



**SAIB:** SW-11-24

**Date:** March 18, 2011

**SUBJ:** Helicopter Terrain Awareness and Warning System

*This is information only. Recommendations aren't mandatory.*

## **Introduction**

This Special Airworthiness Information Bulletin is to inform owners and operators of rotorcraft equipped with Garmin 400/500 series GPS Navigation Systems, with the activated function of Terrain Awareness and Warning Systems (TAWS) designed for use in fixed wing airplanes. There is an airworthiness concern regarding operation of a rotorcraft with an alert system not designed or intended for use on rotorcraft. At this time, this airworthiness concern is not an unsafe condition that would warrant airworthiness directive (AD) action under Title 14 of the Code of Federal Aviation Regulations (14 CFR) part 39.

## **Background**

Controlled Flight into Terrain (CFIT) is an obvious safety concern for all types of aircraft. Mandates to install TAWS systems are regulatory for certain category and classes of aircraft, typically transport airplanes and certain rotorcraft. The installation of these potentially safety enhancing systems remains non-required for the vast majority of smaller airplanes and rotorcraft. The FAA has become aware of a number of installations of Garmin 400/500 series GPS Navigation Systems, in rotorcraft, with the airplane TAWS function activated. The TAWS function in these systems was designed and certified for use in Part 23 airplanes (reference Supplemental Type Certificate (STC) SA01933LA) and meets the requirements of Technical Standard Order (TSO) C151b (TAWS for airplanes) but does not meet the requirements of TSO C194 (Helicopter Terrain Awareness Warning System, HTAWS). Whereas the TAWS systems was not designed or intended for flight below 1000 ft. Above Ground Level (AGL), the HTAWS system requirements are better optimized for operation at lower altitudes utilized by rotorcraft in normal operations. Furthermore, the Garmin 400/500 TAWS installation manuals clearly note that the TAWS function is not designed nor approved for use in rotorcraft. The rationale driving this safety concern is the number of nuisance warnings and cautions that will be presented to the aircrew as a result of significantly different algorithms in TAWS versus HTAWS systems. When operating below 1000 ft. AGL, these distractions to the aircrew and increased workload could possibly decrease safety. Garmin has obtained an STC for incorporating HTAWS functionality in the 400W/500W Navigation systems on the Bell 206B model helicopter (STC SR02080SE), effective September 23, 2010.

## **Recommendations**

We recommend if you seek the safety benefit a terrain awareness systems offers, you work to incorporate an approved installation of an approved HTAWS in your rotorcraft. We further recommend that if the TAWS function is activated in your rotorcraft, you deactivate that function by means of the options selectable procedure described in the Garmin installation manuals for the 400/500 series system until an approved HTAWS system can be installed in your rotorcraft.

## **For Further Information Contact**

George Schwab, Aerospace Engineer, FAA Rotorcraft Directorate, FAA Rotorcraft Standards Staff, Safety Management Group, 2601 Meacham Blvd., Ft. Worth, TX 76137; phone: (817) 222-5114; fax: (817) 222-5961; e-mail: george.schwab@faa.gov.