

AUSTRALIAN SPORT ROTORCRAFT ASSOCIATION INC



ABN 53 412 417 012

SAFETY ALERT

No: SA 2014.01

Date: 21/07/2014

Subject: Vertical Descents

ASRA considers flat spins, tail slides and full, zero air speed, vertical descents are advanced manoeuvres and are not to be practiced by inexperienced pilots.

Vertical descents can be a safe manoeuvre in a gyroplane but it is difficult for an inexperienced pilot to differentiate between zero airspeed vertical descent and flying backwards as an ASI will not indicate this. There is a significant risk of a vertical descent turning into a tail slide and then a flat spin. The recovery from these requires significant skill, experience and altitude to be achieved safely. Because of these risks ASRA does not support the inclusion of full, zero air speed, vertical descents as part of the solo training for a gyroplane pilot. Instructors are to warn a student of the risks and explain the safe recovery but not practice the manoeuvres during initial training for a solo pilot. A pilot may request to do advanced training with a suitably experienced instructor, who can teach the safe and correct method to recover from tail slides and flat spins in a suitable 2 seat training gyroplane.

Pilots can perform near vertical descents without risk of a tail slide by assuring some air speed is indicated on their ASI and the attitude of their aircraft is not nose high. This is a safe and useful technique for shortening an approach but needs to be completed in time to regain airspeed for landing. Low power settings should be used for near vertical, sink manoeuvres to avoid the possibility of entering a tail slide if the engine was to fail when the nose was too high.

Vertical descents can be considered to be safe manoeuvres in gyroplanes provided that they are conducted by experienced pilots who have been properly trained to carry out the manoeuvre.

There are significant risks associated with vertical descents especially when power settings above idle result in nose high attitudes. These include:

- The possibility of entering a tail slide resulting in flying backwards, a state that cannot be recognised by observing the ASI. This possibility is enhanced if the engine fails at a critical moment;
- In the event that rearward flight results and rudder inputs are applied, the effect of that input will be reversed to that normally experienced, further complicating the successful recovery;
- The likelihood of the tail slide resulting in a flat spin which can require significant skill, experience and altitude for a successful recovery.

As a result of these risks, ASRA considers flat spins, tail slides and zero air speed vertical descents to be advanced manoeuvres and are not to be practiced by inexperienced pilots. ASRA expects that instructors will explain the risks associated with vertical descents together with demonstrating the recovery from near zero airspeed vertical descents to all student pilots. An instructor may, at his sole discretion, allow a student to practice an approach to and recovery from a near zero airspeed vertical descent provided that the student understands that the characteristics felt and observed in the training gyroplane will be different to the gyroplane that the student intends to operate.

At an appropriate time, a pilot certificate holder may request advanced training including vertical descents, with a suitably experienced instructor.

This Safety Alert cancels AD 1992.09 which is hereby withdrawn.

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