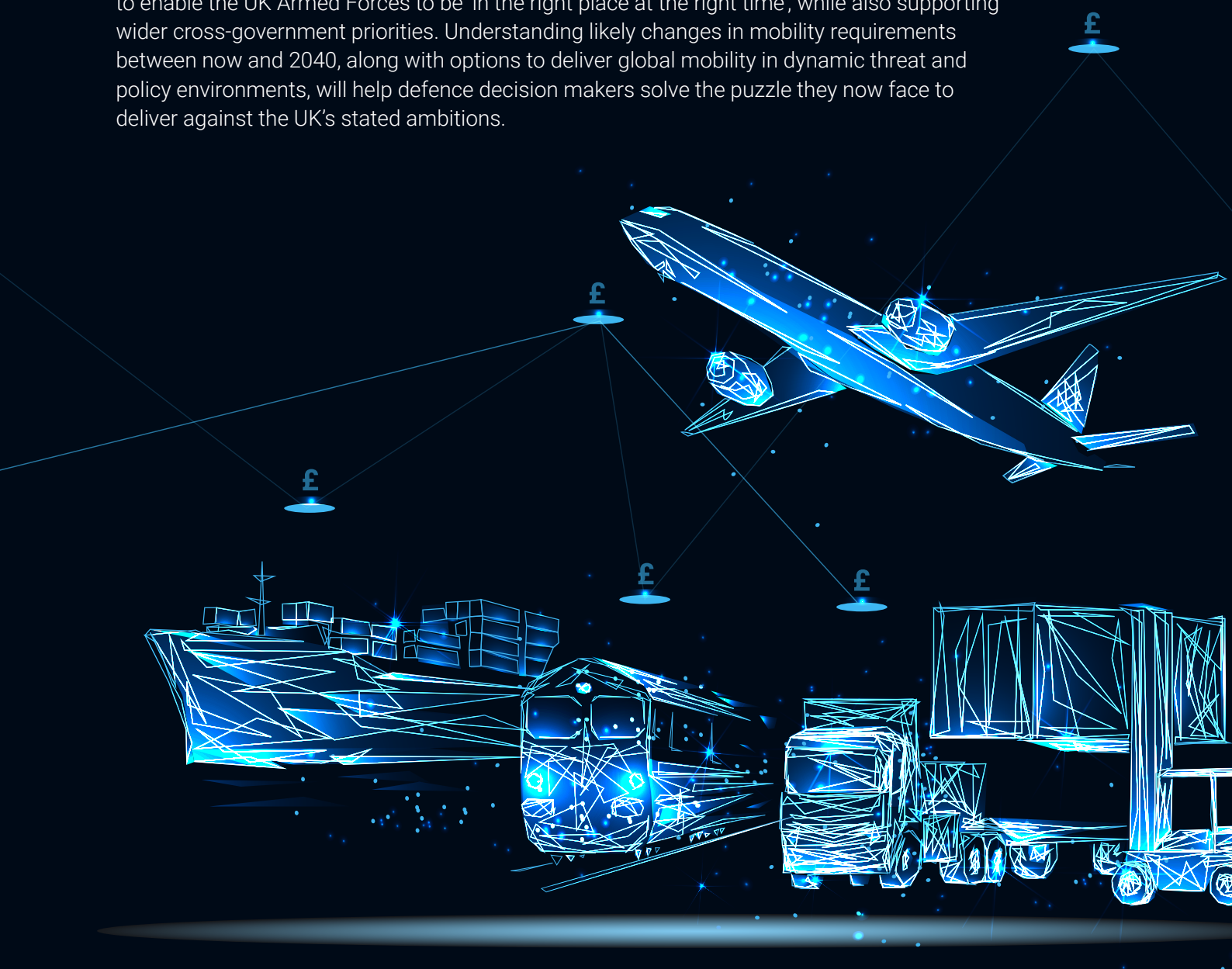
RESEARCH BRIEF

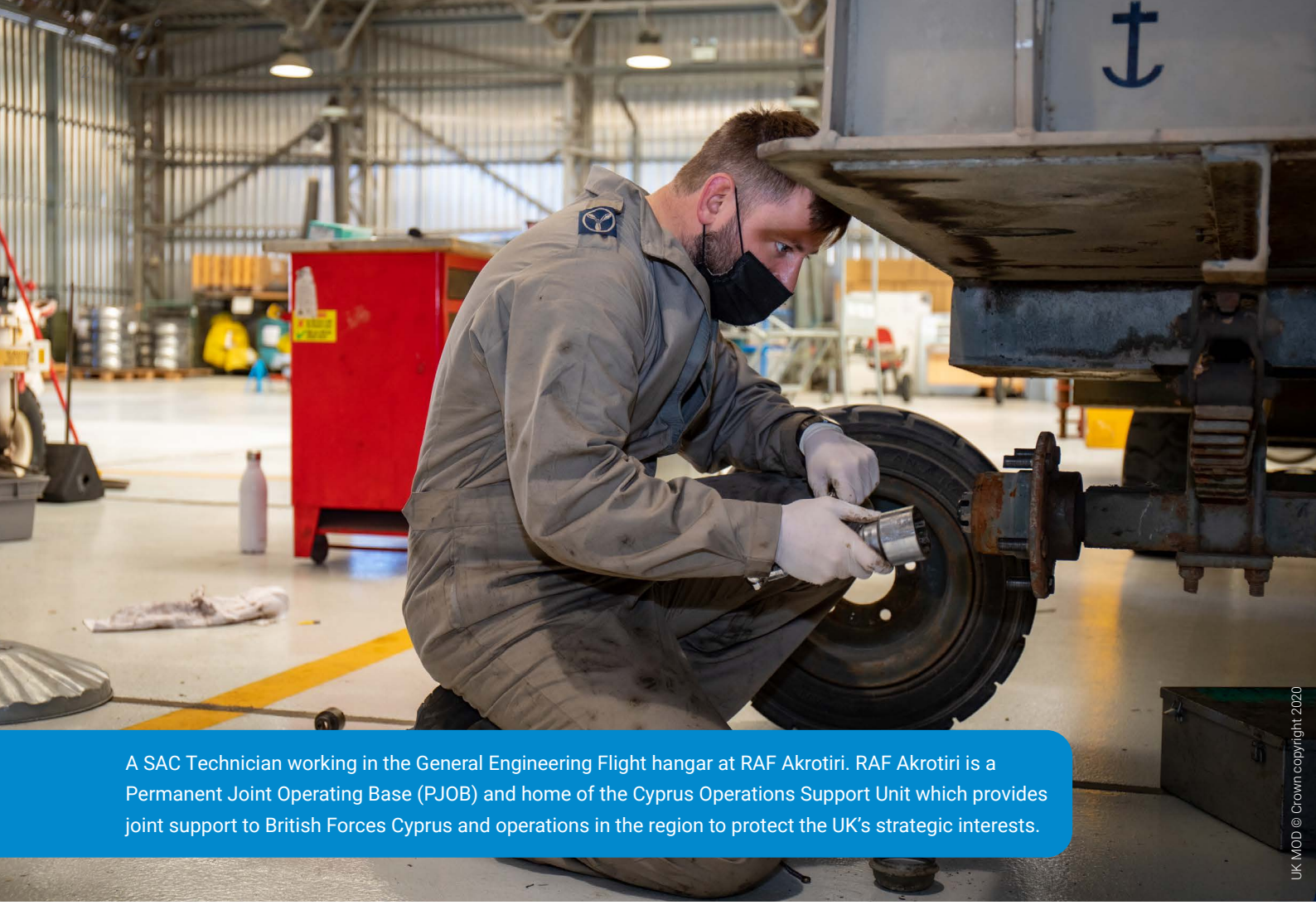
Achieving global mobility

Future Force Design 2040

The *Integrated Review of Security, Defence, Development and Foreign Policy*, published in March 2021, presents an ambitious vision of a 'Global Britain' that has a persistent presence around the world and contributes to tackling a wide range of crises and operations both close to home and further afield.

Realising this vision will rely on having the right force design and mix of military capabilities to enable the UK Armed Forces to be 'in the right place at the right time', while also supporting wider cross-government priorities. Understanding likely changes in mobility requirements between now and 2040, along with options to deliver global mobility in dynamic threat and policy environments, will help defence decision makers solve the puzzle they now face to deliver against the UK's stated ambitions.





A SAC Technician working in the General Engineering Flight hangar at RAF Akrotiri. RAF Akrotiri is a Permanent Joint Operating Base (PJOB) and home of the Cyprus Operations Support Unit which provides joint support to British Forces Cyprus and operations in the region to protect the UK's strategic interests.

On behalf of the UK Ministry of Defence (MOD)'s Finance and Military Capability team (FMC), the Development, Concepts and Doctrine Centre (DCDC) commissioned RAND Europe to help develop a framework for identifying the UK's global mobility requirements, using all available means, out to 2040.

The study was conducted between February and June 2021 and had three core research objectives:

- **Identify high-level core military requirements** for global mobility out to 2040 and any potential shortfalls vis-à-vis the current equipment plan.
- Determine a **range of different options for delivery** of global mobility out to 2040.
- Pinpoint the **top-level implications of these options** for future force design and capability planning.

RAND researchers used a mixed-method approach to deliver the study, including literature review and a broad stakeholder consultation across the Armed Forces, academia and expert partners within the Global Strategic Partnership that provides academic support to DCDC.

Key findings

It is likely that requirements for global mobility will increase in terms of capacity, capability, survivability, and assurance and speed of response, all within enduring constraints on affordability.

A few key factors will shape the requirements for global mobility, including:

The changing nature of the threat environment, including an increasingly contested physical (e.g. anti-access, area denial, A2AD), cyber and electromagnetic environment, as well as climate-degraded areas, or political obstacles from nations refusing access, basing and overflight (ABO).

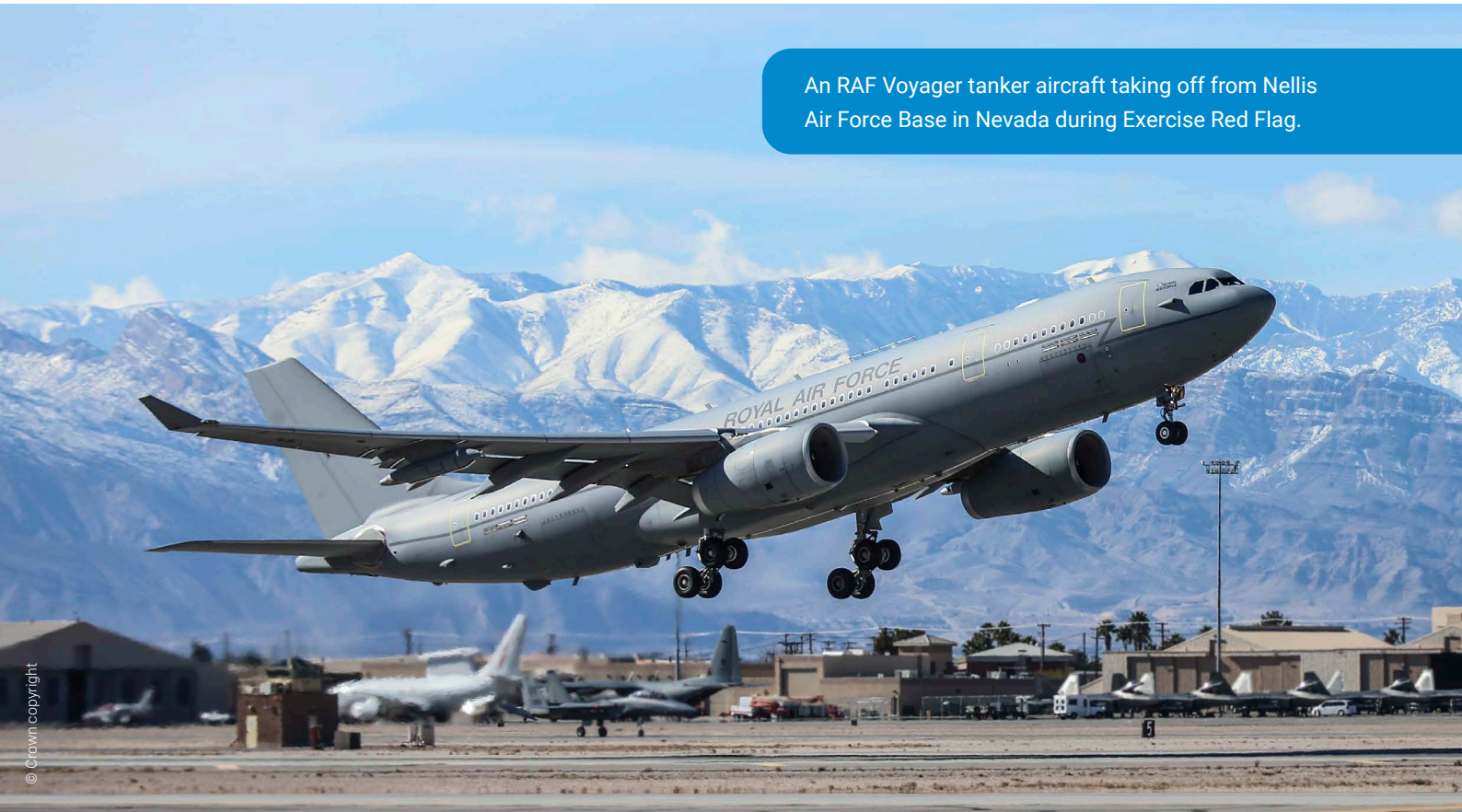
Developments in the information environment, cyberspace and space, holding the potential seamlessly to integrate data between various systems (e.g. through a 'digital backbone') and achieve better situational awareness (e.g. through space-based intelligence, surveillance and reconnaissance), while at the same time magnifying security and operational risks if adversaries hack, jam, spoof, gain access to or outright disable or destroy such capabilities.

Wider political, economic, social, technological, legal and environmental (PESTLE) trends of the kind addressed in DCDC's Global Strategic Trends programme. These include urbanisation, climate change and net zero objectives, developments in the commercial sector (e.g. automation, autonomy, advanced manufacturing), or shifting alliances and partnerships – many of which Defence cannot influence alone but will need to help shape or mitigate.

The MOD and Armed Forces will continue to have to compete for finite resources with other government departments and, in some ways, will be required to 'do more with less' when delivering the country's global ambitions. This is exemplified by the envisaged reduction of the number of strategic airlift platforms over the next two decades and the limited fleet of sealift assets.

Defence will therefore need to think innovatively about how to design a model for delivering global mobility that is both effective and resilient. A range of options should be considered which, in combination and accompanied by sound management of risk, could offer both effectiveness and resilience to the UK's mobility fleet and underpinning systems:

- **Multi-role platforms**
- **International collaboration**
- **Commercial solutions**
- **Uncrewed, optionally crewed, lightweight assets**
- **Data-driven and/or data-enabled mobility**
- **Additive manufacturing**



An RAF Voyager tanker aircraft taking off from Nellis Air Force Base in Nevada during Exercise Red Flag.

Recommendations

To design an effective and resilient model for delivering global mobility, the RAND study recommends that the MOD should focus on the following policy actions:

1. Place more focus on resilience and redundancy and less on efficiency to better resource global mobility delivery, understanding the upfront costs as a necessary hedge against shocks.

2. Approach mobility from a 'Multi-Domain Integration' perspective to increase synergies across the joint force, cutting across the traditional remit of individual Services or Top-Level Budget holders and pursuing multi-domain and multi-modal solutions to address demand for mobility.

3. Strengthen multinational collaboration arrangements to extract greater value from them, whether in terms of military capability, industrial benefits or international influence.

4. Work with partners and allies to improve access, basing and overflight and freedom to operate in key regions, including areas of increasing strategic relevance such as the Indo-Pacific.

5. Invest in strategic bases and regional hubs to allow for forward basing of mobility assets and increased use of prepositioning to reduce deployment lead times and enhance deterrence.

6. Map the vulnerabilities across Defence's global mobility assets and infrastructure to help address potential areas of risk, including but not limited to the growing challenge posed by air and missile threats, cyber-attacks and environmental degradation.

7. Increase the protection and survivability of global mobility assets and infrastructure to enable operations in a range of threat environments, given the proliferation of so-called A2AD capabilities.

8. Approach global mobility from a sustainability and net carbon zero perspective to ensure alignment with broader government sustainability goals (so far as security imperatives allow).

GLOBAL STRATEGIC PARTNERSHIP

The Global Strategic Partnership (GSP), a consortium of research, academic and industry organisations that is led by RAND Europe, provides ongoing analytical support to the UK Ministry of Defence.

Cover image: Adobe Stock

This summary describes work done by RAND Europe documented in *Global Mobility: Future Force Design 2040* by Lucia Retter, Zudik Hernandez, Ben Caves, Megan Hughes, Anna Knack, RR-A1309-1, 2021 (available at www.rand.org/t/RRA1309-1). To view this summary online, visit www.rand.org/t/RBA1309-1. RAND Europe is a not-for-profit research organisation that helps improve policy and decisionmaking through research and analysis. RAND Europe's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND**® is a registered trademark.

RB-A1309-1 (2021)