

SUPPLEMENT 6

TO THE AIRPLANE FLIGHT MANUAL (AFM)

DA42 L360

**TERRAIN AWARENESS AND WARNING SYSTEM – CLASS B
(TAWS-B)**

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CHAPTER

SUPPLEMENT 6

TERRAIN AWARENESS AND WARNING SYSTEM – CLASS B
(TAWS-B)

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1 GENERAL

1.8 G1000 AVIONICS SYSTEM

TERRAIN AWARENESS AND WARNING SYSTEM (TAWS)

This document describes the Terrain Awareness and Warning System (TAWS) which is an optional part of the Garmin G1000 Integrated Avionics System. This information supplements the information presented in the Airplane Flight Manual.

The purpose of the TAWS feature is to provide appropriate aural warnings and cautions for terrain and obstacles to the pilot. The pilot should refer to the Garmin DA42-L360 Pilot's Guide for the terrain warning and caution messages and system information.

WARNING

THE TERRAIN DISPLAY IS INTENDED TO SERVE AS A SITUATIONAL AWARENESS TOOL ONLY. IT MAY NOT PROVIDE EITHER THE ACCURACY OR FIDELITY, OR BOTH, ON WHICH TO SOLELY BASE DECISIONS AND PLAN MANEUVERS TO AVOID TERRAIN OR OBSTACLES.

2 OPERATIONAL LIMITATIONS

2.16 OTHER LIMITATIONS

2.16.6 GARMIN G1000 AVIONICS SYSTEM

USE OF THE TERRAIN AWARENESS AND WARNING SYSTEM

1. Navigation must not be predicated upon the use of the TAWS, Terrain or Obstacle data displayed by the G1000.
2. Pilots are authorized to deviate from their ATC clearance to the extent necessary to comply with terrain / obstacle warnings from TAWS.
3. The Terrain/Airport/Obstacle databases have an area of coverage as detailed below:
 - (a) The Terrain Database has an area of coverage from North 75° Latitude to South 60° Latitude in all longitudes.
 - (b) The Airport Terrain Database coverage area includes airports from North 75° Latitude to South 60° Latitude in all longitudes.
 - (c) The Obstacle Database coverage area includes the United States and Europe.

NOTE: The area of coverage may be modified, as additional terrain data sources become available.

4. When replacing or updating the TAWS terrain and obstacle database cards, the following procedure must be conducted:
 - The G1000 system must be turned off.
 - After database card replacement, apply power to the G1000 system to perform a TAWS system test. A successful TAWS system test will result in the aural “TAWS SYSTEM TEST OK” message being played and removal of the “TAWS TEST” annunciator from the PFD and MFD displays. (Note: the cockpit speaker must be ON or a headset worn to hear the TAWS aural message.)
 - Turn the G1000 system off.
5. To avoid unwanted alerts, TAWS must be inhibited when landing at an airport that is not included in the airport database.

3 EMERGENCY PROCEDURES

3.4 G1000 FAILURES

3.4.1 NAVIGATION INFORMATION FAILURE

1. If Garmin G1000 GPS navigation information is not available or invalid and the TAWS option is installed, TAWS will not be available. A white 'TAWS N/A' or red 'TAWS FAIL' annunciator will be displayed on the PFD (left of selected altitude) or on the MFD TAWS page (lower right hand corner).
2. If the white 'TAWS N/A' status annunciator is displayed on the PFD or MFD TAWS page, the system will no longer provide TAWS alerting or display relative terrain elevations. The crew must maintain compliance with procedures that ensure minimum terrain separation.
3. If the red 'TAWS FAIL' status annunciator is displayed on the PFD or MFD TAWS page, the system will no longer provide TAWS alerting or display relative terrain elevations. The crew must maintain compliance with procedures that ensure minimum terrain separation.

4A NORMAL OPERATING PROCEDURES

4A.6 CHECKLISTS FOR NORMAL OPERATING PROCEDURES

4A.6.8 TAKE-OFF

TAWS NORMAL PROCEDURES

(If Optional TAWS system is installed)

TAWS CAUTION

When a TAWS CAUTION occurs, take positive corrective action until the alert ceases. Stop descending or initiate either a climb or a turn, or both, as necessary, based on analysis of all available instruments and information.

TAWS WARNING

If a TAWS WARNING occurs, immediately initiate and continue a climb that will provide maximum terrain clearance, or any similar approved vertical terrain escape maneuver, until all alerts cease. Only vertical maneuvers are recommended, unless either operating in visual meteorological conditions (VMC), or the pilot determines, based on all available information, that turning in addition to the vertical escape maneuver is the safest course of action, or both.

TAWS INHIBIT

The TAWS Forward Looking Terrain Avoidance (FLTA) and Premature Descent Alerts (PDA) functions may be inhibited to stop alerting for acceptable flight conditions (such as below glideslope maneuvers). For detailed operating instructions regarding the G1000 TAWS Option, refer to the Garmin DA42-L360 Pilot's Guide.

4B ABNORMAL OPERATING PROCEDURES

There is no change to the abnormal operating procedures when the Terrain Awareness and Warning System (TAWS) is installed.

5 PERFORMANCE

There is no change to the aircraft performance when the Terrain Awareness and Warning System (TAWS) is installed.

6 MASS AND BALANCE / EQUIPMENT LIST

There is no change to the mass and balance or equipment list when the Terrain Awareness and Warning System (TAWS) is installed.

7 DESCRIPTION OF THE AIRPLANE AND SYSTEMS

7.13 GARMIN G1000 INTEGRATED AVIONICS SYSTEM

7.13.8 TERRAIN AWARENESS AND WARNING SYSTEM (TAWS)

General

TAWS-B (Terrain Awareness and Warning System - Class B) is an optional feature to increase situational awareness and aid in reducing controlled flight into terrain (CFIT). TAWS-B provides visual and aural annunciations when terrain and obstacles are within the given altitude threshold from the aircraft. The displayed alerts and warnings are advisory in nature only and require the following to operate properly:

- Valid terrain and obstacle databases
- A valid 3-D GPS position solution

TAWS-B uses terrain and obstacle information supplied by government sources. Terrain information is based on terrain elevation information in a database that may contain inaccuracies. Individual obstructions may be shown if available in the database.

TAWS-B uses information provided from the GPS receiver to provide a horizontal position and altitude. GPS altitude is derived from satellite measurements and is then converted to the height above geodetic sea level (GSL). This altitude is used to determine TAWS-B alerts. GSL altitude accuracy is affected by satellite geometry, but is not subject to variations in pressure and temperature that normally affect pressure altitude sensors and therefore does not require local altimeter settings to determine MSL altitude.

TAWS-B displays a 2-D picture of the surrounding terrain and obstacles relative to the position and altitude of the aircraft. Furthermore, the GPS position and GSL altitude are used to calculate and “predict” the aircraft’s flight path in relation to the surrounding terrain and obstacles. In this manner, TAWS-B can provide advanced alerts of predicted dangerous terrain conditions.

8 AIRPLANE HANDLING, CARE AND MAINTENANCE

There is no change to the airplane handling, care and maintenance when the Terrain Awareness and Warning System (TAWS) is installed.