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

February 5, 2013

Electronic Device Factual Report

Specialist's Factual Report
by Bill Tuccio

A. EVENT

Location:	Chandler, AZ
Date:	October 5, 2012
Aircraft:	Piper PA-28R-201
Registration:	N4184M
Operator:	Private
NTSB Number:	WPR13LA004B

B. GROUP - No Group

C. SUMMARY

On October 5, 2012, about 1415 mountain standard time, a Piper PA-28-161, Warrior, N8115Q, and a Piper PA-28R-201, Arrow, N4184M, collided midair approximately 12 miles south of Chandler, Arizona. Both airplanes were being operated under the provisions of Title 14 Code of Federal Regulations (CFR) Part 91 as local instructional flights. Each airplane had a certified flight instructor (CFI) and student pilot. No injuries were reported from either airplane. The Warrior departed Chandler Municipal Airport (CHD), Chandler, Arizona about 1335. The Arrow departed Falcon Field Airport (FFZ), Mesa, Arizona about 1230. Visual meteorological conditions prevailed for the flight. No flight plan was filed for either airplane.

D. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Laboratory received the following device from PA-28R-201, N4184M:

GPS Manufacturer/Model:	Zaon XRX Portable Collision Avoidance System (PCAS)
Serial Number:	36264

Zaon XRX PCAS Device Description

The Zaon XRX PCAS system is a portable device capable of detecting and displaying range, bearing, and altitude information of certain aircraft in the vicinity of the

unit. The XRX is a stand-alone, passive system that detects transponder replies of altitude equipped transponders. The device uses its internal compass and altimeter to determine the range, the 45 degree relative bearing quadrant, and the relative altitude of threat aircraft. The device prioritizes the most critical threat on its 122x32 pixel display and also provides audio alerts.

The Zaon XRX PCAS requires external power to operate. XRX data can optionally be displayed on external, moving map display devices through an RS-232 interface. The unit does not record any historical traffic information, but does retain configuration settings in non-volatile memory[1] and through 16 mechanical on/off switches.

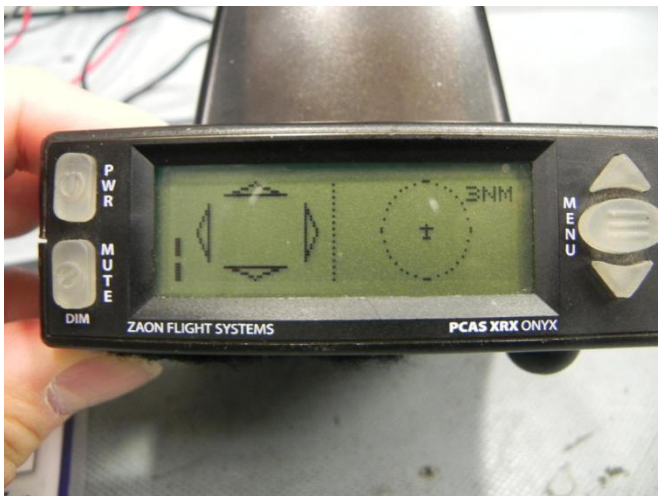
Zaon XRX PCAS Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed that the unit had not sustained any damage. Power was applied to the accident unit and it started normally. The configuration settings were explored and documented.

Zaon XRX PCAS Data Description

The unit was configured for a low-wing, non-pressurized aircraft. The alert settings were set to 3 nautical miles and 1,500 feet. The unit's third-party communications interface was set to "none." The display screen was set to "Screen B" style. The external speaker and headset interfaced audio tested properly as described in the Zaon XRX operating manual. The operating screen is shown in figure 1.

Figure 1. Zaon XRX operating screen.



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