

National Transportation Safety Board

Office of Aviation Safety
Central Region



CEN22FA019

SOUND SPECTRUM ANALYSIS

ACCIDENT

Location: Marengo, Wisconsin
Date: October 23, 2021
Time: 1440 central daylight time (1940 UTC)
Airplane: American Champion Aircraft model 8KCAB, Registration No. N843AC

PARTICIPANTS

Investigator-In-Charge Andrew Todd Fox
National Transportation Safety Board
Denver, Colorado

Group Member Les Doud
Hartzel Propeller
Piqua, Ohio

BACKGROUND

On October 23, 2021, about 1440 central daylight time, an American Champion Aircraft 8KCAB airplane, N843AC, was destroyed when it was involved in an accident near Marengo, Wisconsin. The pilot and his passenger were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot's sister-in-law used her mobile phone to capture several "live" photos of the airplane while it maneuvered near her house during the final minutes of the flight. These "live" photos consisted of several frames of video with sound to create a short movie clip. One of these movie clips, identified as IMG_4856.mov, showed the airplane in a steep nose down descent in the moments before the accident. The IMG_4856.mov file contained 0.855 seconds of video footage.

A Hartzell engineer extracted and analyzed the audio track using the commercially available SpectraPLUS-SC computer software. The review of the sound spectrum determined the fundamental propeller blade passage was about 80 Hz, as depicted in figure 1, which corresponded to 2,400 rpm for the 2-blade propeller installed on the airplane.

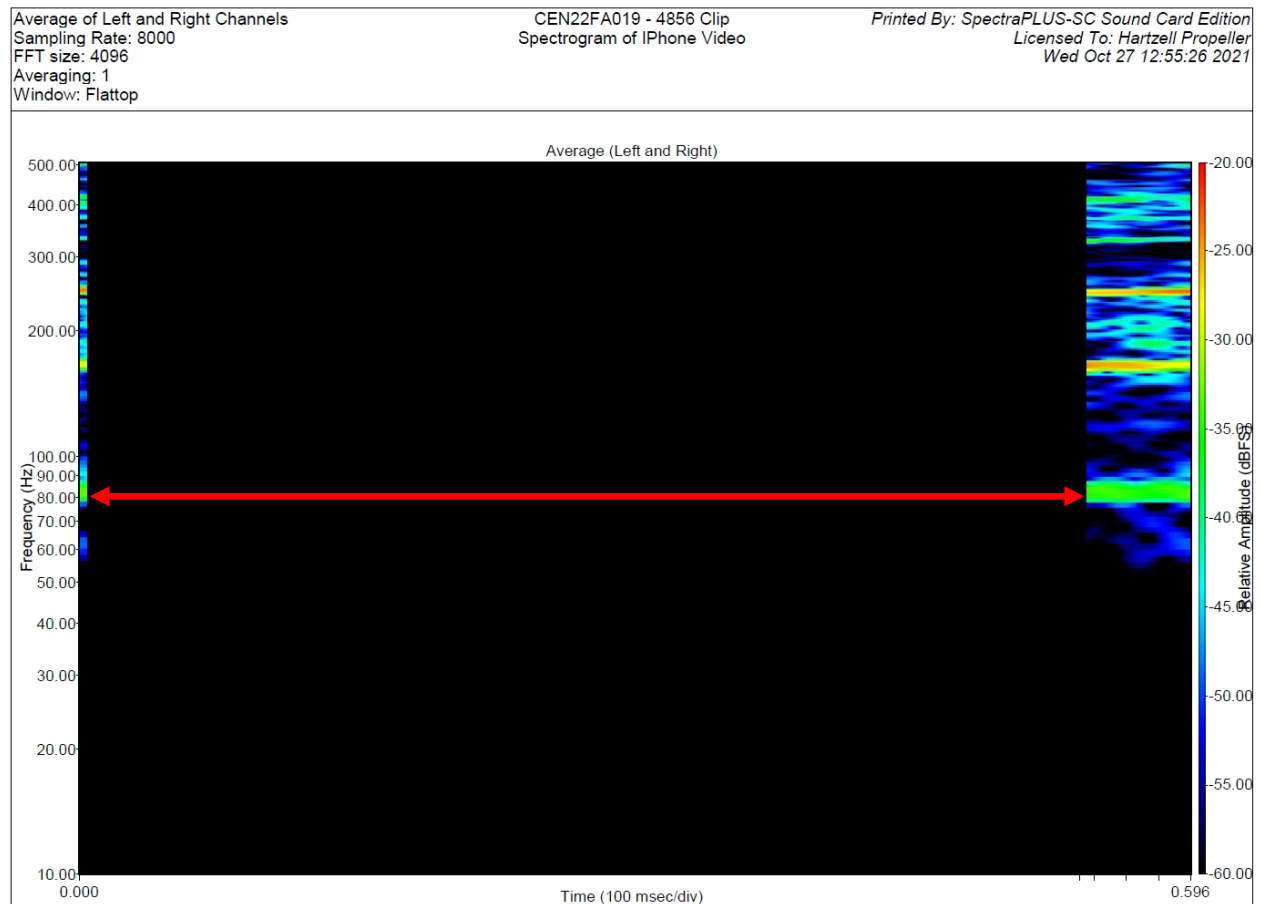


Figure 1. Sound spectrum plot of extracted audio from IMG_4856.mov