



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

January 18, 2017

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Chief Medical Officer

A. ACCIDENT: ERA15LA366; Bally, PA

On September 21, 2015, about 1830 eastern daylight time, a Cessna 172S, N347SP, operated by Certified Flyers, was substantially damaged during collision with terrain, while maneuvering after takeoff from Butter Valley Golf Port (7N8), Bally, Pennsylvania. The commercial pilot incurred minor injuries. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the planned flight to Morristown Municipal Airport (MMU), Morristown, New Jersey. The flight departed 7N8 about 1830.

B. GROUP IDENTIFICATION

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

C. DETAILS OF INVESTIGATION

1. Purpose

This investigation was performed to evaluate the pilot for any medical conditions, the use of any medications/illicit drugs, and the presence of any toxins.

2. Methods

The FAA blue ribbon medical file, toxicology results, and the investigator's reports were reviewed.

FAA Medical File

According to the FAA files, the 23 year old male pilot received his first aviation medical certificate in 2010, without limitations. His second and most recent medical exam was dated April 7, 2015. He reported 1300 total flight hours but no medical conditions or medications to the FAA and received a first class medical certificate without limitations.

Included in the FAA medical file were records from the pilot's post accident medical care which documented a forehead laceration and nasal bone fractures as the pilot's injuries. The records indicated ondansetron was ordered during his medical care and he was discharged after receiving doses of oxycodone and robaxin (administered about 12:50 pm). No other medications were administered during his medical care.

Ondansetron is an anti-emetic medication available by injection or tablet.¹ Oxycodone is an opioid analgesic tablet available as a Schedule II controlled substance; it is commonly marketed in combination with acetaminophen with the name Percocet.² Robaxin (methocarbamol) is a muscle relaxant.³ Both of the latter carry warnings about driving and operating machinery.

Toxicology

Toxicology testing performed by the FAA's Bioaeronautical Research Laboratory on blood and urine obtained during the pilot's initial post accident medical care identified alprazolam in urine and blood (0.123 ug/ml) as well as its metabolite, alpha-hydroxyalprazolam in urine. Lorazepam was identified in urine and blood (0.03 ug/ml). In addition, sertraline and its metabolite desmethylsertraline were identified in urine and blood and ondansetron was found in urine.

Alprazolam is a benzodiazepine medication available as a Schedule IV controlled substance used to treat anxiety disorder and panic disorder. It is commonly marketed with the name Xanax. The drug information includes this instruction to providers: "Because of its CNS depressant effects, patients receiving alprazolam tablets should be cautioned against engaging in hazardous occupations or activities requiring complete mental alertness such as operating machinery or driving a motor vehicle."⁴ The usual therapeutic dose range is between 0.0060 and 0.0200 ug/ml; levels above 0.100 are considered toxic.⁵ With regular use, patients may develop

¹ National Institutes of Health. US National Library of Medicine. DailyMed. Ondansetron. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=e0050959-c14c-41b6-9a92-fadc5f6feff3> Accessed 1/18/2017.

² National Institutes of Health. US National Library of Medicine. DailyMed. Oxycodone and acetaminophen. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=70910da5-d785-38ad-7a91-1dce7d461e9a> Accessed 1/18/2017.

³ National Institutes of Health. US National Library of Medicine. DailyMed. Robaxin. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=0db1e8dd-b4fa-491b-a529-0fb939710759> Accessed 1/18/2017.

⁴ National Institutes of Health. US National Library of Medicine. DailyMed. Alprazolam. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=2238e083-08f2-0aa8-59b7-16b6d68dbd48> Accessed 1/17/2017.

⁵ Federal Aviation Administration. CAMI Toxicology Drug Information. Alprazolam. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=5> Accessed 1/17/2017.

tolerance to the effects of benzodiazepines and require increasing doses to achieve the same results.

Lorazepam is another benzodiazepine medication available as a Schedule IV controlled substance, indicated for the treatment of anxiety disorders or for the short-term relief of the symptoms of anxiety or anxiety associated with depressive symptoms. It is commonly marketed with the name Ativan. Lorazepam carries specific warnings including, “Use of benzodiazepines, including lorazepam, both used alone and in combination with other CNS depressants, may lead to potentially fatal respiratory depression. Use of benzodiazepines, including lorazepam, may lead to physical and psychological dependence. As with all patients on CNS-depressant drugs, patients receiving lorazepam should be warned not to operate dangerous machinery or motor vehicles and that their tolerance for alcohol and other CNS depressants will be diminished.”⁶ The usual therapeutic range is between 0.1600 and 0.2700 ug/ml.⁷

Sertraline is an antidepressant marketed with the name Zoloft.⁸

D. SUMMARY OF MEDICAL FINDINGS

The 23 year old male pilot had reported no chronic medical conditions and no medication use to the FAA. Post accident toxicology identified alprazolam in urine and blood (0.123 ug/ml) as well as its metabolite, alpha-hydroxyalprazolam in urine. Lorazepam was identified in urine and blood (0.03 ug/ml). In addition, sertraline and its metabolite desmethylsertraline were identified in urine and blood and ondansetron was found in urine.

⁶ National Institutes of Health. US National Library of Medicine. DailyMed. Lorazepam. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=ad2a0633-50fe-4180-b743-c1e49fc110c6> Accessed 1/17/2017.

⁷ Federal Aviation Administration. CAMI Toxicology Drug Information. Lorazepam. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=83> Accessed 1/17/2017.

⁸ National Institutes of Health. US National Library of Medicine. DailyMed. Sertraline. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=f9641190-9151-4f7e-89ff-1e7a818c30ee> Accessed 1/18/2017.