Rans S6-ES Coyote II, G-MZMS

AAIB Bulletin No: 10/2003	Ref: EW/G2003/06/27	Category: 1.4
Aircraft Type and Registration:	Rans S6-ES Coyote II, G-MZMS	
No & Type of Engines:	1 Rotax 503 DCDI piston engine	
Year of Manufacture:	1998	
Date & Time (UTC):	21 June 2003 at 1330 hrs	
Location:	Popham Airfield, Hampshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Major disruption of the airframe	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	65 years	
Commander's Flying Experience:	389 hours (of which 170 were on type)	
	Last 90 days - 15 hours	
	Last 28 days - 7 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

History of flight

Popham is an unlicensed airfield in Hampshire. The aircraft was taxied to the holding point of Runway 08; the runway has a grass surface and is 914 metres long by 25 metres wide. Runways 08 and 26 run parallel to mature woodland located approximately 100 metres south of the airfield. There is a prominent windsock between the trees and the grass strip approximately mid-way along the runways' length; there are also a number of flags mounted on poles around the main hangar which give visual indications of the wind strength and direction. The airfield also has an anemometer mounted on the roof of the clubhouse and during normal operating hours the radio operator can provide pilots with measured wind information. The trees at the edge of the wood, being approximately 40 to 50 feet high, are significantly higher than the windsock, the flags and the airfield anemometer. The wind reported (presumably measured) at the airfield was south-westerly at 8 to 10 knots.

Before departing, the pilot observed the windsock which indicated that the wind was light and variable. The aircraft carried out a normal take-off run and lifted-off at about the normal point on the runway. As the aircraft climbed level with the tops of the trees, its right wing dropped. The pilot lowered the aircraft's nose and corrected the bank to wings level but by then he had reached the position at which a left turn is required to avoid flying over a petrol station located on the eastern airfield boundary. During the left turn the aircraft began to sink and despite full engine power, height could not be maintained; the pilot, realising his predicament, attempted to land on Runway 03. The

aircraft struck the ground heavily to the east of Runway 03 and both occupants were able to exit the aircraft unaided.

General weather conditions

A meteorological aftercast stated that at the time of the accident, there was a high-pressure area centred over Belgium feeding a light southerly airflow over the Popham area. The mean sea level pressure was 1017 hPa with no cloud below 5,000 feet. The general surface wind in the area was 150°/5 to 8 kt whilst the wind at 500 feet agl was likely to have been 170°/10 kt.

Warnings to pilots

Being an unlicensed airfield, Popham does not have to meet licensed aerodrome criteria. Nevertheless, local features such as obstacles are described in flight guides such as the 'Pooleys' and 'Bottlang' VFR guides. In both guides the relevant pages for Popham Airfield show the locations of the trees together with a text warning *'Trees up to 50 ft agl along aerodrome boundaries'*.

Conclusion

The pilot concluded that the cause of the accident was that the windsock did not clearly indicate the true strength and direction of the wind he encountered above the trees. The combination of the downwind component created by the south-westerly wind and the required left turn placed the aircraft in a downwind condition for which insufficient power was available to overcome the sink caused by the turbulence generated by the trees.

The pilot's conclusion was only partly supported by the aftercast. The airfield anemometer appeared to have been sensing a different wind direction (south-westerly) to the general surface wind which was south-easterly but the measured wind strength was reasonably accurate. Moreover, the pilot reported that the windsock showed light and variable wind conditions and so it is quite possible that the wind changed direction during the take-off. However, as the aircraft rose above treetop level and began to encounter the free stream wind, this was likely to have been from between 150° and 170° which, for a departure from Runway 08, does not result in a tailwind component. Furthermore, allowing for drift at 50 KIAS, after the left turn onto a ground track of about 060°, at its worst the tailwind component was unlikely to have exceeded 3 kt. Consequently, this accident may have been attributable to a combination of low power-to-weight ratio and transient wind effects.

Finally, given that Popham is an unlicensed airfield, the current statements in the commercial VFR flight guides about the presence and locations of trees are probably adequate warning for holders of pilot's licences.