

# DH82A Tiger Moth, G-BALX

**AAIB Bulletin No: 9/98 Ref: EW/C98/4/5 Category: 1.3**

**Aircraft Type and Registration:** DH82A Tiger Moth, G-BALX

**No & Type of Engines:** 1 de Havilland Gipsy Major 1C piston engine

**Year of Manufacture:** 1941

**Date & Time (UTC):** 19 April 1998, time unknown

**Location:** En route from Dieppe to Lashenden

**Type of Flight:** Private

**Persons on Board:** Crew - 1 - Passengers - None

**Injuries:** Crew - Missing - Passengers - N/A

**Nature of Damage:** Aircraft missing

**Commander's Licence:** Private Pilot's Licence

**Commander's Age:** 54 years

**Commander's Flying Experience:** Approximately 1,000 hours  
(of which approximately 500 were on type)

Last 90 days - about 15 hours

Last 28 days - about 12 hours

**Information Source:** AAIB Field Investigation

## History of the flight

The pilot flew from Lashenden (Headcorn), UK, to Dieppe, France, on Sunday 19 April 1998, a trip that he had flown many times before. He filed a flight plan for the intended flight which indicated a direct routing and at 1010 hrs he refuelled the aircraft with 49 litres of fuel (10.8 Imp gallons). He took off at 1050 hrs and landed at Dieppe at 1204 hrs. Whilst on the ground at Dieppe he filed a flight plan for the return flight, by telephone, with Lille Air Traffic Control Centre; the ATC tower at Dieppe was closed. The aircraft was seen to take off at approximately 1440 hrs and at 1442 hrs a radio call was received by Paris North, the local Flight Information Service (FIS),

from a pilot using the correct callsign. After establishing contact the pilot transmitted "G-BALX EN ROUTE FROM DIEPPE TO HEADCORN, OFF THE FRENCH COAST, HEADING 350\_, VFR AND ESTIMATING MID-CHANNEL AT 17"; mid-channel marks the boundary between the Paris Flight Information Region (FIR) and the London FIR. The pilot did not pass an airborne time nor did he request that his flight plan be activated. The reply from Paris FIS was "PARIS INFORMATION DO NOT PROVIDE TRAFFIC INFORMATION ONLY GENERAL INFORMATION ON REQUEST, YOU CAN MAINTAIN THIS FREQUENCY". The pilot acknowledged this transmission. There was no further radio, radar or visual contact with the aircraft which was subsequently reported missing.

## **Pilot experience**

The pilot had held a Private Pilot's Licence since 13 March 1985 and had a valid medical certificate at the time of the flight. He was an experienced pilot in the Tiger Moth and had made a number of lengthy flights in this particular aircraft. He often flew extended legs over the sea and had previously flown from Cherbourg, France, to Lashenden via the Isle of Wight, this involves a flight of 55 nm over the sea. Furthermore, on previous flights to and from Dieppe he had usually taken the direct route and this was reflected on both flight plans on 19 April 1998.

## **Meteorology**

An aftercast for 1500 hrs on 19 April 1998 was obtained from the Meteorological Office, Bracknell. The synoptic situation indicated that a weak warm front was lying from Bournemouth to Le Havre and moving slowly north-east. The visibility in the area between Dieppe and Lashenden was estimated as 30 km with a scattered cloud base at 2,000 feet and a broken cloud base at 8,000 feet. The surface wind was 180\_/10 kt and at 2,000 feet the wind was 200\_/17 kt. There was no significant weather although there may have been some occasional light rain in the western area of the channel. This aftercast accurately reflects the forecast conditions.

A professional pilot, who had flown in a light aircraft from Biggin Hill to several airfields in northern France that afternoon, confirmed the validity of the aftercast and noted that the weather conditions were perfect for light aviation until about 1730 hrs when the weather to the west of Beachy Head began to deteriorate in rain with an associated cloud base of approximately 2,000 feet. These benign conditions were entirely reasonable for the planned visual flight by the Tiger Moth from Dieppe to Lashenden .

## **Aircraft details**

At the time of the flight the aircraft held a current Certificate of Airworthiness. Its previous annual inspection had been completed on 28 June 1997. The CAA were not aware of any outstanding inspections or technical work required by this aircraft. The last recorded entry in the engine log book, on 8 April 1998, gave a total of 926 hours and 30 minutes which represents a relatively high time engine.

The main wing structure of the aircraft was of wood with a doped fabric covering, the fuselage was of a tubular steel construction, again with a doped fabric cover. The fabric was painted with a camouflage scheme on the upper surfaces with bright yellow under surfaces. This aircraft was standard for its type except that it was fitted with an additional aluminium fuel tank. The normal fuel tank held 19 Imp gallons and the additional tank held a further 9.5 Imp gallons. The aircraft also had a modification incorporated to the piston rings which reduced the oil loss thus ensuring that the aircraft retained sufficient oil to match its increased endurance.

At a cruising speed of 80 mph it is estimated that this aircraft would use approximately 6.6 Imp gallons per hour thus giving an endurance, at that speed, of approximately 4 hours 20 minutes. Therefore, assuming that both fuel tanks were full at Lashenden and after allowing for the flight time to Dieppe, starting and taxiing, it would have had approximately 3 hours endurance after leaving Dieppe.

### **Air traffic control**

One of the occasions upon which a pilot must file a VFR flight plan is for a flight to or from the UK which will cross the FIR boundary. This ensures that HM Customs requirements are met and, when the flight involves flying over the sea or other areas where Search and Rescue may be difficult, allows for the prompt notification of overdue aircraft. When departing an airfield with an Air Traffic Service Unit (ATSU) the pilot is responsible for completing the flight plan which the ATSU will then file. The effect of filing the flight plan is to inform the destination airfield, together with any of the alternates, that the flight is planned to take place. Once the aircraft becomes airborne the ATSU will file a departure message which will then activate the flight plan. The destination airfield, knowing the estimated time en route (from the filed flight plan) and now knowing the departure time will have an estimated time of arrival (ETA). When the aircraft arrives at its destination the ATSU then closes the flight plan. If, however, the aircraft does not arrive within 30 minutes of the ETA the ATSU will initiate overdue action and, subsequently, Search and Rescue operations may commence.

However, if the airfield from which the aircraft departs has an ATSU but the flight is outside their operating hours (i.e. ATC is closed) then the responsibility for filing, activating and closing the flight plan now rests with the pilot. In this case the flight plan should be filed either by telephone or facsimile and arrangements made for a responsible person on the ground to telephone the relevant

unit as soon as the aircraft is airborne in order to pass the departure time; it is this action which activates the flight plan. Passing an airborne time over the RT could lead to delays since the FIR staff are often very busy.

The pilot of G-BALX had completed a flight plan for the intended flight to Dieppe which was filed and activated by the ATSU at Lashenden. This outbound route could not be tracked subsequently by the Distress and Diversion cell (D&D) at West Drayton, probably because the aircraft had been flying below radar coverage. When the aircraft arrived at Dieppe, the ATSU there closed the flight plan with an arrival message. When the pilot left Dieppe the ATC tower was closed and so he filed his flight plan by telephone to Lille Air Traffic Control Centre and this flight plan was received at Lashenden. This was the correct procedure. Once airborne he contacted Paris Information but did not pass an airborne time nor did he request that his flight plan be activated. The D&D cell were unable to provide any evidence of the return leg but, since they had also been unable to do so for the outbound flight, this is, in itself, of little consequence.

Since the ATC unit at Dieppe was closed no departure message was sent. Although the pilot contacted Paris Information by radio, in the absence of a specific request, the flight plan was not activated. Lashenden were therefore unaware of the flight's departure and ETA. When the aircraft was reported missing overdue action, and the subsequent Search and Rescue operation, was initiated on the morning of 21 April 1998. Since then there has been no sign of the aircraft or pilot.

### **Flight planning**

The pilot was apparently quite used to flying extended legs over the sea in this single engine aircraft. When flying from Lashenden to Dieppe, the most obvious route would be to fly south-east to cross the channel between Lydd and Boulogne, thus exposing the aircraft to a sea crossing of only 28 nm rather than the 60 nm required on a direct track. If the shorter sea crossing had been chosen the total distance flown would only be 18 nm extra.

Allowing for a cruising speed of 80 mph and assuming a transit altitude of 1,500 feet, which is the altitude that the pilot entered on both flight plans, the total flight time for the return trip would have been 54 minutes on a heading of 344°, having allowed for the effect of the wind. Assuming a take-off time from Dieppe of 1440 hrs this would have produced a time at the boundary between the Paris FIR and the London FIR (mid channel) of 1503 hrs.

### **Further Action**

This report contains those facts that it has been possible to establish since the disappearance of the aircraft. If new and important evidence is disclosed subsequently then the Chief Inspector may cause the investigation to be re-opened in accordance with Regulation 15 of The Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996.