

ACCIDENT

Aircraft Type and Registration:	Socata TB20 Trinidad GT, G-SCIP	
No & Type of Engines:	1 Lycoming IO-540-C4D5D piston engine	
Year of Manufacture:	2000 (Serial no: 2014)	
Date & Time (UTC):	21 January 2016 at 1630 hrs	
Location:	Sleap Airfield, Shropshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Propeller bent, engine cowling scraped and engine shock-loaded	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	60 years	
Commander's Flying Experience:	2,602 hours (of which 1,621 were on type) Last 90 days - 25 hours Last 28 days - 6 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional enquiries by the AAIB	

Synopsis

The pilot was unable to extend the nose landing gear fully during the approach to land. He diverted to another airfield where he performed a successful landing despite the nose gear collapsing shortly after touchdown. The maintenance company which maintained the aircraft believed there was some form of hydraulic lock in the retraction jack, but were unable to determine the cause.

History of the flight

The aircraft was returning to Welshpool from Elstree Aerodrome. On left base leg for Runway 22, the pilot selected landing gear and flaps down but saw only two green lights for the main gears, whilst the nose gear green remained unlit. He could also hear the electro-hydraulic pump running and saw the red gear-in-transit light illuminated.

The pilot recycled the gear several times without success as he continued the approach, so he asked the tower controller to look at the condition of the gear as he flew past. She reported that the nose gear appeared to be only about halfway down and that a medical helicopter pilot had confirmed this. The pilot aborted the landing and circled the airfield whilst he considered his options, eventually deciding to divert to Sleap Airfield because there would be more help available, a choice of two runways and the aircraft was also maintained there.

The light was fading but, after the ten-minute flight to Sleaf, during which the pilot tried more reselections and emergency extensions whilst pulling 'g', he could sense that the pump motor was straining and decided to stop the attempts in case it overheated from repeated running. He also spoke to the owner of the maintenance company, who could only suggest what the pilot had already tried. Accordingly, the pilot agreed with the controller that Runway 23 would be used for an emergency landing and the runway lights were illuminated.

Following a request by the fire service to go around to allow more time for them to position, the pilot made his approach. As the aircraft crossed the start of the paved surface, he shut down the engine to try and avoid damage to the propeller. The aircraft sank rapidly and landed firmly on its mainwheels, followed by the nose gear which promptly collapsed. The aircraft then slid with its nose on the ground for some 100 metres, before coming to a halt. The pilot switched off fuel and electrics before rapidly evacuating the aircraft.

Investigation

The aircraft's nose was lifted and supported on a trestle. A representative from the maintenance company then tried to extend the leg manually, but he was unable to move it until he undid a union on the retract line of the nose gear piston, after which he was able to pull the leg fully down and into lock. After the aircraft had been towed to the hangar and placed on jacks, no obvious mechanical anomalies were apparent, so the system was replenished and several retraction/extension cycles were performed. All were normal and the maintainer was at a loss to explain how what had appeared to be a hydraulic lock had occurred in the system. As a precaution, a number of components, including parts in the nose gear piston, were replaced.