UK Civil Aviation Authority

Consultation: Legislation for new types of Vertical Take-Off and Landing (VTOL) aircraft

Part A: Overview

CAP3267A

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Part A: Overview

Context

The emergence of new types of VTOL (Vertical Take-Off and Landing) aircraft and associated technologies has the potential to broaden and enhance the reach of civil aviation. The UK Government has set an objective to see piloted 'eVTOL' operations in the UK from 2028 and has established the Future of Flight programme to help deliver this objective.

Whilst it is possible to operate new types of VTOL aircraft today for testing and demonstration purposes, existing legislation does not always provide for the routine operation of these new aircraft. The CAA, sponsored by the Department for Transport, is identifying the proposed regulatory changes needed to accommodate the safe use of these new types of VTOL aircraft in the UK. Following our initial consultation and consultation response document on the policy frameworks for new types of VTOL, the CAA is consulting further on the detail of these frameworks – specifically covering Complex-Motor Powered Aircraft (CMPA), continuing airworthiness, pilot licensing and flight operations regulations.

We are aware of the differences across the aviation industry in the use of terms related to these new types of aircraft. For the purpose of these consultations, we use the term *new types of VTOL aircraft* to describe the types of aircraft we expect to be impacted by these proposals, rather than *eVTOL*. This recognises that not all aircraft impacted by our proposals will be electric-powered.

Our objectives

The CAA's eVTOL Delivery Model (CAP 3169)[1] set out our ambition to implement the regulatory framework and operational systems required to enable initial commercial passenger operations by the end of 2028. In delivering this ambition, we aim to include the regulatory changes required to enable carrying fare paying passengers or cargo, emergency medical services, and other commercial aviation activities, day and night, in most weather conditions. Whilst we expect other innovative use cases to emerge beyond the 2030s, such as remotely piloted or autonomous aircraft, these are not the focus of the current consultation.

Our proposals have been developed in support of CAA's mission of 'protecting people, enabling aerospace'. **Our primary objective is safety** – specifically, to ensure public and passenger safety through establishing proportionate regulations that allow safe flights and safe integration within the wider aviation ecosystem.

[1] CAP3169: Advanced Air Mobility: eVTOL Delivery Model | UK Civil Aviation Authority

In developing our proposals, we have also had regard to the following objectives:

- **Sector Growth:** In support of the CAA's Growth Duty contained in section 108 of the Deregulation Act 2015, develop a regulatory framework that can enable aerospace and the growth of the VTOL sector, promoting investment and job creation in the UK. Support the emerging industry operating across the ecosystem – such as original equipment manufacturers (OEMs), operators and aerodrome operators, amongst others.
- **Support for UK's Net Zero target:** Enable the development and deployment of electric, hybrid-electric, and hydrogen VTOL aircraft that may contribute to the reduction of transport-related carbon emissions.
- **Innovation:** Provide policy recommendations that allow and accommodate innovation in technology, whilst preserving safety.
- **International compatibility:** Ensure compliance with any published ICAO Standards and Recommended Practices. Promote compatibility with other international frameworks, to ensure we remain harmonised with the international system where it is in the UK's interest to do so.

The regulatory framework

Existing regulations can currently support the testing and demonstration of new types of VTOL aircraft. E Conditions provides an established framework for a limited range of low-risk development, pre-certification, testing and demonstration flying of certain experimental aircraft. In addition, the Permit to Fly (PtF) framework can enable a broader range of aircraft to fly, subject to conditions and limitations set out in the associated Flight Conditions (FC).

For aircraft to qualify for a Certificate of Airworthiness, they will require UK Type Certification or validation of a Foreign State certification. The CAA has adopted UK.SC.VTOL Issue 2, together with the associated Means of Compliance, as the intended UK certification basis for new types of VTOL aircraft.

The regulatory frameworks needed to enable commercial operations at scale – across airworthiness, flight operations, pilot licensing, and aerodromes – are not yet in place. Our proposed overarching policy approach is to apply existing regulatory frameworks to these new types of VTOL aircraft as far as possible. This means we can utilise an established, well-understood framework and ensure equity with existing aviation, coherence across the aviation regulatory system and compatibility with international frameworks. We have proposed bespoke regulatory requirements where technical or operational characteristics mean that existing regulations cannot be applied – for example, on fuel or energy policy. Some of the relevant regulations that could require amending to implement the regulatory framework for VTOL in the UK include, but are not limited to:

- Air Navigation Order 2016 (S.I. 2016/765)
- UK Regulation (EU) 2018/1139 – i.e. the Basic Regulation
- UK Regulation (EU) 748/2012 – i.e. the Initial Airworthiness and Environmental Certification Regulation
- UK Regulation (EU) 2015/640 – i.e. the Additional Airworthiness Regulation
- UK Regulation (EU) 1321/2014 – i.e. the Continuing Airworthiness Regulation
- UK Regulation (EU) No 1178/2011 – i.e. the Aircrew Regulation
- UK Regulation (EU) No 139/2014 – i.e. the Aerodromes Regulation
- UK Regulation (EU) 965/2012 – i.e. the Air Operations Regulation

Any changes to these regulations will need to be coordinated with other interdependent rulemaking tasks and consultations. These include:

- **Heliports certification requirements** – in line with ICAO State Letters pertaining to Annex 14 and Annex 19, introducing heliport certification and Safety Management System (SMS) requirements, improving regulatory oversight, and harmonising requirements with aerodromes and future vertiports.
- **Changes to UK Regulation (EU) No 1321/2014 Part 66** – including the addition of the electric powerplant category to the engineer's licensing requirement.
- **Implementation of UK Information Security Management System** – introducing regulations relating to management of information security.

In addition to the regulatory changes set out above, changes will also be required to Acceptable Means of Compliance (AMC) and Guidance Material (GM). Changes to policy documents (e.g. CAP 371 The Avoidance of Fatigue In Aircrews[2]) may also be required.

Previous consultations

The CAA published a consultation on 7th November 2025 on the policies needed to accommodate the safe use of these new types of VTOL aircraft[3]. This consultation proposed to use existing aviation regulatory frameworks where possible, only introducing bespoke requirements where technical or operational characteristics mean that existing requirements cannot be applied.

[2] CAP 371 - The Avoidance of Fatigue In Aircrews Guide to Requirements

[3] CAP3186: Policy framework for new types of Vertical-Take Off and Landing (VTOL) aircraft | UK Civil Aviation Authority

The consultation closed on 29th January 2026 and received 28 responses. On 23rd April 2026, the CAA published a consultation reply document providing a summary of comments received and our response[4]. Overall, the proposals in the consultation received strong levels of support. Across all questions, 85% of responses were positive, and 7% were negative. Many respondents considered our proposals effective, proportionate and safety-enabling. Comments that disagreed with our proposals mostly requested further clarification or detail on how proposals would work in practice. Some respondents raised concerns about the international compatibility of our proposals. The consultation reply document set out the following positions to take forward:

- **Definitions and Thresholds**: To classify new types of VTOL aircraft as Powered-Lift or Non-Conventional Helicopters, and to treat these aircraft as Complex Motor-Powered Aircraft (CMPA) by default.
- **Initial Airworthiness:** To include new VTOL aircraft in the scope of existing initial airworthiness requirements.
- **Continuing Airworthiness**: To include new VTOL aircraft in the scope of existing continuing airworthiness requirements, and to determine any specific requirements needed for new VTOL aircraft maintenance.
- **Pilot Licensing**: To deliver a pilot licensing pathway to enable commercial and private pilot licence holders to fly new types of VTOL aircraft.
- **Flight Operations**: To apply existing flight operations regulatory requirements for aeroplanes and helicopters, or a combination of both, to new types of VTOL aircraft, as is appropriate to the specific type of aircraft.
- **Aerodromes:** To apply regulatory requirements for aerodromes - currently under review as part of the Heliports Certification and Safety Management System rulemaking - to aerodromes accommodating new types of VTOL.

This package of consultations sets out the detail behind the CMPA, Continuing Airworthiness, Pilot Licensing and Flight Operations policy positions established through this previous consultation exercise.

Other relevant work

The CAA has adopted UK SC.VTOL Issue 2 to enable the certification of new types of VTOL aircraft. In addition, in the absence of any ICAO noise standards for such aircraft, the CAA intends to require certified VTOL aircraft to comply with the essential requirements for environmental compatibility prescribed in Annex III to the Basic Regulation (UK Regulation (EU) 2018/1139) using the related Environmental Protection Technical Specifications already published by EASA as Means of Compliance[i].

[4] CAP3240 : - VTOL Consultation Reply Document | UK Civil Aviation Authority

These consultations build on several prior publications. These include:

- **Advanced Air Mobility: eVTOL Delivery Model (September 2025)** – a CAA publication describing the objectives, delivery principles, emerging policy positions and future activities needed to support the implementation of eVTOL regulation in the UK.[5]
- **The Roadmap for Advanced Air Mobility Aircraft Type Certification (June 2025)** – a joint publication with several other National Aviation Authorities, describing the activities needed to deliver harmonization of aircraft certification.[6]
- **Future of Flight Action Plan (March 2024) –** a joint publication by DfT, the CAA and Future of Flight Industry Group setting out the previous government's strategic roadmap for drones and Advanced Air Mobility.[7]
- **Policy statements (Various)** – CAA documents explaining prior policy positions across airworthiness, pilot licensing and flight operations at the time of publication.

The policy proposals included in this consultation have also been informed by a number of research projects commissioned or conducted by the CAA. These include:

- **Systems Theoretic Process Analysis (STPA) based Safety Analysis of eVTOL Operations (August 2025)** – A systems-thinking based safety analysis of risks and mitigations needed for eVTOL operations, completed in conjunction with WMG, University of Warwick and the eVTOL Safety Leadership Group [8]
- **Battery Thermal Runaway in eVTOL Aircraft: Risks, Mitigations, and Firefighting Strategies (December 2025)** – An assessment of the risks associated with Li-Ion batteries in eVTOL aircrafts, and what the CAA might do to mitigate these risks.[9]
- **Research Assessment of Transitory Helicopter Downwash (RATHD) project (April 2025)** – Verification and validation of downwash simulations of eVTOL aircraft.[10]
- **Noise measurements from eVTOL aircraft: A review of available data (June 2025)** – A review of literature on noise emissions from eVTOL aircraft. [11]

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[5] CAP3169: Advanced Air Mobility: eVTOL Delivery Model | UK Civil Aviation Authority

[6] Roadmap for AAM aircraft type certification | Civil Aviation Safety Authority

[7] Future of Flight action plan - GOV.UK

[8] CAP3141: STPA-based Safety Analysis of eVTOL Operations | UK Civil Aviation Authority

[9] CAP3203: Battery Thermal Runaway in eVTOL Aircraft: Risks, Mitigations, and Firefighting Strategies | UK Civil Aviation Authority

[10] CAP3075: Protecting the Future: Trials and Simulation of Downwash and Outwash for Helicopters and Powered Lift Aircraft | UK Civil Aviation Authority

[11] CAP2506: Noise measurements from eVTOL aircraft: A review of available data | UK Civil Aviation Authority

- **Understanding the downwash/outwash characteristics of eVTOL aircraft (October 2023) -** Initial findings of the effects of downwash for the safe operation of eVTOL air vehicles[12].

In addition, our proposals are being informed by industry engagement conducted through stakeholder working groups in place for flight operations, pilot licensing and heliports, as well as continued engagement with the ADS Advanced Air Mobility Special Interest Group.

Consultation summary

The consultations within this package put forward the proposals summarised below. This package does not include proposals regarding aerodromes, which are being consulted on separately within the Heliport Certification and Safety Management System work. We are also not seeking views on definitions or initial airworthiness at this stage, which we consider to be resolved following our November 2025 consultation (CAP3186)[13].

Part B: Complex Motor-Powered Aircraft

In CAP3186 and CAP3240, the CAA confirmed that it would treat all new types of VTOL aircraft as Complex-Motor Powered Aircraft by default. This will ensure that aircraft are maintained to the highest standards, pilots are trained at an ATO, and they are operated to the highest standards. It ensures that both operational oversight and maintenance standards are aligned with the complexity and types of operations these aircraft can be used for.

However, we also acknowledge that there may be cases where treating Powered-Lift and Non-Conventional Helicopters as CMPA may not be proportionate for certain operational regimes. In CAP3186, we proposed that the CAA have a discretion to determine whether a specific Powered-Lift aircraft or Non-Conventional Helicopter can be excluded from the CMPA regime. Part B sets out the proposed mechanism in more detail. Specifically, it proposes:

- To introduce an application process, with an application submitted by the Design Approval Holder to have an aircraft treated as non-CMPA.
- To introduce eligibility criteria for this application process, including (i) Maximum-Take-Off Mass (MTOM) (ii) Operations limited to private, recreational flights (i.e. non commercial) and (iii) submission of a risk assessment.
- For non-CMPA status to be granted subject to the above eligibility criteria being met, acceptance of the risk assessment by CAA following a technical review, and possible operational restrictions imposed by the CAA.

[12] CAP2576: Understanding the downwash/outwash characteristics of eVTOL aircraft | UK Civil Aviation Authority

[13] CAP3186: Policy framework for new types of Vertical-Take Off and Landing (VTOL) aircraft | UK Civil Aviation Authority

Part C: Continuing Airworthiness

The requirements for continuing airworthiness are set out in UK Regulation (EU) No 1321/2014. The CAA policy position is that the current continuing airworthiness framework and requirements are well established and are suitable for new types of VTOL aircraft. We therefore intend to use the current continuing airworthiness framework and requirements, only amending the regulations where necessary to include Powered-Lift and Non-Conventional Helicopters. This approach will ensure new VTOL aircraft will be subject to the same high maintenance standards with the same level of oversight that applies to existing aircraft.

In line with the CAA's wider proposed approach to the new regulatory framework, bespoke provisions will only apply to Powered Lift and Non-Conventional Helicopters where and when the CAA considers this to be required for safety reasons and/or to capture novel technology. To enable this, Article 3 is proposed to be amended to reflect that Powered Lift aircraft are proposed to be treated as aeroplanes, and Non-Conventional Helicopters are proposed to be treated as helicopters unless relevant legislation specifies otherwise.

Changes to the regulations relate to continuing airworthiness tasks, complex maintenance tasks, maintenance implementation procedures, pilot-owner maintenance and continuing airworthiness organisations. They also include changes required to align to CMPA proposals set out in Part B, and other changes to UK Regulation (EU) No 1321/2014 currently being progressed under RMT.0201 including the addition of the electric powerplant category to the engineer's licensing requirement.

Part D: Pilot Licensing

The requirements for personnel licensing are set out in UK Regulation (EU) No 1178/2011 and the Air Navigation Order 2016. We consider that the current licensing framework and requirements are well established and are suitable to enable a personnel licensing pathway for new types of VTOL aircraft. We therefore intend to use the current framework and the principles of the Powered-lift requirements, only amending the regulations where necessary to enable Powered-lift type ratings.

Certification Specifications for Operational Suitability Data—Flight Crew Data (CS-FCD) enables the determination of the specific type rating requirements for new aircraft types. It provides a standardised data-driven process to ensure pilots receive the appropriate training for a particular aircraft type. Changes to the regulations align the prerequisite requirements to the type of operation being flown. This approach will enable a pathway for commercial and non-commercial operations which promotes safety while enabling innovation.

Part E: Flight Operations

The requirements for flight operations are set out in the UK Regulation (EU) 965/2015. As set out in CAP3186, our proposed approach is to make use of existing definitions, regulations, classifications and principles for new types of VTOL aircraft as far as practical. Regulations will be based be on the core capability of the aircraft, whether it has characteristics of both an aeroplane and a helicopter, or only those of a helicopter. The former will be treated as Powered-Lift and we will apply aeroplane rules, helicopter rules or a combination of the two, depending on the mode of operation. The latter fit the definition of a helicopter and will be treated as such. Applying the principles of existing rules, whenever practical, will expedite our work and help ensure that the new entrants to the aviation market are treated in an equitable fashion with the existing aviation sector.

In this consultation, the most material proposals we set out relate to:

- Requirements for a Flight Data Monitoring Programme (FDM) for all aircraft certified under SC-VTOL that are required to have a Flight Data recorder (FDR).
- Requirements for FDRs and Lightweight Recorders for aircraft certified under SC-VTOL.
- The use of Operating Sites by Powered-Lift.
- Fuel schemes for new types.
- Recharging with passengers embarking, on board, or disembarking.
- Overwater operations with new types.
- Performance and Operating Limitations requirements for new types.
- Instruments Data and Equipment required for new types.
- The use of Specific Approvals by new types.

How to respond

The CAA is seeking feedback from both the general public and stakeholders across the VTOL sector. This includes aircraft designers, aircraft manufacturers, aviation technology providers, maintenance organisations, continuing airworthiness management organisations (CAMOs), maintenance training organisations, flight operators, pilots, pilot training organisations, aerodrome operators, ground handling service providers, air navigation service providers, and academics, amongst others. Respondents are invited to respond to all or a subset of the consultation documents depending on their preference.

Responses must be provided by **31st July 2026**. Responses should be provided on Citizen Space, using the link provided on the CAA website.

Following the close of the consultation period, the CAA will consider all consultation responses and publish our updated recommendations in a consultation reply document. All indicative drafting included within these consultation documents remains subject to change following the consultation period. When these consultations have concluded, we will provide our final opinion and instructions to Department for Transport, who will consider whether to progress with our proposals in a statutory instrument, or the extent to which, depending on the passage of the Civil Aviation Bill through Parliament, the CAA may take forward measures under powers conferred on them by that bill.

ANNEX A

Abbreviations

AAM – Advanced Air Mobility

AMC – Alternative Means of Compliance

ATO – Approved Training Organisation

CAMO – Continuing Airworthiness Management Organisations

CMPA – Complex Motor-Powered Aircraft

CS FCD – Certification Specific Flight Crew Data

DfT – Department for Transport

EU – European Union

FC – Flight Conditions

FDM – Flight Data Monitoring

FDR – Flight Data Recorder

GM – Guidance Material

ICAO – International Civil Aviation Organisation

MTOM – Maximum Take-off Mass

OEM – Original Equipment Manufacturer

PtF – Permit to Fly

RATHD – Research Assessment of Transitory Helicopter Downwash

SC VTOL – Special Condition Vertical Take-off and Landing

SMS – Safety Management System

STPA – Systems Theoretic Process Analysis

eVTOL – Electronic Vertical Take-off and Landing

VTOL – Vertical Take-off and Landing