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Swedish Accident
Investigation Authority
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This document is a translation made by SHK of the original response in Swedish to the safety recommendation. In case of discrepancies between this translation and the Swedish original text, the Swedish text shall prevail in the interpretation of the response.

The Swedish Transport Agency's response to the Swedish Accident Investigation Authority's final report RM 2015:02

The Swedish Transport Agency hereby provides its response to the recommendations made by the Swedish Accident Investigation Authority (SHK) in the final report into the above occurrence.

It is recommended that the Swedish Transport Agency:

take action 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)

The Transport Agency's response to recommendation RM 2015:02 R2
Information about deficient quality for obstacle AIP SUP 53/15 has been introduced in AIP AIRAC AMDT 6 and is valid from 15 November 2015.

At the beginning of 2016, the Transport Agency will also be adding information to its website concerning obstacle marking, the quality of the obstacle database and how and where to report obstacle lighting that is not functioning. This information will be coordinated with LFV Flyginfo SE and the Swedish Energy Agency (Vindlov).

It is recommended that the Swedish Transport Agency:

use its authority to issue regulations for reporting obstacles and to take action to ensure that the information on all new obstacles fulfils the quality requirements imposed in the ADQ regulation. (RM 2015:02 R3)

The Transport Agency's response to RM 2015:02 R3

The Agency is currently working to update the regulations (TSFS 2010:155) concerning the marking of objects that may constitute a hazard to aviation and the reporting of obstacles. These regulations will be circulated for comment in the first quarter of 2016 and the plan is for the updates to come into force in the first half of 2016.

It is recommended that the Swedish Transport Agency:

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*)

The Transport Agency's response to RM 2015:02 R4

The Agency is currently working to update the regulations (TSFS 2010:155) concerning the marking of objects that may constitute a hazard to aviation and the reporting of obstacles. These regulations will be circulated for comment in the first quarter of 2016 and the plan is for the updates to come into force in the first half of 2016.

The new LED (light-emitting diode) technology has begun to increasingly dominate the market thanks to low energy consumption and long lifespan. These lights do not emit any heat and are thus almost impossible for pilots to see when they are using night vision devices, which detect radiant heat. The Transport Agency would like to use the amendments to the regulations to increase aviation safety by improving the chances of civilian and military pilots detecting obstacle lighting when using night vision devices. A requirement is being introduced that LEDs that also emits IR light that can be detected by pilots using night vision devices be installed when LED lighting is installed on new obstacles or when existing obstacle lighting has stopped working and needs to be replaced.

The proposed update to the regulation that is currently under review contains the following updated paragraph concerning obstacle lighting:

Section 24 A light marking's coloured area shall fulfil the requirement in Appendix 6 to these regulations.

When the obstacle lighting consists of LEDs, these shall, in addition to visible light, also emit IR light (infra-red light) within a wavelength range that is visible to pilots who are using night vision devices (NVD). The IR light shall be emitted continuously if the visible obstacle lighting is constantly lit. In other cases, the IR light shall flash at the same frequency as the visible obstacle lighting.

It is recommended that the Swedish Transport Agency:

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*)

The Transport Agency's response to RM 2015:02 R5

The Agency is currently working to update the regulations (TSFS 2010:155) concerning the marking of objects that may constitute a hazard to aviation and the reporting of obstacles. These regulations will be circulated for comment in the first quarter of 2016 and the plan is for the updates to come into force in the first half of 2016. In conjunction with the review of the regulations within the field of airports, TSFS 2010:155 will be reviewed once more, with any proposals for improvements being analysed and implemented. It will not be possible to complete this as part of the current work to amend TSFS 2010:155 that involves aspects including the quality requirements for reporting obstacles and IR lights. Consequently, the Transport Agency intends to begin a further revision of the regulations in 2016 in order to strengthen aviation safety and take care of further improvements to the requirements for obstacle marking for aviation. One example is a clarification concerning the marking of stays for masts. This work is expected to begin in 2016, but will come into force later in 2016 or in 2017.

It is recommended that the Swedish Transport Agency:

consider whether supervisory action or other action can be taken before, or as soon as possible after, the erection of obstacles, in order to ensure the design of the marking for individual obstacles complies with the regulations. (RM 2015:02 R6)

The Transport Agency's response to RM 2015:02 R6

At the beginning of 2016, the Transport Agency will also be adding information to its website concerning obstacle marking, the quality of the obstacle database and how and where to report obstacle lighting that is not functioning. This information will be coordinated with LFV Flyginfo SE and the Swedish Energy Agency (Vindlov).

The Transport Agency is dependent on the general public and other concerned public authorities and actors reporting when they see that an obstacle's lighting is not functioning.

In 2016, in order to further boost the reporting of faults and to disseminate general information about obstacle marking, the Transport Agency intends to send out a communication to municipalities, county administrative boards, the Swedish Transport Administration and Lantmäteriet containing information encouraging them to stress in their consultation processes the importance of the correct reporting and marking of obstacles in accordance with the applicable regulations (TSFS 2010:155)

The Transport Agency believes that further dissemination of information

and cooperation between public authorities could improve compliance with the regulations and improve self-inspection of obstacle marking, which would also have a positive impact on aviation safety.

This case has been decided on by Simon Posluk, Chair, Aviation Accident Analysis Board. Head of Unit Tomas Olsson, Head of Section Ann-Sofie Lorefält, Andreas Holmgren and Charlotte Billgren and Accident Investigation Coordinator Britt-Marie Kärlin participated in the final processing of the case, the latter being rapporteur.

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Simon Posluk

Chair, Aviation Accident Analysis Board