

ACCIDENT

Aircraft Type and Registration:	Flight Design CT2K, G-IDSL	
No & Type of Engines:	1 Rotax 912 ULS piston engine	
Year of Manufacture:	2002	
Date & Time (UTC):	17 April 2010 at 1045 hrs	
Location:	Frensham Airstrip, Surrey	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Engine frame and nose leg bent, rudder pedal limit stop and right rudder pedal tube distorted	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	77 years	
Commander's Flying Experience:	2,010 hours (of which 220 were on type) Last 90 days - 5 hours Last 28 days - 4 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

After takeoff, the pilot had to apply more right rudder than usual to counteract a yaw to the left. This became progressively worse until the pilot ran out of rudder authority. Following two wide and slow circuits and two rejected landings, the pilot made a successful, but firm landing. He suffered no injury. Subsequent inspection of the aircraft identified that the rudder pedal limit stops and centring mechanism were damaged, which had restricted the travel of the right rudder pedal. Prior to the accident, the aircraft had been manoeuvred on the ground using a mechanical tug. The UK type certificate holder for the aircraft stated that they did not provide, nor approve the use of, mechanical towing aids for the aircraft. The right rudder pedal tube, engine mounts and nose strut also suffered damage.

History of the flight

The pilot had intended to make a solo flight to Calais from a private grass airstrip located to the south-west of the village of Frensham in Surrey. No defects were noticed by the pilot during either the pre-flight inspection or taxi checks and the aircraft was positioned for takeoff from Runway 07. The reported wind was from the north-east at less than 5 kt. The takeoff run appeared normal, but as the aircraft became airborne the pilot found that he had to apply more right rudder pedal than expected. Having applied what the pilot believed to be full right rudder pedal, the aircraft continued to yaw to the left. The pilot flew a wide left hand circuit at 60 kt and positioned the aircraft for landing on Runway 07. As the aircraft touched down, it immediately started to drift to the left, heading towards an area of soft ground

adjacent to the side of the runway, before the pilot rejected the landing. Following a second unsuccessful attempt to land, the pilot positioned the aircraft at an offset heading to the runway, to allow for the aircraft's tendency to drift to the left on landing, and reduced the approach speed to the stall speed plus 5 kt. The pilot described the touchdown as firm, but with the slower approach speed and offset heading he was able to bring the aircraft to a stop whilst still remaining on the runway. When the pilot attempted to taxi the aircraft, application of the right rudder pedal resulted in only a gradual right turn. The pilot was uninjured.

The aircraft is a monoplane having a tricycle undercarriage with nosewheel steering. The nosewheel steering mechanism and rudder are both mechanically connected to the rudder pedal assembly, which incorporates limit stops and a centring mechanism. Inspection by a representative of the UK type certificate holder identified that the right rudder pedal limit stop and pedal centring mechanism had been damaged. When tested, the rudder pedals were found to have normal full range travel to the left, but only limited travel to the right. The type certificate holder considered that the damage was consistent with the nosewheel having been turned with sufficient force to deflect it beyond its normal operating range. It was considered unlikely that a pilot would be able to apply sufficient force to the rudder pedals to damage either the limit stops or centring mechanism. The right rudder pedal tube was also found to have been distorted, as well as damage

to the nosewheel strut and engine mountings. The damaged mountings resulted in the front of the engine being approximately 35 mm lower than normal.

The aircraft was normally parked in a hangar, which it shared with a number of larger aircraft that required the use of a mechanical tug. The pilot stated that he was aware that the tug was being regularly used to manoeuvre G-ILSD, by connecting it to the nosewheel fairing attachment bolts. This had caused some cosmetic damage to the fairing and so the pilot had replaced the standard bolts with ones that had a slightly larger bolt head, making it easier to connect the tug. The pilot stated that damage to the right pedal limit stop and centring mechanism had most likely occurred when the aircraft had been manoeuvred using the tug. He considered that the distortion of the right pedal tube had probably occurred during the incident flight when he had attempted to apply full right rudder, and that both the nosewheel strut and engine mounts had been damaged during landing.

The UK type certificate holder for the aircraft stated that they did not provide for, nor approve the use of, mechanical towing aids for the aircraft type and that they had not issued a modification to the nosewheel fairing to enable such attachment. As a result of this event, the UK type certificate holder is considering the release of a service letter addressing the ground handling of the aircraft and the addition of an appropriate cautionary placard.