SERVED: August 25, 2000

NTSB Order No. EA-4854

UNITED STATES OF AMERICA
NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD
at its office in Washington, D.C.
on the 24th day of August, 2000

Petition of MICHAEL JOHN PEET, For a Review of the Denial by the Administrator of the Federal Aviation Administration of the Issuance of an Airman Medical Certificate.	)	Docket SM-4290

OPINION AND ORDER

Petitioner, by and through his attorney, appeals the written initial decision and order of Administrative Law Judge William R. Mullins, issued on February 24, 1999, after the conclusion of an evidentiary hearing held on July 23 and 24, 1998.[1] By that

[1] A copy of the initial decision and order is attached. Petitioner filed a timely Notice of Appeal on March 4, 1999, and submitted a brief in support of this appeal on March 24, 1999. The Administrator filed a reply brief opposing petitioner's appeal on May 7, 1999.

decision, the law judge affirmed the Administrator's denial of a first-class airman medical certificate on the grounds that petitioner failed to establish by a preponderance of the evidence a satisfactory medical explanation for his loss of consciousness experienced on March 8, 1997. The law judge held that petitioner was disqualified from holding an airman medical certificate under sections 67.109(a)(2), (3), and (b); 67.209(a)(2), (3), and (b); and 67.309(a)(2), (3), and (b).[2]

---

[2] Sections 67.109, 67.209, and 67.309, codified at 14 C.F.R. Part 67, are identical provisions applying to first, second, and third-class airman medical certificates. Section 67.109 provides in pertinent part:

> **67.109 Neurologic**
> Neurologic standards for a first-class airman medical certificate are:
>
> (a) No established medical history or clinical diagnosis of any of the following:
>
> * * *
>
> (2) A disturbance of consciousness without satisfactory medical explanation of the cause; or
>
> (3) A transient loss of control of nervous system function(s) without satisfactory medical explanation of the cause.
>
> (b) No other seizure disorder, disturbance of consciousness, or neurologic condition that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds-
> (1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
> (2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

Petitioner is a Captain with United Airlines and has been a pilot with the company for the past 12 years. (Transcript (Tr.) 123.) Around 8:00 p.m. on March 7, 1997, upon returning to work from a three-week vacation, petitioner and his co-pilot, Michael Maloney, flew a commercial passenger aircraft from Denver, Colorado, to Chicago, Illinois, arriving around 5:00 a.m. on March 8, 1997.[3] (Tr. 126–128, 162-163.) Petitioner testified that upon arriving in Chicago, he slept for only a half-hour because he drank so much coffee and did not eat much during the all-night flight to Chicago.[4] (Tr. 127-128.) Petitioner met Mr. Maloney between 10:00 and 10:30 a.m. and had breakfast, which consisted of several cups of coffee with lots of sugar and a sweet roll. (Tr. 129-130, 164.)

After breakfast, around noon, petitioner and his co-pilot went to a bookstore. (Tr. 165.) Petitioner testified that, while in the bookstore, he did not feel well: he felt lightheaded, dizzy, sweaty, and his vision was blurred. *Id*. Petitioner further testified that the symptoms persisted as he left the bookstore. (Tr. 131.) At the hearing, petitioner

(..continued)

[3] Petitioner had an hour layover in San Diego, California, prior to completing his journey. (Tr. 127.)

[4] Petitioner had been awake for nearly 24 hours. During the flight to Chicago, petitioner only took a bite out of his crew meal and sent the remaining meal back to the steward(ess). (Tr. 126, 128.)

testified that he could tell something was wrong as he stepped out onto the street, turned and noticed the L-train running overhead, and fell backwards, hitting his head on the ground. *Id*.

Petitioner's co-pilot testified that he observed petitioner standing in the middle of the street with his back turned towards him looking up toward the L-train passing overhead. (Tr. 167.) Mr. Maloney further testified that as petitioner turned to face him, he noticed that petitioner's face was clenched and his eyes were wide open, and then petitioner's upper body began to convulse and his legs became very rigid, causing him to fall and hit his head on the ground. (Tr. 168-169.) Mr. Maloney and an unidentified pedestrian ran to petitioner, picked him up, and carried him over to the sidewalk. (Tr. 169.) According to Mr. Maloney, petitioner's body continued to convulse, his face was purplish-blue, his eyes were rolled back in his head, his mouth was foaming, and he was bleeding. (Tr. 170-174.) Mr. Maloney testified that petitioner appeared unconscious. (Tr. 175.) After paramedics were called and arrived at the scene around 1:15 p.m., petitioner was taken to the emergency room of Northwestern Memorial Hospital in Chicago, Illinois, where he was diagnosed with a syncopal episode induced by hypoglycemia.[5] (Petitioner

[5] The term syncopal episode simply means fainting, i.e., a temporary global reduction in blood flow to the brain that results in a loss of consciousness. (Tr. 244.) The term hypoglycemia refers to blood sugar measured lower than the normal

Exhibit (Pet. Ex.) 2; Administrator Exhibit (Adm. Ex.) 1, at 47 and 53.)

On March 11, 1998, after review of petitioner's medical file, the Federal Air Surgeon for the Federal Aviation Administration (FAA) denied petitioner's application for issuance of a first-class airman medical certificate on the grounds that, on March 8, 1997, petitioner suffered a generalized tonic-clonic seizure that rendered him ineligible for medical certification under FAR.[6] (Adm. Ex. 1, at 9-11.) In his brief filed in support of this appeal, petitioner argues that the law judge erred in finding that he failed to sustain his burden of proof. Petitioner claims that there is substantial and reliable evidence in the record establishing that on March 8, 1997, he suffered

(..continued)
range. (Tr. 336.) The normal blood sugar range is 90 milligrams percent. (Tr. 339.) The paramedics' pre-hospital report indicates that petitioner's blood sugar measured below 50 milligrams percent following the episode in which he lost consciousness. A blood sugar measured at 50 milligrams percent is evidence of hypoglycemia. A solution made of 50 percent concentrated glucose and normal saline was administered intravenously to raise petitioner's blood sugar. (Adm. Ex. 1, at 47.)

[6] Petitioner's original application for a first-class airman medical certificate was denied on May 30, 1997. (Adm. Ex. 1, at 24.) On June 12, 1997, petitioner filed a request for reconsideration with the Federal Air Surgeon. (Adm. Ex. 1, at 18.) In a letter dated July 11, 1997, the Manager of the Aeromedical Certification Division instructed petitioner to submit test results from a current glucose tolerance test and current tilt-table test along with a medical certification application to the FAA after expiration of a six-month waiting period. (Adm. Ex. 1, at 16.) This appeal stems from the FAA's March 11, 1998 denial of petitioner's airman medical certificate.

either a syncopal episode or a provoked symptomatic seizure,[7] due to reactive hypoglycemia aggravated by lack of sleep and other factors.[8] The Administrator filed a lengthy reply brief opposing petitioner's appeal and urging the Board to uphold the law judge's initial decision. After careful review of the briefs, pleadings, and the entire record, petitioner's appeal is denied.

Petitioner's witness, Dr. Mark Rosenbloom, the attending emergency room physician at Northwestern Memorial Hospital who examined and treated petitioner immediately following the event in which petitioner experienced a loss of consciousness,[9] testified that he believes petitioner experienced a syncopal episode resulting from hypoglycemia, lack of sleep, too much

---

[7] A seizure is an abnormal and excessive discharge of nerve cells in the brain. (Tr. 237.) Seizures are classified as: idiopathic seizures (cause unknown) and symptomatic seizures (caused by some type of neurologic insult resulting from, among other things, a blocked blood vessel, injury to the brain, lack of oxygen, etc.). (Tr. 83-85, 238-239.)

[8] Hypoglycemia is broadly categorized as fasting hypoglycemia or reactive (postprandial) hypoglycemia. (Tr. 336.) Fasting hypoglycemia is low blood sugar associated with no food intake for six to eight hours. Id. Reactive hypoglycemia is a condition where the blood sugar falls within three to five hours after ingestion of a carbohydrate load. (Tr. 336-337.)

[9] Dr. Rosenbloom is licensed to practice medicine in the State of Illinois and is certified by the American College of Emergency Physicians. (Tr. 7; Pet. Ex. 1.) On a daily basis, he sees two to four people who have experienced a loss of consciousness and has to determine whether it was syncopal or seizure related. (Tr. 14.) Moreover, he attends two to three medical conferences a year and has authored a textbook in which he researched and wrote a section on seizure. (Tr. 25.)

caffeine, and insufficient food. (Tr. 15, 22-23.)[10] The doctor explained, during the hearing, that muscle clenching and tonic-clonic movements that might be misinterpreted as seizure-like activity might accompany a hypoglycemic episode.[11] (Tr. 42.)

Dr. John E. Myers, a board-certified neurologist, also testified on behalf of petitioner and offered a slightly different medical opinion regarding petitioner's loss of consciousness on March 8, 1997.[12] (Tr. 64-65.) After a review of petitioner's medical history, an interview with petitioner's co-pilot, and a thorough physical examination, Dr. Myers diagnosed petitioner with a symptomatic seizure resulting from reactive hypoglycemia that may be prevented from reoccurring by maintaining a proper diet.[13] (Tr. 66-88; Pet. Ex. 8.) During

---

[10] This diagnosis was based on consideration of many factors, including: 1) there was no incidence of tongue biting or urination in this case, which is commonly associated with seizure; 2) petitioner did not experience a post-seizure state known as acidosis, which is often represented by abnormal vital signs that include an elevated heart and respiratory rate and low bicarb level; 3) petitioner's physical examination did not reveal any abnormalities; 4) petitioner reported feelings of weakness and lightheadedness prior to the episode, which is consistent with hypoglycemia; and 5) the paramedics reported a glucose level below 50, which is an abnormally low blood sugar level evidencing hypoglycemia. (Tr. 15-17, 22-24, 42, 45-46.)

[11] Tonic-clonic movements refer to the stiffening and jerking activity associated with seizure. (Tr. 243, 250.)

[12] Dr. Myers has over 15 years of experience as a neurologist. He is a member of the American Academy of Neurology and is affiliated with a number of state and local medical organizations. (Tr. 62-63; Pet. Ex. 4.)

[13] Dr. Myers initially diagnosed petitioner with syncope resulting from hypoglycemia. However, after receiving an

the hearing, Dr. Myers acknowledged that seizure caused by hypoglycemia is a rare diagnosis. (Tr. 89, 93.) However, he testified that during his past 15 years in medical practice, he has diagnosed it in two or three patients. (Tr. 93.) He further testified that medical literature recognizes that hypoglycemia may cause seizure. (Tr. 92.)

The Administrator's medical experts, Dr. John D. Hastings[14] and Dr. James N. Heins,[15] both agree that seizures may occur in people with profound degrees of hypoglycemia and in diabetics with an overdose of insulin. (Tr. 259, 262-263, 288, 340, 374.) However, they both testified that reactive hypoglycemia can not cause an acute symptomatic seizure. (Tr. 259, 261-265, 347, 350-351.) Dr. Heins explained that reactive hypoglycemia is a benign

(..continued)
abnormally low glucose tolerance test from petitioner, interviewing petitioner's co-pilot, and consultation with an endocrinologist, Dr. Myers modified the diagnosis. (Tr. 71-83; Pet. Ex. 6, 7, and 8; Adm. Ex. 1, at 91-94, 136-137, and 139.)

[14] Dr. Hastings is a board-certified neurologist, who currently holds a license to practice medicine in Oklahoma and Missouri. He has been an aviation medical examiner since 1976 and has taught about the neurologic aspects of aviation medicine for the FAA since 1978. In addition, he has served as a consultant for the Federal Air Surgeon and has written an article titled "Convulsive Syncope in the Aviation Environment." (Tr. 231—235; Adm. Ex. A-2.)

[15] Dr. Heins is a board-certified endocrinologist with approximately 24 years of experience. He is also a Professor of Clinical Medicine at Washington University School of Medicine, a Consultant of Endocrinology at Barnes Jewish Hospital in St. Louis, Missouri, a Director of the Endocrinology Division at Missouri Baptist Medical Center in St. Louis, Missouri; and he teaches medicine in various hospitals. (Tr. 330-334; Adm. Ex. 6.)

condition that involves the delayed secretion of insulin in response to a carbohydrate load. Dr. Heins further explained that once a patient's blood sugar goes down, adrenaline and other hormones are secreted and the blood sugar automatically returns to normal levels long before it gets low enough for a long enough duration to produce a seizure. (Tr. 338-339; 349-350, 353-354.)[16] Both doctors testified that they have never seen or heard that reactive hypoglycemia causes seizures, and Dr. Hastings further testified that medical literature does not support the theory that reactive hypoglycemia causes seizures. (Tr. 259, 261-265, 320, 347, 350-351.)

Dr. Hastings and Dr. Heins both believe that reactive hypoglycemia was not a factor that induced petitioner's loss of consciousness on March 8, 1997. (Tr. 265, 341, 355.) Dr. Heins explained that reactive hypoglycemia occurs within three to five hours after eating a meal, and petitioner's episode occurred approximately one to two hours after he ate. (Tr. 336-337, 343.) Thus, both doctors believe that petitioner's loss of consciousness occurred too soon after the meal to be attributed to reactive hypoglycemia. (Tr. 265, 342-343, 346.)

Dr. Heins further explained that the coffee with sugar and sweet roll that petitioner ingested kept his blood sugar up, and

[16] Dr. Heins testified that at blood sugar measured at 40 milligrams percent, a patient generally loses consciousness, between 30 and 35 milligrams percent a patient will convulse, and at about 20 milligrams percent they will die. (Tr. 340, 345.)

believes that the blood sugar test performed by the paramedics was flawed. (Tr. 342-344.) According to Dr. Heins, the blood sugar test used by the paramedics is calibrated to give an accurate reading on arterialized capillary blood, and the paramedics took the blood sample from petitioner's scalp wound or an IV, which is venous blood. (Tr. 344, 358-359.) Dr. Heins further explained that venous blood carries blood sugar ten points higher than capillary blood. He thus believes that petitioner's true blood sugar at the time the paramedics administered the blood sugar test was approximately 60 or below, which is insufficiently low to produce a loss of consciousness. (Tr. 345.)

In these proceedings, the burden of proof is on petitioner to establish his medical qualifications by a preponderance of reliable, probative, and substantial evidence. Petition of Witter, NTSB Order No. EA-4500 at 3 (1996). Disqualification for medical certification follows any loss of consciousness for which no satisfactory medical cause is ascribed. Petition of Scarpuzza, 3 NTSB 256, 257 (1977). In weighing medical testimony, the Board reviews expert testimony and draws conclusions based on the quality of the medical opinion. This quality depends on the logic, objectivity, persuasiveness, and depth of the medical opinion. Petition of Ruhmann, NTSB Order No. EA-3710 at 11 (1992).

After careful review of the record in this case, we reject

petitioner's argument that reactive hypoglycemia was a factor that caused his loss of consciousness, and adopt the findings of the law judge. In upholding the Administrator's denial of medical certification, the law judge relied upon Mr. Maloney's description of petitioner's movements, which Dr. Hastings testified demonstrated a generalized tonic-clonic seizure. Absent a finding that the law judge's determinations are inherently incredible or inconsistent with the overwhelming weight of the evidence, the law judge's findings will not be disturbed. Petition of Witter, NTSB Order No. EA-4500, at 4 (1996).[17] We also find that the likelihood of petitioner's loss of consciousness being attributed to reactive hypoglycemia is speculative and remote, and is not adequately supported by the record. The record shows that the timing between petitioner's meal and loss of consciousness is too short to be attributed to reactive hypoglycemia. Moreover, the evidence suggests that the blood sugar test performed by the paramedics may have been flawed, and the record shows that petitioner's treating

[17] We reject petitioner's alternative argument that the law judge improperly considered unreliable testimony of a lay witness upon which no testifying physician relied. The record clearly shows that several physicians, including petitioner's witness, Dr. John A. Myers, considered statements of Mr. Michael Maloney, petitioner's co-pilot and sole eyewitness to the event, in determining whether petitioner suffered a syncopal episode (i.e., fainted) or a seizure. "It is patent that the diagnosing physician in a case involving a possible seizure is dependent upon the testimony of the eyewitnesses to the event to provide a description of its manifestations." Petition of Olsen, 6 NTSB 155, 158 (1988).

physicians based their diagnoses on incomplete and/or inaccurate information.[18]

ACCORDINGLY, IT IS ORDERED THAT:

1. Respondent's appeal is denied;[19] and

2. The initial decision of the law judge and the actions of the Administrator in denying petitioner any class of medical certificate are affirmed.

HALL, Chairman, HAMMERSCHMIDT, GOGLIA, BLACK, and CARMODY, Members of the Board, concurred in the above opinion and order.

[18] The record shows that in reaching his medical opinion that petitioner experienced a syncopal episode, Dr. Rosenbloom did not consider statements from Mr. Maloney, the sole eyewitness to the event. (Tr. 26.) The record also shows that Dr. Rosenbloom and Dr. Nancy A. Lee, an endocrinologist who conferred with Dr. Myers and upon whom he relies in reaching his medical opinion, were under a mistaken assumption that petitioner had not eaten for more than 12 hours and then ingested a large carbohydrate load. (Pet. Ex. 2 and 6; Tr. 22.)

[19] Because we believe the existing record provides an adequate basis for assessing petitioner's contentions on appeal, his request for oral argument is denied.