



ROYAL
AERONAUTICAL
SOCIETY

KEEPING THE UK AEROSPACE SECTOR GLOBALLY CONNECTED, SUSTAINABLE AND SECURE FOR 2025 AND BEYOND

The Royal Aeronautical Society Position paper for the UK government

July 2024

An RAeS Position Paper



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About the Royal Aeronautical Society (RAeS)

The Royal Aeronautical Society is the world's only professional body and learned society dedicated to the entire aerospace, space and aviation communities.

Established in 1866 to further the art, science and engineering of aeronautics, the Society has been at the forefront of developments in aerospace ever since.

The Society seeks to promote the highest possible standards in aerospace disciplines, provide specialist information and act as a central forum for the exchange of ideas, and play a leading role in influencing opinion on aerospace matters. As such, we provide authoritative, independent and evidence-based reports, briefings, opinions and events.

Our global presence is expressed through our divisions and branches across the globe and our expertise is expressed through our 23 Specialist Groups who work across a whole range of areas.

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EXECUTIVE SUMMARY



Since 1866 the Royal Aeronautical Society has been at the forefront of aerospace as a leading independent international organisation and an authoritative source of knowledge and expertise. This legacy continues today through the Society's Strategy, Vision, and Mission⁽¹⁾, with the Society advancing professional registration and training, disseminating a body of knowledge across aerospace through our events and publications, and encouraging both young people and a diverse cross section of society to enter these domains.

This position paper outlines a strategic approach for the Royal Aeronautical Society to advise the UK government on prioritising the growth and security of the nation's aerospace sector, while improving the sector's contribution to a sustainable future. The Society's strategic priorities are centred around reducing emissions, safety and security, the future of flight and space, and tomorrow's aerospace professional.

The aim is to ensure the UK remains at the forefront of global aviation connectivity and industry innovation, addressing future challenges and seizing opportunities in this rapidly evolving sector. We have highlighted five priorities for the UK government, with recommendations, to support a strategic

The primary recommended actions are:

1. Maintain high levels of safety while accelerating modernisation programmes with sustainable and innovative technologies.
2. Boost air power and space capabilities to protect national security interests in the UK and Europe.
3. Accelerate regulatory capacity and capability to advance and enable future flight technology.
4. Maximise economic benefits through investment, research and international co-operation.
5. Develop joined-up collaborative approaches to attract retain and upskill the workforce.

vision for the UK to operate effectively in the aerospace sector.

By focusing on these priorities, the UK government can ensure that the aerospace sector remains a key driver of economic growth, technological advancement, and global competitiveness.

**David Edwards FRAeS, Chief Executive
Royal Aeronautical Society**

⁽¹⁾ Strategy (aerosociety.com)

PRIORITY 1: MODERNISE OUR AVIATION INFRASTRUCTURE WITH SAFE AND SECURE, SUSTAINABLE AND INNOVATIVE TECHNOLOGIES

In the evolving landscape of global aviation, the necessity for modernising safe and secure infrastructure and aerospace systems to enhance global mobility has never been more critical. The UK, with its history of pioneering advancements in aerospace, stands at a crossroads; the convergence of traditional aviation with emerging technologies and markets presents both unprecedented opportunities and challenges. The integration of novel flight technologies, including Remotely Piloted Air Systems (RPAS) or Uncrewed Air Systems (UAS) and Advanced Air Mobility (AAM) systems, which includes Electric Vertical Take-Off and Landing (eVTOL) vehicles into the UK's airspace, requires innovative thinking and substantial infrastructural and systematic adjustments. In addition, AAM, with the promise of green point-to-point travel for local communities, emphasises the need to protect disappearing regional airports and General Aviation (GA) airfields.

A strategic approach for safe and secure infrastructure modernisation, focusing on sustainable development and the incorporation of green technologies to meet environmental targets is an imperative. This aligns with the global aviation industry's shift towards reducing its carbon footprint to net zero by 2050, with the new UK government poised to lead by example.

Around 2.5% of the entire global CO₂ emissions are the result of aviation⁽²⁾. While international agreements to partially offset this are already in place, it is important that both the government and industry takes appropriate action. Further investment and legislation are required to develop efficient aircraft, technologies, and the use of affordable Sustainable Aviation Fuel (SAF).

Carbon capture and hydrogen have potential but are not yet proven at scale. The government should review research and testing with *Camelina sativa*⁽³⁾ as a carbon-negative sustainable jet fuel, together with other alternatives including Power-to-Liquid (PtL) technologies using renewable electricity, water, and carbon dioxide. The government also need to conduct further research around SAF production plants. Care is needed to avoid a competitive approach to land use that compromises food

production. Aviation has a responsibility to ensure it has a licence to grow in a sustainable way that supports the protection of the environment.

It is also for the government to make the necessary changes to regulation as a matter of urgency that will enable the Civil Aviation Authority (CAA) to adapt its processes and procedures to facilitate changes in the UK airspace arrangements that contribute to reductions in CO₂ and noise impacts of aviation. In addition, more investment is required in future electricity production with the shift to more electric propulsion.

Sustainability policies need to be accelerated in the production, operation and maintenance of all varieties of air vehicles, aimed at minimisation of environmentally damaging waste products and noise. This can only be realised by stronger government investment in supporting and accelerating current research and development to commercialise innovative technologies. This also includes support for airports and airlines as they modernise their assets, and understanding the investment needed for refuelling with alternative fuels for future aircraft. The UK can also advance further research and investigation into



⁽²⁾ Aviation – IEA

⁽³⁾ <https://www.aerosociety.com/publications/aerospace-magazine-june-2024/>



Non-CO₂ warming effects and take a lead in the management of contrail emission reduction⁽⁴⁾. The government should continue to draw on the expertise and advice within the Jet Zero Council⁽⁵⁾.

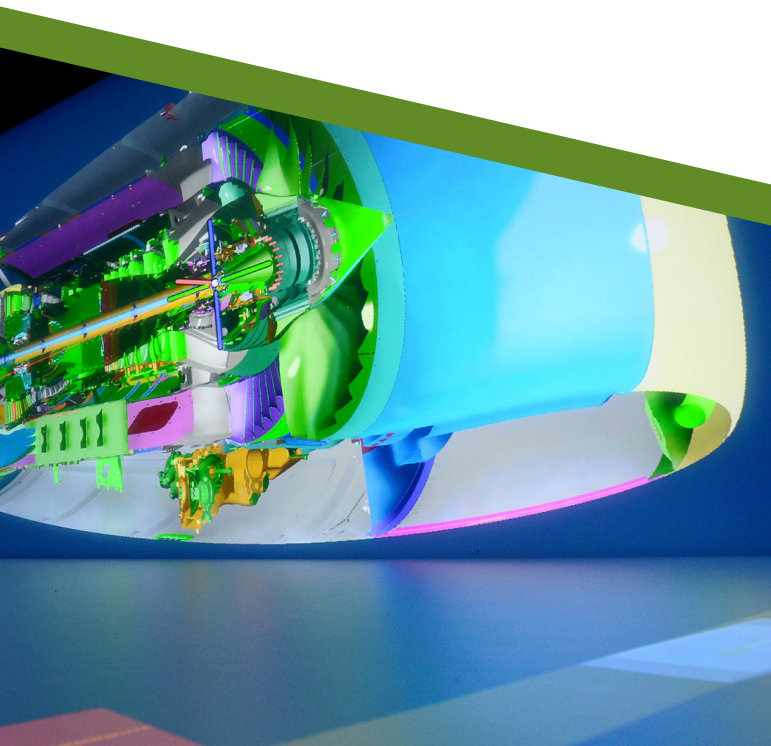
The Society, through its advocacy and expertise, has consistently supported the advancement of aerospace technology. The Society outlines below its commitment to promoting research, dialogue and policy development in areas critical to aerospace and infrastructure modernisation, including the integration of modern technologies, secure platforms and sustainability.

As we move towards 2025 and beyond, the UK's focus on modernising its aerospace systems and infrastructure to support global mobility will require a collaborative effort. Commercial aviation is at a turning point with consideration being

given to alternative solutions and fuels which will inevitably require government support. By leveraging technological innovations, and prioritising sustainability, the UK can maintain its position in the global aerospace arena, ensuring a secure, connected and prosperous future.

RECOMMENDATIONS - SUSTAINABILITY AND AVIATION

- **Invest** in sustainable aviation⁽⁶⁾: support the development and deployment of additional sustainable and environmentally friendly aircraft and technologies, including new designs of aircraft to use alternative fuels.
- **Support** innovation through tax incentives, grants, and low interest loans for sustainable aviation projects.
- **Support** development of Zero Emission Flight (ZEF) technologies through Aerospace Technology Institute (ATI) programmes.
- **Reduce** Non-CO₂ emissions in aviation⁽⁷⁾: accelerate contrail management trials and research across the UK and North Atlantic airspace.
- **Increase** SAF collaboration and research: seek to scale up SAF research including PtL with international collaborative projects, and explore new feedstocks such as *Camelina sativa*.



⁽⁴⁾ contrails-and-contrail-management-briefing-paper.pdf (aerosociety.com)

⁽⁵⁾ <https://www.gov.uk/government/groups/jet-zero-council>

⁽⁶⁾ gbd-2022-23-final-digital.pdf (aerosociety.com)

⁽⁷⁾ ATI-Non-CO₂ – Technologies-Roadmap-Report-FINAL-March-2024.pdf

- **Changes** to primary/secondary regulation: enable the CAA to make changes to airspace arrangements and flight profiles that contribute to reductions in emissions and noise from flight profiles in a timely manner.
- **Provide** the CAA with clear guidance on the priorities to be afforded to different categories of airspace user that accord with government intent for economic growth and sustainability.



RECOMMENDATIONS – AIR TRAFFIC AND TRANSPORT MODERNISATION

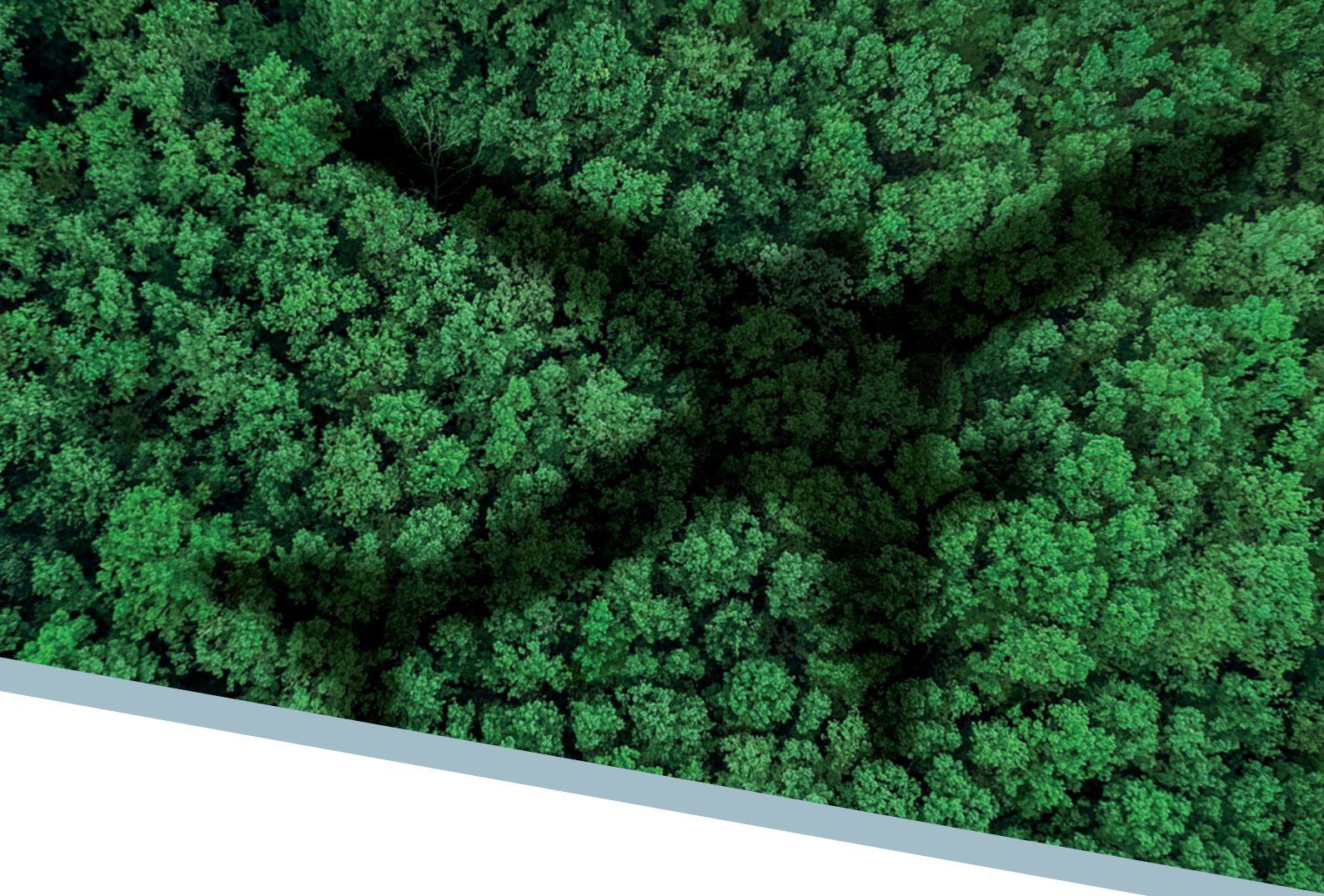
- **Accelerate** the Airspace Modernisation Programme over the next five years to increase capacity⁽⁹⁾; address airport infrastructure for new fuels and to support integration of AAM.
- **Expand** airport capacity: focus on expanding and upgrading existing airport facilities and runways. Use artificial intelligence and machine learning to increase capacity and improve passenger and cargo handling efficiencies.
- **Enhance** air traffic management⁽⁹⁾ and increase air traffic control staff⁽¹⁰⁾; adopt next-generation air traffic management technologies, including digital transformation to improve airspace efficiency and safety.
- **Support** development of large UAS and eVTOL manufacturing and operations in the UK through airspace, regulatory, and traffic management modernisation programmes.
- **Invest** in digital infrastructure and cybersecurity: prioritise the digitalisation of air transport management to streamline operations and enhance security IT systems at border crossings.
- **Strengthen** Global Navigation Satellite Systems (GNSS)⁽¹¹⁾: advance discussions on European Geostationary Navigation Overlay Service (EGNOS) to enable more efficient use of existing runway infrastructure at regional airports and benefit shipping operations.
- **Promote** intermodal transport links: improve connections between airports and other modes of transport, such as rail, to facilitate more efficient passenger and cargo movements.

⁽⁸⁾ CAP 1711 Part 1 Airspace Modernisation Strategy 2023-2040 (caa.co.uk)

⁽⁹⁾ raes-atmsg-atmsg-contribution-to-net-zero-climate-change-issues-briefing-paper.pdf (aerosociety.com)

⁽¹⁰⁾ raes-atmsg-air-traffic-control-staffing-in-the-uk-briefing-paper.pdf (aerosociety.com)

⁽¹¹⁾ raes-atmsg-gnss-services-supporting-civil-aviation-in-the-uk-briefing-paper.pdf (aerosociety.com)



PRIORITY 2: INCREASE AIR POWER AND SPACE CAPABILITY

Increasing air power and space capability stands as a critical priority for the UK, aligning with global trends towards enhancing national security, advancing technological frontiers in aerospace, and capitalising on the burgeoning space economy – a domain which modern society not only in the UK but all nations around the world are now dependent on. The strategic imperative to bolster air power and expand space capabilities is driven by a rapidly evolving global security environment, characterised by advanced technological warfare, space as a contested domain and the increasing importance of information superiority. The government should prioritise our national defence air systems, and resilience of our defence industrial base.

The war in Ukraine underscores the crucial need for a strong defence and security industrial base in Europe and with NATO. The government will need to ensure it can sustain the UK's industrial capability and military advantage. Future reviews should outline long-term plans for defence and security funding and consider increasing spending beyond 2.5% of GDP to enhance both the UK and NATO's capability. This should include accelerating New Medium Helicopter (NMH)⁽¹²⁾ and the NATO Next Generation Rotorcraft Capability (NGRC)⁽¹³⁾. The government needs to tackle obstacles around defence procurement, and fast

track international defence collaboration to ensure interoperability between different platforms among our international allies.

With evolving threats, the UK government will need to refocus attention on a review of its defence requirements. Uncrewed Air Systems (UAS), increasingly prevalent in theatre, are being used both tactically and strategically. The UK has world-class defence contractors to meet these demands, but further government backing and support is needed. The government should be committed to ensuring a diverse array of air power and deterrence platforms, including Anti-Submarine Warfare (ASW) capabilities. The tri-national Global Combat Air Programme (GCAP)⁽¹⁴⁾, the largest military aircraft programme in the UK in 30 years, is entering a critical period ahead of contracts being awarded. Sovereign air capability projects, such as Tempest⁽¹⁵⁾, are vital, in addition to the acquisition and interoperability of combat aircraft with our allies. The future of the UK's combat air sector now depends on the government's decisions around innovative fighter programmes and collaborative ventures for our global security.

The developments in the defence and space arena further highlight the role of innovative aerospace technologies in enhancing the UK's defence posture and operational capabilities, with the development of UAS, advanced propulsion technologies and satellite communications as being essential to maintaining strategic advantages.

Next-generation combat air systems will change air power through increased incorporation of passive and active electronic warfare, including cyberwarfare and the utilisation of autonomous network-enabled weapons, and there will be a need to introduce safeguards and establish parameters on the use and scale of new airborne weaponry, including in the space domain. The role of space in defence will expand further to include the protection of space infrastructure. The government should, therefore, position the UK to be at the forefront of space exploration, commercial space activities, and satellite technology.

Investing in space capabilities will not only enhance national security but also help to address global challenges, such as climate change. Further research is needed to explore the economic viability of



⁽¹²⁾ https://en.wikipedia.org/wiki/New_Medium_Helicopter

⁽¹³⁾ https://www.nato.int/nato_static_fl2014/assets/pdf/2021/2/pdf/2102-factsheet-ngrc.pdf

⁽¹⁴⁾ Global Combat Air Programme – Wikipedia

⁽¹⁵⁾ The only way is Tempest (aerosociety.com)

Space-Based Solar Power (SBSP). Another challenge is the protection of the space environment, including the impact of the abundance of space debris. In December 2023, the European Space Agency (ESA) was tracking over 35,000 debris objects. There is an ever-increasing risk of collision and a need for a responsible approach to the exploitation of orbits around the Earth, particularly when considering planned constellations involving thousands of small satellites, their correct behaviour in orbit and clean removal at the end of their life cycle. This is an area where the government can build on the existing Space Industrial Plan⁽¹⁶⁾.

Enhancing air power and space capability will require government policies leveraging innovative technologies, fostering international partnerships, and investing in the next generation of aerospace and space professionals. This strategic focus not only aims to secure the UK's defence interests but also positions it as a global leader in the advancing fields of aerospace and space exploration.



RECOMMENDATIONS - AIR POWER AND DEFENCE

- **Strengthen** current aircraft fleet and next-generation defence and security: invest in advanced air and space defence systems to ensure the UK's airspace and space communications are secure.
- **Avoid** any gaps in our national defence capabilities: accelerate the roll out of Atlas A400M capabilities⁽¹⁷⁾ replacing the C-130J Hercules and acquire additional E-7 Wedgetails⁽¹⁸⁾.
- **Support** more research and development: invest in hypersonic flight, reusable launch systems, and advanced propulsion systems.
- **Develop** advanced UAS (drones) and associated technologies: strengthen research and development and the UK manufacturing base to provide UAS for military, government and commercial applications, drawing on experience of systems deployed in Ukraine and other conflict zones.
- **Procurement**: tackle defence procurement head-on by streamlining processes for UK Small Medium-sized Enterprises in the defence sector and the supply chain.
- **Enhanced** joint training programmes: accelerate UK initiatives with NATO for increased interoperability on systems and platforms.

RECOMMENDATIONS - SPACE AND SATELLITE CAPABILITIES

- **Re-join** the EU-ESA Galileo navigation programme, as the navigation system remains important for military operations, and provides resilience to the UK financial services sector, and energy distribution networks.
- **Support** Growth with UK's Space Industry: promote UK spaceports and satellite technologies.
- **Prioritise** Space Sustainability: advocate for and implement further measures to ensure the long-term sustainability of space activities.
- **Strengthen** UK Membership in ESA to boost joint research, collaborative observation, telecoms and navigation programmes, and industry contracts.
- **Support** UK Space Agency: increase cadre of experienced professionals in all aspects of space.
- **Develop** International Partnerships: strengthen engagement with NASA on joint air and space security and development projects.
- **Advance** Global Navigation Satellite Systems (GNSS)⁽¹⁹⁾: progress discussions on European Geostationary Navigation Overlay Service (EGNOS) and GNSS.

⁽¹⁶⁾ Space Industrial Plan: from ambition to action – advancing UK space industry – GOV.UK (www.gov.uk)

⁽¹⁷⁾ Atlas C.1 (A400M) | Royal Air Force (mod.uk)

⁽¹⁸⁾ <https://www.raf.mod.uk/aircraft/wedgetail-aew-mk1/>

⁽¹⁹⁾ raes-atmsg-gnss-services-supporting-civil-aviation-in-the-uk-briefing-paper.pdf (aerosociety.com)

PRIORITY 3: ACCELERATE REGULATORY FRAMEWORKS FOR FUTURE FLIGHT TECHNOLOGY

The push to accelerate regulatory frameworks to accommodate future flight technology is a priority reflecting the rapid evolution of the aerospace sector. Innovations with unmanned aircraft systems, eVTOL aircraft and autonomous flight systems present significant opportunities for transforming transportation, enhancing efficiency, and reducing environmental impact. However, these advancements also introduce complex challenges related to safety, airspace management and integration with existing aviation infrastructure.

The Future of Flight programmes⁽²⁰⁾ are accelerating the implementation of Artificial Intelligence (AI), robotics, autonomy and innovative technologies across all domains, raising issues around ethics, reliability, safety, validation and cost. Since 2019, The Future Flight Challenge programme⁽²¹⁾, jointly funded by government and industry, has supported the integration of advanced technologies, AAMs, and hybrid electric regional aircraft in the UK's airspace. The government should continue to back the development and integration of these innovative technologies into our national air space. Agile regulatory frameworks are required to adapt to technological progress while ensuring safety and compliance with international standards.

Regulatory adaptation will support the industry's future growth. New government regulations should facilitate innovation, with the adoption and exploration of new mobility solutions. Regulatory environments must enable the UK to maintain its competitive edge and drive innovation, collaboration, and access to global markets.

The Society understands the importance of government regulations that balance innovation with safety, security, and environmental stewardship. The President's 2024 briefing paper, *Shaping the Future of Advanced Air Mobility (AAM) Safety*⁽²²⁾, serves as a benchmark for policymakers when considering recommendations to advance the eVTOL sector. The Society is also facilitating international harmonisation of commercial UAS standards with the BSI and other standards organisations.

Creating flexible, forward-looking regulatory frameworks will be paramount in harnessing the potential of future flight technologies. This approach will ensure the UK's airspace remains safe, competitive, and conducive to innovation, positioning the country as a leader in the next generation of aviation and aerospace development.



⁽²⁰⁾ Future Flight Challenge – UKRI

⁽²¹⁾ Future Flight Challenge – Civil Aviation Authority (caa.co.uk)

⁽²²⁾ shaping-the-future-of-aam-safety-presidents-paper-2024.pdf (aerosociety.com)



RECOMMENDATIONS – REGULATORY PRIORITIES

- **Accelerate** Aviation Regulations: maintain momentum with aviation regulatory frameworks to keep pace with technological advancements, such as UAS and AAM.
- **Foster** Innovation through Regulation: support a regulatory environment that encourages innovation while ensuring safety and security.
- **Support** Experimental Test Beds and Regulatory Sandboxes: Fast-track initiatives with experimental aircraft and future flight technologies.
- **Engage** in Global Regulatory Harmonisation: work towards the harmonisation of aviation regulations and standards for UAS and AAM on a global scale with the International Civil Aviation Organization (ICAO), together with other international aviation authorities.
- **Ensure** the CAA has targets specifically to support the development of certification processes and standards for semi-autonomous systems in collaboration with the Federal Aviation Authority (FAA) and the European Union Aviation Safety Agency (EASA).
- **Support** Regulatory Resource: ensure government regulators are staffed to meet the demands from industry. Support associated standards development activity through BSI and EUROCAE⁽²³⁾.
- **Develop** Closer ties with EASA: foster co-operation with EASA on safety and environmental protection of air transport in Europe.
- **Strengthen** Cybersecurity: ensure that new regulatory frameworks adequately address the increasing importance of cybersecurity across the entire sector.

⁽²³⁾ EUROCAE (European Organisation for Civil Aviation Equipment) is a non-profit organisation with the objective to develop standards for European civil aviation.

PRIORITY 4: MAXIMISE ECONOMIC BENEFITS

The aerospace, defence and space sectors contribute respectively £27bn, £23bn and £17bn in turnover to the UK economy every year⁽²⁴⁾. The aviation sector alone supports one million jobs. Maximising economic benefits from the aerospace, space and aviation sectors is vital for the UK, poised to reinforce its position as a global leader while driving national economic growth. The aerospace industry, including commercial aviation, defence and space, is a significant contributor to the UK economy, supporting high-skilled jobs, fostering innovation and generating substantial export revenue. Over the last decade, UK defence aerospace exports have averaged over £9bn per annum. Seventy per cent of domestic aerospace production is exported.

Investment in aerospace, aviation and space remains critical for the UK's economic growth and national security. An investment-friendly environment should include regulatory stability, tax incentives and streamlined procurement processes. The government will need to sustain, multi-year investment in industry to support the UK's global competitiveness. Any new strategic approach by the government should be underpinned by providing an attractive investment environment, addressing ongoing workforce shortages, and putting the UK on a more resilient, competitive footing.

In 2024, the UK aerospace manufacturing sector received £200m in joint government and industry funding for aerospace research and development projects. The government should continue to support more research and development, investment in innovative technologies, and the expansion of global market access for UK aerospace products and services. This approach not only sustains the industry's competitiveness but also leverages its capacity for high-value job creation and substantial economic contributions. Spaceports, launch services and innovation will also support economic growth.

Policy frameworks should enhance the operational efficiency of air and space operators, support the adoption of sustainable aviation practices, and ensure the UK's aviation sector remains one of the most competitive globally. Enhancing airport infrastructure, liberalising air transport



agreements and fostering innovation in air mobility are key drivers of economic benefit. Tourism and business air travel are also vital in supporting the UK economy.

Regulatory innovation, public-private partnerships and strategic investments in future flight technologies can unlock new economic opportunities, enhance productivity and contribute to environmental sustainability. The Society emphasises the aerospace sector's role in economic development by advocating for policies that support the aerospace and aviation industries' growth, innovation and global competitiveness.

Prioritising the aerospace industry as an engine of economic growth requires strategic investments and an ecosystem that fosters innovation. This multifaceted approach will ensure benefits to the economy and position the UK to leverage the aviation, aerospace defence and space sectors for national prosperity and global leadership.

⁽²⁴⁾ Industry Facts & Figures – ADS Group Aerospace Sector Deal – GOV.UK (www.gov.uk)

RECOMMENDATIONS - ECONOMIC GROWTH WITH SOCIAL BENEFITS

- **Leverage** Aviation for Trade: use the aviation sector to boost trade by improving air freight capabilities and reducing barriers. This includes increasing cargo and passenger capacity at UK airports.
- **Attract** Investment: create incentives for both domestic and international investment in the UK's aviation, aerospace and space sectors.
- **Promote** UK Aerospace Globally: support marketing and export assistance programmes for UK aerospace products and services.
- **Foster** Industry Collaboration: encourage collaboration between the government, industry and academia to drive innovation and economic growth, including initiatives to encourage commercialisation of UK space capabilities.
- **Support** Regional Airports and Airfields: invest in the development of regional airports to spread economic benefits across the UK. Review the economic benefits in protecting UK airfields on brownfield sites.
- **Support** Economic and Social Benefits for the Aviation Sector Workforce: introduce tax incentives and pension provisions. Support mechanisms for improved work-life balance.
- **Avoid** any increase in passenger duty tax, particularly for less frequent flyers. In addition, the government should support airlines with the introduction of aviation carbon tax initiatives, such as the Emissions Trading Scheme (ETS) and Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).
- **Continue** to protect consumers through EU261 and other international frameworks and seek to increase consumer protection throughout the industry.



PRIORITY 5: DEVELOP FUTURE AND EXISTING TALENT

Developing future talent within the aerospace and aviation sectors is crucial for sustaining innovation and competitiveness. This priority is rooted in the recognition that the industry's success depends significantly on a diverse and skilled workforce, capable of driving technological advancements and addressing emerging challenges, not least with the current skills shortage across the sector. The dynamic nature of aerospace necessitates continuous learning and adaptation, making the cultivation of the next generation of professionals and support of the current generation a strategic necessity.

We need a better understanding of future needs, especially as air systems become more software dependent. In addition to traditional aeronautical skills, persons are needed who can bridge the gap between the physics of flight and software in ways not yet encountered. There is an equal need to address lower-skilled workers who remain vital to civil aviation operations. Ground operations staff are some of the lowest paid and would benefit from additional support and training.

For tomorrow's aerospace professional it is vital to align education and skills development with the evolving needs of the aerospace sector. The government should maintain initiatives aimed at fostering STEM (Science, Technology, Engineering and Mathematics) education and supporting young people to pursue careers in aviation, aerospace and space. The future talent pipeline from school age right through to higher and further education will depend on the early encouragement of interest in subjects in the sector.

The defence, aerospace, aviation and space industries continue to rely heavily on highly skilled talent. The government can enhance collaboration and alignment between industry, government and academia to ensure that education and training programmes are responsive to the sector's current and evolving needs. This includes investing in more apprenticeships, degree and doctorates, vocational training and lifelong learning opportunities to support career progression and workforce adaptability. The government can support recruitment and retention further by increasing investment in organisations such as the RAF Air Cadets, dedicated to young persons with interests in aerospace and cyber. Additional incentives for Adult Volunteers would help assist the shortage of staff at squadrons.

The Society plays a pivotal role in promoting aerospace careers and professional development. Through its educational programmes, scholarships and career resources, the Society aims to inspire and support individuals pursuing aerospace professions. The Society also emphasises the importance of diversity and inclusion within the workforce, recognising that a diverse talent pool is essential for driving innovation and addressing complex challenges.

Outreach programmes remain at the forefront of activity in developing future talent. Through Project Altitude the Society is reaching out to thousands of young persons. In 2023, the Boeing Girls into Engineering Day initiative brought girls from different schools together to learn about aviation and aerospace, taking part in practical activities and discussions. The Falcon 2 programme⁽²⁵⁾ has enabled school children to use their creative skills to design a flight simulator to support both able-bodied and disabled people to experience the thrill of flying. The Society's Cool Aeronautics programme⁽²⁶⁾ is a model example for government in attracting young people into the sector in the UK and internationally.

The Society's Futures Awards Committee was formed in March 2023 to oversee the launch and review of the newly created Futures Scholarship Awards⁽²⁷⁾. The careers team remain actively engaged through careers fairs, as well as colleges and secondary schools to deliver talks and workshops. Collaborating with



⁽²⁵⁾ The Falcon 2 Programme (aerosociety.com)

⁽²⁶⁾ Rising to the challenge – how Cool Aeronautics went virtual (aerosociety.com)



industry partners and the CAA, the Society continues to showcase education-based activities. In July 2023 we exhibited at the Royal International Air Tattoo (RIAT) at RAF Fairford, led by the RAF Charitable Trust to offer career advice in the sector.

In encouraging young people to pursue a career in the aerospace, aviation and space industries, the Society's Apprentice and Student Affiliate membership enables access to mentoring, knowledge resources, networking opportunities, awards and scholarships. The Society collaborates with both UK and international academic institutions to promote the benefits of membership to those at various levels of study. On diversity, the Society's woman-to-woman alta mentoring programme won the Economic and Social Research Council (ESRC) Impact prize for work on empowering women in aviation.

RECOMMENDATIONS - SKILLS AND WORKFORCE

- **Develop** a more joined-up approach with aerospace and aviation education at all levels across the UK: enhance education to create a pipeline of skilled aerospace professionals in collaboration with industry and academic partners.
- **Expand** Apprenticeships and Training: increase the availability of apprenticeships and vocational training programmes in aviation and aerospace in partnership with industry leaders.
- **Support** Career Development: implement more programmes and scholarships to support and incentivise ongoing professional development and career advancement in the sector.
- **Re-introduce** recognition schemes and accreditations that enable the efficient transfer of licences, skills and knowledge gained by serving UK military personnel into the relevant civilian sector.
- **Introduce** mutual recognition schemes for engineer and pilot licences between the CAA and EASA.
- **Promote** Diversity and Inclusion: actively work to increase diversity and inclusion within the aerospace workforce,

Looking ahead, developing future talent will require a multifaceted approach, encompassing education reform, industry partnerships and targeted initiatives to inspire and retain skilled professionals. This collaborative effort will ensure the aerospace and aviation sectors remain vibrant, innovative and capable of contributing to the UK's economic and strategic goals. These programmes should not be limited to the UK and the government should seek to accelerate co-operation initiatives and skills programmes with ICAO, International Air Transport Association (IATA) and other agencies.

The Society has also highlighted the growing mental health challenge to civil aviation safety⁽²⁸⁾. There is a growing recognition that mental health issues are having a significant impact on aviation safety for all safety-critical stakeholder groups, not just pilots. The Society is advocating greater research and the development of appropriate regulation, guidance and industrial understanding to address the issue.

ensuring a broad talent pool with an emphasis on attracting more women to the sector.

- **Embrace** Innovation and Lifelong Learning Platforms: use virtual and augmented reality and technologies to provide immersive training experiences for aerospace engineers. Draw on the Society's Aeroversity⁽²⁹⁾ online platform for aerospace professionals.
- **Address** the challenges for lower-skilled personnel who are vital to day-to-day operations and investigate ways to improve recruitment and retention.
- **Develop** a Student Loan System: a system akin to Norway, Australia and Canada to provide loans for individuals with the right skills to become a commercial pilot.
- **Support** next generation of aerospace professionals: simplify licensing and introduce VAT exemptions for pilot, engineering, and Air Traffic Control (ATC) training. The government should consider a loan funding system to support persons undergoing commercial pilot training to tackle pilot shortages and promote diversity and accessibility.

⁽²⁷⁾ Futures Scholarship (aerosociety.com)

⁽²⁸⁾ <https://www.aerosociety.com/news/pilot-mental-health-can-ai-powered-psychological-assessment-help/>

⁽²⁹⁾ <https://www.aerosociety.com/membership-accreditation/professional-development/aeroversity/>

SUMMARY

IT IS VITAL FOR THE GOVERNMENT TO ADDRESS THE FOLLOWING PRIORITIES TO SUPPORT THE UK AEROSPACE SECTOR BY:

- Advancing modernisation programmes with safe and secure sustainable and innovative technologies.
- Strengthening air power and space capabilities to protect national security interests.
- Accelerating regulatory capacity and capability to advance future flight.
- Supporting further investment, research and international co-operation.
- Developing joined-up collaborative approaches to attract, retain and upskill the workforce.

The Royal Aeronautical Society has been at the centre of shaping policy for successive governments over the past 150 years. The Society is proud of its legacy of bringing together world-leading expertise to build upon cumulative knowledge to support the advancement of the aerospace sector. The Society will continue to play a key role in convening the government and the international aerospace communities to share insights across industry, academia, regulatory authorities and other stakeholders.

The Royal Aeronautical Society looks forward to continuing our close collaboration with the government to ensure that the aerospace sector will remain a priority and at the forefront of innovation, defence, safety and security and economic prosperity.

The Royal Aeronautical Society
July 2024



Sources: Industry, Academia, Engineering Associations, RAeS resource centres and Specialist Groups.

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