UK Civil Aviation Authority

Annual Safety Review 2024

CAP 3146

Published by the Civil Aviation Authority, 2025

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First published August 2025

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The latest version of this document is available in electronic format at: www.caa.co.uk/CAP3146

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Definitions

Occurrence[1]

Occurrence means any safety-related event which endangers or which, if not corrected or addressed, could endanger an aircraft, its occupants or any other person and includes in particular an accident or serious incident. Occurrences in this document refer to Mandatory Occurrence Reports and Voluntary Occurrence Reports submitted to the UK CAA in accordance with UK Regulation No 376/2014 (the UK Mandatory Occurrence Reporting Regulation).

Accident[2]

An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

a) a person is fatally or seriously injured as a result of:

— being in the aircraft, or

— direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or

— direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

b) the aircraft sustains damage or structural failure which:

— adversely affects the structural strength, performance or flight characteristics of the aircraft, and

— would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades,

[1] UK Regulation No 376/2014 (the UK Mandatory Occurrence Reporting Regulation)

[2] ICAO Annex 13, Aircraft Accident and Incident Investigation

landing gear, and those resulting from hail or bird strike (including holes in the radome); or

c) the aircraft is missing or is completely inaccessible.

An injury resulting in death within thirty days of the date of the accident is classified, as a fatal injury.

If the fatality occurs to persons outside the aircraft, then these are treated as third party fatalities and are not always reportable to the CAA. Occupational health and safety related occurrences are reported to and investigated by the Health and Safety Executive (HSE).

Serious Incident[2]

An incident involving circumstances indicating that there was a high probability of an accident and associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down.

The difference between an accident and a serious incident lies only in the result.

Serious Injury[2]

An injury sustained by a person in a accident which:

a) requires hospitalisation for more than 48 hours, commencing within seven days from the date the injury was received; or
b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or
c) involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or
d) involves injury to any internal organ; or
e) involves second or third degree burns, or any burns affecting more than 5 per cent of the body surface; or
f) involves verified exposure to infectious substances or injurious radiation.

Types of Flight

Business Aviation

Business aviation, also sometimes called corporate aviation, is generally defined as the use of any general aviation (GA) aircraft for a business purpose. Business aviation is considered a subset of the larger general aviation, which encompasses all civil aviation activity except commercial airlines.

Commercial Air Transport

An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

Offshore operation

Helicopter operations which routinely have a substantial proportion of the flight conducted over sea areas to or from offshore locations. Such operations include, but are not limited to, support of offshore oil, gas and mineral exploitation and sea-pilot transfer.

General Aviation

An aircraft operation other than a commercial air transport operation or an aerial work operation.

Military operations

Flights conducted by UK or other state military services. This is not overseen by the CAA.

Acronyms and Abbreviations

AAIB	Air Accident Investigations Branch
AAM	Advanced Air Mobility
AOC	Air Operators Certificate
ATM	Air Traffic Management
ATS	Air Traffic Services
CAT	Commercial Air Transport
HEMS	Helicopter Emergency Medical Services
NASP	National Aviation Safety Plan
RSMS	Regulatory Safety Management System
RPAS	Remotely Piloted Aircraft System
SAR	Search and Rescue
SMS	Safety Management System
SPI	Safety Performance Indicator
VTOL	Vertical Take-Off & Landing
eVTOL	Electric Vertical Take-Off & Landing

Introduction

This Annual Safety Review for United Kingdom (UK) is compiled by the Safety Intelligence Team of the UK Civil Aviation Authority (CAA). It presents the safety performance of UK civil aviation for 2024.

Data is subject to change as ongoing investigations are completed. This review is prepared using occurrence data collected in accordance with UK Regulation (EU) No 376/2014 (the UK Mandatory Occurrence Reporting Regulation). Data is collected from occurrences that have been reported to the CAA and have occurred in or outside the UK involving UK registered aircraft and non-UK operators in UK airspace.

UK airspace and UK airlines are among the safest in the world. There has not been a fatal accident involving a commercial airline in the UK since 1989. The CAA is not complacent; the government is committed, through the UK state safety system, to maintaining and improving the high safety standards in aviation.

Use of Occurrence Reports

The sole objective of occurrence reporting is the prevention of accidents and incidents and not to attribute blame or liability.

Occurrence data provides regulators and industry stakeholders a focused overview of safety performance across the UK aviation sector. It highlights key incident trends, systemic risks, and the effectiveness of current mitigations. In addition, it examines the implications of new developments such as autonomous systems, urban air mobility corridors and hybrid propulsion technologies on existing safety protocols and oversight mechanisms.

The objective is to support evidence-based decision-making, enable proactive risk management and foster close collaboration between regulatory bodies and industry players. By drawing on the latest data and shared insights, this approach contributes to shaping a regulatory environment that is both safety-centric and innovation-ready.

In 2024, the CAA received close to 60,000 occurrence reports, of which 259 (0.4%) were categorised as an accident or a serious incident.

Around 80% of accidents and serious incidents involved a general aviation aircraft or a remotely piloted aircraft system.

Injury related accidents are rare, only 0.02% of all reports in 2024 resulted in fatal injuries (all involving a general aviation aircraft).

Last year the overall reporting of occurrences increased another 26% compared to 2023.

Global Navigation Satellite System (GNSS) interference was again most reported in 2024 (over 30% of all reports). In the second half of 2024 the reporting rate plateaued and remains level or slightly lower than earlier in the year. UK CAA has published a new version of a Safety Notice[3] on the topic to raise awareness, to advise Operators who may be impacted by the loss or degradation of GNSS signals, to update the affected areas and to include the newest information.

Internally, we perform statistical analysis to primarily support the UK's State Safety Programme (SSP) and subsequently inform oversight regulatory actions and interventions, policy decisions and safety promotion. More specifically we perform:

- descriptive analysis of event types and occurrence category analysis by aviation sector in support of risk-based oversight activities
- specific risk analysis in support of the Regulatory Safety Management System (RSMS)

[3] Global Navigation Satellite System Radio Frequency Interference Leading to Navigation/Surveillance Degradation SN-2025/006

(UK CAA website: https://www.caa.co.uk/our-work/publications/documents/content/sn-2025006/)

- monitoring of Safety Performance Indicators (SPIs) to identify trends and inform safety risk management

We also respond to external occurrence data requests (mainly from the civil and military aviation industry) submitted through SRG1605 and SRG1604 forms and requests made via the Freedom of Information Act (FOIA). Safety information is only shared for the purpose of maintaining and improving aviation safety.

In 2024, common data requests have not changed much compared to previous years. These mainly included statistics on ground collisions, undeclared dangerous goods, engineering reports related to certain aircraft types, etc. Aviation organisations request this with a purpose to enrich their operational safety picture and improve their Safety Management Systems, where applicable, especially where there are emerging safety trends with limited information available.

Equally, military aviation organisations query for information on certain aspects of civil aviation (like laser or drone interferences).

There is continuing interest from the general public and media on disruptive passengers and drone flying related topics.

We also publish a number of reports every year based on the aviation safety data we collect. Areas covered include:

- Birdstrike data
- Laser incidents

Finally, analysis of safety occurrences informs the development of safety promotion material such as CAA publications and Safety Sense Leaflets. In 2024, we published content and campaigns including:

- Mountain Flying
- Paramotor Code
- Helping drone users to fly safely
- Carbon Monoxide in General Aviation
- Lithium battery safety
- Airspace safety

Comms publications aim to raise awareness about key risk areas, seasonal events and high severity occurrences. Furthermore, investigation findings and outputs of severe occurrences that lead to the identification of causal factors and root causes also contribute to the development of bespoke safety publications. Examples of such publications can be found:

- Safety Notices

- The Importance of Occurrence Reports
- Airspace & Safety Initiative
- Air Safety Support International

Handling, processing, and investigation of occurrence reports sometimes involves different business areas at the CAA who may have an interest in the event from different perspectives, such as the type of aircraft flown, the location or the type of event. For the purposes of this document, individual occurrences may be featured in more than one business area.

The analysis of data presented in this Annual Safety Review may differ from reports published by other organisations and regulators. This is a result of different data collection methods and analysis used to interpret the data. This includes year on year changes to data from historic CAA reports and publications. Each report has its own merits and contributes to the analysis and data landscape of safety reporting.

Aerodromes

This section includes accidents and serious incidents with an aerodrome involvement at UK certified and licensed aerodromes, involving civil aircraft. Lists of the aerodromes that hold a UK Certificate or a UK License are available on the CAA's website.

An aerodrome occurrence may be described as those involving an aerodrome's infrastructure, or personnel working at the aerodrome (including those who may be employed by a third party such as a ground handler or an airline). Events such as technical malfunctions experienced by aircraft are only included if there are factors directly related to the aerodrome that influence the outcome of the occurrence. Security events are not covered by this document, therefore, events such as bomb threats and stowaways have been excluded. The involvement of an aerodrome in an occurrence does not imply that the aerodrome was at fault or the cause of the occurrence.

The types of occurrences which may be classed as related to aerodromes include runway excursion, runway incursion, abnormal runway contact, loss of control on the ground, ground collision, collision with an obstacle during take-off and landing and ramp/ground handling.

In 2024 there were 23 occurrences classed as an accident or serious incident relating to aerodromes, 12 were accidents and 11 were serious incidents. Some of the main reasons for report in 2024 were loss of control on the ground, runway excursion, ground collision and ground handling.

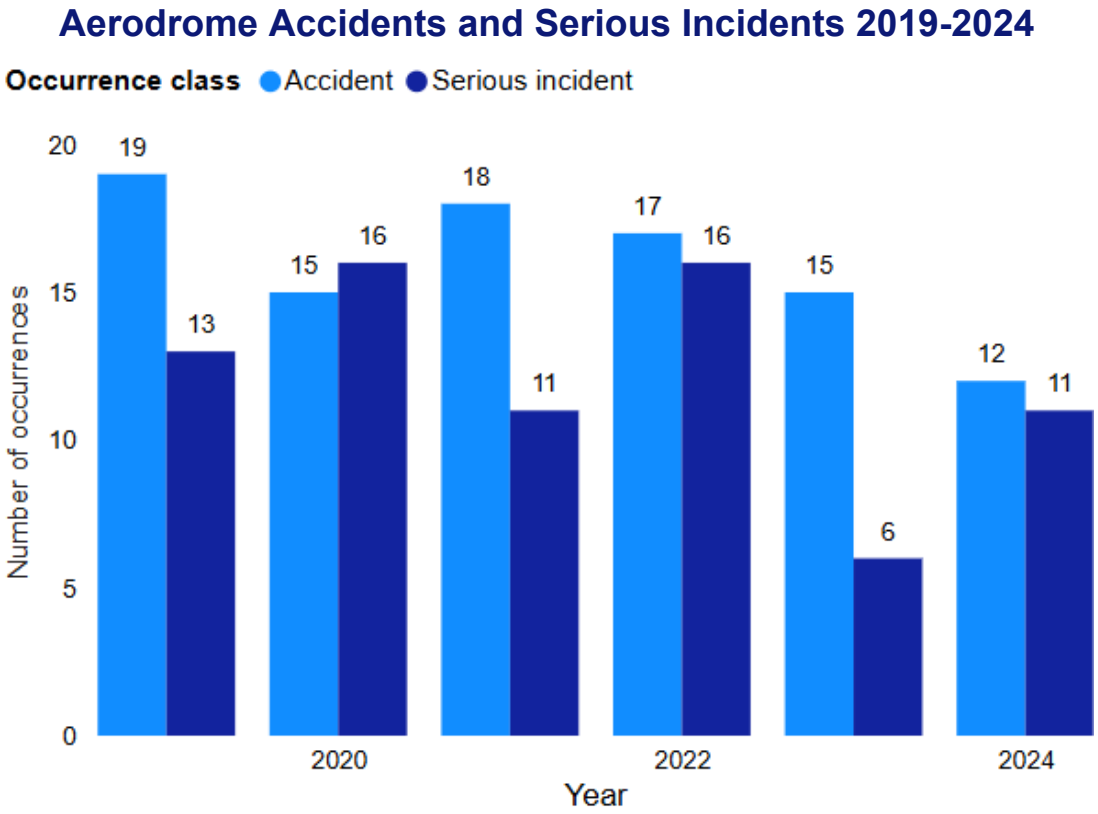
The number of accidents related to aerodromes reduced to 12 in 2024 from an average of 17 during the period 2019-2023. The number of serious incidents related to aerodromes increased to 11 in 2024 from 6 in 2023, although lower than the average of 12 for the years 2019-2023.

There was one serious injury accident reported to the CAA in 2024 that involved a member of Cabin Crew who fell from steps whilst closing the aircraft door for departure at East Midlands Airport[4]. The last accident that resulted in a serious injury occurred in 2021.

There were no accidents that resulted in a fatality in the years between 2019 and 2024 at UK certified or licensed aerodromes. If the injury or fatality occured to persons outside the aircraft, then these are treated as third party injury or fatalities and are not always reportable to the CAA. Occupational health and safety related occurrences are reported to and investigated by the Health and Safety Executive (HSE).

[4] AAIB investigation ongoing (AAIB website accessed 18th June 2025: https://www.gov.uk/government/publications/aaib-current-field-investigations/air-accidents-investigation-branch-current-field-investigations)

The graph below provides a visual representation of accidents and serious incidents related to aerodromes in the UK in the years between 2019 and 2024.



Year	Reported Accidents	Reported Serious Incidents
2019	19	13
2020	15	16
2021	18	11
2022	17	16
2023	15	6

Year	Reported Accidents	Reported Serious Incidents
2024	12	11

Air Traffic Management (ATM)/Air Navigation Services (ANS)

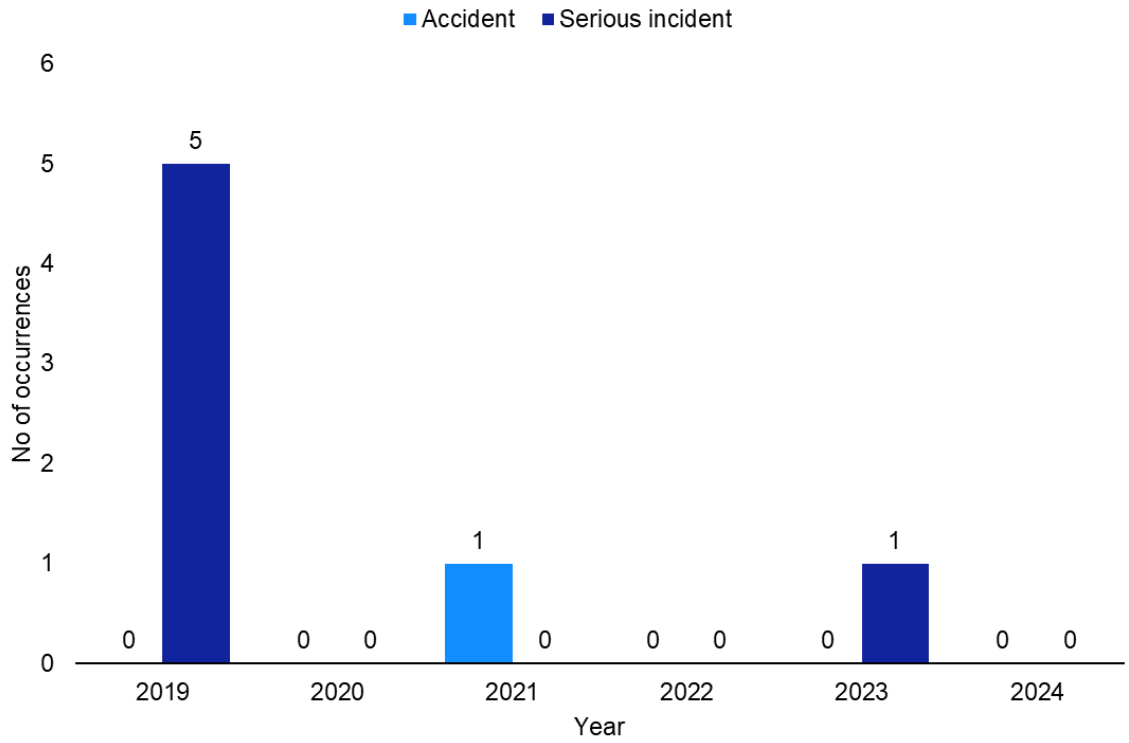
This section includes accidents and serious incidents with an ATM/ANS involvement that occurred within UK airspace. The involvement of ATM/ANS in an occurrence does not imply that ATM/ANS were at fault or the cause of the occurrence.

The types of reports which may be classed as related to ATM/ANS include airborne conflict, runway incursions, losses of separation, airspace infringements, air traffic control engineering problems and difficulties with communication.

There were no occurrences involving fatalities or serious injuries reported under ATM/ANS in 2024, the last fatal accident with ATM/ANS involvement occurred in 2021.

The graph below provides a visual representation of accidents and serious incidents related to the provision of ATM/ANS in the UK in the years between 2019 and 2024.

ATM/ANS Accidents and Serious Incidents 2019-2024



Year	Reported Accidents	Reported Serious Incidents
2019	0	1
2020	0	5
2021	1	0
2022	0	0
2023	0	1
2024	0	0

General Aviation (GA)

The UK GA sector covers around 17,000 aircraft (mainly with a maximum take-off mass below 5,700 kg), including specialist activities such as pilot training, balloon operations, gliding, ex-military aircraft operations, parachuting and air displays. Overall, while the risk associated with GA is greater than commercial aviation, the safety level of GA in the UK is still acceptable given the nature of activity undertaken.

The CAA's GA Unit exists to help people avoid potential harm when they encounter GA, and our team is committed to delivering protection now and in the future as effectively and efficiently as possible. The unit is responsible for safety promotion activities aimed at the GA industry including:

- podcasts
- safety animations
- a variety of safety publications, including the SkyWay Code and the series of Safety Sense Leaflets
- webinars
- attending GA community events

At the time of writing, owners and operators of around 10,600 UK registered GA aircraft[5] have reported close to 600,000 hours of flying in 2024. This reflects a shallow downward trend of reported flying hours over a seven year period (since 2017).

In 2024, the CAA received over 2,200 occurrence reports that involved a GA aircraft, of which 7% were classified as accidents or serious incidents and 1% resulted in fatal or serious injuries to persons on board. GA occurrence reports make 3.6% of all occurrences reported to UK CAA.

Many of the accidents and serious incidents are reported to and investigated by the Air Accidents Investigation Branch (AAIB) and some are still under investigation[6].

There were 158 accidents and serious incidents involving GA aircraft in 2024, of which 83% resulted in no injuries. The number of accidents and serious incidents were well below the past 10-year average (202), with a rate of 27 per 100,000 reported hours flown.

[5] UK aircraft register (UK CAA website: https://www.caa.co.uk/aircraft-register/g-info/)

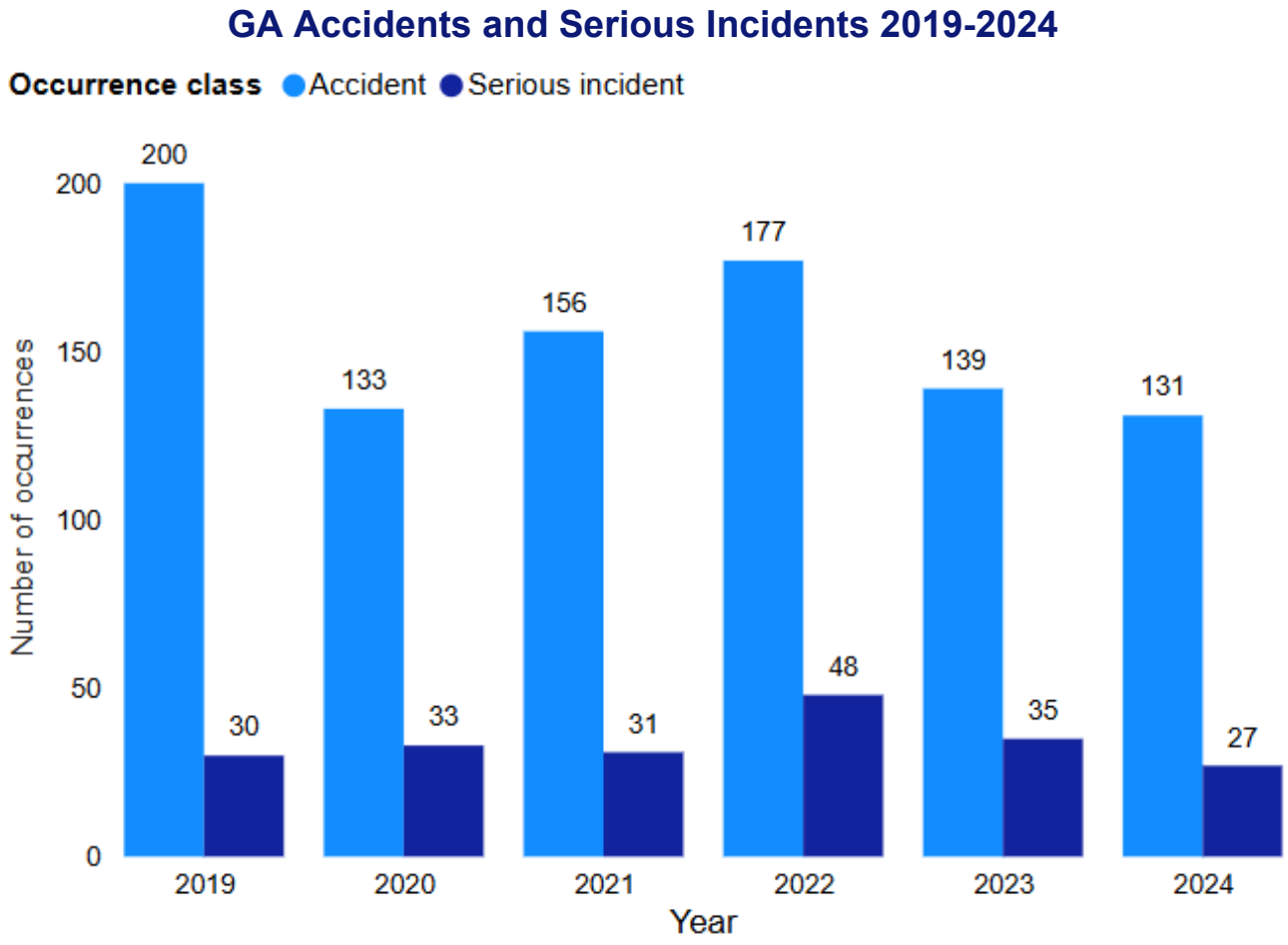
[6] AAIB investigation ongoing (AAIB website accessed 18th June 2025: https://www.gov.uk/government/publications/aaib-current-field-investigations/air-accidents-investigation-branch-current-field-investigations

Eight accidents resulted in fatal injuries to nine people (this number of fatalities is below past 10-year average of 14).

There were 11 reportable accidents that resulted in serious injuries to 14 people.

Reportable accidents and serious incidents in 2024 (and long-term) can be largely divided into two categories: those contributed by pilot performance (such as insufficient preparation for a flight and poor aircraft handling during critical phases of flight) and those related to technical malfunctions (such as engine failure) during flight.

The graph below provides a visual representation of reportable accidents and serious incidents involving general aviation aircraft in the years between 2019 and 2024.



Year	Reported Accidents	Reported Serious Incidents
2019	200	30
2020	133	33
2021	156	31
2022	177	48
2023	139	35
2024	131	27

Non-Scheduled Commercial Air Transport (CAT)

Non-scheduled fixed-wing CAT covers a variety of related flight operations, including various corporate flights, air taxi and aerial works. Commercial rotorcraft operations are covered in a later section.

The main difference from the scheduled sector is that aircraft in the non-scheduled area are often smaller with fewer or no passengers and they do not operate to a set timetable.

The safety issues of these operations are often similar to the ones in scheduled operations but with a different variety of aircraft types and locations that they operate to/from.

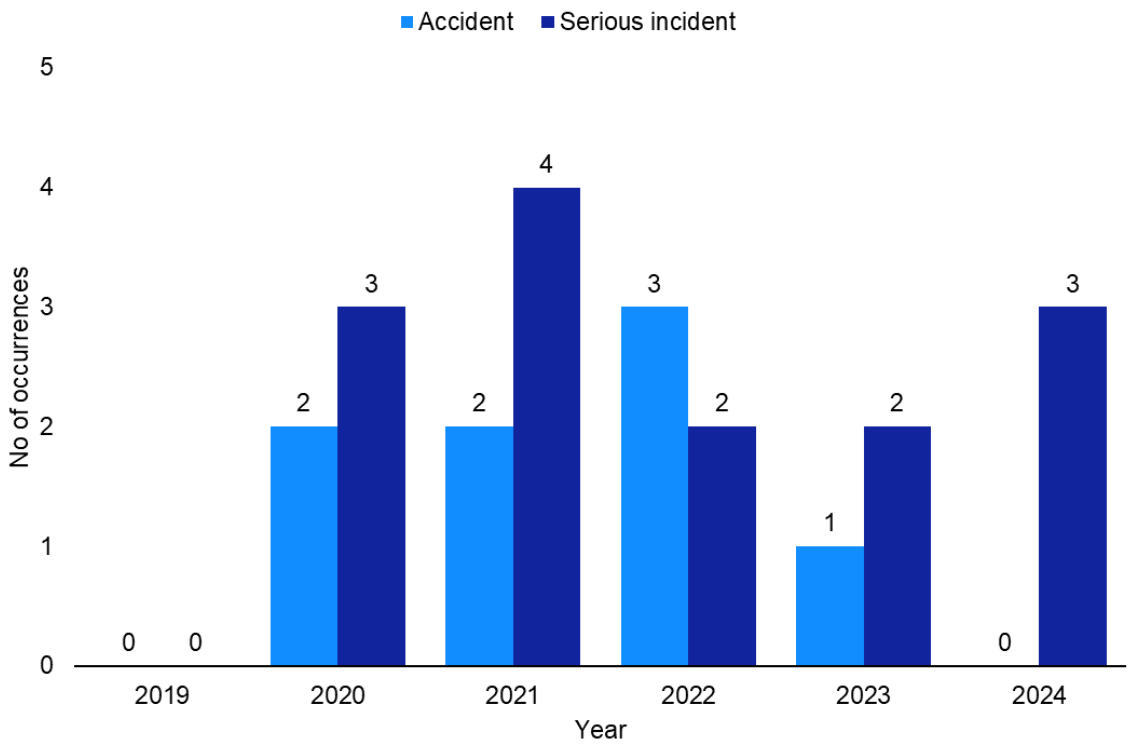
The UK non-scheduled CAT sector involves close to 30 operators with approximately 22,000 flights in 2024.

In 2024, there were no accidents and three serious incidents. There have been no fatal or serious injury accidents in the past five years.

The main causes for serious incidents in 2024 were technical malfunctions: these events involved flight control restriction, partial power failure and a fault with the aircraft flaps.

The graph below provides a visual representation of reportable accidents and serious incidents for non-scheduled CAT in the years between 2019 and 2024.

Non-Scheduled CAT Accidents and Serious Incidents 2019-2024



Year	Reported Accidents	Reported Serious Incidents
2019	0	0
2020	2	3
2021	2	4

Year	Reported Accidents	Reported Serious Incidents
2022	3	2
2023	1	2
2024	0	3

Non-UK Operators in UK Airspace

This section covers accidents and serious incidents involving non-UK operated aircraft (anything conducted on an operator not registered in the UK) within UK airspace (including Isle of Man and the Channel Islands). This section also includes multiple sectors such as General Aviation (GA) and Business Aviation as well as Commercial Air Transport (CAT).

In 2024, 23% (5) of accidents and serious incidents were reported as runway excursions.

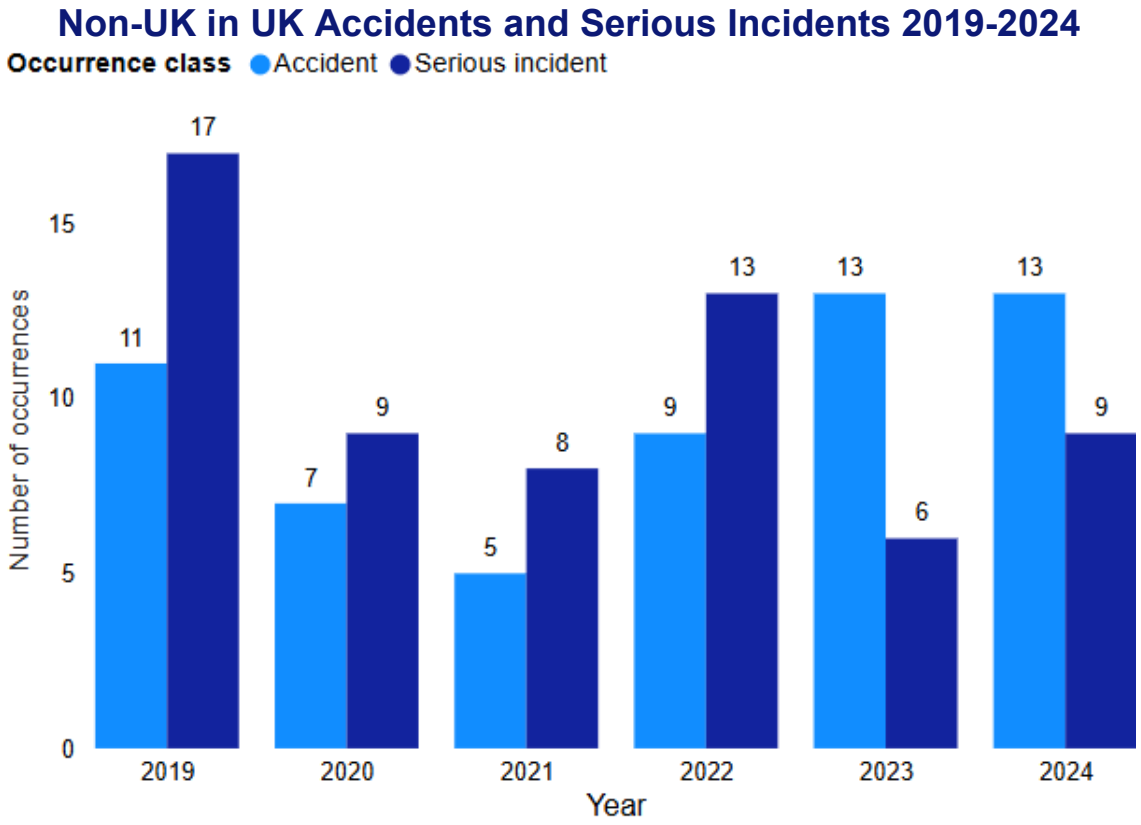
Loss of control in-flight and on ground, abnormal runway contact, controlled flight into terrain and technical malfunctions were other common areas reported in 2024.

Two of the 2024 accidents resulted in fatalities, both involving a general aviation aircraft.

AAIB has issued a Special Bulletin[7] and an Anniversary Statement[8] related to both accidents.

No serious injuries were sustained in 2024.

The graph below provides a visual representation of accidents and serious incidents involving non-UK aircraft in UK in the years between 2019 and 2024.



[7] AAIB website: https://www.gov.uk/aaib-reports/aaib-special-bulletin-s1-slash-2025-rockwell-commander-112-tca-n4698w

[8] AAIB website: https://www.gov.uk/government/news/anniversary-statement-cessna-t210m-n761ju

Year	Reported Accidents	Reported Serious Incidents
2019	11	17
2020	7	9
2021	5	8
2022	9	13
2023	13	6
2024	13	9

Remotely Piloted Aircraft Systems (RPAS)

The number of registered drone users with the CAA continues to grow as the hobby becomes more popular and new users register. The drone and model aircraft code provides guidance for flying drones, model aeroplanes, model gliders, model helicopters, and other unmanned aircraft systems outdoors in the Open A1 and A3 categories[9].

There are approximately 720,000 active registered drone flyers and operators (21.4% increase year on year)[10] which consists of:

- Approximately 450,000 active Flyer IDs
- Approximately 270,000 active Operator IDs

There are over 21,000 remote pilots with Remote Pilot Competency Qualifications, and over 2,500 active Specific Category Operational Authorisations approved by the CAA.

There were 55 accidents and serious incidents involving RPAS during 2024, which is a 31% decrease compared to 2023.

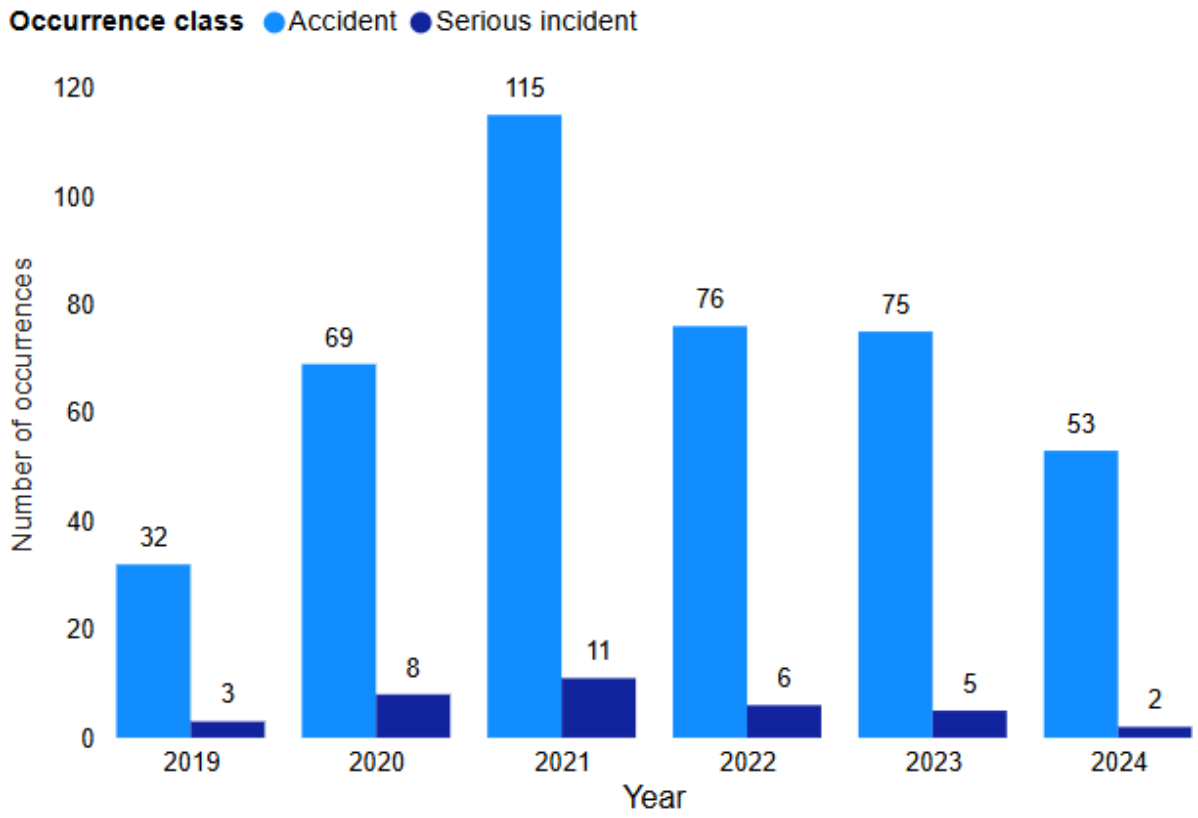
In 2024, 56% (31) of accidents and serious incidents were contributed to by loss of control in flight, making it the most commonly reported event in connection to accidents. System or component failure was the second most frequently reported accident in 2024.

The graph below provides a visual representation of accidents and serious incidents related to RPAS in the UK in the years between 2019 and 2024.

[9] Drone and Model Aircraft Code (UK CAA website: https://register-drones.caa.co.uk/drone-code)

[10] CAA Drone & Model Aircraft Registration and Education Scheme (*DMARES*) database as on 28th of February 2025.

RPAS Accidents and Serious Incidents 2019-2024



Year	Reported Accidents	Reported Serious Incidents
2019	32	3
2020	69	8
2021	115	11
2022	76	6
2023	75	5
2024	53	2

Scheduled Commercial Air Transport (CAT)

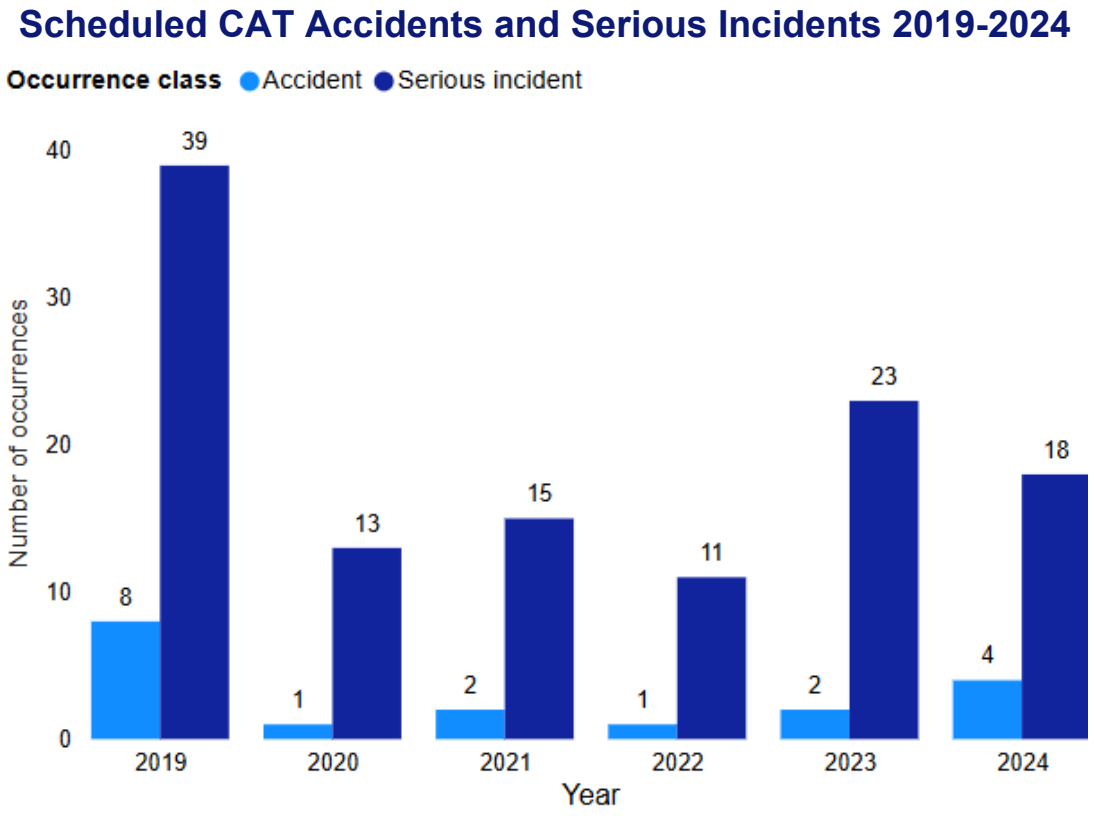
Scheduled CAT accounts for the majority of passenger and cargo flights in the UK. This sector consists of 18 airlines operating in over 800 large fixed-wing aircraft and is the most common way the public interact with the aviation system.

In 2024, this sector flew over 128 million passengers on over 880 thousand flights. This is an increase on 2023, where there were 118 million passengers carried on 839 thousand flights (an increase of nearly 10 million passengers).

There were 4 accidents and 18 serious incidents in 2024. Two of these accidents resulted in serious injuries to cabin crew while performing their duties when the aircraft was on the ground. Of the remaining two accidents, one involved a nose gear collapse during landing with the other involving a ground collision while taxiing, there were no injuries sustained in either of these two events.

Technical malfunctions of the aircraft were the most commonly identified cause of serious incidents in 2024, aligning with previous years' data. Injuries to passengers and crew are most likely to occur due to turbulence during the cruise or from trips and falls when boarding or disembarking the aircraft.

The graph below provides a visual representation of accidents and serious incidents for scheduled CAT in the years between 2019 and 2024.



Year	Reported Accidents	Reported Serious Incidents
2019	8	39
2020	1	13
2021	2	15
2022	1	11
2023	2	23
2024	4	18

Vertical Take Off & Landing (VTOL)

The UK's Vertical Take-Off and Landing (VTOL) sector continues its trajectory of rapid innovation and diversification, ensuring a robust and adaptive safety framework is more critical than ever. From traditional rotorcraft to Advanced Air Mobility (AAM) platforms such as electric VTOL (eVTOL) aircraft, the sector is navigating a complex landscape of emerging technologies, operational models, and regulatory requirements.

There are approximately 50 onshore helicopter operators that have been granted an Air Operators Certificate (AOC) and approximately 100 helicopters that carry out both commercial operations and/or special operations such as Helicopter Emergency Medical Services (HEMS) / Search and Rescue (SAR). For the offshore sector, there are approximately 100 helicopters used in the support of offshore operations spread between five air operators

In 2024, within the onshore helicopter sector, there was one accident and one serious incident. The accident occurred during hover training where a helicopter lost control. The serious incident happened during a maintenance inspection where movement on a tail rotor control rod slider assembly was observed.

With regards to the offshore helicopter sector, there was one accident that occurred during rescue operations in the Falkland Islands – an unresponsive casualty fell into the sea from the helicopter.

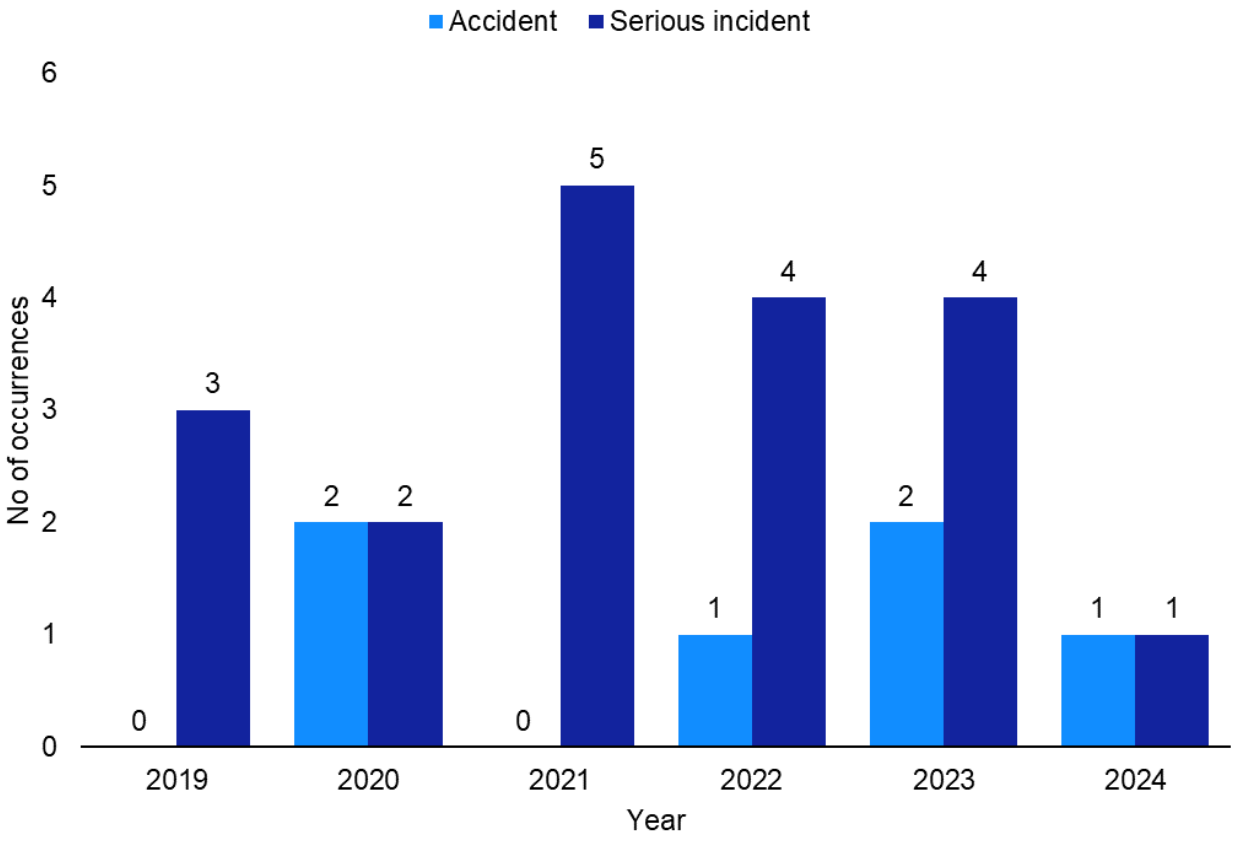
Within the VTOL sector there were no fatalities for 2024.

In terms of main causes for accidents and serious incidents in 2024, these were related to non-powerplant system/component failure/malfunction, loss of control–inflight and windshear.

In 2024, the distribution of serious incidents between onshore and offshore sectors involved one for onshore and none for offshore - this is a decrease in the numbers when comparing 2024 against 2023.

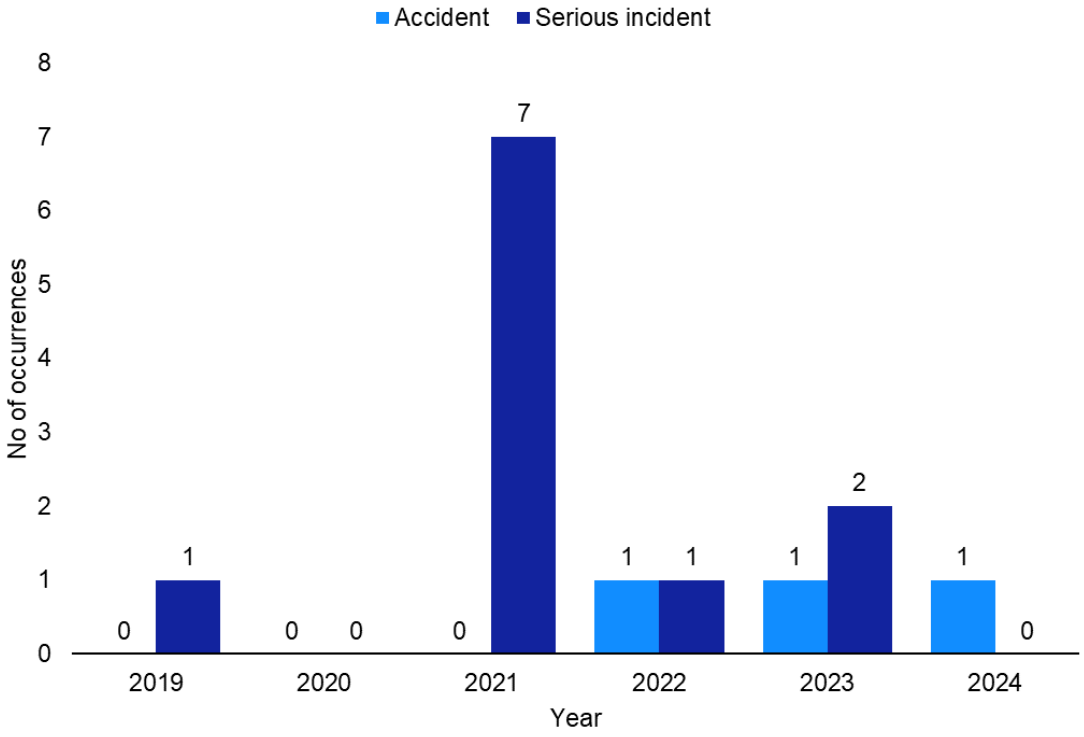
The two following graphs provide a visual representation of accidents and serious helicopter incidents (onshore and offshore) in the years between 2019 and 2024.

Onshore VTOL Accidents and Serious Incidents 2019-2024



Year	Reported Accidents	Reported Serious Incidents
2019	0	3
2020	2	2
2021	0	5
2022	1	4
2023	2	4
2024	1	1

Offshore VTOL Accidents and Serious Incidents 2019-2024



Year	Reported Accidents	Reported Serious Incidents
2019	0	1
2020	0	0
2021	0	7
2022	1	1
2023	1	2
2024	1	0

Safety Performance Indicators (SPIs)

Safety Performance Indicators (SPIs) are data-based (including occurrence data) measurements which are used to monitor safety performance over time. Occurrence reports data is trended in order to understand any areas of particular interest within the aviation system. Effective SPIs measure, monitor and trigger action when necessary; reviewing organisational and operational attributes that contribute to safety management activities.

SPIs are currently under development and will feature in the NASP 2025-2027, which is due to be published early next year.