

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, D.C. 20594

October 13, 2011

17 – Electronic Devices Factual Report

by Bill Tuccio

1. EVENT

Location: Tupelo, Mississippi
Date: 08/17/2011
Aircraft: Cessna 310Q
Registration: N444YM
Operator: Private
NTSB Number: ERA11FA458

2. GROUP - No Group

3. SUMMARY

On August 17, 2011, at 0805 central daylight time, a Cessna, 310Q, N444YM, owned by Hamilton Air LLC and operated by an individual, struck a main road and impacted a tree in a residential yard adjacent to the Tupelo Regional Airport (KTUP), Tupelo, Mississippi. The pilot was killed and the airplane incurred substantial damage. Visual meteorological conditions prevailed and no flight plan was filed for the personal local flight which was conducted under the provisions of 14 Code of Federal Regulations Part 91. The flight was originating at the time of the accident.

4. DETAILS OF DEVICE INVESTIGATION

On October 5, 2011 the NTSB Vehicle Recorder Laboratory received the following device(s):

Device Manufacturer/Model: Apple iPad
Serial Number: V5038RWPETV

Device Manufacturer/Model:	True Flight Flight Cheetah FL210
Serial Number:	1251
Security Video:	Electronic File

4.1. Apple iPad Description

The Apple iPad is a touch-screen, wi-fi device capable of email, audio (music) playback, contact management, calendaring, and numerous other specialized functions depending on configuration. Specialized functions are supported by additional user-installed program applications (Apps) such as electronic flight bags and reference information. Application data is stored in non-volatile memory and may include image, video, and position location information. In addition, the specialized application data may be stored in a proprietary file structure using numerous file formats. The amount and type of data stored varies based on the software version and configuration of the specific device. This iPad was wi-fi and 3G capable.

4.1.1. Apple iPad Damage

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed that the unit had sustained major damage from impact forces as shown in figure 1. An internal inspection was performed and fluid was found to have penetrated inside the unit and the Lithium-ion internal batteries were bent. Due to damage to the unit, repair was not practicable. The main logic boards were removed from the accident unit and placed into an NTSB surrogate Apple iPad. Power was applied and the unit started in an unusable state. Software tools were used to download and examine the files on the unit.

Figure 1. Apple iPad.



4.1.2. Apple iPad Data Description

Examination of the files revealed a variety of aviation related applications installed on the unit. While certain files showed evidence of device usage on the day of the flight, no track or logbook history information was found on the unit.

4.2. True Flight Flight Cheetah FL210 Description

The True Flight Flight Cheetah FL-210 is a Microsoft Windows-based portable multi-function display (MFD) equipped with a 6.5 inch color LCD display (640 x 480 pixels). Panel mounted soft-keys are used for control. The unit contains 1 GB of RAM and a 16 GB solid-state hard drive. The unit is capable of receiving, processing, and displaying WAAS GPS, obstacle alert, and terrain alert data. Information can be mapped onto on an approach overlay or a terrain overlay. The unit can also display approach charts, en-route charts, and satellite imagery. Optional features include XM satellite weather, Zoon XRX Traffic Alert, and a True Flight Electronic Horizon. The unit also included 3 externally accessible USB 2.0 ports.

4.2.1. True Flight Flight Cheetah FL210 Damage

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed that the unit had sustained minimal damage as shown in figure 2. An internal inspection was performed confirming no internal damage. Power was applied to the accident unit and it started normally.

Figure 2. True Flight Flight Cheetah FL210.



4.2.2. True Flight Flight Cheetah FL210 Data

The unit was inspected using the built in soft keys. The navigational data, which can be updated, showed effective dates from November 18, 2010 to January 13, 2011, with an FBO/Fuels date of August 17, 2009. The main navigation page was centered upon the HAB airport. Inspection revealed the track log feature was off and no flight plan relative to the accident flight was stored in the unit.

4.3. Security Video Description

An electronic disk was provided containing one Audio Video Interleave (AVI) video file. The file was recorded at 352 x 240 pixel resolution, in color. The video camera was fixed, recording a parking lot, a road, and in the background a blurred image that appeared to be a runway running perpendicular to field of view, and a less distinct image of another runway parallel to the field of view. The video camera recorded a time stamp on each frame. The time stamps began on August 17, 2011 at 0758:15.983 and ended at 0759:14.770. No attempt was made to verify the accuracy of the time recorded on the camera. Further, the frame time stamps skipped seconds of recording, consistent with a motion activated recording system.

The images were recorded in daylight, and cars could be seen passing frequently on the road adjacent to the parking lot and in front of what appeared to be the airport runways. There were three frames recorded on the video consistent with an aircraft taking off, however the images were blurred such that verification aircraft type or registration number was not possible. The images were recorded at 0758:29.942,

0758:30.036, and 0758:30.192. The first two images showed the blurred object ascending in the field of view, and the last image—more distinct than the prior two images—showed a blurred object lower than the second recorded image.