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MEDICAL

Specialist's Factual Report

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A. ACCIDENT

Location: Dallas, Texas
Date: November 12, 2022

B. MEDICAL SPECIALIST

Specialist Turan Kayagil, MD, FACEP
National Transportation Safety Board
Washington, DC

C. DETAILS OF THE INVESTIGATION

1.0 Purpose

This investigation was performed to evaluate the pilot of the P-63 and the flight crew of the B-17 for potentially impairing substances and medical conditions.

2.0 Methods

The autopsy and toxicology reports for the six involved flight crewmembers were reviewed, as was the Federal Aviation Administration (FAA) medical case review. Selected investigator reports and relevant regulation and medical literature were also reviewed.

D. FACTUAL INFORMATION

1.0 P-63 Pilot

1.1 FAA Medical Case Review

According to the FAA medical case review, the 63-year-old male P-63 pilot's last aviation medical examination was November 1, 2022. At that time, he reported 35,000 total civilian flight hours. He was 70 inches tall and weighed 213 pounds. He reported no medication use and no active medical conditions. No significant issues were identified, and he was issued a first-class medical certificate without limitation.

1.2 Autopsy

The Southwestern Institute of Forensic Sciences (IFS) at Dallas performed the P-63 pilot's autopsy. According to the P-63 pilot's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy was limited by the severity of his injuries; his brain was unavailable for examination. His

coronary arteries exhibited mild-to-severe narrowing by plaque, including 85-95% narrowing of the first diagonal branch artery, 50-75% narrowing of the right coronary artery, 25-60% narrowing of the left circumflex coronary artery, and 25-50% narrowing of the left anterior descending coronary artery. The remainder of the autopsy, including visual examination of the available heart muscle, did not identify any other significant natural disease.

1.3 Toxicology

According to the P-63 pilot's autopsy report, the IFS Laboratory performed postmortem toxicological testing of muscle tissue from the P-63 pilot and did not detect any tested-for substances.

According to the P-63 pilot's FAA toxicology report, the FAA Forensic Sciences laboratory performed postmortem toxicological testing of urine from the P-63 pilot and did not detect any tested-for-substances.¹ No blood from the P-63 pilot was available for FAA testing.

2.0 B-17 Flight Crew

2.1 B-17 Pilot

2.1.1 FAA Medical Case Review

According to the FAA medical case review, the 66-year-old male B-17 pilot's last aviation medical examination was September 2, 2022. At that time, he reported 28,000 total civilian flight hours. He was 67 inches tall and weighed 180 pounds. He reported no medication use. His reported medical history included seasonal/environmental allergies and chronic neck/back pain managed with chiropractic treatment. No significant issues were identified, and he was issued a first-class medical certificate limited by a requirement to have available glasses for near vision.

2.1.2 Autopsy

The Southwestern IFS at Dallas performed the B-17 pilot's autopsy. According to the B-17 pilot's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy was limited by the severity of his injuries; his brain was unavailable for examination. His coronary arteries exhibited mild-to-

¹ 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. Some of these substances are listed at <https://jag.cami.jccbi.gov/toxicology>.

moderate narrowing by plaque, including 20-70% narrowing of left anterior descending coronary artery, 20-50% narrowing of the right coronary artery, and 20% narrowing of the left circumflex coronary artery. The remainder of the autopsy, including visual examination of the heart, did not identify any other significant natural disease.

2.1.3 Toxicology

According to the B-17 pilot's autopsy report, the IFS Laboratory performed postmortem toxicological testing of chest cavity blood from the B-17 pilot and did not detect any tested-for substances.

According to the B-17 pilot's FAA toxicology report, the FAA Forensic Sciences laboratory performed toxicological testing of postmortem specimens from the B-17 pilot, detecting meclizine in liver tissue and at 4.1 ng/mL in cavity blood.¹

Meclizine, sometimes marketed as Dramamine Less Drowsy, is a sedating antihistamine medication available over the counter for prevention and treatment of dizziness, nausea, and vomiting associated with motion sickness. Meclizine can also be used to treat vertigo symptoms caused by inner ear problems. It typically carries a label warning that it can cause drowsiness and may adversely affect a user's ability to safely drive a motor vehicle or operate machinery.^{2,3} The FAA states that, after a pilot uses any drug with that warning (including any sedating antihistamine), the pilot should observe a waiting period for the drug to be cleared from circulation before flying.⁴ According to the FAA medical case review for this accident, meclizine should not be used by a pilot within 36 hours of flying, and the FAA considers regular use by a pilot (as opposed to occasional use) to be unacceptable. Therapeutic meclizine levels in the plasma of living users typically range from about 1 to 45 ng/mL, with a typical elimination half-life of about 5-7 hours.⁵ Drug levels in postmortem cavity blood are not reliably comparable to levels in antemortem plasma.

² National Institutes of Health National Library of Medicine. Dramamine Less Drowsy. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=fa6a0969-7427-4b87-bc04-a2792665c218>. Updated August 19, 2022. Accessed April 6, 2023.

³ National Institutes of Health National Library of Medicine. Antivert. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=4a5d81fc-ad25-4c3f-a91c-93fe334c02e5>. Updated October 18, 2022. Accessed April 6, 2023.

⁴ Federal Aviation Administration. Guide for aviation medical examiners: pharmaceuticals (therapeutic medications) do not issue - do not fly. Federal Aviation Administration website. <https://www.faa.gov/go/dni>. Updated March 8, 2023. Accessed April 6, 2023.

⁵ Schulz M, Schmoltdt A, Andresen-Streichert H, Iwersen-Bergmann S. Revisited: therapeutic and toxic blood concentrations of more than 1,100 drugs and other xenobiotics. *Crit Care*. 2020;24(1):195. doi:10.1186/s13054-020-02915-5.

2.2 B-17 Copilot

2.2.1 FAA Medical Case Review

According to the FAA medical case review, the 67-year-old male B-17 copilot's last aviation medical examination was October 21, 2022. At that time, he reported 26,100 total civilian flight hours. He was 73 inches tall and weighed 203 pounds. He reported using tamsulosin, a prescription medication that is commonly used to treat the symptoms of an enlarged prostate and is not generally considered impairing. He reported a history of seasonal/environmental allergies and asthma, conditions for which he had received an FAA Letter of Eligibility for first-class medical certification in 1999. No significant issues were identified at the B-17 copilot's last aviation medical examination, and he was issued a first-class medical certificate limited by a requirement to wear corrective lenses and possess glasses for near/intermediate vision.

2.2.2 Autopsy

The Southwestern IFS at Dallas performed the B-17 copilot's autopsy. According to the B-17 copilot's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy was limited by the severity of his injuries; structural evaluation of his brain was not possible and his heart was unavailable for examination. Within the limitations of the autopsy examination, no significant natural disease was identified.

2.2.3 Toxicology

According to the B-17 copilot's autopsy report, the IFS Laboratory performed postmortem toxicological testing of muscle tissue from the B-17 copilot and identified ethanol at 0.027 g/hg.⁶

According to the B-17 copilot's FAA toxicology report, the FAA Forensic Sciences laboratory performed toxicological testing of postmortem specimens from the B-17 copilot, detecting dextromethorphan and tamsulosin in muscle and liver tissue.¹ The FAA tested liver and brain tissue for ethanol; it was not detected.⁷ No blood from the B-17 copilot was available for FAA testing.

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.⁸ FAA regulation imposes strict limits on flying after consuming ethanol,

⁶ In tissue, concentrations in g/hg are approximately equivalent to concentrations in g/dL.

⁷ The FAA Forensic Sciences laboratory uses an ethanol reporting cutoff of 0.01 g/hg or g/dL.

⁸ Cook CCH. Alcohol and aviation. *Addiction*. 1997;92(5):539-555.

including prohibiting pilots from flying with a blood ethanol level of 0.04 g/dL or greater.⁹ However, consumption is not the only possible source of ethanol in postmortem specimens. Ethanol can be produced by microbes in a person's body after death. Postmortem ethanol production is made more likely by extensive traumatic injury and can cause an affected toxicological specimen to test positive for ethanol while another specimen from the same person tests negative.¹⁰

Dextromethorphan is a cough suppressant medication that is available over the counter in a variety of cold and allergy products.^{11,12} Dextromethorphan is not typically impairing at levels associated with medicinal use.¹³ The FAA states that pilots who use dextromethorphan should observe a waiting period for the drug to be cleared from circulation before flying.¹⁴

Tamsulosin, sometimes marketed as Flomax, is a prescription medication commonly used to treat the symptoms of an enlarged prostate.¹⁵ It may also be used in the treatment of kidney stones. It is not generally considered impairing.

2.3 B-17 Flight Engineer

2.3.1 FAA Medical Case Review

According to the FAA medical case review, the 64-year-old male B-17 flight engineer's last aviation medical examination was August 25, 2022. At that time, he

⁹ [14 Code of Federal Regulations § 91.17](#).

¹⁰ 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.

¹¹ National Institutes of Health National Library of Medicine. Robitussin 12 Hour Cough Relief. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=5d12a1b8-f1fb-41ca-9a4f-0595a585cbb5>. Updated January 14, 2023. Accessed April 6, 2023.

¹² National Institutes of Health National Library of Medicine. All Nite. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=945a4068-3630-4f1d-b794-d2f1603af285>. Updated December 19, 2018. Accessed April 6, 2023.

¹³ Couper FJ, Logan BK. Drugs and Human Performance Fact Sheets. National Highway Traffic Safety Administration. DOT HS 809 725. April 2014 (Revised). <https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/809725-drugshumanperformfs.pdf>. Accessed April 6, 2023.

¹⁴ Federal Aviation Administration. Pilot information – Over-the-counter medications. Federal Aviation Administration website. https://www.faa.gov/pilots/medical_certification/medications. Updated November 9, 2022. Accessed April 6, 2023.

¹⁵ National Institutes of Health National Library of Medicine. Flomax. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=6771ad8e-ac92-4aec-b484-5d8350a353f8>. Updated January 4, 2023. Accessed April 6, 2023.

reported 4,341 total civilian flight hours. He was 68 inches tall and weighed 168 pounds. He reported no medication use and a history of seasonal/environmental allergies. No significant issues were identified, and he was issued a second-class medical certificate limited by a requirement to wear corrective lenses.

2.3.2 Autopsy

The Southwestern IFS at Dallas performed the B-17 flight engineer's autopsy. According to the B-17 flight engineer's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy did not identify significant natural disease.

2.3.3 Toxicology

According to the B-17 flight engineer's autopsy report, the IFS Laboratory performed toxicological testing of postmortem specimens from the B-17 flight engineer and did not detect any tested-for substances. The IFS testing included testing of blood and vitreous for ethanol.

According to the B-17 flight engineer's FAA toxicology report, the FAA Forensic Sciences laboratory performed toxicological testing of postmortem specimens from the B-17 flight engineer.¹ FAA testing detected ethanol at 0.023 g/hg in liver tissue.⁶ FAA testing did not detect ethanol in brain tissue or vitreous.⁷ FAA testing also identified meclizine and naproxen in muscle and liver tissue. No blood from the B-17 flight engineer was available for FAA testing.

Ethanol is described above (see D.2.2.3). Meclizine is also described above (see D.2.1.3).

Naproxen, sometimes marketed as Aleve, is an anti-inflammatory medication commonly used for control of pain and fever, and sometimes for arthritis and gout.^{16,17} It is available over the counter and is not generally considered impairing.

¹⁶ National Institutes of Health National Library of Medicine. Aleve. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=00ef5b30-71d0-4cb4-84a3-48c67d1cea2a>. Updated February 21, 2022. Accessed April 6, 2023.

¹⁷ National Institutes of Health National Library of Medicine. Naprosyn. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=8bff5df5-d856-4237-b6a8-ae445b454844>. Updated April 30, 2021. Accessed April 6, 2023.

2.4 B-17 Fourth Crewmember

2.4.1 FAA Medical Case Review

According to the FAA medical case review, the 53-year-old male B-17 fourth crewmember was not a pilot. He did not have an FAA medical certification file.

2.4.2 Autopsy

The Southwestern IFS at Dallas performed the B-17 fourth crewmember's autopsy. According to the B-17 fourth crewmember's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. Autopsy evaluation for natural disease was markedly limited by the extent of his injuries, which prevented structural evaluation of his brain, heart, and lungs.

2.4.3 Toxicology

According to the B-17 fourth crewmember's autopsy report, the IFS Laboratory performed postmortem toxicological testing of muscle tissue from the B-17 fourth crewmember and did not detect any tested-for substances.

According to the B-17 fourth crewmember's FAA toxicology report, the FAA Forensic Sciences laboratory performed toxicological testing of postmortem specimens from the B-17 fourth crewmember, detecting rosuvastatin in liver tissue.¹ The rosuvastatin result in muscle tissue was reported as inconclusive. No blood from the B-17 fourth crewmember was available for FAA testing.

Rosuvastatin, sometimes marketed as Crestor, is a prescription medication commonly used to control cholesterol and reduce cardiovascular risk.¹⁸ Rosuvastatin is not generally considered impairing.

2.5 B-17 Fifth Crewmember

2.5.1 FAA Medical Case Review

According to the FAA medical case review, the 88-year-old male B-17 fifth crewmember was not a pilot. He did not have an FAA medical certification file.

¹⁸ National Institutes of Health National Library of Medicine. Crestor. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=325a5d0e-9a72-4015-9fcd-1655fb504cee>. Updated January 13, 2023. Accessed April 6, 2023.

2.5.2 Autopsy

The Southwestern IFS at Dallas performed the B-17 fifth crewmember's autopsy. According to the B-17 fifth crewmember's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy was limited by the extent of his injuries; structural evaluation of his heart and lungs was severely limited and his brain was unavailable for examination. Within the limitations of the autopsy examination, no significant natural disease was identified.

2.5.3 Toxicology

According to the B-17 fifth crewmember's autopsy report, the IFS Laboratory performed postmortem toxicological testing of muscle tissue from the B-17 fifth crewmember and detected metoprolol and diphenhydramine.

According to the B-17 fifth crewmember's FAA toxicology report, the FAA Forensic Sciences laboratory performed toxicological testing of postmortem specimens from the B-17 fifth crewmember.¹ Diazepam was detected at 4 ng/g in muscle tissue and 14 ng/g in kidney tissue. Nordiazepam (an active metabolite of diazepam) was detected at 21 ng/g in muscle tissue and 36 ng/g in kidney tissue. Diphenhydramine and chlorpheniramine were detected in muscle and lung tissue. Amlodipine, valsartan, metoprolol, and timolol were detected in muscle and heart tissue. No blood from the B-17 fifth crewmember was available for FAA testing.

Diazepam, sometimes marketed as Valium, is a prescription benzodiazepine medication. It may be used to treat anxiety, muscle spasm, alcohol withdrawal, seizures, and certain sleep disorders, and is sometimes used in healthcare settings as a sedative for medical procedures. Diazepam typically carries a warning that it can cause sleepiness, dizziness, and slowed thinking and motor skills, and that users should not drive, operate heavy machinery, or do other dangerous activities until they know how the drug affects them. Nordiazepam is an active metabolite of diazepam.^{13,19}

Diphenhydramine is a sedating antihistamine medication widely available over the counter in multiple sleep aids and cold and allergy products. Diphenhydramine can cause cognitive and psychomotor slowing and drowsiness. It often carries a warning that it may impair performance of tasks like driving and operating heavy

¹⁹ National Institutes of Health National Library of Medicine. Valium. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=554baee5-b171-4452-a50a-41a0946f956c>. Updated November 8, 2019. Accessed April 6, 2023.

machinery.^{13,20,21} Chlorpheniramine is another sedating antihistamine medication available over the counter in a variety of cold and allergy products. Its effects are similar to those of diphenhydramine, and it often carries similar warnings about drowsiness and driving/operating machinery.²²

Amlodipine, valsartan, and metoprolol are prescription medications of three different classes (dihydropyridine calcium channel blocker, angiotensin receptor blocker, and cardioselective beta blocker, respectively) that can be used to treat high blood pressure. Additionally, valsartan and metoprolol each may be used in the treatment of certain types of heart failure, amlodipine and metoprolol each may be used in the treatment of heart-related chest pain, and metoprolol may be used in the treatment of certain types of irregular heartbeat, as part of medical therapy following heart attack, or to help prevent migraine headache.^{23 - 26}

Timolol is a prescription nonselective beta blocker medication. An oral tablet form of timolol is available for some of the same uses as metoprolol, but timolol is more usually prescribed in topical eye drop form. Timolol eye drops act to lower the pressure of the fluid within the eye in conditions where this pressure is elevated, specifically ocular hypertension and glaucoma.^{27,28}

²⁰ National Institutes of Health National Library of Medicine. Benadryl Allergy Liqui-Gels. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=bfeae100-e2d1-4607-be3b-2d9b15cd4f7f>. Updated March 20, 2023. Accessed April 6, 2023.

²¹ Moskowitz H, Wilkinson CJ. *Antihistamines and Driving-Related Behavior: A Review of the Evidence for Impairment*. National Highway Traffic Safety Administration. DOT HS 809 714. May 2004. <https://www.nhtsa.gov/sites/nhtsa.gov/files/antihistamines20text.pdf>. Accessed April 6, 2023.

²² National Institutes of Health National Library of Medicine. Chlorpheniramine maleate. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=31dec627-f2e4-6dbe-e054-00144ff8d46c>. Updated March 29, 2023. Accessed April 5, 2023.

²³ National Institutes of Health National Library of Medicine. Norvasc. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=abd6a2ca-40c2-485c-bc53-db1c652505ed>. Updated April 4, 2022. Accessed April 6, 2023.

²⁴ National Institutes of Health National Library of Medicine. Diovan. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=5ddba454-f3e6-43c2-a7a6-58365d297213>. Updated March 9, 2022. Accessed April 6, 2023.

²⁵ National Institutes of Health National Library of Medicine. Lopressor. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=0283bc9d-6998-493a-824a-d4c85f704111>. Updated January 24, 2023. Accessed April 6, 2023.

²⁶ Mann JFE, Flack JM. Choice of drug therapy in primary (essential) hypertension. In: Post TW, ed. *UpToDate*. Waltham, MA: UpToDate Inc. <https://www.uptodate.com/contents/choice-of-drug-therapy-in-primary-essential-hypertension>. Updated March 7, 2023. Accessed April 6, 2023.

²⁷ National Institutes of Health National Library of Medicine. Timolol maleate. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=d591352a-09d8-2fdc-e053-2a95a90ad8a5>. Updated March 8, 2022. Accessed April 6, 2023.

²⁸ National Institutes of Health National Library of Medicine. Timoptic. DailyMed.

Amlodipine, valsartan, metoprolol, and timolol are not generally considered impairing.

E. SUMMARY OF MEDICAL FACTS

1.0 P-63 Pilot

The 63-year-old male P-63 pilot's last aviation medical examination was November 1, 2022. At that time, he reported no medication use and no active medical conditions. No significant issues were identified, and he was issued a first-class medical certificate without limitation.

According to the P-63 pilot's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy was limited by the severity of his injuries; his brain was unavailable for examination. His coronary arteries exhibited mild-to-severe narrowing by plaque. His autopsy did not identify any other significant natural disease.

The P-63 pilot's postmortem toxicological testing did not detect any tested-for-substances.

2.0 B-17 Flight Crew

2.1 B-17 Pilot

The 66-year-old male B-17 pilot's last aviation medical examination was September 2, 2022. At that time, he reported no medication use. His reported medical history included seasonal/environmental allergies and chronic neck/back pain managed with chiropractic treatment. No significant issues were identified, and he was issued a first-class medical certificate limited by a requirement to have available glasses for near vision.

According to the B-17 pilot's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy was limited by the severity of his injuries; his brain was unavailable for examination. His coronary arteries exhibited mild-to-moderate narrowing by plaque. His autopsy did not identify any other significant natural disease.

The B-17 pilot's postmortem toxicological testing detected meclizine in liver tissue and cavity blood.

<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=45ac65b3-19f7-4f33-aebf-cadd3daa4bf1>. Updated April 30, 2022. Accessed April 6, 2023.

2.2 B-17 Copilot

The 67-year-old male B-17 copilot's last aviation medical examination was October 21, 2022. At that time, he reported using the prescription medication tamsulosin, which is not generally considered impairing. He reported a history of seasonal/environmental allergies and asthma, conditions for which he had received an FAA Letter of Eligibility for first-class medical certification in 1999. No significant issues were identified at his last aviation medical examination, and he was issued a first-class medical certificate limited by a requirement to wear corrective lenses and possess glasses for near/intermediate vision.

According to the B-17 copilot's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy was limited by the severity of his injuries; structural evaluation of his brain was not possible and his heart was unavailable for examination. Within the limitations of the autopsy examination, no significant natural disease was identified.

The B-17 copilot's postmortem toxicological testing identified ethanol in a muscle tissue specimen at 0.027 g/hg. Ethanol was not detected in brain or liver tissue specimens. Dextromethorphan and tamsulosin were detected in muscle and liver tissue.

2.3 B-17 Flight Engineer

The 64-year-old male B-17 flight engineer's last aviation medical examination was August 25, 2022. At that time, he reported no medication use and a history of seasonal/environmental allergies. No significant issues were identified, and he was issued a second-class medical certificate limited by a requirement to wear corrective lenses.

According to the B-17 flight engineer's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy did not identify significant natural disease.

The B-17 flight engineer's postmortem toxicological testing identified ethanol in a liver tissue specimen at 0.023 g/hg. Ethanol was not detected in blood, vitreous, or brain tissue specimens. Meclizine and naproxen were detected in muscle and liver tissue.

2.4 B-17 Fourth Crewmember

The 53-year-old male B-17 fourth crewmember had not applied for FAA medical certification.

According to the B-17 fourth crewmember's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. Autopsy evaluation for natural disease was markedly limited by the extent of his injuries, which prevented structural evaluation of his brain, heart, and lungs.

The B-17 fourth crewmember's postmortem toxicological testing detected rosuvastatin in liver tissue.

2.5 B-17 Fifth Crewmember

The 88-year-old male B-17 fifth crewmember had not applied for FAA medical certification.

According to the B-17 fifth crewmember's autopsy report, his cause of death was blunt force injuries and his manner of death was accident. His autopsy was limited by the extent of his injuries; structural evaluation of his heart and lungs was severely limited and his brain was unavailable for examination. Within the limitations of the autopsy examination, no significant natural disease was identified.

The B-17 fifth crewmember's postmortem toxicological testing detected diazepam and its active metabolite nordiazepam in muscle and kidney tissue. Diphenhydramine and chlorpheniramine were detected in muscle and lung tissue. Amlodipine, valsartan, metoprolol, and timolol were detected in muscle and heart tissue.

Submitted by:

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