

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



CEN21FA345

MEDICAL

Specialist's Factual Report

March 8, 2023

A. ACCIDENT

Location: Hartford, Wisconsin
Date: 7/31/2021
Time: 11:30 Local
Airplane: Piper J3C-65; N42522

B. MEDICAL GROUP

No group was formed for the medical evaluation of this accident.

C. DETAILS OF THE INVESTIGATION

Purpose

This investigation was performed to evaluate the front-seated and rear-seated pilots for medical conditions, the use of medications/illicit drugs, and the presence of toxins.

Methods

The Federal Aviation Administration (FAA) medical case review, the front-seated pilot's autopsy and FAA Forensic Sciences Laboratory toxicology reports,¹ and the rear-seated pilot's post-accident medical records were reviewed. Other relevant medical and regulatory issues were reviewed.

D. FACTUAL INFORMATION

1.0 Front-seated Pilot

1.1 FAA Medical Case Review

According to the initial FAA medical case review, at the time of the accident, the 21-year-old female front-seated pilot had a medical certificate without limitation; the medical certificate had expired for first class but was valid for third class. At the time of her most recent and only exam (2/24/17), the pilot was 65 inches tall and weighed 124 pounds. She reported having 1.5 total flight hours. She reported taking no medications and having no medical conditions. No significant medical concerns were identified.

¹ The FAA Forensic Sciences Laboratory has the capability to test for more than 1,000 substances including toxins, common prescription and over-the-counter medications, and illicit drugs. <https://jag.cami.jccbi.gov/toxicology/>

1.2 Autopsy

According to the autopsy report from the Washington County Medical Examiner's Office, Washington County, Wisconsin, the pilot's cause of death was craniocerebral injuries due to blunt force trauma to head. There was evidence of medical intervention including an endotracheal tube and catheters. No evidence of significant natural disease was identified.

1.3 Toxicology

Toxicology testing performed by the FAA Forensic Sciences Laboratory detected fentanyl and its inactive metabolite norfentanyl in the front-seated pilot's urine at 4.2 nanograms per milliliter (ng/mL) and 6.6 ng/mL, respectively. Neither fentanyl nor norfentanyl were found in her cardiac blood. Etomidate was detected but not quantified in both her cardiac blood and urine. Both fentanyl and etomidate are used for rapid intubation. Fentanyl is a narcotic pain medicine used as an adjunct to anesthesia to mitigate some of the adverse effects of intubation. Etomidate is an induction agent for general anesthesia.²

2.0 Rear-seated Pilot

2.1 FAA Medical Case Review

According to the initial FAA medical case review, at the time of the accident, the 18-year-old male rear-seated pilot held a third class medical certificate without limitation. At the time of his most recent and only exam (9/8/20), the rear-seated pilot was 68 inches tall and weighed 141 pounds. He reported having 9 total flight hours. He reported taking no medications and having no medical conditions. No significant medical concerns were identified.

2.2 Post-accident Medical Records

Post-accident medical records were obtained for the rear-seated pilot who had survived the crash. The rear-seated pilot had diagnoses of subarachnoid and subdural hemorrhages with loss of consciousness and multiple fractures. No clinical blood ethanol or urine drug screen was performed. He was discharged from the hospital on 8/4/21.

No toxicology specimens were obtained for the rear-seated pilot.

² FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs.

Fentanyl. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=64>

Norfentanyl. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=362>

Etomidate. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=61>

E. SUMMARY OF MEDICAL FACTS

The 21-year-old female front-seated pilot had a medical certificate without limitation that was valid for third class. At her most recent and only FAA medical certification examination (2/24/17), she reported taking no medications and having no medical conditions. According to the autopsy, the front-seated pilot's cause of death was craniocerebral injuries due to blunt force trauma to head. No significant natural disease was identified. The resuscitation medications fentanyl and its metabolite norfentanyl were detected in her urine and etomidate was detected in her blood and urine.

The 18-year-old male rear-seated pilot held a third class medical certificate without limitation. At the time of his most recent and only FAA medical certification examination (9/8/20), he reported taking no medications and having no medical conditions. The rear-seated pilot survived the crash. He suffered subarachnoid and subdural hemorrhages with loss of consciousness and multiple fractures. No toxicology specimens were obtained for the rear-seated pilot.

Submitted by:

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