



## Safety Information Bulletin

### Operations

SIB No.: 2017-XX

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**Subject: Terrain Awareness Warning Systems**

#### Ref. Publications:

- EASA [Opinion 15/2016](#) Terrain awareness warning systems (TAWS) operation in instrument flight rules (IFR) and visual flight rules (VFR), for turbine-powered aeroplanes of less than 5 700 kg maximum certified take-off mass able to carry six to nine passengers;
- Commission Regulation (EU) [965/2012](#) of 5 October 2012 (hereafter referred to as the “Air Operations regulation”), in particular CAT.IDE.A.150 and SPO.IDE.A.130;
- [International Civil Aviation Organization \(ICAO\)](#) Annex 6, Part I “International Commercial Air Transport – Aeroplanes”, particularly, Section 6.15.5, and Part II “International General Aviation – Aeroplanes”, particularly Section 2.4.11.2;
- Italian ANSV Accident Investigation Report ([OE-FAN 24/02/2004](#));
- German BFU Accident Investigation Report ([BFU 3X004-09](#));
- Spanish CIAIAC Accident Investigation Report ([A-07/1998](#));
- French BEA Accident Investigation Report ([v2-I080628](#));
- UK AAIB Accident Investigation Report ([G-BYCP 03/10/2015](#)).

#### Applicability:

Turbine-powered aeroplanes with a maximum certified take-off mass (MCTOM) of less than 5 700 kg, and a maximum operational passenger seating configuration (MOPSC) of six to nine passengers.

#### Description:

Following receipt of safety recommendations (SRs) ITAL-2009-001, SPAN-2012-010, FRAN-2009-009 and UNKG-2016-055, an action to review the existing regulatory mitigation for the risk of controlled flight into terrain (CFIT) accidents with small turbine-powered aeroplanes was introduced into the European Aviation Safety Plan (later renamed European Plan for Aviation Safety) in 2012.

ITAL-2009-001 states that TAWSs would have reduced the probability of occurrence of the accident, similarly to SPAN-2012-010, while FRAN-2009-009 proposes to require operators to develop a policy and procedures for the use of a TAWS, depending on the flight rules (IFR or VFR). UNKG-2016-055 proposes to require all in-service and future turbine aeroplanes with a MCTOM of 5 700 kg or less and with a MOPSC of between six and nine passengers to be fitted with, as a minimum standard, a Class B TAWS certified to European Technical Standards Order (ETSO) C151b.

Furthermore, the ICAO recommends in its Annex 6, Part I, Section 6.15.5 and Part II, Section 2.4.11.2, that “All turbine-engined aeroplanes of a maximum certified take-off mass of 5 700 kg or

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less and authorized to carry more than five but not more than nine passengers should be equipped with a ground proximity warning system”.

Rulemaking Tasks RMT.0371 and RMT.0372 on TAWS were launched in 2014. The objective of the tasks was to reduce the probability of accidents categorised as a CFIT for turbine-powered aeroplanes having a MCTOM of less than 5 700 kg and a MOPSC between six and nine. As a result of these tasks, EASA Opinion 15/2016 was published on 16 December 2016.

The Opinion proposes a regulatory change to the Air Operations regulation, to require turbine-powered aeroplanes performing commercial operations, for which the individual Certificate of Airworthiness is first issued after 1 January 2019, having a MCTOM of 5 700 kg or less and a MOPSC of six to nine, to be equipped with a TAWS that meets the requirements for Class B equipment, as specified in an acceptable standard. Existing guidance material defines “acceptable standard” as the applicable ETSO issued by EASA (e.g. ETSO-C151b), or equivalent.

The regulation modifying the Air Operations regulation will be published to incorporate the proposed amendments.

Within the framework of the RMTs, mandating TAWS to be installed on existing aeroplanes (retrofit) and to be applied all operations (including non-commercial) was also considered. The outcome of the data analysis and impact assessment did not support this, especially taking into account the principle of proportionality for general aviation legislation. However, considering the potential safety benefits of TAWS, i.e. further reducing the probability of CFIT accidents, there is sufficient cause for installation of TAWS on certain aeroplanes, on a voluntary basis, regardless of the kind(s) of operation.

### Recommendations:

Considering all available information, EASA recommends that owners and operators of existing aeroplanes (see Applicability), as well as manufacturers of new aeroplanes, take the following actions:

- Install a TAWS that meets the requirements for Class B equipment, as specified in an acceptable standard, e.g. ETSO-C151b, or equivalent;
- Ensure that TAWS functions which are part of already installed avionics equipment are not inhibited or disabled. The aircraft maintenance programme should also include measures to ensure those functions are not affected.

### Contact:

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