

National Transportation Safety Board

Office of Aviation Safety
Central Region



CEN23FA239

SOUND SPECTRUM ANALYSIS SUMMARY

ACCIDENT

Location: Watertown, Wisconsin
Date: June 14, 2023
Time: 0903 central daylight time
Airplane: Mooney M20R, Registration No. N1025C

PARTICIPANTS

Investigator-In-Charge	Andrew Todd Fox National Transportation Safety Board Denver, Colorado
Group Member	Les Doud Hartzell Propeller Piqua, Ohio

ACCIDENT SYNOPSIS

On June 14, 2023, about 0903 central daylight time, a Mooney M20R airplane, N1025C, was destroyed during an accident near Watertown, Wisconsin. The pilot and passenger were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* (CFR) Part 91 personal flight.

SOUND SPECTRUM ANALYSIS

Nest Doorbell Camera

43.204956, -88.744438
857 ft msl

The airplane's Continental IO-550-G engine is rated at 2,500 rpm, which results in a blade passage frequency of 125 Hz with a three-blade propeller. The sound spectrum was at or near that blade passage frequency as the airplane passed abeam the residence about 28 seconds before impact, as shown in Figure 1. The blade passage frequency then decreased as the airplane passed the residence and then increased shortly before impact. The blade passage frequency was about 138 Hz immediately before the sound of impact. The recorded audio was consistent with the engine operating until the airplane impacted terrain.

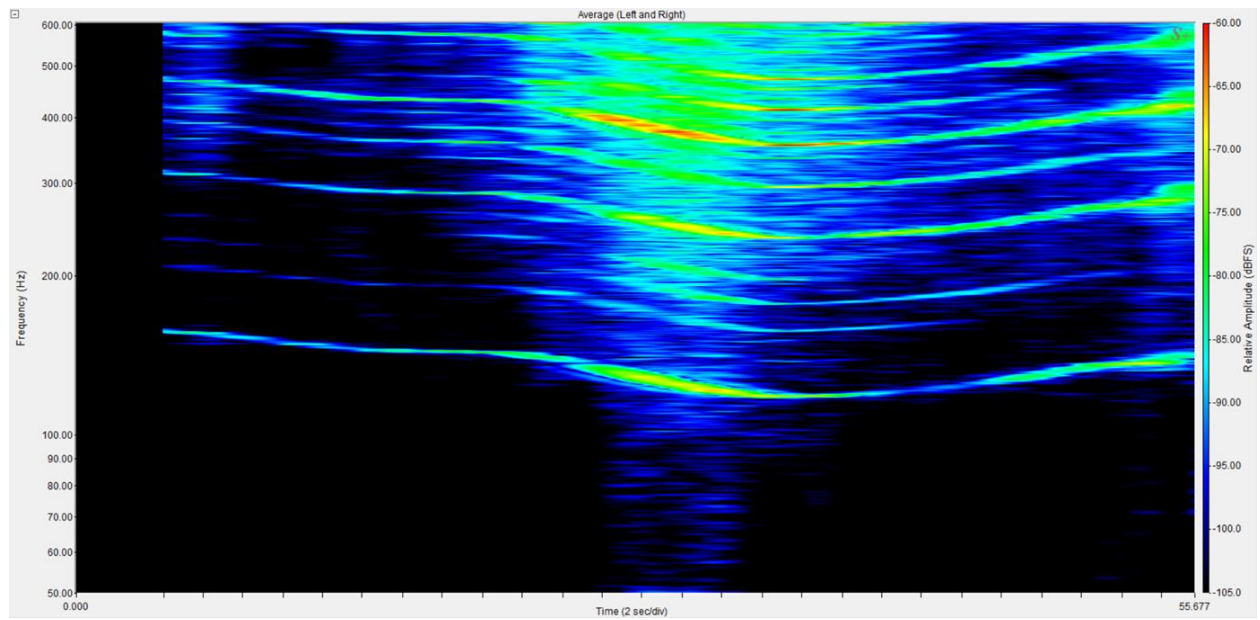


Figure 1. Plot of sound spectrum from audio recorded by a digital doorbell camera