

AAIB Bulletin No: 3/96

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Category: 1.2

Aircraft Type and Registration:	Cessna 310, N3TQ	
No & Type of Engines:	2 Continental IO 470 piston engines	
Year of Manufacture:	1973	
Date & Time (UTC):	10 November 1995 at about 1700 hrs	
Location:	Bournemouth (Hurn) International Airport	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Erosion of underside of nose, including landing gear support structure and doors, one propeller blade tip on each engine bent	
Commander's Licence:	FAA Commercial Pilot's Licence	
Commander's Age:	44 years	
Commander's Flying Experience:	521 hours total (of which 104 hours were on type) Last 90 days - 30 hours Last 28 days - 7.3 hours	
Information Source:	AAIB Field Investigation	

The aircraft was being used for a private flight from Stansted to Bournemouth. After a normal departure from Stansted, the pilot noticed a distinct 'clunk' from the forward floor area as the landing gear was retracting. Immediately afterwards, when the gear retraction was complete and all the gear indicating lights were extinguished (which was the correct gear up indication), he tested the lights and found them to be all serviceable. Since all appeared to be normal, he elected to continue to Bournemouth.

After an otherwise uneventful flight, the pilot thought it prudent to extend the gear early. After selecting 'gear down', although the 'gear in transit' indications appeared correct, the change in pitching moment which he associated with gear extension felt different from normal. When the gear movement had stopped, he observed that he had the two main gears indicating 'down and locked', no nose gear indication but the 'gear in transit' red light illuminated.

After a short discussion with ATC, the pilot was asked if he wished to fly past the tower for a visual check. The pilot replied in the affirmative and, as it was now dark, he requested that the controller looked for the taxi light, which was attached to the nose gear strut. However, since the tower personnel were not able to see the light on this pass, the pilot requested a second pass with all lights off except the navigation lights and the taxi light. During this pass, the controller stated that he thought that the taxi light might be on. The pilot, therefore, judged that his nose gear was still retracted and declared a full emergency. He stated his intention to land on both main gears and to shut down both engines during the landing, after making a wide approach to allow the fire service time to position its vehicles.

The approach and landing were executed as planned and the pilot held the nose off as the aircraft decelerated during the ground roll. As the aircraft slowed the nose dropped gently onto the runway and came to a stop, nose down. The pilot completed the shutdown of the aircraft and he and the passenger then disembarked unaided. The nose gear, which was observed to be almost fully retracted after the aircraft had come to a halt, was extracted using a small crowbar and 'jury locked' for the aircraft to be towed to the maintenance area.

Subsequent examination of the nose gear operating mechanism revealed that there had been an overload failure of the lugs of the idler lever which is located under the floor, beneath the pilots feet. (see diagrams) The position and direction of this failure was consistent with it having occurred as a result of high forces being generated towards the end of the retraction cycle. The damage to the forward part of the aircraft resulting from the groundslide of the nose during the landing precluded the possibility of establishing the pre-landing rigging of the nose gear mechanism.

