



Barbados Civil Aviation  
Department

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**AIRWORTHINESS**

**ADVISORY**

**CIRCULAR**

# ENHANCED GROUND PROXIMITY WARNING SYSTEMS (TAWS)



# **ENHANCED GROUND PROXIMITY WARNING SYSTEMS TERRAIN AWARENESS AND WARNING SYSTEM**

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**1. Definitions:**

- a) **EGPWS:** Enhanced Ground Proximity Warning System
- b) **TAWS:** Terrain Awareness and Warning System

**2. Introduction:** The Civil Aviation (Instrument & Equipment) Regulations 26, requires that certain aircraft be equipped with EGPWS.

**3. Purpose:** This Airworthiness Advisory Circular clarifies the requirements of Regulation 26 (1), (4) & (5) within Barbados, with regard to the installation of EGPWS. In addition it makes reference to an FAA advisory circular that serves to provide guidance for designing an acceptable installation for TAWS equipment that complies with TSO-C151, as revised.

**4. Additional information**

By notice of this Advisory Circular, the following information from ICAO Annex 6, is provided:

- a) All turbine-engine aeroplanes of a maximum certificated take-off mass in excess of 15,000 kg, or authorized to carry more than 30 passengers shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function
- b) All turbine-engine aeroplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorized to carry more than nine passengers, for which the individual certificate of airworthiness is first issued on or after 1<sup>st</sup> January 2004, shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function
- c) From 1<sup>st</sup> January 2007, all turbine-engine aeroplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorized to carry more than nine passengers, shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function
- d) A ground proximity warning system shall provide automatically, a timely and distinctive warning to the flight crew when the airplane is in potentially hazardous proximity to the earth's surface
- e) From 1 January 2007, all piston-engine aeroplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorized to carry more than nine passengers shall be equipped with a ground proximity warning system which provides the following warnings:
  - i) Excessive decent rate
  - ii) Excessive altitude loss after take-off or go-around

## 5. Interpretation

Some States have classified EGPWS as Terrain Awareness and Warning System (TAWS) and have categorized TAWS as Class A or Class B that includes the forward looking terrain avoidance as follows:

- a.) **Class A TAWS Equipment:** A class of equipment that is defined in TSO-C151, as revised. As a minimum, it will provide alerts for the following circumstances:
- Reduced required terrain clearance.
  - Imminent terrain impact.
  - Premature descent.
  - Excessive rates of descent.
  - Excessive closure rate to terrain.
  - Negative climb rate or altitude loss after take-off.
  - Flight into terrain when not in landing configuration.
  - Excessive downward deviation from an ILS glide slope.
  - Descent of the airplane to 500 feet above the terrain or nearest runway elevation (voice callout “Five Hundred”) during a non-precision approach.
- b.) **Class B TAWS Equipment:** A class of equipment that is defined in TSO-C151, as revised. As a minimum, it will provide alerts for the following circumstances:
- Reduced required terrain clearance.
  - Imminent terrain impact.
  - Premature descent.
  - Excessive rates of descent.
  - Negative climb rate or altitude loss after take-off.
  - Descent of the airplane to 500 feet above the terrain or nearest runway elevation (voice callout “Five Hundred”) during a non-precision approach.

**NOTE:** *TSO-C151, as revised, is only the process for obtaining design and performance approvals for an appliance, system, or product and does not provide installation instructions.*

AOC holders are advised that, either Class A TAWS equipment or Class B TAWS equipment meet the Barbados requirements however, those operators providing service to other States are advised that, in order to satisfy the requirements of those States, there may be a need to comply with more stringent requirements. This factor should be considered when purchasing EGPWS equipment.