

SUMMARY

The intention was to carry out flight training southeast of Malmö Airport and then return and practice instrument approaches. After about sixteen minutes of flying, radar vectors was initiated for approach to runway 17. At the same time, the aircraft lost all electrical power, which i.e. caused all installed navigation equipment, radio communication with air traffic control and intercommunication to cease functioning. It was dark outside under visual flight conditions.

In order to find their way back to the airport, the pilots used external references and a tablet with a navigation program installed. In the absence of electrical power in a noisy environment, the crew had to perform manual landing gear extension, a procedure that neither the student nor the instructor had previously performed.

The crew then tried to check, with the help of their light sources via mirrors on the engine cowlings, whether the nose landing gear was extended. None of the pilots could see anything and the crew decided to continue the approach.

At touchdown, the landing gear collapsed. The plane landed on its belly and skidded over 300 meters before stopping.

It has not been possible to determine the reason why the loss of electrical power occurred.

The accident was caused by the pilots lacking sufficient knowledge about the manual landing gear extension function, which in turn led to the landing gear not being fully extended before landing.

Contributing factors are that the instructions in the aircraft's flight manual for the electrical system did not correspond to how the installed system worked. In addition lack of knowledge for the electrical system and lack of a warning system that clearly indicates that the battery is not charged by the alternators and ambiguities in the training organization's instructions for the operation, risk management and training.

Safety recommendations

EASA is recommended to:

- Evaluate and decide whether a warning system that clearly indicates that the battery is not being charged by the alternators can be introduced as an operational requirement for aircraft operated under instrument flight rules or in darkness. *(RL 2020:11 R1)*

The typecertificate holder Textron Aviation Inc. is recommended to:

- Update the POH so that the function of the ALT OUT warning corresponds to the correct serial number of the aircraft. *(RL 2020:11 R2)*

The Swedish Transport Agency is recommended to:

- Inform operators flying under the instrument flight rules or darkness about the risks of aircraft types that do not have a low voltage warning installed. *(RL 2020:11 R3)*