



**Accident** to the DIAMOND - DA40  
registered **F-GUVU**  
on 3 April 2023  
at Annecy-Meythet (Haute-Savoie)

<b>Time</b>	16:27 <sup>1</sup>
<b>Operator</b>	Aéroclub d'Annecy Haute-Savoie
<b>Type of flight</b>	Instruction
<b>Persons on board</b>	Instructor
<b>Consequences and damage</b>	Student-pilot severely injured
This is a courtesy translation by the BEA of the Final Report on the Safety Investigation. As accurate as the translation may be, the original text in French is the work of reference.	

**Student-pilot hit by rotating propeller in parking area,  
in instruction**

**1 HISTORY**

*Note: the following information is principally based on the video recordings from the security camera filming the aeroplane parking area, statements and radio communication recordings.*

After engine start-up for an instruction flight, and after being cleared to taxi to holding point "Alpha" for runway 04, the controller informed the instructor and the student-pilot that a bag left on the wing of the aeroplane had just fallen to the ground. The instructor opened the canopy to see if he could locate the bag. As he did not see it, he asked the student-pilot to get out of the aeroplane to recover the bag. The student-pilot got out of the aircraft in front of the leading edge and headed forward while protecting himself from the wind caused by the propeller. The student-pilot hit the rotating propeller on his right arm, which threw him to the ground. The instructor stopped the engine while alerting the emergency services by radio.

**2 ADDITIONAL INFORMATION**

**2.1 Aeroplane information**

F-GUVU is a four-seater DA40 aeroplane with tricycle landing gear. It is equipped with a forward-tilting canopy and a gullwing door at the rear left. A step in front of each wing provides access to the two seats at the front. A reinforced wing-walkway at the wing root provides access to the front and rear seats (see **Figure 1**).

<sup>1</sup> Except where otherwise indicated, the times in this report are in local time.



*Figure 1: step and wing-walkway to access the aeroplane*

## 2.2 Persons on board information

The 43-year-old instructor held an Airline Transport Pilot Licence - Aeroplanes (ATPL(A)) issued by the Swiss authorities, along with a Flight Instructor - Aeroplane (FI(A)) rating. He had logged around 7,000 flight hours, 1,300 hours of which on single-engine aeroplanes and 70 hours of which as an instructor.

The 51-year-old student-pilot had logged around 15 flight hours. This was his second flight on the DA40 after a few years of break in his training.

## 2.3 Statements

The instructor stated that this was the second flight he made with this student-pilot. He added that when the controller informed them of the presence of a bag that had just fallen from the wing, he took over the controls and half-opened the canopy to try to locate the bag from his side. As he did not see it and was reluctant to leave the student-pilot alone on board with the engine running, he asked the latter to get out and check, asking him to be careful.

The instructor explained that his decision not to shut down the engine was motivated by the following:

- The time pressure associated with the flight instruction session, due to:
  - the delay already accumulated during the briefing and preparation of the aeroplane;
  - the constraint represented by the next booking time slot of the aeroplane;
  - the duration of the engine shutdown procedure and the new starting procedure which would have been required.
- The confidence he had in the student-pilot. Despite the break in his training, the student-pilot had a fairly advanced knowledge of the DA40 and a level of flying proficiency which was perfectly acceptable. He thought that the student-pilot had been made aware of the dangers of being close to an aircraft with the propeller rotating during previous training sessions.

- His personal experience and the fact that he was used to seeing people working close to an aeroplane with a rotating propeller (personnel starting aeroplanes by manually launching the propeller, starting aeroplanes using an external power unit, transmitting documents at the parking area during aerobatic training sessions, assisting with aircraft parking, etc.).

The instructor stated that he thought that the student-pilot would logically get out at the rear of the aeroplane and would therefore be within an area that presented no immediate danger. As a result, there was no specific briefing about the path to take when getting out of the aeroplane and no warning about the danger posed by the rotating propeller.

He added that when the student-pilot started to get up to exit the aeroplane, he looked at the throttle lever to make sure that the engine was at idle. When he looked back at the student-pilot, he saw him get out from the front of the wing. It was at this point that he realised how dangerous the situation was, but he no longer had any way of communicating verbally or visually with his student because of the noise of the engine, the relative wind and the student facing away from him. He stated that he did not have time to shut down the engine before the student-pilot was hit by the propeller. He added that the main cut-off switch located on the far left was difficult to reach from the right seat where he was. He specified that when he saw the student-pilot fall, he alerted the emergency services by radio and then cut off all power sources (electrical, engine, fuel).

The student-pilot stated that he completed the first part of his training on the DR400, and that he then flew with a pilot friend on the DA40 during the break in his training. He specified that he did not remember being warned about the dangers of walking around an aeroplane with the propeller rotating, or about the paths to follow when moving about in an aircraft parking area.

He explained that after the flight preparation briefing, he had the pouch containing the aeroplane's documents and put it on the left wing to start the pre-flight inspection with the instructor. He added that he boarded using the step in front of the wing, as he was used to doing. After starting the engine and discussing the taxi clearance read-back with the instructor, they were interrupted in their tasks for starting taxiing and informed of the presence of a bag that had fallen down behind the aeroplane. He stated that, in consultation with the instructor, the latter asked him to exit the aeroplane to have a look while he maintained the canopy half-opened with the throttle lever in the idle position. According to him, he got out "normally" from the front as he was used to doing, but lost his balance forwards. He explained that he had the intention of walking along the wing while bending down to see underneath in order to locate the bag.

#### **2.4 Analysis of the recording from the security camera filming the flying club's parking area**

A video camera filmed the aircraft parking area, and the event was recorded. The analysis of this video recording showed that:

- during engine start-up, a bag fell from the left wing to the ground, behind the wing, probably due to the relative wind generated by the propeller;
- the student-pilot got out of the aeroplane using the step located in front of the leading edge;
- once on the ground, with his back almost turned to the instructor who was still on board, he bent down slightly and headed forward until he was hit by the propeller.

## 2.5 Safety aspect

The checklist for F-GUVU in the “before start-up” section does not mention checking that the documents are on board.

As a general rule, when pilots take charge of an aeroplane in a parking area, they carry several bags or pouches containing not only the aeroplane’s documents, but also their own documents and any personal belongings. The pilots are responsible for setting the strategy to be applied to ensure that all the documents are on board before start-up.

In the light of experience, some flying clubs updated their checklists by adding a number of items requiring special attention, for example “documents on board”, “towbar removed and stored”, “keys visible” during the pre-flight inspection (in particular during the propeller inspection), “chocks removed and stored”, etc.

As regards personnel moving around aircraft with engine(s) started, there is no regulatory obligation to shut down the engine(s). Each operator is responsible for identifying potentially risky situations, for assessing the risk level associated with each identified situation and taking all appropriate measures to make it “acceptable”, and for defining specific procedures if required (restricted zones, paths, training, information notices, etc.).

Here are some examples:

- embarkation or disembarkation of specialised personnel from a helicopter with rotor turning;
- disembarkation of an instructor when signing-off a student-pilot to fly an aeroplane solo;
- start-up of an aeroplane’s engine using an external power unit. On Pilatus PC6 aeroplanes and on some models of DA40, the power receptacle is located on the fuselage side, in front of the left wing and the main landing gear;
- in military and civil commercial aviation, there are many situations where staff members have to operate in the immediate vicinity of an aircraft while engines are running.

## 3 CONCLUSIONS

*The conclusions are solely based on the information which came to the knowledge of the BEA during the investigation.*

### Scenario

After engine start-up, a bag that the student-pilot had left on the left wing fell off, probably as a result of the propeller blast. The controller warned the instructor and the student-pilot. In this unusual situation, the instructor decided to leave the engine running and asked the student-pilot to get out to retrieve the bag. The instructor, convinced that the student-pilot was going to exit from the rear, did not think about talking with him to make sure they shared the same strategy. The student-pilot got out from the aeroplane as he was used to doing, from the front, while at the same time looking for his bag, without identifying the risk associated with the rotating propeller. He bent down and moved away from the leading edge to have a better view underneath the wing of the aeroplane. This movement brought him closer to the rotating propeller, which hit him on the right arm.

## Contributing factors

The following factors may have contributed to the accident:

- placing a bag on the wing before the pre-flight inspection, which may also damage the wing skin;
- failure to check that documents were on board before engine start-up;
- time pressure not to suspend the instruction session (see para. 2.3) and reduce its duration, which led the instructor to decide to keep the engine running while the student-pilot exited the aeroplane to retrieve his bag;
- insufficient coordination between the instructor and the student-pilot, which was limited to the strategy put in place to allow the latter to exit the cockpit, without mentioning the path to take to get out of the aeroplane and retrieve the bag;
- underestimation of the risks associated with exiting the aeroplane with the propeller rotating.

***The BEA investigations are conducted with the sole objective of improving aviation safety and are not intended to apportion blame or liabilities.***