

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

March 15, 2021

Electronic Devices

Specialist's Factual Report By Nick Swann

1. EVENT SUMMARY

Location: Groveland, FL
Date: April 7, 2020
Aircraft: Schempp-Hirth Standard Cirrus
Registration: N271BL
Operator: Private
NTSB Number: ERA20LA145

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

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

Device Manufacturer/Model:	LXNav Nano
Serial Number:	04819 (3PV)
Device Manufacturer/Model:	Naviter Oudie
Serial Number:	201601101188
Device Manufacturer/Model:	Nadler SN10
Serial Number:	990093

3.1. Device Descriptions

3.1.1. LXNav Nano Description

The LXNav Nano is a small IGC flight recorder used for gliding. This device is primarily used for recording glider flights for records and competitions. It is capable of storing the data from the glider onto an SD card that is accessible through side of the device. It additionally contains a USB connection to access the recorded data. The user manual

suggests using the USB connection to download recorded data instead of removing the SD card.

3.1.2. Naviter Oudie Description

The Naviter Oudie is a small touch screen enabled flight data recorder used in gliding and free-flight applications. The device is capable of recording flight data to internal memory.

3.1.3. Nadler SN10 Description

The Nadler SN10 is a glide computer capable of displaying environmental and aircraft parameters relevant to gliding.

3.2. Device Conditions

3.2.1. LXNav Nano Condition

Upon arrival at the Vehicle Recorder Laboratory, an examination revealed the unit had sustained impact damage. The external case of the device was in decent condition; however, the USB connection point had broken and part of it was taped to the outside of the device. Additionally, the SD card slot was empty. An image of the device as arrived is shown below in figure 1.



Figure 1. The LXNav Nano with impact damage.

3.2.2. Naviter Oudie Condition

Upon arrival at the Vehicle Recorder Laboratory, an examination revealed the unit had sustained severe impact damage. The device's screen was shattered as shown in figure 2. The device was then disassembled and the internal motherboard was determined to have minimal damage. The motherboard was then connected to a surrogate display, however the device was unable to boot when powered on.



Figure 2. The Naviter Oudie shown with impact damage.

3.2.3. Nadler SN10 Condition

Upon arrival at the Vehicle Recorder Laboratory, an examination revealed that the SN10 had sustained heavy impact damage. The display was destroyed and partially removed from the device as shown in figure 3.

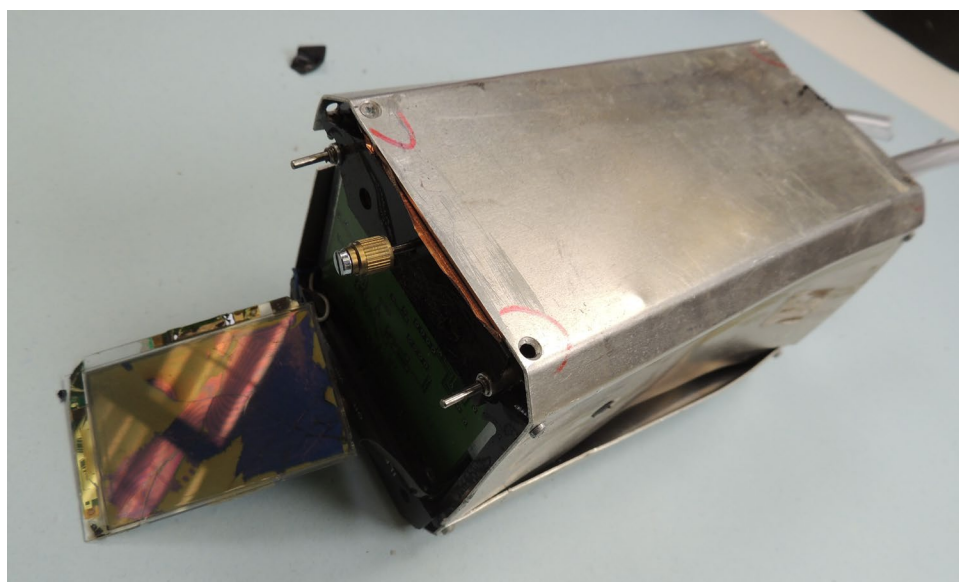


Figure 3. The Nadler SN10 shown with impact damage.

3.3. Data Descriptions

3.3.1. LXNav Nano Data Description

The LXNav Nano is capable of storing data on an SD card. The device arrived at the NTSB Recorder's Laboratory without the SD card. Therefore, the device does not contain any historical data from the accident flight.

3.3.2. Naviter Oudie Data Description

The Naviter Oudie is capable of storing data in non-volatile memory (NVM).¹ The device had evidence of significant impact damage and the screen was shattered. A surrogate screen was attached and the device was powered on but would not boot successfully. Extensive work would be required to retrieve the data and it was determined to be not necessary in the scope of the investigation.

3.3.3. Nadler SN10 Data Description

The Nadler SN10 is capable of storing data in volatile memory in a battery-backed SRAM.^{2,3} The manufacturer of this device was contacted and it would require extensive work to recover the data due to the nature of the memory. Additionally, the data set would be the minimal and therefore was determined to be not necessary in the scope of the investigation.

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

² Volatile memory is semiconductor memory that requires external power for data retention.

³ Static Random Access Memory