TRI KIS, G-OKPW

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Aircraft Type and Registration:	TRI KIS, G-OKPW
No & Type of Engines:	1 Jabiru 3300 piston engine
Year of Manufacture:	1994
Date & Time (UTC):	24 June 2000 at 1106 hrs
Location:	Nr Billinghurst, Sussex
Type of Flight:	Private
Persons on Board:	Crew - 1 - Passengers - 1
Injuries:	Crew - None - Passengers - None
Nature of Damage:	Door detached and not recovered; minor damage to door frame
Commander's Licence:	Private Pilot's Licence
Commander's Age:	65 years
Commander's Flying Experience:	460 hours (of which 308 were on type) Last 90 days - 14 hours Last 28 days - 2 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and AAIB telephone inquiries

Introduction

The aircraft was a home-built aircraft which was fitted with gull-wing doors. These were hinged at their top edges and secured in the closed position by cable-operated spring-loaded latch pins, which engaged holes in the lower corners of the door frames.

History of the flight

Prior to take off, the pilot/builder of the aircraft checked that the doors were closed and securely latched by ensuring that the lock pins were visibly protruding through the door frame. After an uneventful take off from Runway 21 at Shoreham Airfield on a planned flight to Cranfield, the aircraft was levelled at 1, 600 feet and 120 kt. Some 8 minutes later, the right hand door opened suddenly and separated from the aircraft. The pilot immediately reduced the speed to 80 kt; no

handling problems were apparent and no damage could be seen to the tail of the aircraft. He transmitted a PAN call on the Shoreham frequency and after providing further details on the status of the aircraft and requesting an immediate landing on the most into-wind runway, the aircraft was cleared to join directly downwind for Runway 03 left hand. The approach controller reported that during touchdown the aircraft bounced once or twice before full control was regained, after which it was taxied back without further incident.

Discussion

The incident resulted in only light damage to the door sill; the door itself was never recovered. The pilot reported that the hinging arrangements are such that in the event of a door opening wide in flight, the airflow will tend to disengage the hinges allowing the whole door to be separated cleanly.

No positive explanation was found for the door becoming unlatched. However, the pilot commented that design's reliance on tension cables, to withdraw the latch pins against their springs, meant that it was possible for the operating handles to return to an apparently 'closed and locked' position even if the latch pins were not actually engaged properly in the door frame; the resulting lost motion being accommodated by cable 'sag'. Modifications have since been accomplished on G-OKPY which have included replacement of the latch operating cables with a system of rigid rods, with a view to making latch engagement more positive and preventing the operating handle from closing back flush should the latches fail to engage properly.