

Rutan Varieze, G-BKVE

AAIB Bulletin No: 6/99 Ref: EW/G99/04/09 Category: 1.3

Aircraft Type and Registration: Rutan Varieze, G-BKVE

No & Type of Engines: 1 Continental O-200-A piston engine

Year of Manufacture: 1986

Date & Time (UTC): 11 April 1999 at 1600 hrs

Location: Field at Waltham, near Canterbury, Kent

Type of Flight: Private

Persons on Board: Crew - 1 - Passengers - None

Injuries: Crew - None - Passengers - N/A

Nature of Damage: General damage to wing, fuselage, and engine mountings

Commander's Licence: Private Pilot's Licence

Commander's Age: 52 years

Commander's Flying Experience: 315 hours (of which 8 were on type)
Last 90 days - 8 hours
Last 28 days - 7 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

The aircraft had been recently purchased and the actual performance details were not available. A preceding 1 hour 10 minute flight had indicated a fuel consumption of 4.3 imperial gallons per hour; close to the published figure of 4.4 gallons per hour.

The flight was planned from Orleans St Denis to Biggin Hill and the fuel required was calculated as 12.9 imperial gallons, including a 45 minute reserve. The fuel content was over 13 gallons in the wing tanks, and 2 gallons in the fuselage tank (full). The aircraft's owners manual recommends the use of the fuselage fuel as the last fuel on a long trip. "This allows complete use of the wing fuel and a very accurate indication of the last half hour fuel supply". The fuel gauges are only visible from the rear seat and it is not possible for a tall pilot to tell if the tanks are low on fuel until the engine cuts.

The flight was uneventful, with winds and altitudes as planned until overhead Waltham, when, at 2,000 feet with carburettor heat selected on, the engine stopped without warning. A field was selected and the best glide speed of 100 mph maintained. After checking mixture and magnetos, an attempt was made to move the fuel selector, which is located under the right wrist, with the left

hand (the right hand was on the control column). The selector was jammed and the pilot could not apply enough force to move it to the fuselage tank position. At 500 feet attempts to move the selector were abandoned to concentrate on the approach. Maximum range was required to reach the field, and the front landing gear was not lowered. The propeller stopped windmilling on final approach at approximately 70 mph and the aircraft yawed harshly; touchdown was achieved at approximately 60 mph. On inspection the wing tanks contained less than 1 gallon, and the fuselage tank was full. There were no obvious signs of leakage, indicating that the fuel consumption for the duration of the flight was 6.9 imperial gallons per hour, not 4.4 as published and used for flight planning.

The pilot commented that although the single isolated cause of the accident was the failure of the fuel selector, a combination of factors eroded other safety margins so that, what was planned as a contingency, became of vital importance. He further stated that the shoulder harness and the reclined seat position were very effective in reducing the risk of injury.