



Accident to the SCHLEICHER– ASH 26 E
registered **D-KWAY**
on 25 July 2022
at Aspres-sur-Buëch

Time	Around 12:30 ¹
Operator	Private
Type of flight	Local
Persons on board	Pilot
Consequences and damage	Glider substantially damaged

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.

Deployment of engine at low height, collision with trees

1 HISTORY OF THE FLIGHT

Note: the following information is principally based on statements and data from the glider's FLARM.

The pilot took off without assistance at around 12:07 from Serres-la-Batie Montsaleon (Hautes-Alpes) for a local flight north of the aerodrome. He switched off the engine and retracted the propeller before starting a spiral in a thermal uplift enabling him to gain around 650 m in altitude. At around 12:20, he exited the spiral, headed towards Saint-Apôtre mountain and then flew along the south slopes. Having lost nearly 600 m in altitude and not finding any updrafts, he then turned into the valley towards Aspres-sur-Buëch aerodrome where he would have been able to land with ease given the glider's altitude and lift-to-drag ratio². He decided to use the engine to gain altitude and continue his flight. At 12:29, when he was at a height of 260 m and at a distance of 2,850 m from the runway, he deployed the propeller³ and tried to start the engine, without success.

The glider continued to lose height and struck trees at a few dozen metres from the threshold of runway 10 at Aspres-sur-Buëch before finishing its run on the ground.

¹ Except where otherwise indicated, the times in this report are in local time.

² The glider's theoretical maximum lift-to-drag ratio is of the order of 50.

³ The FLARM recorded a background noise parameter (ENL), this parameter was used to determine the time of deployment of the propeller.

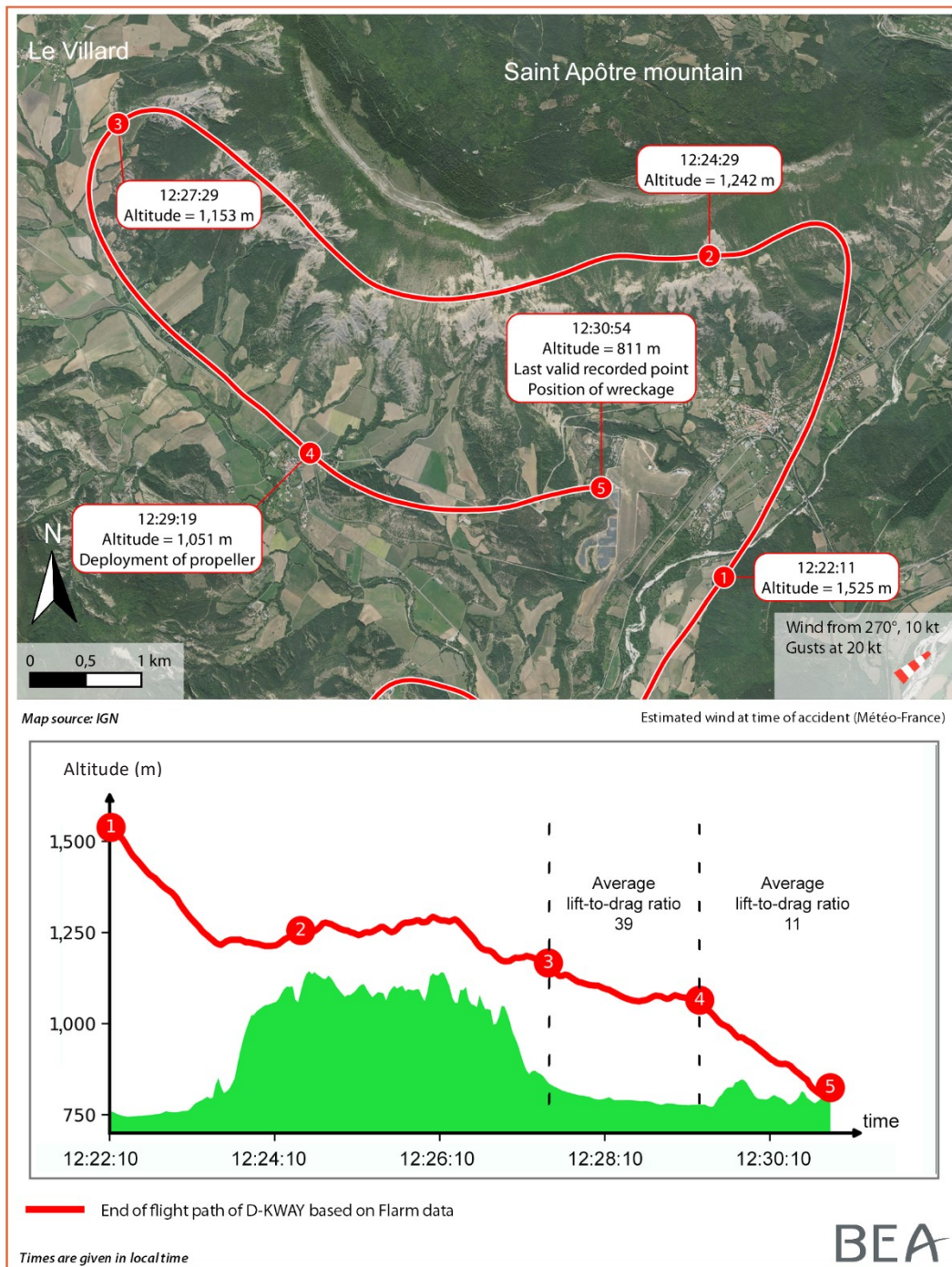


Figure 1: flight path of glider

2 ADDITIONAL INFORMATION

2.1 Pilot experience

The 62-year-old pilot held a sailplane pilot licence (SPL) with the powered glider, TMG⁴, aerobatic, winch, tow and self-launch ratings. He was a glider and motor glider instructor. He had logged 5,039 glider flight hours including 887 hours on type, 106 h 21 min in the previous three months, including 66 h 08 min on type.

He also held an aeroplane private pilot licence and had logged around 4,000 aeroplane flight hours. He was the owner of D-KWAY.

2.2 Meteorological information

The estimated meteorological conditions on the accident site were wind from 270° of 10 kt with gusts of 20 kt, CAVOK, temperature 35°C, QNH 1014 hPa.

2.3 Site and wreckage information

The wreckage was situated at a distance of 30 m from the threshold of runway 10 at Aspres-sur-Büech and offset 85 m to the right of the edge of the runway.

The glider had collided with several trees before finishing its run on the ground. The propeller was deployed and intact.



Figure 2: photo of glider on accident site (source: BEA)

⁴ Touring Motor Glider.

2.4 Pilot's statement

The pilot reported that he had purchased D-KWAY in April 2013, a glider equipped with an engine and extendable propeller for self-launching. He flew this glider for the first time on 14 April 2013 and was in the habit of deploying the propeller and starting the engine in flight. He added that he knew that the propeller can sometimes deploy without the engine starting. He had already been confronted with this situation during his previous flights. He specified that he thus knew how a deployed propeller without the engine operating affected the glider's performance.

Given the height of the glider, he decided to start an approach to Aspres-sur-Buëch aerodrome. He then tried to use the engine which had had time to cool down since the take-off. On perceiving that the engine did not start up after deployment of the propeller and after several unsuccessful attempts to start it, he continued the approach to the aerodrome and tried to land with the propeller extended. When at a low height and seeing that he would not be able to reach the runway, he prepared himself for a forced landing straight ahead. He explained that he pulled on the stick to increase the glider's pitch attitude before colliding with trees.

In hindsight, he believed that he would have probably been able to land on the runway if he had not extended the propeller.

2.5 Use of engine in flight

The ASH 26 E is a single-seat self-launching glider composed of a combustion engine and propeller assembled on a retractable pylon installed in the upper part of the fuselage, aft of the wings.

The procedure for deploying the propeller and starting up the engine in flight is set out below:

*“Open the fuel valve situated next to the seat, on the left panel of the cockpit.
Set the main switch to on.
Set the main engine switch to on.
Engage the “Extend propeller” switch upwards.
Check that the “Propeller extended” green LED is on.
Disengage the propeller stop.
Set the ignition switch to on.
Check that the fuel pump can be heard.
Ensure that the airspeed is between 90 and 110 km/h.
Move throttle 1/3 towards “Wide open”.
Push “Primer” button for two to three seconds.
Push “Starter” button for five seconds maximum.
If the engine does not fire, press “Primer” and then “Starter” again at 15 s intervals, with increasing amounts of priming fuel.
If the engine fires shortly and then seems to stall again, re-press “Primer” for a short instant.
If possible, allow the engine to warm through.
Reduce the airspeed and move the throttle to Wide Open Throttle.”*

The procedure for stopping the engine and retracting the propeller in flight is set out below:

*“Ensure that the airspeed is between 90 and 100 km/h.
Move the throttle to idle.
Wait until low rpm have stabilised.
Set the ignition switch to off.
Let engine revs die down.”*

Engage the propeller stop lever.

Wait until the propeller runs against the propeller stop block.

Check vertical position of the propeller by means of the mirror.

Hold down the "Retract" switch.

Let the propeller retract only so far that its tip can no longer be seen in the rear view mirror.

Then after about two minutes or when the maximum liquid coolant temperature has dropped by two degrees, press the "Retract" switch again until the "Propeller retracted" ILEC LED lights.

Set the fuel valve to shut.

Switch off the power-plant main switch by pushing the red lever next to it. Set the engine main switch to off."

The ASH 26 E flight manual indicates that the power-plant of a powered sailplane must not be considered as a life insurance for flying over areas where it is not possible to land. The pilot must always be prepared for the possibility that the power-plant will fail to deliver the hoped-for propulsion. The manual details that this may not necessarily be due to a technical shortcoming but might be due to mistakes in carrying out the starting procedure caused by the nervous tension of the pilot. The manual also indicates that the engines of powered sailplanes are not subject to quite such stringent production and test regulations as normal aviation engines⁵ and therefore cannot be expected to be quite so reliable.

The manual specifies that a minimum safe height for extending the propeller and starting up the engine must be complied with. The criterion to determine the minimum height is that it must be possible to retract the propeller again and carry out a normal landing if the engine cannot be started. A general value for this minimum safe height is about 300 m, however, this also heavily depends on the pilot's abilities and geographical factors.

3 CONCLUSIONS

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

Scenario

When at a sufficient height and distance to land on an aerodrome, the pilot tried to start up the glider's engine, without success. The extended propeller resulted in the lift-to-drag ratio decreasing from 40 to 10 which meant that the glider was no longer able to reach the threshold of the aerodrome's runway. Given the time required to carry out the propeller retraction procedure and the glider's low height, the pilot privileged holding the flight path.

Contributing factors

The following factors may have contributed to the pilot's late attempt to start the engine:

- overconfidence in the reliability of the engine;
- insufficient knowledge of the consequences of deploying the propeller on the glider's lift-to-drag ratio.

⁵ Such as certified engines equipping aeroplanes according to applicable regulations..

Safety lessons

Minimum safe height for deploying the propeller and starting the engine

Glider engines are not as reliable as aeroplane engines. Under stress, pilots may also forget a step in the often complex engine start-up procedure⁶. Anticipating a start-up fault would give the pilot the time to repeat the procedure if it didn't work the first time, or to retract the propeller.

The safety investigation into an [accident concerning a DG1001M registered D-KVDG on 19 March 2017 at Le Vernet \(Alpes-de-Haute-Provence\)](#) revealed that the extension of the engine pylon was probably started late for an altitude and speed range that did not allow the deployment sequence to be completed before the collision with the trees and then the ground.

Knowing the glider's performance with the propeller extended and the engine shut down

Anticipating the degradation in glider performance when flying with the propeller extended and the engine shut down, will allow the pilot to land safely if the engine does not start.

The actual lift-to-drag ratio of a glider with the propeller extended and the engine shut down can be estimated during a dedicated flight.

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

⁶ Refer to the BEA report concerning the [accident to the Eiri PIK-20 E registered D-KVNO on 29 August 2019 at Vernet \(Alpes-de-Haute-Provence\)](#)