

Serious Incident

Aircraft Type and Registration:	ATR 72-212 A, G-CMMT	
No & Type of Engines:	2 Pratt & Whitney Canada PW127M turboprop engines	
Year of Manufacture:	2013 (Serial no: 1109)	
Date & Time (UTC):	30 December 2023 at 0930 hrs	
Location:	Belfast City Airport	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew – 4	Passengers – 53
Injuries:	Crew – None	Passengers – None
Nature of Damage:	Nose landing gear and left main landing gear subject to loads exceeding the design limits	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	46 years	
Commander's Flying Experience:	5,300 hours (of which 4,700 were on type) Last 90 days – 150 hours Last 28 days – 45 hours	
Information Source:	Aircraft Accident Report Form submitted by the commander and further enquiries by the AAIB	

Synopsis

The left main landing gear and nose landing gear contacted the runway heavily during a second approach to Belfast City Airport in gusty wind conditions. The commander elected to go-around and diverted to Belfast Aldergrove Airport, where the aircraft landed uneventfully. The left main landing gear and the nose landing gear required replacement because of excessive loads and visible damage.

The AAIB considers that the event arose from a normal operating hazard that is listed in the UK Aeronautical Information Publication¹.

History of the flight

The aircraft was operating a scheduled flight from Edinburgh Airport to Belfast City Airport. The weather was reported to be gusty and the flight crew were familiar with the challenges of operating at Belfast City Airport with winds over 15 kt blowing from a south-easterly direction (100°-160°). The commander flew the approaches to Runway 22. The approaches met the stable criteria at 1,000 ft aal. The first approach was discontinued due to destabilising wind effects approaching Decision Height. Conditions for the second attempt were more

Footnote

¹ UK Aeronautical Information Publication available at [eAIS Package United Kingdom \(nats.co.uk\)](https://www.nats.co.uk) [accessed 12 February 2024].

benign and the approach was reportedly uneventful until the aircraft was flared for landing. During the flare, wind effects destabilised G-CMMT resulting in it touching down firmly on the left main landing gear and then bounced before touching down heavily a second time, nose landing gear first. The commander initiated a go-around and the aircraft subsequently diverted to Belfast Aldergrove Airport for an uneventful landing.

Airfield information

Belfast City Airport's listing in the UK Aeronautical Information Publication (AIP) contains the following warning to pilots.

'EGAC AD2.20 Local Aerodrome Regulations, Paragraph 4 Warnings...

b. Pilots should anticipate windshear on approach to Runway 22 and departure from Runway 04 when the surface wind direction is between 100° and 160° + 15 KTS. Due to strong wind conditions, turbulence may be expected on approach or climb out to/from either runway...'

Recorded data

The AAIB reviewed the flight data and CVR.

Both approaches into Belfast City Airport were stabilised at 1,000 ft and crew cooperation appeared to be working well. For the second approach, the last wind report from ATC was 140/22, which was inside the 28 kt recommended maximum crosswind value for the reported runway conditions. The automatic altitude callouts progressed as expected down to 20 ft, but shortly after, it became apparent that the touchdown was not as expected and the commander initiated a go-around.

Below 500 ft QNH on the approach the recorded CAS had been generally fluctuating in the range +10/-9 kt of the pilots' target V_{APP} of 120 kt. As the aircraft descended through approximately 70 ft QNH the speed briefly became more unstable, averaging approximately 134 kt over an eight second period as the aircraft approached the flare. In the final two seconds before the first touchdown the recorded CAS values were 124 and 130 kt.

Aircraft damage

The operator reported that the nosewheel tyres were damaged and when the wheels were removed, the left nosewheel axle was slightly bent.

The flight data showed an acceleration of approximately 2.2 g in the normal axis when the aircraft contacted the runway before the go-around. The aircraft manufacturer assessed that the left main landing gear and the nose landing gear had both experienced loads beyond their allowable limits and required replacement before the aircraft could be returned into service.

Conclusion

The landing gear sustained damage during a heavy touch down after the aircraft became destabilised, due to wind effects experienced during the flare, immediately before touchdown.