

Flap control lever unintentionally released, Schempp-Hirth Nimbus-3T, D-KJUN

Terlet glider airfield, 4 September 2022

At around 16.00 hours, after making a cross-country flight, the pilot decided to land at Terlet glider airfield. At an altitude of 350 metres, he selected the flaps in the landing position (L) to pre-set the trim lever to the desired landing position. Well before the glider approached the starting point of the circuit, the pilot set the flaps to position +2. Once on final, the pilot put the flaps back in the landing position and opened the air brakes. A few seconds later, the flap control lever moved unintentionally out of the landing position and stopped in the -1 detent.²³ As a result, the flaps moved to a negative position. The glider then quickly lost height. The pilot responded by putting the flap control lever back in the landing position and pulling the glider's nose up; the air brakes remained open. However, the glider ended up in the trees and was severely damaged. The pilot was unharmed.

Inspection of the flap handle mechanism showed that the pawl on the flap handle showed wear and that a notch had formed. This allowed the pawl to release from the detent plate, when forces on the flaps increased after the pilot had opened the air brakes.

The fact that wear can occur on the pawl was known to Schempp-Hirth, the manufacturer of the glider. In December 2011, Schempp-Hirth therefore issued a technical note which also applied to the Nimbus-3T.²⁴ It stated that during maintenance, the maintenance information²⁵ for the flap



▲ Seven detents for the flap control lever.

²³ The Nimbus 3T has seven detents for the flap control lever, namely L, +2, +1, 0, -1, -2 and S.

²⁴ Schempp-Hirth Flugzeugbau GmbH Kirchheim/Teck, *Technical Note No. Gen-2*, December 2011.

²⁵ Schempp-Hirth Flugzeugbau GmbH Kirchheim/Teck, *Wartungsinformation SHK-M-01-11 zu Wölbklappensteuerungen von Schempp-Hirth Segelflugzeugen und Motorseglern*, September 2013.

control SHK-M-01-11 must be noted. This information must also be appended to the service instructions. The maintenance information stated, among other things, that in addition to the detent plate, the pawl on the flap handle must also be checked for wear, that it must have a rectangular cross-section and the edges must not be excessively rounded. It contained a picture of a badly worn pawl in which also a notch had formed, along with the text that this example has come a long way above the wear limit that would have required a repair.

The pilot purchased the Nimbus 3T together with a partner in April 2022 and since then had made approximately 20 flights with it himself. His partner had previously experienced the flap control lever coming loose during flight; that was en route at a higher altitude. The owners had taken no action in response to this event.

The glider had a valid Airworthiness Review Certificate (ARC) that had been issued in Germany on 4 March 2022. The 2011 Technical Note Gen-2 was not included in the overview²⁶, including airworthiness directives and technical notes, applicable to the glider and also not in its maintenance program. The relevant technical note was not included in the annual ARC inspections of the glider. This allowed the wear to continue unnoticed, resulting in a notch in the pawl, which caused the pawl, and subsequently the flap control lever, to release from the detent plate. As a result, the flaps moved out of the landing position into a negative position and the glider lost lift in a critical phase of flight.

The Dutch Safety Board has not further investigated this occurrence.

Classification: Accident

Reference: 2022129



▲ The pawl, with a notch in it, which is part of the flap control lever.

²⁶ LTA/TM-Übersicht.