

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



CEN23FA204

MEDICAL

Specialist's Factual Report

May 16, 2025

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A ACCIDENT

Location: Lyndonville, New York
Date: May 28, 2023

B MEDICAL SPECIALIST

Specialist JE Tuttle MD MHA FACS
National Transportation Safety Board
Washington, DC

C DETAILS OF THE INVESTIGATION

1.0 Purpose

This investigation was performed to evaluate the pilot and pilot-rated passenger for potentially impairing medical conditions and substances.

2.0 Methods

The Federal Aviation Administration (FAA) medical case review, the pilot's and pilot-rated passenger's autopsy and toxicology reports were reviewed. Selected relevant regulation, medical literature, and investigator reports were also reviewed.

D FACTUAL INFORMATION

1.0 Pilot

1.1 FAA Medical Case Review

According to the FAA medical case review, the 69-year-old male pilot's last aviation medical examination was May 2, 2016. At that time, he reported 1500 total civilian flight hours. He was 70 inches tall and weighed 212 pounds. He reported that he had high blood pressure and seasonal allergies. The pilot reported taking lisinopril / hydrochlorothiazide, a combination prescription medication commonly used to treat high blood pressure; amlodipine, a prescription medication commonly used to treat high blood pressure; omeprazole, an over-the-counter medication commonly used to treat acid reflux; and loratadine, an over-the-counter medication commonly used to treat seasonal allergies. The Aviation Medical Examiner (AME) noted that the pilot's high blood pressure was qualified under Conditions AMEs Can Issue (CACI) criteria. The pilot was issued a third-class medical certificate with the limitation that he must wear corrective lenses. The medical certificate expired in 2018.

The pilot completed a BasicMed Course and reported completing a BasicMed Comprehensive Medical Examination Checklist (CMEC), most recently in July 2022.¹

1.2 Autopsy

The Office of the Medical Examiner of Monroe County performed the pilot's autopsy. According to the pilot's autopsy report, his cause of death was diffuse blunt force trauma, and his manner of death was accident. Examination of his heart identified mild coronary artery disease. The remainder of the autopsy, including visual examination of the heart, did not identify other significant natural disease.

1.3 Toxicology

1.3.1 Autopsy Testing

At the request of the Office of the Medical Examiner, NMS Labs performed toxicological testing of the pilot's liver tissue.² Cyclobenzaprine was detected at 320 ng/g. Ethanol was detected at 0.4 g/hg.³ Toluene was detected at 3 µg/g. O-xylene was detected at 2 µg/g, m-xylene was detected at 3 µg/g, and p-xylene was detected at 1.1 µg/g (total o-, m-, and p-xylenes 6.1 µg/g). Methyl ethyl ketone (MEK) was detected at 21 µg/g. Chloroethane was detected at 11 µg/g. N-butanol was detected at 10 µg/g. Norcyclobenzaprine, acetaminophen, and caffeine were presumptively positive.⁴

1.3.2 FAA Laboratory Testing

The FAA Forensic Sciences Laboratory performed toxicology testing of postmortem specimens from the pilot.⁵ Cyclobenzaprine was detected in liver tissue at 195 ng/g and in muscle tissue at 13 ng/g. Norcyclobenzaprine was detected in liver tissue at 1856 ng/g and in muscle tissue at 117 ng/g. Gabapentin was detected

¹ BasicMed provisions allow pilots who meet certain requirements to fly without current medical certification. Among those requirements, a pilot must have completed a BasicMed training course within 24 calendar months and must have had a medical examination with a state-licensed physician using the CMEC within 48 months. Aircraft and operating restrictions also apply. For details, see 14 Code of Federal Regulations (CFR) Part 68, 14 CFR 61.113(3) and https://www.faa.gov/licenses_certificates/airmen_certification/basic_med/.

² Information about tissue testing procedures, including tested-for substances, is available on the NMS Labs website at Test Codes [8052TI](#), and [2415TI](#). Accessed April 22, 2025.

³ In tissue, concentrations in g/hg are approximately equivalent to concentrations in g/dL.

⁴ A presumptive positive indicates a substance is detected on a screening test without a second test to confirm presence or quantity of the detected substance.

⁵ The FAA Forensic Sciences laboratory has the capability to test for around a thousand substances including toxins, prescription and over-the-counter medications, and illicit drugs.

in liver tissue at 915 ng/g and in muscle tissue at 769 ng/g. Chlorothiazide was detected in liver tissue and not detected in muscle tissue. Hydrochlorothiazide, meloxicam, and acetaminophen were detected in liver and muscle tissue. Ethanol was not detected in brain or liver tissue.

1.3.3 Descriptions of Detected Substances

Cyclobenzaprine is a prescription centrally acting muscle relaxant medication commonly used to treat musculoskeletal pain and muscle spasms. It often carries a warning its use may impair the mental and physical abilities necessary to drive a vehicle or operate heavy machinery.⁶ Cyclobenzaprine may cause drowsiness, lethargy, and blurred vision, and its use with other central nervous system (CNS) depressants can produce additive impairing effects. Studies have shown that drivers using cyclobenzaprine had impaired performance in maintaining vehicle position and an increased risk of adverse events.^{7, 8} The FAA considers cyclobenzaprine a “do not fly” medication.⁹ Norcyclobenzaprine is a metabolite of cyclobenzaprine.

Ethanol is a type of alcohol. It is the intoxicating alcohol in beer, wine, and liquor, and, if consumed, can impair judgment, psychomotor performance, cognition, and vigilance.¹⁰ FAA regulation imposes strict limits on flying after consuming ethanol, including prohibiting pilots from flying with a blood ethanol level of 0.04 g/dL or greater.¹¹ Alcohol consumption is not the only possible source of ethanol in postmortem specimens. Ethanol can sometimes be produced by microbes in a person’s body after death.¹²

⁶ National Institutes of Health National Library of Medicine. Cyclobenzaprine hydrochloride film coated. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=858d10e7-dfe5-4c4f-e053-2a91aa0a783e>. Updated June 6, 2023. Accessed March 20, 2025.

⁷ Couper, F., Huestis, M., Fulford, J., Perkinson, N., Miller, S., Raymond, P., Katz, A., Symoun, J., Smither, D. D., and Berning, A. (2024, December, revised). *Drugs and human performance fact sheets: 2024* (Report No. DOT HS 813 650). National Highway Traffic Safety Administration.

⁸ Caron J, Kaye R, Wessel T, Halseth A, Kay G. An assessment of the centrally acting muscle relaxant tolperisone on driving ability and cognitive effects compared to placebo and cyclobenzaprine. *J Clin Pharm Ther.* 2020;45(4):774-782. doi:10.1111/jcpt.13165.

⁹ Federal Aviation Administration. Guide for aviation medical examiners: pharmaceuticals (therapeutic medications) “do not issue - do not fly.” https://www.faa.gov/ame_guide/pharm/dni_dnf. Updated July 10, 2023. Accessed March 20, 2025.

¹⁰ Cook CCH. Alcohol and aviation. *Addiction.* 1997;92(5):539-555.

¹¹ 14 Code of Federal Regulations §91.17.

¹² Kugelberg FC, Jones AW. Interpreting results of ethanol analysis in postmortem specimens: a review of the literature. *Forensic Sci Int.* 2007;165(1):10-29. doi: 10.1016/j.forsciint.2006.05.004.

Toluene and xylene (including the xylene isomers o-, m-, and p-xylene) are petroleum hydrocarbon volatile solvents used industrially to make paints, paint thinners, cleaning agents, pesticides, and gasoline.¹³ MEK, also known as 2-butanone, is a volatile solvent commonly used in the manufacturing of some adhesives, glues, paints, semiconductors, cosmetics, foods, cleaning agents, and gasoline. MEK may be released in exhaust produced by combustion engines, and occurs naturally at trace levels in some fruits and vegetables.¹⁴ Chloroethane is a volatile solvent that is currently used in the production of some dyes, plastics, pharmaceuticals, and leaded gasoline.¹⁵ In addition to industrial uses, volatile solvents like toluene, xylene, MEK, and chloroethane can be misused as inhalants, commonly referred to as “huffing,” to induce psychoactive or mind-altering effects. These effects can include loss of coordination, irritability, muscle weakness, and disinhibition.^{16, 17}

N-butanol is an alcohol that is used commercially as a gasoline additive.¹⁸ N-butanol also can be produced by microbes in a person’s body after death; as such, the presence of n-butanol in a postmortem specimen is potentially indicative of postmortem microbial activity in the specimen.¹⁹

Gabapentin is a medication that is commonly used for nerve-related pain and may also be used to treat certain types of seizures. It generally carries a warning that use may cause somnolence, dizziness, and general CNS depression. Gabapentin typically carries a warning that use may impair the mental and physical abilities required for driving a vehicle or operating heavy machinery, and caution is advised until the user can assess the impact of dosing on alertness and motor activities.²⁰ The FAA considers gabapentin a “do not issue/do not fly” medication.⁹

¹³ Baselt. RC. *Disposition of Toxic Drugs and Chemicals in Man*. 10th Edition. Seal Beach, California. Biomedical Publications. 2014.

¹⁴ National Library of Medicine. National Center for Biotechnology Information. Compound Summary. Methyl ethyl ketone. PubChem. <https://pubchem.ncbi.nlm.nih.gov/compound/Methyl-ethyl-ketone>.

¹⁵ United States Department of Health and Human Services Agency for Toxic Substances and Disease Registry. Toxicological Profile for Chloroethane. January 2025. <https://www.atsdr.cdc.gov/ToxProfiles/tp105.pdf>. Accessed April 22, 2025.

¹⁶ Beckley JT, Woodward JJ. Volatile solvents as drugs of abuse: focus on the cortico-mesolimbic circuitry. *Neuropsychopharmacology*. 2013;38(13):2555-2567. doi:10.1038/npp.2013.206.

¹⁷ United States Drug Enforcement Administration. Inhalants. <https://www.dea.gov/factsheets/inhalants>. Accessed April 22, 2025.

¹⁸ Segal D, Bale AS, Phillips LJ, et al. Issues in assessing the health risks of n-butanol. *J Appl Toxicol*. 2020;40(1):72-86. doi:10.1002/jat.3820.

¹⁹ Boumba VA, Exadactylou P, Velivasi G, Ziavrou KS, Fragkouli K, Kovatsi L. The frequency of ethanol, higher alcohols, and other low molecular weight volatiles in postmortem blood samples from unnatural deaths. *Forensic Sci Int*. 2022;341:111503. doi:10.1016/j.forsciint.2022.111503.

²⁰ National Institutes of Health National Library of Medicine. Neurontin-gabapentin capsule. DailyMed.

Hydrochlorothiazide is a prescription medication that may be used to treat high blood pressure.²¹ Chlorothiazide may be found as an impurity in hydrochlorothiazide production and may also be a prescription diuretic injection medication, commonly used in hospitals for congestive heart failure.²² Meloxicam is a prescription non-steroidal anti-inflammatory drug commonly used for arthritis pain.²³ Acetaminophen is an over-the-counter medication commonly used to treat minor aches and pains and reduce fever.²⁴ Caffeine is a central nervous system stimulant that is commonly ingested, including in coffee, tea, soft drinks, and chocolate, and also can be used as an ingredient in certain anti-drowsiness medications and headache medications.²⁵ Hydrochlorothiazide, chlorothiazide, meloxicam, acetaminophen, and caffeine are not generally considered impairing.

2.0 Pilot-Rated Passenger

2.1 FAA Medical Case Review

According to the FAA medical case review, the 72-year-old male pilot-rated passenger's last aviation medical examination was March 13, 2023. At that time, he reported 3875 total civilian flight hours. He was 69 inches tall and weighed 170 pounds. He reported having high blood pressure, high cholesterol, and prediabetes. He reported taking metformin, a prescription medication commonly used to treat diabetes and prediabetes; lisinopril, a prescription medication commonly used to treat high blood pressure; diltiazem, a prescription medication commonly used to treat high blood pressure; and atorvastatin, a prescription medication commonly

<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=ee9ad9ed-6d9f-4ee1-9d7f-cfad438df388>. Updated July 12, 2022. Accessed May 20, 2025.

²¹ National Institutes of Health National Library of Medicine. Hydrochlorothiazide tablet. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=7b38ac8a-4540-4eb2-aedd-9aa966d22190>. Updated March 27, 2007. Accessed April 23, 2025.

²² National Institutes of Health National Library of Medicine. Chlorothiazide sodium injection, powder. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=1d9fa4e6-6516-45cd-a316-292c6a529ecc>. Updated July 1, 2022. Accessed April 23, 2025.

²³ National Institutes of Health National Library of Medicine. Meloxicam capsule. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=ce9a8fd7-9bd2-4793-82f3-0fb8f0965d0f>. Updated July 23, 2024. Accessed April 23, 2025.

²⁴ National Institutes of Health. National Library of Medicine. Acetaminophen tablet. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c3b408ff-f47b-4fee-ade5-5db6e25f4ee0>. Updated June 30, 2010. Accessed March 13, 2025.

²⁵ National Institutes of Health National Library of Medicine. Caffeine. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=7c4d61f7-9c6a-61ac-e053-2991aa0a9533#:~:text=When%20using%20this%20product%20limit%20the%20use%20of,as%20much%20caffeine%20as%20a%20cup%20of%20coffee>. Updated January 23, 2024. Accessed April 23, 2025.

used to treat high cholesterol and reduce cardiovascular risk. The AME noted that the pilot-rated passenger's high blood pressure was qualified under CACI criteria. The AME issued the pilot-rated passenger a third-class medical certificate with the limitation that he must wear corrective lenses for near and distant vision.

The pilot-rated passenger also reported having had eye surgeries including bilateral cataract surgery in 2000 and a 2016 surgery for a retinal pucker following a vitreous detachment. He had a Statement of Demonstrated Ability (SODA) for defective color vision.²⁶

2.2 Autopsy

The Office of the Medical Examiner of Monroe County performed the pilot-rated passenger's autopsy. According to the pilot-rated passenger's autopsy report, his cause of death was diffuse blunt force trauma, and his manner of death was accident. Due to the extent of injuries, the brain was absent. Examination of the heart revealed coronary artery disease with up to 50% narrowing of the coronary arteries. The remainder of the autopsy examination, including visual examination of the heart, did not identify other significant natural disease.

2.3 Toxicology

2.3.1 Autopsy Testing

At the request of the Office of the Medical Examiner, NMS Labs performed toxicological testing of liver tissue of the pilot-rated passenger.² Citalopram (including escitalopram) was detected at 3600 ng/g. Diltiazem was detected at 3900 ng/g. Desmethylocitalopram / desmethylescitalopram (undifferentiated) and caffeine were presumptively positive.^{Error! Bookmark not defined.}

2.3.2 FAA Laboratory Testing

The FAA Forensic Sciences Laboratory performed toxicology testing of postmortem tissue specimens from the pilot-rated passenger.⁵ Citalopram was detected in liver tissue. Citalopram was also detected in muscle tissue at 257 ng/g. N-desmethylocitalopram was detected in liver and muscle tissue. Diazepam was detected in liver tissue at 72 ng/g and muscle tissue at 19 ng/g. Nordiazepam was detected in liver tissue at 284 ng/g and in muscle tissue at 73 ng/g. Oxazepam was detected in liver tissue at 16 ng/g and detected in muscle tissue at 4 ng/g.

²⁶ At the discretion of the Federal Air Surgeon, a [SODA](#) may be granted, instead of an Authorization, to a person whose disqualifying condition is static or nonprogressive and who has been found capable of performing airman duties without endangering public safety. A [SODA](#) does not expire and authorizes a designated Examiner to issue a medical certificate of a specified class if the Examiner finds that the condition described on the [SODA](#) has not adversely changed. ([14 CFR 67.401](#)).

Temazepam was detected in liver tissue at 7 ng/g and was not detected in muscle tissue. Atorvastatin, meloxicam, and tadalafil were detected in liver and muscle tissue. Testing for diltiazem was inconclusive in liver tissue; diltiazem was detected in muscle tissue. Pramoxine was detected in liver tissue and was not detected in muscle tissue.

2.3.3 Descriptions of Detected Substances

Citalopram is a prescription medication commonly used to treat depression and anxiety.²⁷ In healthy individuals, studies of citalopram have not clearly established that it causes cognitive or psychomotor impairment.^{28, 29} However, citalopram sometimes carries a warning that any psychoactive drug may impair judgment, thinking, or motor skills, and that users should be cautioned about operating hazardous machinery, until they are reasonably certain that citalopram does not affect their ability to engage in such activities. According to the FAA, a pilot on citalopram may be considered for FAA medical certification via authorization for special issuance only, due to the required detailed evaluation of the individual pilot's condition, including assessment of the pilot's cognitive function and response to medication.³⁰ N-desmethylocitalopram (reported by NMS Labs as desmethylocitalopram) is a metabolite of citalopram. Escitalopram is a component of citalopram (one of two mirror-image molecules of citalopram) and is also sold as a prescription medication.³¹ Prescription escitalopram has similar uses, effects, and implications for FAA medical certification as does citalopram. Desmethylescitalopram is a metabolite of escitalopram.

Diazepam, temazepam, and oxazepam are available as prescription benzodiazepine medications. Temazepam is also a metabolite of diazepam, and oxazepam is a metabolite of temazepam as well as other benzodiazepines. Use of diazepam alone could cause a person to test positive for diazepam, temazepam, and oxazepam. Diazepam is commonly used to treat generalized anxiety disorders,

²⁷ National Institutes of Health National Library of Medicine. Celexa. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=4259d9b1-de34-43a4-85a8-41dd214e9177>. Updated October 9, 2023. Accessed May 18, 2024.

²⁸ Fairweather DB, Pozzo CD, Kerr JS, Lafferty SV, Hindmarch I. Citalopram compared to dothiepin and placebo: effects on cognitive function and psychomotor performance. *Hum Psychopharmacol*. 1997;12(2):119-126.

²⁹ Paul MA, Gray QW, Love RJ, Lange M. SSRI effects on psychomotor performance: assessment of citalopram and escitalopram on normal subjects. *Aviat Space Environ Med*. 2007;78(7):693-697.

³⁰ Federal Aviation Administration. Guide for aviation medical examiners: decision considerations - aerospace medical dispositions, item 47, psychiatric conditions - use of antidepressant medications. Federal Aviation Administration website. https://www.faa.gov/ame_guide/app_process/exam_tech/item47/amd/antidepressants. Updated April 24, 2024. Accessed April 23, 2025.

³¹ National Institutes of Health National Library of Medicine. Lexapro. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=13bb8267-1cab-43e5-acae-55a4d957630a>. Updated October 1, 2023. Accessed May 16, 2025.

insomnia, seizures, and panic disorders. It is also commonly used as a pre-medication before some medical procedures.³² Diazepam generally carries a warning that use may cause drowsiness, fatigue, muscle weakness and poor motor coordination.³³ Diazepam use may produce a state of intoxication similar to ethanol, causing slurred speech, disorientation, and sedation. The FAA considers diazepam a “do not fly” medication.⁹ Nordiazepam is an active metabolite of diazepam.

Tadalafil is a prescription medication commonly used to treat erectile dysfunction; it may also be used to treat symptoms of an enlarged prostate, or to treat pulmonary hypertension.^{34,35} According to the FAA, occasional use of tadalafil (such as for erectile dysfunction) is acceptable for pilots with no side effects and a 24-hour waiting period from the last dose prior to flying. Daily use of tadalafil (such as for an enlarged prostate) is also acceptable for pilots if there are no side effects with use, following a 1-week waiting period after starting the medication.³⁶

Diltiazem is a prescription medication commonly used to treat high blood pressure.³⁷ Atorvastatin is a prescription medication commonly used to treat high cholesterol.³⁸ Meloxicam is a prescription non-steroidal anti-inflammatory drug commonly used for arthritis pain.²³ Pramoxine is an over-the-counter medication commonly used to treat pain and itching associated with minor skin irritations.³⁹ Diltiazem, atorvastatin, meloxicam, and pramoxine are not generally considered impairing.

³² FDA. Benzodiazepine Drug Information. <https://www.fda.gov/drugs/information-drug-class/benzodiazepine-drug-information>. Updated September 23, 2020. Accessed April 23, 2025.

³³ National Institutes of Health National Library of Medicine. Diazepam tablet. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c397a9da-862f-4f3f-8109-7d21691de53a>. Updated April 4, 2023. Accessed April 23, 2025.

³⁴ National Institutes of Health. National Library of Medicine. Cialis-tadalafil tablet. Film coated. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=ebddb745-81f9-4b25-8739-b2886032ed26>. Updated July 28, 2009. Accessed March 19, 2025.

³⁵ National Institutes of Health. National Library of Medicine. Tadalafil tablet. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=fceb8aaf-b4eb-4004-8ca4-f004eac6b314>. Updated January 21, 2025. Accessed March 5, 2025.

³⁶ FAA. Guide for AMEs: Pharmaceuticals: Erectile dysfunction and benign prostatic hyperplasia. https://www.faa.gov/ame_guide/pharm/ed. Updated August 25, 2017. Accessed March 19, 2025.

³⁷ National Institutes of Health National Library of Medicine. Diltiazem hydrochloride extended-release capsules. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=eefbf29fe-ce22-4482-b850-5854550bf2c4>. Updated August 4, 2023. Accessed April 23, 2025.

³⁸ National Institutes of Health. National Library of Medicine. Atorvastatin calcium. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=25c8f92f-9cb6-482b-82e1-16ad7c94e7b3>. Updated September 28, 2024. Accessed April 23, 2025.

³⁹ National Institutes of Health. National Library of Medicine. Pramoxine hydrochloride. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=81ab7fa7-d9b0-49dc-9782-02f37e588c5e>.

E SUMMARY OF MEDICAL FACTS

1.0 Pilot

According to the FAA medical case review, the 69-year-old male pilot's last aviation medical examination was May 2, 2016. At that time, he reported that he had high blood pressure and seasonal allergies. He reported taking the medications lisinopril / hydrochlorothiazide, amlodipine, omeprazole, and loratadine. The AME noted that the pilot's high blood pressure was qualified under CACI criteria. The pilot was issued a third-class medical certificate with the limitation that he must wear corrective lenses. The medical certificate expired in 2018. The pilot completed a BasicMed Course and reported completing a BasicMed Comprehensive Medical Examination Checklist, most recently in July 2022.

The Office of the Medical Examiner of Monroe County performed the pilot's autopsy. According to the pilot's autopsy report, his cause of death was diffuse blunt force trauma, and his manner of death was accident. Examination of his heart identified mild coronary artery disease. The remainder of the autopsy, including visual examination of the heart, did not identify other significant natural disease.

NMS Labs performed postmortem toxicological testing of the pilot's liver tissue. Cyclobenzaprine was detected at 320 ng/g. Ethanol was detected at 0.4 g/hg. Toluene was detected at 3 µg/g. O-xylene was detected at 2 µg/g, m-xylene was detected at 3 µg/g, and p-xylene was detected at 1.1 µg/g (total o-, m-, and p-xylenes 6.1 µg/g). Methyl ethyl ketone (MEK) was detected at 21 µg/g. Chloroethane was detected at 11 µg/g. N-butanol was detected at 10 µg/g. Norcyclobenzaprine, acetaminophen, and caffeine were presumptively positive.

The FAA Forensic Sciences Laboratory performed toxicology testing of postmortem specimens from the pilot. Cyclobenzaprine was detected in liver tissue at 195 ng/g and in muscle tissue at 13 ng/g. Norcyclobenzaprine was detected in liver tissue at 1856 ng/g and in muscle tissue at 117 ng/g. Gabapentin was detected in liver tissue at 915 ng/g and in muscle tissue at 769 ng/g. Chlorothiazide was detected in liver tissue and not detected in muscle tissue. Hydrochlorothiazide, meloxicam, and acetaminophen were detected in liver and muscle tissue. Ethanol was not detected in brain or liver tissue.

2.0 Pilot-rated Passenger

According to the FAA medical case review, the 72-year-old male pilot-rated passenger's last aviation medical examination was March 13, 2023. At that time, he reported having high blood pressure, high cholesterol, and prediabetes. He reported taking the medications metformin, lisinopril, diltiazem, and atorvastatin. The AME noted that the pilot-rated passenger's high blood pressure was qualified under CACI criteria. The AME issued the pilot-rated passenger a third-class medical certificate with the limitation that he must wear corrective lenses for near and distant vision. The pilot-rated passenger had a Statement of Demonstrated Ability (SODA) for defective color vision.

NMS Labs performed toxicological testing of liver tissue of the pilot-rated passenger. Citalopram (including escitalopram) was detected at 3600 ng/g. Diltiazem was detected at 3900 ng/g. Desmethylocitalopram / desmethylescitalopram (undifferentiated) and caffeine were presumptively positive.

The FAA Forensic Sciences Laboratory performed toxicology testing of postmortem tissue specimens from the pilot-rated passenger. Citalopram was detected in liver tissue. Citalopram was also detected in muscle tissue at 257 ng/g. N-desmethylocitalopram was detected in liver and muscle tissue. Diazepam was detected in liver tissue at 72 ng/g and muscle tissue at 19 ng/g. Nordiazepam was detected in liver tissue at 284 ng/g and in muscle tissue at 73 ng/g. Oxazepam was detected in liver tissue at 16 ng/g and detected in muscle tissue at 4 ng/g. Temazepam was detected in liver tissue at 7 ng/g and was not detected in muscle tissue. Atorvastatin, meloxicam, and tadalafil were detected in liver and muscle tissue. Testing for diltiazem was inconclusive in liver tissue; diltiazem was detected in muscle tissue. Pramoxine was detected in liver tissue and was not detected in muscle tissue.

Submitted by:

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Medical Officer