

# Airworthiness Directive

## Vertical descents:

There has been four cases reported, in Australia, of Gyroplanes failing to recover from a vertical descent. Two of the pilots involved had enough height to eventually effect a recovery but the other two were not so lucky. Though there was no loss of life, it is still a problem that must be addressed. The design of the gyro has a considerable bearing on its ability to translate from a vertical descent into forward flight. Anyone modifying a gyro away from the conventional must be aware of the potential problems that they can create. The two major factors are the trim and the tail design. In a vertical descent the gyroplane has a tendency to rotate. Any rotation must be stopped before a recovery can be effected. The first thing to do is to apply full opposite rudder and this may be sufficient to stop the rotation. If the aircraft fails to stop rotating the pilot can apply some power to increase the airflow over the rudder. In some cases rotation will increase in speed before the aircraft recovers.

Lastly the control column can be moved slightly sideways away from the centre of rotation. The design of the tail and the airflow over the rudder will considerably effect the ease with which rotation can be stopped. The twin tail type has been found to be the least effective in stopping rotation and the fully flying tail the best. A large radiator or other obstruction to the clear airflow over the rudder will also make it more difficult to stop the rotation. Once the rotation has been stopped forward motion can be induced by gently moving the control column forward to lower the nose. A very moderate amount of power can also be applied. The recovery should be effected into the wind to avoid the aircraft weather-cocking during recovery. If you are an inexperienced pilot go to an instructor for advice before attempting a vertical descent. The instructor may be prepared to test fly your aircraft and advise you how it recovers. Finally always start a vertical descent with as much height as possible. If your gyro starts to rotate you could lose 100ft or more before persuading it to stop.

N.B. Testing a Gyroplane for correct recovery should only be done by an experienced pilot operating at a safe altitude.

**Tim McClure**

Chairman Operations Committee.

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