

DEPARTMENT OF CIVIL AVIATION
MALAYSIA
AIRWORTHINESS NOTICE

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**AEROPLANES REQUIRED TO BE EQUIPPED WITH GROUND PROXIMITY WARNING SYSTEM (GPWS) –
COMMERCIAL AIR TRANSPORT**

1. Introduction

Controlled Flight Into Terrain (CFIT) occurs when an airworthy aircraft under the control of the flight crew is flown unintentionally into terrain, obstacles or water, usually with no prior awareness by the crew. This type of accident can occur during most phases of flight, but CFIT is more common during the approach-and-landing phase, which begins when an airworthy aircraft under the control of the flight crew descends below 5,000 feet above ground level (AGL) with the intention to conduct an approach and ends when the landing is complete or the flight crew flies the aircraft above 5,000 feet AGL en route to another airport.

The DCA in its effort to prevent aviation fatalities caused by CFIT, have made revision of the requirements for the MCAR 1996, Regulation 32 Fifth Schedule, Scale X, Aircraft equipment capable of giving warning to the pilot of potentially hazardous proximity of ground or water i.e. Ground Proximity Warning System (GPWS).

2. Requirements

- 2.1 All turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5700 kg or authorised to carry more than nine passengers shall be equipped with a ground proximity warning system.
- 2.2 All turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 15,000 kg or authorised to carry more than 30 passengers, for which the individual certificate of airworthiness is first issued on or after 1 January 2001, shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.
- 2.3 From 1 January 2005, all turbine-engined aeroplanes of a maximum certificate take-off mass in excess of 15,000 kg or authorised to carry more than 30 passengers shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.
- 2.4 All turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorised to carry more than nine passengers, for which the Individual certificate of airworthiness is first issued on or after 1 January 2004, shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.
- 2.5 From 1 January 2007, all turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorised to carry than nine passengers, shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.
- 2.6 **Recommendation** - All turbine-engined aeroplanes of a maximum certificated take-off mass of 5,700 kg or less and authorised to carry more than five but not more than nine passengers should be equipped with a ground proximity warning system which provides the warnings of 2.9 a) and c) warning of unsafe terrain clearance and a forward looking terrain avoidance function.
- 2.7 From 1 January 2007 all piston-engined aeroplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorised to carry more than nine passengers shall be equipped with a ground proximity warning system which provides the warnings in 2.9 a) and c), warning of unsafe terrain clearance and a forward looking terrain avoidance function.
- 2.8 A ground proximity warning system shall provide automatically a timely and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.

2.9 A ground proximity warning system shall provide, unless otherwise specified herein, warnings of the following circumstances:

- (a) excessive descent rate;
- (b) excessive terrain closure rate;
- (c) excessive altitude loss after take-off or go-around;
- (d) unsafe terrain clearance while not in landing configuration;
 - 1. gear not locked down;
 - 2. flaps not in a landing position, and
- (e) excessive descent below the instrument glide path.

3. Compliance

3.1 All aeroplane on the Malaysian register and issued with its Certificate of Airworthiness in the Transport Category (Passenger and/or Cargo) and Aerial Work shall comply to the requirements to paragraph 2.1 to 2.9 of this notice, as applicable.

DIRECTOR GENERAL
DEPARTMENT OF CIVIL AVIATION
MALAYSIA.