

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division

Washington, D.C. 20594

November 24, 2014

Terrain Awareness Warning System (TAWS)

Specialist's Factual Report

By Bill Tuccio, Ph.D.

1. EVENT SUMMARY

Location: Wichita, Kansas
Date: October 30, 2014
Aircraft: Raytheon Aircraft Company King Air B200
Registration: N52SZ
Operator: Gilleland Aviation, Inc.
NTSB Number: CEN15FA034

On October 30, 2014, at 0948 central daylight time, a Raytheon Aircraft Company King Air B200, N52SZ, impacted the Flight Safety International (FSI) building located on the airport after departure from the Wichita Mid-Continent Airport (KICT), Wichita, Kansas. The pilot, who was the sole occupant, was fatally injured and the airplane was destroyed. Three building occupants were fatally injured, 2 occupants sustained serious injuries, and four occupants sustained minor injuries. The airplane was registered to and operated by Gilleland Aviation, Inc., Georgetown, Texas, under the provisions of 14 *Code of Federal Regulations* Part 91 as a business flight. Visual meteorological conditions prevailed and an instrument flight rules (IFR) flight plan was filed. The flight originated at 0947 and was enroute to the Mena Intermountain Municipal Airport (KMEZ), Mena, Arkansas.

2. TERRAIN AWARENESS WARNING GROUP (TAWS) DATA GROUP

A TAWS group was not convened.

3. DETAILS OF TAWS INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following device:

Manufacturer/Model:	Sandel ST3400 TAWS and Radio Magnetic Indicator (RMI)
Serial Number:	Unknown

3.1. Sandel ST3400 TAWS/RMI Description

The Sandel ST3400 TAWS/RMI is an FAA-approved Class A and B TAWS solution. The self-contained, panel-mounted unit has a 3-inch color display of terrain combined with an RMI indicator and optional traffic display. The unit provides aural alerts of terrain and, when equipped, traffic.

The unit continuously records the last 10 hours of parametric data to non-volatile memory¹ (NVM). The data may be downloaded via a built in micro-USB port on the front of the unit.

3.2. Sandel ST3400 TAWS/RMI Condition

Upon arrival at the NTSB's Vehicle Recorder Division, it was evident the unit has sustained severe heat and impact damage, as shown in figure 1. Figure 1 shows the four NVM chips where parametric data was recorded.

The NVM chips were inspected. Figure 2 shows the labelling of the four NVM chips under a microscope, and microscopic details of the four chips on the right. The packaging and dye of each chip was damaged, exposing the interior wire bonding. Due to the damage, it was determined the memory contents were destroyed.

Figure 1. Disassembled unit with NVM highlighted.



¹ Non-volatile memory is semiconductor memory that does not require external power for data retention.

Figure 2. Internal board with NVM chips annotated.



3.3. Data Recovery

Due to damage, there was no data available for recovery from the device.