

RotorSport UK Ltd

Poplar Farm, Prolley Moor, Wentnor, Bishops Castle, Shropshire, SY9 5EJ

Service Information Letter

SIL-020

Issue: 1

Dated: 20.08.15

CCAR no: None

The purpose of this document is to communicate information that may be of benefit to pilot owners of RotorSport aircraft. If there is any clarification required of the content of the letter, contact RSUK on 44(0)1588 650769, or email info@rotorsport.org. Document completed iaw BP 2.20.

Aircraft type & model applicability:

All, but especially Calidus

Aircraft serial numbers affected:

All

Subject: Airspeed management during take off

Safety effect:

Avoiding tail strikes, rotor ground strikes and/or loss of control during take off.

Weight and CG effect: Not affected

Background:

During 2015 there have been a disproportionate number of rotor ground strikes and take off accidents with Calidus aircraft. One aircraft owner filmed his accident from inside the aircraft, allowing RotorSport to understand much more about the cause, and enabled a comparative assessment.

Discussion:

The historical take-off technique for a gyroplane has been:

1. Pre-rotate.
2. On reaching nominated pre-rotator rpm, pull the stick back and smoothly apply full power.
3. Aircraft accelerates and when the nose lifts the stick is pushed forward to balance the aircraft on the main wheels, holding the nose wheel off the ground until flying speed is reached – at which point the aircraft lifts off. The aircraft is accelerated, whilst still close to the ground, until 60 mph is indicated and then the climb commenced.
4. Unlike a fixed wing aircraft, it is not common practice to closely monitor airspeed until airborne.

Having viewed this noted video recording, it can be seen that the nose lifted as usual at 40mph, the aircraft then became airborne, but airspeed was allowed to decay to zero – resulting in a roll to the right, vertical descent, and the aircraft impacting the ground from around 10-15ft. The damage was similar to that on previous accidents. The primary cause was considered to be that the pilot did not manage to control the aircraft's airspeed by pushing the stick forwards following take-off to select a near level accelerative attitude.

Recently a RotorSport test pilot was undertaking a grass take-off in an unusual field situation, and whilst concentrating on the ground layout and conditions, also allowed the aircraft attitude to become too nose high on take-off. This resulted in reducing airspeed and immediate corrective action was required. The pilot considered this event, and the evidence of the video, and felt it appropriate to remind pilots that monitoring airspeed during take-off is essential; ensuring it has reached approx 50mph, will result in a clean take-off, and little chance of damage. Getting airborne at less than 40mph leaves little room for error. Given that modern autogyros have good performance and accelerate quickly there should be no need to be trying to climb away from the ground at low airspeed.

Recommendation:

Pilots monitor airspeed during take-off, and ensure that the aircraft lifts in a smooth flat fashion at around 50mph.

References: None

Effect on Pilots Handbook or Maintenance Manual: None

SIL authorised by:

Quality Control Manager	Engineering Manager	Chief Test Pilot (if flight performance or safety effect)	Head of Airworthiness or CVE (where required)
Name: G Speich Signature and date:	Name: G Shaw Signature and date:	Name: Signature and date:	Name: A Lyons Signature and date: