

SUMMARY

A JAS 39 C from the Swedish Defence Material Administration took off from Malmen Air Base Airport on 11 October for low-level flight training. The low-level flight momentarily dropped to a minimum flight level of 100 feet (30 metres) and at high speed in an area above southern Norrland and Värmland. In the final phase of the low-level flight training, the pilot reduced speed and increased altitude somewhat to then begin entry into Östgöta TMA and thereafter commence the approach towards Malmen Air Base Airport. The aircraft had a heading of 117 degrees and passed very close by the top of a mast that was at the same height as the aircraft. The lateral clearance was assessed to be approximately 10–20 metres. The pilot had no visual contact with the mast prior to passing and was therefore unable to perform evasive manoeuvres. The mast was not recorded in the chart documentation used. After passing the mast, the pilot turned back towards the mast and was unable to see any obstruction lights.

The number of obstacles has increased drastically, due in part to the increased need of masts for telecommunication and data communication and the expansion of wind power. At the same time, the need for precision in details of location and height of obstacles has also increased. The incident investigated by SHK occurred during military low-level flight. Flying at this altitude is also common in civil aviation, but the investigation reveals that the existing obstacle database does not reliably account for existing obstacles; there are quality issues in the obstacle database in terms of both the location and height of obstacles. There are also a number of obstacles missing from the database altogether.

SHK establishes that Sweden does not fulfil the requirements of the ADQ Regulation, the EU regulation containing rules regarding the quality of obstacle data, and that this entails flight safety risks. The Government must clarify how Sweden will fulfil the quality requirements regarding flight data imposed by the ADQ Regulation, as well as which authority/authorities shall take responsibility for this and how their work will be funded. SHK considers that in the meantime, temporary measures should be taken to ensure that aviation safety is addressed with regard to the existing quality of obstacle data and the marking out of obstacles. The investigation also reveals that there is a lack of obstruction lights and marking out of obstacles.

The incident was caused by the aircraft flying at an altitude that was not obstacle-free and in an area with obstacles that were not recorded in the expected fashion, and by the fact that the obstacle in question is not marked as an obstruction and has no lighting that would allow it to be detected at altitudes where the obstacle constitutes a hazard.

During its investigation, SHK learned that the measures required by the ADQ Regulation have not been taken in Sweden. Had the requirements regarding precision, resolution and integrity in terms of obstacles been fulfilled, the possibility of the pilot being aware of the obstacle when planning the flight would have been considerably higher, which would have made the incident less likely to occur.

Safety recommendations

Recommendation to the Government:

- to clarify responsibility for the obstacle database and responsibility for the Aeronautical Information Service and ensure that measures are taken as soon as possible with the purpose of ensuring that both existing and future information on obstacles for the needs of both civil and military aviation fulfil the quality requirements and other requirements laid down in the ADQ regulation. *(RM 2015:02 R1)*

Recommendations to the Swedish Transport Agency:

- to take measures as soon as possible – e.g., in the form of information or regulatory initiatives – in order to address aviation safety with regard to the existing quality of obstacle data and the marking out of obstacles. *(RM 2015:02 R2)*
- to use its authority to issue regulations for reporting obstacles and to take measures to ensure that the information on all new obstacles fulfils the quality requirements imposed in the ADQ regulation. *(RM 2015:02 R3)*
- to evaluate and consider amendments to the regulations on obstruction lights in order to enable the visual detection of such lighting even when using NVD (Night Vision Devices). *(RM 2015:02 R4)*
- to evaluate and consider amendments to the regulations on the marking of objects that may constitute a hazard for aviation so that they meet the safety requirements imposed in the aviation sector. *(RM 2015:02 R5)*
- to consider whether supervisory measures or other measures can be taken before – or as soon as possible after – the erection of obstacles, in order to ensure the formulation of the marking for individual obstacles complies with the regulations. *(RM 2015:02 R6)*

Recommendations for the Swedish Armed Forces:

- to ensure the obstacle database of the fighter aircraft JAS 39 is updated at the same time as obstacle data in the Mission Support System. *(RM 2015:02 R7)*
- to strive to ensure all other flight systems in Swedish military aviation are updated in the long term with obstacle data in order to carry out safe low-level flight when needed. *(RM 2015:02 R8)*
- to ensure that it is clear from rules and manuals how low-level flight is to be planned and conducted using safe methods. *(RM 2015:02 R9)*