

**STANDARD CIRRUS
75,
G-DDGX**

**Gwernesney Airfield,
Monmouthshire**

27 July 2019

Accident

Investigation Synopsis

The glider was undertaking an aerotow launch to the west at Gwernesney Airfield which was operated by the resident gliding club. During the early stages of the ground roll the horizontal tailplane (tailplane) detached from G-DDGX and fell to the ground. Club members assisting with the launch signalled for the takeoff to be aborted but the message did not reach the aerotow tug pilot; the accident pilot did not appear to hear or see the stop signals either. The glider became airborne and climbed rapidly, before the tow cable released and the aircraft's nose dropped. The glider descended steeply and struck the ground nose first. It came to rest inverted pointing in an easterly direction. First responders extricated the pilot from the aircraft before he was airlifted to hospital. He died five days later from complications related to injuries sustained in the accident.

The investigation determined that the tailplane had not been correctly attached when the glider was rigged and this condition was not detected prior to the flight. Several possible mis-rigging scenarios were identified during the investigation, but the precise manner in which the tailplane had been mis-rigged could not be determined.

Two Safety Recommendations are made relating to communication for glider launching and detecting incorrect alignment of tailplane locking features. In addition, the gliding club has undertaken several safety actions regarding launch signalling and detection of incorrect tailplane locking on other Standard Cirrus gliders.

Safety Recommendation 2020-012

Justification

The BGA's guidance notes highlight the limitations of hand signals and 'strongly' recommend that radios are used during aerotows. While pilot-to-pilot communications would not have prevented this accident, intervention by a radio-equipped launch observer, as occurred in the Ventus glider incident, may have influenced the outcome.

Therefore, the following safety recommendation was made:

Safety Recommendation 2020-012

It is recommended that the British Gliding Association specifies in its Operational Regulations the minimum requirements for an 'adequate system of communication' for glider launching.

Date Safety Recommendation made: 21 May 2020

LATEST RESPONSE

Response received: 14 April 2021

The Operational Regulations were updated at the BGA's AGM in March 2021 to reflect the changes to signalling. These were previously updated in Managing Flying Risk as follows:

<https://members.glidering.co.uk/wp-content/uploads/sites/3/2015/04/BGA-Operational-Regulations-3-Mar-21.pdf>

<https://members.glidering.co.uk/managing-flying-risk-index/managing-flying-risk-launch-signalling/>

Safety Recommendation Status **Closed**

AAIB Assessment **Adequate**

Action Status **Planned Action Completed**

RESPONSE HISTORY

Response received: 02 October 2020

The BGA accepts that its Operational Regulations regarding signalling should be reviewed and updated. BGA Operational Regulations are high level BGA requirements which are periodically reviewed and can only be significantly modified following a general meeting. Supporting detail is generally published elsewhere to facilitate change.

As a result of this accident, several BGA Operational Regulations have been redrafted and will be approved by the membership in their next general meeting. In addition, Managing Flying risk has been updated.

The following text describes the proposed changes:

PLANNED NEW OPERATIONAL REGULATION REPLACING OP REGS 34, 35 AND 36: Op Reg XX. Launch signalling. A reliable and unambiguous signalling system shall be used for all launches.

PLANNED NEW OPERATIONAL REGULATION REPLACING OP REGS 37, 38 AND 39 Op Reg XX. Emergency signals – aerotow.

The following emergency signals shall apply: Aerotow Release. The tug pilot orders the glider pilot to release immediately by rocking the tug laterally. Unable to Release on Aerotow. The glider pilot either communicates the problem to the tug pilot by radio, or alternatively signals 'unable to release' by flying out to the left side of the tug as far as is practicable and rocking the glider laterally. Excessive Drag on Aerotow. The tug pilot either communicates the problem to the glider pilot by radio, or alternatively signals that the glider is producing excessive drag (for example the glider airbrakes are open or the drogue parachute is deployed) by wagging the rudder.

RECENTLY UPDATED MANAGING FLYING RISK TEXT Launch signalling

Launch signalling from the ground does not remove the responsibility for the safe conduct of the launch from the pilot in command.

Recognised methods of launch signalling The recognised methods of launch signalling include radio and other wireless transmission, lights, and hand/bat signals. Release of the tow rope or cable by the glider or tug pilot on the ground signals the pilots intent not to launch.

Terminology To minimise the risk of a misunderstanding during launch signalling, which is a safety critical activity, 'take-up slack', 'all out' and 'stop' are the standard terms where verbal commands are used during launches.

Use of signalling lights and signalling by hand – limitations Light or hand signalling can result in a delayed response, can be difficult to see (even when using bats for hand signalling) or interpret in poor visibility or against bright sunlight, and may not be seen once the launch progresses, for example when a tug pilot is focussed on starting the take-off. Where signalling lights are utilised, they should not be red or green in colour. Use of signalling lights and signalling by hand/bat – protocol Lights:

- a. Take up slack: light dashes of one second duration and three seconds interval.
- b. All out: light dots at one second interval.
- c. Stop: steady light.

By hand:

- a. Take up slack: arm swung underarm.
- b. All out: arm swung from side to side above the head.
- c. Stop: arm held stationary vertically above the head.

Signalling – aerotow Radio communication should be established between the launching operation and the towing aircraft. Where radio communication is not possible, another of the recognised methods of signalling to stop the launch should be available.

Signalling – wire launches The method of communication used between the launch point and winch (or tow car) should result in reliable signalling for the duration of each launch and may be visual or audible. It is highly desirable for the signalling system to reliably allow an immediate audible and visual STOP command to be sent to the winch driver. Wireless signalling can provide near-instant communication to audible and visual indicators in the winch cab. Please note that a short period at the start of a personal management radios (PMR) radio transmission can be lost during channel identification. This shortcoming can be addressed by repeating the launch command, eg. “All out. All out” or “Stop. Stop”.

AAIB Assessment – Partially Adequate Open

Safety Recommendation 2020-013

Justification

Following this accident, for gliders with similar tailplane locking features to that of the Standard Cirrus 75, the gliding club introduced tell-tale markings to show the approximate required position of the locking lever and make it easier to detect incorrect alignment. The EASA recommended that such markings indicating the correct position for locking levers should be green in colour. Similar tailplane attachment mechanisms are known to be used on other types of glider.

Therefore, the following safety recommendation was made:

Safety Recommendation 2020-013

It is recommended that the European Union Aviation Safety Agency require a means to detect incorrect alignment of the tailplane locking lever on gliders with locking features similar to the Standard Cirrus 75.

Date Safety Recommendation made: 21 May 2020

LATEST RESPONSE

Response received: 26 April 2021

Following the European Union Aviation Safety Agency (EASA)'s investigation of this issue in cooperation with the sailplane Type Certificate Holder, Schempp-Hirth, an Airworthiness Directive (AD) AD-2020-0260 has been issued in order to address this issue linked to elevator attachment. Furthermore, Safety Information Bulletin (SIB) SIB-2019-07 addressing sailplane rigging is being revised to add more examples. A further update will follow.

The AD specifies:

- 1) Within 90 days after the effective date of the AD, to modify the (powered) sailplane by installing an optical indicator in accordance with the instructions of the TN.
- (2) Concurrently with the modification of the (powered) sailplane amend the AFM of that (powered) sailplane in accordance with the instructions of the TN, inform all pilots and, thereafter, operate the (powered) sailplane accordingly.

Safety Recommendation Status Closed

AAIB Assessment Adequate

Action Status Planned Action Completed

RESPONSE HISTORY

Response received: 07 September 2020

The European Union Aviation Safety Agency (EASA) is investigating this issue in cooperation with the sailplane Type Certificate Holder (TCH) Schempp-Hirth and will revert back to the Air Accidents Investigation Branch once its assessment of this safety recommendation is complete.

AAIB Assessment – Partially Adequate Open