

ACCIDENT

Aircraft Type and Registration:	Cessna 441 Conquest, G-USAR	
No & Type of Engines:	2 Garrett Airesearch TPE 331-10N-513S turboprop engines	
Year of Manufacture:	1985	
Date & Time (UTC):	25 July 2011 at 0708 hrs	
Location:	Doncaster Airport, South Yorkshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 2
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Right landing gear, wing, flaps damaged and engine shock-loaded	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	37 years	
Commander's Flying Experience:	4,830 hours (of which 425 were on type) Last 90 days - 120 hours Last 28 days - 35 hours	
Information Source:	AAIB Field Investigation	

Synopsis

During the landing roll, the right main landing gear trailing arm failed causing the right wing to contact the ground. The aircraft veered to the right and came to rest on the grass on the right side of the runway. The pilot was uninjured. The reason for the failure of the trailing arm could not be identified due to damage of the fracture surfaces caused by contact with the runway.

History of the flight

After a normal landing, the pilot selected reverse pitch on the propellers to slow the aircraft. As the aircraft decelerated a vibration from the right main landing gear became apparent. The pilot initially believed that it was

caused by wheel shimmy, but after a few seconds the pilot heard a loud bang and the right wing dropped. As the aircraft subsequently rotated to the right, the pilot shut down both engines. After the aircraft came to a halt, the pilot left the aircraft through the normal exit. He was uninjured.

Investigation

Examination of the aircraft revealed that the right main landing gear trailing arm had failed between the lower shock absorber bracket and the hinge point. After recovery of the aircraft, the trailing arm assembly was removed for detailed examination. The section of

the trailing arm, which had remained attached to the landing gear leg, had been damaged by contact with the runway surface after the failure. This had destroyed any features which may have been present on the fracture surface.

The section of the trailing arm which had remained attached to the wheel was examined. No corrosion was identified on the external surface of the arm or on the inner bore. The fracture surface on this section had two distinct features. The first was a large area which showed the characteristics of a fracture due to overload in bending. The second was a flat face, perpendicular to the axis of the trailing arm. Both optical and Scanning Electron Microscope (SEM) examination of this area failed to identify any features which could be associated

with the initiation of the failure, but did confirm that it had been abraded by contact with the runway surface, which removed any features that may have indicated the initial failure mode of the trailing arm.

Maintenance history

The maintenance records confirmed that the aircraft had been maintained in accordance with the manufacturer's approved maintenance programme and that the aircraft satisfied all the regulatory requirements. The records confirmed that the aircraft had undergone a scheduled maintenance input in May 2011 which included inspections of the main landing gear for defects and condition. No defects were identified with the trailing arms of the main landing gear during this input.