

## DH82A Tiger Moth, G-AKXS, 21 July 2002

<b>AAIB Bulletin No:</b> 11/2002	<b>Ref:</b> EW/G2002/07/23	<b>Category:</b> 1.3
<b>Aircraft Type and Registration:</b>	DH82A Tiger Moth, G-AKXS	
<b>No &amp; Type of Engines:</b>	1 De Havilland Gipsy Major 1C piston engine	
<b>Year of Manufacture:</b>	1940	
<b>Date &amp; Time (UTC):</b>	21 July 2002 at 1225 hrs	
<b>Location:</b>	White Waltham Airfield, Berkshire	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - None
<b>Injuries:</b>	Crew - Serious	Passengers - N/A
<b>Nature of Damage:</b>	Aircraft destroyed	
<b>Commander's Licence:</b>	Airline Transport Pilots Licence	
<b>Commander's Age:</b>	57 years	
<b>Commander's Flying Experience:</b>	14,481 hours (of which 280 were on type)	
	Last 90 days - 23 hours	
	Last 28 days - 15 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

A flying display had been organised by the flying club at White Waltham. The reported meteorological conditions were CAVOK with a surface wind of 320°/10-15 kt. One of the early items on the display programme was a formation display by three Tiger Moths and a DH Rapide. This display was planned to culminate with two Tiger Moths flying at right angles towards the display line before breaking to the left and right respectively to fly parallel to the display line in opposite directions. Video evidence indicated that the display was being flown well in light turbulent conditions.

The two aircraft flew towards the display line at a speed of approximately 70 kt and commenced their 'break'. The aircraft breaking left did so without difficulty. Video evidence showed, however, that the aircraft breaking to the right entered the turn with a high rate of roll, as if a full lateral control input had been applied, although it was not possible to see the position of the ailerons on the video. What could be seen however, was the application of a substantial amount of right rudder

coincident with the start of the turn. As a result the nose of the aircraft dropped after it had turned through approximately 80° and this was countered by the application of nose up elevator. Substantial right rudder and nose up elevator remained applied causing the aircraft to enter a spin to the right. The rudder was then centralised and the aircraft completed one further turn before striking the ground.

After impact the pilot, who had been occupying the rear cockpit, released his harness but was unable to free his legs which had become trapped by elements of the distorted structure. Two flying instructors arrived promptly on the scene and, having been assured by the pilot that he was "OK", removed him from the wreckage because of the risk of fire. The airfield fire and rescue services then arrived and sprayed foam around the aircraft as fuel was leaking from the ruptured fuel tank. An Air Ambulance helicopter was on scene within two minutes of the accident and the pilot was later flown to a local hospital.

The front cockpit of the aircraft had been completely destroyed in the impact. The pilot, who had worn a full harness with an additional lap strap and a rigid, RAF type, flying helmet received severe back injuries. Inspection revealed that one of his shoulder harness supports had failed at the attachment point to the fuselage as a result of the impact.

Prior to the formation display the pilot had taken the opportunity to fly a Zlin aircraft and had performed a number of aerobatics. The Zlin requires robust control inputs during aerobatics whereas the Tiger Moth, with its weak lateral and directional stability, requires relatively light control forces. It is possible that the pilot had utilised techniques required to fly the Zlin during his first aggressive manoeuvre on the subsequent flight in the Tiger Moth.