Summary and recommendations – RL 2014:02e

Summary

The incident occurred during a flight commissioned for water bombing operations, using a helicopter equipped with “Heli buckets” (water containers) of the Bambi Bucket brand, with the purpose of binding the dust at the Aitik tailings dam. The pilot took off at lunchtime with the helicopter SE-HVI, and two other helicopters from the company also participated in the water bombing of the tailings dam. Towards the end of the day, the two other helicopters continued to retrieve water south of the dam while SE-HVI flew to a smaller tarn north of the dam. When the pilot had lowered the container into the water to fill it and subsequently commenced climb in order to lift the container up out of the water, the helicopter banked suddenly to the left with a pronounced nose rise. The pilot applied full cyclic stick to the right and simultaneously lowered the collective lever in order to correct the rolling movement to the left, but the helicopter still rotated to the left at a high roll speed and with the nose high. Shortly thereafter, the helicopter came down into the tarn. The pilot in one of the other helicopters that was engaged in water bombing noted the absence of SE-HVI. He flew towards the tarn and landed there about 10 minutes after the crash. It was found that the pilot only had minor injuries and was not in need of medical care.

The investigation has shown that when lifting in order to fill the Bambi Bucket, a cable was over the left landing gear skid and skid shoe. This increased the rolling moment markedly to the left, and the helicopter went into a “Dynamic rollover” with a high nose when the pilot raised the collective lever. Once the helicopter had gone into rotation with increasing mass forces at the same time as the laterally directed lift increased, the authority of the control system was not sufficient to correct the movement. The helicopter rotated at a high speed of rotation around the longitudinal and lateral axes before it came down into the tarn. The centre of gravity when lifting into the hover came to be far outside the limitations for which the helicopter was designed. The investigation reports the following causes of the accident:

- The position of the water container was not ascertained prior to lifting.
- The sun's position with sun reflections and shadows affected the pilot's ability to monitor the filling process in the rear-view mirror.
- The design of the landing gear, with its parts, made it possible for a cable to the water container to become caught over the skid.

SHK believes that one factor which contributed to the incident was that the chosen area of water had tall trees in the direction of approach and that the available area placed great demands on the pilot's flying when filling the Bambi Bucket.

Recommendations

The Swedish Transport Agency is recommended to ensure that:

- operators have established operational limitations, which take into consideration risks entailed by the helicopter's design during operations with a suspended load. (*RL 2014:02 R1).*

EASA is recommended to ensure that:

- EASA Member States in their supervision check that operators have established operational limitations, which take into consideration risks entailed by the helicopter's design during operations with a suspended load. (*RL 2014:02 R2*).

Välj ett byggblock