

Communication Summary

December 16, 2020

Communication From: Michelle Watters, MD, PhD, MPH



Dr. Watters was asked to review the CEN20FA049 Olathe, KS, case because of the pilot's toxicology findings.

The Federal Aviation Administration (FAA) medical case review, the pilot's autopsy, and FAA Forensic Sciences laboratory toxicology reports were reviewed by Dr. Watters.

According to the FAA medical certification file and FAA medical case review, the 48-year-old male pilot held a second-class medical certificate without limitations. His most recent FAA medical certification examination was on 5/28/19 and at that time he reported he had accrued 180 total flight hours. He was 74 inches tall and weighed 222 pounds. He reported taking no medications and having a history of seasonal allergies. No significant medical concerns or issues were identified.

According to the Forensic Medical of Kansas, LLC, Kansas City, Kansas autopsy report, the cause of the pilot's death was multiple blunt traumatic and thermal injuries and the manner of death was accident. There was no evidence of any significant natural disease identified. Toxicology testing performed for the medical examiner detected the muscle relaxant cyclobenzaprine at 36 nanograms per milliliter (ng/mL) in the pilot's chest cavity blood and reported carboxyhemoglobin at 10% saturation. The FAA Forensic Sciences Laboratory toxicology testing detected cyclobenzaprine and its active metabolite norcyclobenzaprine in the pilot's liver and muscle tissue. The anti-emetic ondansetron was detected in both liver and muscle tissue. The non-sedating over-the-counter cough suppressant dextromethorphan was detected in liver and muscle tissue while its metabolite dextrorphan was only detected in liver tissue.

Cyclobenzaprine is a prescription medication commonly marketed as Flexeril. It is indicated for relief of muscle spasm associated with acute, painful musculoskeletal conditions. Norcyclobenzaprine is the major metabolite of cyclobenzaprine. Cyclobenzaprine carries the warning that its use may impair mental or physical ability for performing hazardous tasks. The therapeutic range for cyclobenzaprine is 5 to 40 ng/mL and its half-life averages around 18 hours.

Ondansetron is a prescription medication commonly marketed as Zofran. It is indicated for use in preventing nausea and vomiting from chemotherapy, radiation therapy, or surgery; however, it is frequently prescribed for off-label purposes. While ondansetron itself would be considered impairing, the condition for which it would be prescribed would also need to be evaluated for flying safety. Ondansetron's side effects may include fatigue and dizziness.

Carbon monoxide (CO) is an odorless, colorless gas that is a byproduct of combustion, such as from an exhaust system or fire. Carboxyhemoglobin is formed when CO binds to hemoglobin, the protein in red blood cells that carries oxygen. The degree of carboxyhemoglobin formation is related to the concentration of CO and the duration of exposure. The binding of CO impairs oxygen transport and use, and results in symptoms of exposure that can be mild and vague to impairing and incapacitating. Carboxyhemoglobin levels above 5% in nonsmokers and above 10% in smokers would suggest exposure to carbon monoxide.

I can attest that the above summary is correct to the best of my knowledge:

Edward F. Malinowski
National Transportation Safety Board
Air Safety Investigator