

SERIOUS INCIDENT

Aircraft Type and Registration:	Airbus A321-231, G-WUKJ	
No & Type of Engines:	2 International Aero engines V2533-A5 turbofan engines	
Year of Manufacture:	2019 (Serial no: 8879)	
Date & Time (UTC):	16 June 2020 at 1038 hrs	
Location:	Doncaster Airport	
Type of Flight:	Private	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	None	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	46 years	
Commander's Flying Experience:	6,554 hours (of which 3981 were on type) Last 90 days - 57 hours Last 28 days - 51 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

During the takeoff roll, as the aircraft was approaching V_1 , the commander identified that the airspeed on the Primary Flight Display was reading zero and rejected the takeoff. Examination of the aircraft found insect larvae within one of the pitot probes. The aircraft had been parked for nearly 12 weeks prior to the flight. The operator has taken safety action to introduce a procedure that flushes the static and total pressure lines on any aircraft that has been parked for more than three days before it is returned to operation.

History of the flight

G-WUKJ had been parked at a remote stand at Doncaster Airport since 25 March 2020. After arrival it was prepared for long term parking in a 'flight-ready' condition, in accordance with the Aircraft Maintenance Manual (AMM). This was accomplished by a local Part 145 Aircraft Maintenance Organisation (AMO). The aircraft was maintained in accordance with the AMM whilst it was parked.

On 9 June 2020, as part of the long-term parking requirements defined in the AMM, the Air Data System was flushed.

On 15 June 2020, a work package was carried out preparing G-WUKJ to return to service. The pitot covers, which had been in position during the time the aircraft was parked, were removed.

On 16 June 2020, the aircraft was released to service for a non-revenue flight to Stansted. As the aircraft had been on the ground for an extended period, the commander and first officer decided to complete separate walkarounds as a precaution; they found no faults.

Shortly after 1030 hrs, the flight crew prepared the aircraft for flight, taxied to the holding point and were given clearance to takeoff on Runway 20. The commander reported that, during the initial acceleration, his Primary Flight Display (PFD) trend arrow indicated an increasing airspeed. As the aircraft continued to accelerate his attention was drawn to a number of birds that were in the takeoff path. When his instrument scan returned to the PFD he identified that the speed indication was reading zero. He immediately cross checked with the first officer and called to reject the takeoff. Maximum reverse thrust and automatic braking were applied and the aircraft stopped on the runway. The pilot reported that takeoff was rejected at 120 kt, which was also V_1 .

Recorded information

Data from the aircraft's flight recorder showed that the aircraft reached an airspeed of approximately 128 kt as recorded by the Integrated Standby Instrument System (ISIS). This occurred one second after the crew had initiated stopping action as the aircraft attained V_1 . G-WUKJ slowed below 30 kt airspeed, the lowest value recorded by the ISIS, 1,200 m from the beginning of the 2,751 m runway.

Aircraft examination

The post flight report produced a failure message '*34-12-34 ADR1*' associated with a flight control ECAM warning in the No 1 Air Data Reference (ADR1). Troubleshooting performed by the AMO transposed the No 1 and No 3 Air Data Inertial Reference Units (ADIRUs) and after a successful ground test, released the aircraft for the ferry flight.

During the subsequent takeoff, at approximately 1540 hrs, the aircraft performed a low speed rejected takeoff as the commander's PFD was still not registering an air speed.

Further troubleshooting over the following two days finally found three small insect larvae, approximately the size of a grain of rice, within the No 1 pitot probe. These larvae were liberated whilst performing a pitot probe flush, which was advised by the aircraft manufacturer. The larvae were not retained to enable further identification of the insect species.

The operator concluded that the insect larvae may have been deposited in the pitot probe whilst it was parked with the pitot probe covers fitted. To prevent differential pressure measurement issues in the air data system¹, pitot probe covers supplied by the aircraft manufacturer do not completely seal the probes, it is therefore possible that an insect could enter the air data system during prolonged parking. It cannot be ruled out, however, that the larvae were deposited once the aircraft had been prepared to return to service on 15 June or an insect had been within the pitot probe covers before they were fitted.

Footnote

¹ If sealed pitot probe covers are used, they can increase the pressure in the air data system when they are fitted. This could be identified by the system as a real airspeed and could, due to the aircraft's safety logic, cause an inadvertent deployment of the Ram Air Turbine whilst the aircraft is electrically powered up on the ground.

Safety actions

The operator has introduced a requirement to flush all total and static pressure lines before any aircraft is returned to operation after it has been parked for more than three days.

The operator is also looking to identify better pitot probe covers that may offer better protection than those currently used.

The aircraft manufacturer is looking to update the aircraft AMM Return to Operations task to require air data system flushing prior to the next flight after prolonged time on the ground.

Bulletin correction

Prior to publication, it was noted that the aircraft registration was incorrectly stated as G-WUJK instead of G-WUKJ in the history of the flight and in the recorded information sections of the report.

This was corrected online prior to publication on 12 November 2020.