

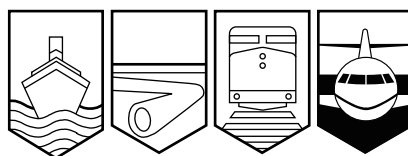
Transportation Safety Board  
of Canada



Bureau de la sécurité des transports  
du Canada

## AVIATION INVESTIGATION REPORT

A04A0079



### AERODYNAMIC STALL AND LOSS OF CONTROL

BLUENOSE SOARING CLUB

SCHREDER HP 18 (AMATEUR-BUILT GLIDER) C-GSTL

CCW4 STANLEY AIRPORT, NOVA SCOTIA

18 JULY 2004

Canada

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

## Aviation Investigation Report

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### *Summary*

The pilot of an amateur-built Schreder HP 18 glider (registration C-GSTL, serial number 18105) was prepared for a winch-assisted take-off from the grass adjacent to Runway 02 at Stanley Airport, Nova Scotia. The wind was from the northwest at approximately four knots. At approximately 1445 Atlantic daylight time, the pilot gave the signal to commence the launch. The winch was activated and after a normal ground roll the glider lifted off the surface. The glider then pitched up to an estimated angle of 45 degrees and climbed steeply to about 100 feet above ground level. The aircraft then rolled to the right, pitched nose-down, and completed one or two rolls before it struck the runway in a left-wing-low, nose-down attitude. The pilot was fatally injured and the glider was destroyed.

## *Other Factual Information*

The Schreder HP 18 is a single-place, high-performance glider. In the HP 18, the pilot is seated in a nearly horizontal (lying-down) position. A head rest props up the pilot's head, allowing for better forward visibility and support, and prevents the pilot from moving rearward during acceleration on a launch. The glider was owned and operated solely by the accident pilot.

The pilot held a current glider pilot licence. He had completed 179 winch-assisted launches in low- to medium- performance gliders, accumulating 63 flight hours, before beginning to fly the high-performance HP 18 in 2003. During his first few flights in the HP 18, it was noted that the pilot initiated a climb attitude that was steeper than necessary during take-off. The pilot was debriefed by his fellow glider pilots, and on subsequent flights the climb attitude was corrected. He had accumulated a total of 16 winch-assisted launches and 21 hours in the HP 18 at the time of the accident. The accident pilot was a member of the Bluenose Soaring Club (BSC), and operated the glider within the organizational structure of the club.

Activities on the field throughout day were proceeding normally and were uneventful up to the time of the accident. Wind conditions were very light from the northwest. The pilot had flown the same glider once that day, approximately 30 minutes before accident flight. The first launch and flight were normal, but thermal activity was not found. The pilot landed after only a few minutes aloft and immediately began to prepare for the next launch. The winch speed used on the second launch was similar to that used on the first launch. No anomalies were found with the operation of the winch.

Post-crash examinations did not reveal any deficiencies in the construction or maintenance of the glider. The flight controls were connected, and there was no indication of airframe structural failure prior to impact. The right and left shoulder harness straps of the five point safety harness were not attached to the latch mechanism, and examination revealed they were likely not attached at impact. Both lap belt airframe attachments were torn free of the fuselage structure.

## *Analysis*

Because of the severity of the breakup, it is unlikely that use of the shoulder harness straps would have reduced the severity of the injuries. The failure of the lap belt attachments at the airframe was likely due to both the destruction of the fuselage in the area of the attachments and the extra load created because the shoulder harnesses were not latched.

As there were no mechanical anomalies found with the glider, it is not likely that the steep climb was due to a mechanical failure. The possibility that the steeper-than-normal climb attitude was caused by the pilot sliding rearward during the launch, because he did not have his shoulder harness attached, was considered. However, the HP-18 seat position restricts rearward movement even if the shoulder harness is undone. The lack of shoulder harness restraint likely did not result in the pilot moving rearward during the launch.

The same winch launch speed was used on the earlier flight, and it is therefore unlikely that the steep climb was due to a change in the winch speed. The previous unsuccessful flight may have prompted the pilot to attempt to gain more altitude from the second launch to increase the likelihood of finding thermal activity. Although it is likely that the pilot initiated the steep climb, this could not be shown conclusively.

The steep climb angle followed by the wing drop is consistent with a wing stall due to excessive angle of attack. Once the wing stalled and the roll commenced, there was insufficient altitude remaining for the pilot to effect a recovery.

### *Findings as to Causes and Contributing Factors*

1. Shortly after lifting off, the aircraft entered a steep climbing attitude and a wing stall ensued; there was insufficient altitude for the pilot to effect recovery.

### *Findings as to Risk*

1. The shoulder harness straps were not latched prior to take-off; however, it is unlikely that their use would have lessened injuries in this accident.

*This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board authorized the release of this report on 02 March 2005.*

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