

**Beech B200
Super King Air,
G-BYCP**

Near Chigwell, Essex

3 October 2015

Accident

Safety Recommendation 2016-055

It is recommended that the European Aviation Safety Agency require all in-service and future turbine aircraft with a Maximum Certificated Takeoff Mass of 5,700 kg or less and with a maximum operational passenger seating configuration of between six and nine passengers to be fitted with, as a minimum standard, a Class B Terrain Awareness and Warning System certified to ETSO-C151b.

Date Safety Recommendation made:

6 October 2016

LATEST RESPONSE

Response received:

23 November 2017

EASA has evaluated the existing regulatory mitigation for the risk of Controlled Flight into Terrain (CFIT) accidents with small turbine powered aeroplanes, within the context of Rulemaking Tasks RMT.0371 and RMT.0372 on Terrain Awareness Warning Systems (TAWS). The tasks were conducted in accordance with the EASA Management Board (MB) Decision No 18-2015 (the rulemaking procedure). The deliverables developed by EASA were based on input from a dedicated rulemaking group representing authorities and industry. All interested parties were consulted through public consultation of Notice of Proposed Amendment NPA 2015-21. Comments received and the associated EASA responses were published in Comment-Response Document CRD 2015-21. EASA Opinion 15/2016, was published on 16 December 2016.

The Opinion includes proposals for amendments to Commission Regulation (EU) No 965/2012 to require turbine-powered aeroplanes performing commercial operations for which the individual Certificate of Airworthiness (CofA) is first issued after 1 January 2019, having a Maximum Certified Take-Off Mass (MCTOM) of 5 700 kg or less, and a Maximum Operational Passenger Seating Configuration (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 European Technical Standards Order (ETSO) issued by the Agency (e.g. ETSO-C151 (any revision) or equivalent).

Mandating TAWS to be installed on existing aeroplanes (retrofit) and to be applied to aircraft used for non-commercial operations was also considered under the RMT. 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, and taking into account that ICAO recommends that all turbine-engined aeroplanes of a MCTOM of 5700 kg or less and authorized to carry more than five but not more than nine passengers should be equipped with a ground proximity warning system, EASA considered that there were significant grounds to recommend the installation of TAWS on such aeroplanes.

Therefore, the Agency published a Safety Information Bulletin (SIB No 2017-14), on 06 September 2017, recommending that owners and operators of the afore-mentioned aeroplanes, as well as affected aeroplane manufacturers, install a TAWS that meets the requirements for Class B equipment, as specified in an acceptable standard, e.g. ETSO-C151 (any revision), or equivalent.

During the RMT, when building the safety case during a regulatory impact assessment (RIA), one of the major aspects taken into account was that the absence of TAWS in the aircraft within the scope of the task was a factor in only two accidents in Europe in the last 10 years.

Technology has evolved and most terrain awareness functions are nowadays an integral part of the avionics. Manufacturers in Europe and the US offer this system with their new aircraft, in line with the recommendation from ICAO and the FAA requirements on TAWS. Furthermore, a significant proportion of

operators have voluntarily installed TAWS or an equivalent terrain awareness system to existing aircraft in Europe (20 % of those responding to an EASA survey conducted under the TAWS RMT).

Lastly, the risk area of terrain conflict, including controlled collision with terrain, features in the published EASA Rulemaking and EPAS programme 2017-2021. The Agency is committed to the continuous assessment and improvement of risk controls to mitigate the risk of controlled flight into terrain, through monitoring of safety issues identified in the Commercial Air Transport Fixed Wing Portfolio (see the EASA Annual Safety Review 2016) for this particular risk area. This includes the establishment of a Member State Task MST.006 to include CFIT in national State Safety Programmes, including, as a minimum, agreeing a set of actions and measuring their effectiveness. Any weaknesses identified in the regulatory framework will be acted on appropriately in order to close any emerging safety gaps.

AAIB Assessment – Partially Adequate - Closed

RESPONSE HISTORY

Response received:

7 February 2017

An action to review the existing regulatory mitigation for the risk of Controlled Flight Into Terrain (CFIT) accidents with small turbine-powered aeroplanes in Commercial Air Transport (CAT) operations was introduced into the European Aviation Safety Plan (later renamed European Plan for Aviation Safety) in 2012, and Rulemaking Tasks RMT.0371 and RMT.0372 on Terrain Awareness Warning System (TAWS) were consequently launched in 2014.

The resulting EASA Opinion 15/2016 was published on 16 December 2016.

The opinion includes proposals for amendments to Commission Regulation (EU) No 965/2012, on air operations, to require turbine powered aeroplanes performing commercial operations for which the individual Certificate of Airworthiness (CofA) is first issued after 1 January 2019, having a Maximum Certified Take-Off Mass (MCTOM) of 5 700 kg or less and a Maximum Operational Passenger Seating Configuration (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 European Technical Standards Order (ETSO) issued by the Agency (eg ETSO-C151b) or equivalent. Pending adoption of the opinion, an amending regulation to Commission Regulation (EU) No 965/2012 will be published to incorporate the proposed amendments.

Extending the requirements to retrofit and non-commercial operations was also considered within the framework of the RMT. 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. Nevertheless, the Agency intends to take an action in 2017 to recommend installation on a voluntary basis.

Previous AAIB Assessment – Partially Adequate - Open

Response received:

20 December 2016

An action to review the existing regulatory mitigation for the risk of Controlled Flight Into Terrain (CFIT) accidents with small turbine-powered aeroplanes in Commercial Air Transport (CAT) operations was introduced into the European Aviation Safety Plan (later renamed European Plan for Aviation Safety) in 2012, and Rulemaking Tasks RMT.0371 and RMT.0372 on Terrain Awareness Warning System (TAWS) were consequently launched in 2014. The first deliverable, a Notice of Proposed Amendment (NPA) 2015- 21, was published for public consultation on 18 December 2015.

The NPA included proposals for amendments to Commission Regulation (EU) No 965/2012, on air operations, to require turbine-powered aeroplanes performing commercial operations for which the individual Certificate of Airworthiness (CofA) is first issued after 1 January 2019, having a Maximum Certified Take-Off Mass (MCTOM) of 5,700 kg or less and a Maximum Operational Passenger Seating Configuration (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 European Technical Standards Order (ETSO) issued by the Agency (eg ETSO-C151b) or equivalent.

Extending the requirements to retrofit and non-commercial operations was also considered within the framework of the RMT. 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. Nevertheless, the Agency intends to recommend installation on a voluntary basis.

The next deliverable for the RMT, an EASA Opinion, is planned to be published by the end of 2016. The related amending regulation to Commission Regulation (EU) No 965/2012 will be published in due course, pending adoption of the Opinion.

Previous AAIB Assessment – Partially Adequate - Open

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3 October 2015

Accident

Safety Recommendation 2016-056

It is recommended that the International Civil Aviation Organisation revise Annex 6 to the Convention on International Civil Aviation, Part 1 (International Commercial Air Transport – Aeroplanes) to upgrade recommendation 6.15.5 [carriage of TAWS on turbine aeroplanes with a Maximum Certificated Takeoff Mass of 5,700 kg or less and authorised to carry more than five but not more than nine passengers] to a standard.

Date Safety Recommendation made:

6 October 2016

LATEST RESPONSE

Response received:

26 January 2017

The recommendations will be presented at the Fourth Working Group Meeting of the Flight Operations Panel (FL TOPSP/WG/4) in May 2017. The working group will be tasked to review the recommendations, referring to several scenarios and considering the cost of implementation on a global basis and report their findings to the Fourth Meeting of the Flight Operations Panel (FL TOPSP/4) in November 2017.

AAIB Assessment – Partially Adequate – Open

RESPONSE HISTORY

N/A

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3 October 2015

Accident

Safety Recommendation 2016-057

It is recommended that the International Civil Aviation Organisation revise Annex 6 to the Convention on International Civil Aviation, Part 2 (International General Aviation – Aeroplanes) to upgrade recommendation 2.4.11.2 [carriage of TAWS on turbine aeroplanes with a Maximum Certificated Takeoff Mass of 5,700 kg or less and authorised to carry more than five but not more than nine passengers] to a standard.

Date Safety Recommendation made:

6 October 2016

LATEST RESPONSE

Response received:

26 January 2017

The recommendations will be presented at the Fourth Working Group Meeting of the Flight Operations Panel (FL TOPSP/WG/4) in May 2017. The working group will be tasked to review the recommendations, referring to several scenarios and considering the cost of implementation on a global basis and report their findings to the Fourth Meeting of the Flight Operations Panel (FL TOPSP/4) in November 2017.

AAIB Assessment – Partially Adequate - Open

RESPONSE HISTORY

N/A