



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

August 31, 2021

Specialist's Report

OPERATIONAL / HUMAN PERFORMANCE

CEN20LA215

A. ACCIDENT

Operator: McNeely Charter Service, Inc
Location: Sioux Falls, South Dakota
Date: June 7, 2020
Time: 0426 central daylight time¹
Airplane: Mitsubishi MU-2B-60, Registration Number: N44MX, Serial #: 1526 S.A.

B. PARTICIPATING INVESTIGATORS

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C. SUMMARY

On June 7, 2020, about 0425 central daylight time, a Mitsubishi MU-2B airplane, N44MX, was destroyed when it was involved in an accident near Sioux Falls, South Dakota. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* (CFR) Part 135 cargo flight.

Preliminary radar data indicated that the airplane departed Joe Foss Field Airport, Sioux Falls, South Dakota (FSD) from runway 15 at 0426. According to video recordings captured from various facilities at FSD, the airplane appeared to have a normal takeoff roll. After rotation, a high pitch angle was established for initial climb out and the right wing began to dip. As the airplane climbed, the right wing continued to drop with the airplane rolling over to the right side. The airplane noses-over on the right side and continued in a nose down attitude and impacted the ground. Radar track data for the flight began when the airplane reached about 45 ft agl and was limited to 3 radar hits in 3 seconds until the airplane impacted.

¹ All times are central daylight time (CDT) based on a 24-hour clock, unless otherwise noted. Actual time of accident is approximate.

D. DETAILS OF THE INVESTIGATION

On June 16th, 2020, the NTSB operations and human performance investigators were assigned to assist in the investigation.

E. FACTUAL INFORMATION

1.0 History of Flight

The flight originated at Snohomish County Airport (Paine Field) (PAE), Everett, Washington, about 2115, and was originally destined for Huron Regional Airport (HON), Huron, South Dakota, for a fuel stop. Preliminary air traffic control information and weather data was consistent with the pilot diverting to FSD, due to weather at HON at the time of intended arrival. The flight landed at FSD at 0140. The final destination was Kokomo Municipal Airport (OKK), Kokomo, Indiana.

2.0 Flight Crew Information

2.1 The Pilot

The pilot, age 58, held a commercial pilot certificate with an airplane single engine land, multi-engine land, and instrument ratings and was type rated in the SA-227. A second-class airman medical certificate was issued on August 19, 2019 and contained limitations of “must wear corrective lenses.”

A review of McNeely Charter Service, Inc. (McNeely) personnel records² indicated that the pilot completed recurrent company training in the SA-226/227 on September 3, 2019. He completed an airman competency/proficiency check in accordance with 14 CFR 135.293, 135.297 and 135.299 on September 11, 2019 in the SA-227. The instrument proficiency check in accordance with 135.297 listed an expiration date of March 31, 2020.

The most recent competency check in accordance with 135.293 in the MU-2B was accomplished on March 23, 2019. His most recent MU-2 SFAR training was completed on March 16, 2020 with Howell Enterprises, Inc.

At the time of the accident, the pilot was operating under FAA exemption 18510³ as listed on operations specifications paragraph A005 which allowed two additional grace months for the completion of the training and qualification requirements of 14 CFR 135.293 for the MU-2B.

² See attachment 2: Pilot Training Records.

³ See attachment 3: FAA Exemption 18510.

2.1.1 The Pilot's Flight Times

The pilot's flight times⁴, based upon insurance paperwork supplied by McNeely dated October 01, 2019, were:

Total pilot flying time	22,000 hours
Total multi-engine	19,000 hours
Total turbo-prop	17,800 hours
Total MU-2	10,900 hours

McNeely supplied a document titled *McNeely Charter Flight and Rest Limitations Record* which contained information from February 3, 2020 until the day of the accident. On the entry dated February 3, 2020, it was written that in the previous quarter, the accident pilot had documented 298.0 total hours, in the current quarter, he had documented 50.1 total hours and in the current year, 2020, 50.1 total hours.

From January 1, 2020 until March 31, 2020, the document reflected 125.6 total flight hours. From April 1, 2020 until the time of the accident, the document listed 85.6 hours. The chief pilot stated in his interview that the original flight and duty records could not be located, so the records were recreated using flight manifests and aircraft and engine logs. He stipulated that without the original source document, it was not possible to determine actual duty or time in the office, only actual flight time.

2.1.2 Pilot Flight and Duty Times

McNeely operated without assigned duty/rest periods. According to 14 CFR 135.267(d), each crewmember must have had at least 10 consecutive hours of rest during the 24-hour period that preceded the planned completion time of the assignment.

The *Aircraft and Engine Log* was recovered in the debris field following the accident. Two entries were made on the form for June 5, 2020. The first entry was for a flight from West Memphis, Arkansas (AWM) to Scottsbluff, Nebraska (BFF). For this flight, an "out" time of 1552 was listed with an "in" time of 1754. The second entry was for a flight from BFF to PAE. For this flight an "out" time of 1926 was shown with an "in" time of 2321.

According to family members, on June 5th, the accident pilot left home to go to his office about 0800 where he remained until the flight to PAE.

When the time in office as stated by family is added to the flight time, after accounting for about 30 minutes of travel from home to the office, the pilot would have been on duty from 0830 until 2330 Pacific daylight time or 0130 per the flight and duty records provided by McNeely. This equates to a duty day of about 17 hours.

On June 6th, according to cell phone records, the first company email was sent from the pilot at 0906, followed by a text message conversation with the company president from 1026 until

⁴ See attachment 4: Flight and Duty Records.

1044. Text messages, phone calls and emails continued until about 1245 and then began again about 2023.

According to data downloaded from the Garmin GTN 750, the accident pilot departed PAE about 2116 Pacific daylight time. According to the freight forwarder, it was an estimated 2-hour flight from FSD to OKK. Prior to departing PAE, the accident pilot told the flight follower that he estimated he would land in HON about 0120 for fuel before proceeding to OKK.

With the pilot beginning work for the company (duty) about 0906, at the time of departure from FSD (0426), he was already at 19 hours and 20 minutes of duty and at his estimated arrival time into OKK he would be around 20 hours and 54 minutes of duty.

2.1.3 Pilot 72-Hour History

The PIC's pre-accident activities were determined from interviews and cellphone records. A 72-hour history was provided by the wife and son of the PIC. His normal routine was to wake up between 0500 and 0600, and would be in bed between 2000 and 2100. His wife said he would normally take a nap for 2-3 hours if he was tired or had been flying.

On June 4, he the accident pilot had a flight at 1400 to 2000 and went back home at 2040 to eat dinner. He went to bed at approximately 2130. The PIC's wife and son did not report any naps taken by the PIC during the day. The PIC's cell phone activity⁵ began at 0839 and ended at 1807. He had extended breaks⁶ between 1358 and 1800. Text messaging⁷ began at 0018 and ended at 1306. He had extended breaks from 0018 and 0752. Email activity⁸ started at 0018 and ended at 1306.

On June 5, he woke up at approximately 0700 and went to the office around 0800. He left the office to take a flight at approximately 1600 and landed at 2300 and got a hotel. The PIC's wife and son did not report any naps taken by the PIC, and there was no timeframe provided regarding when he went to bed. The PIC's cell phone activity began at 0848 and ended at 2043. He had extended breaks between 1303 to 1451; 1925 to 2043. Text messaging began at 0800 and ended at 2245. He had extended breaks from 1154 and 1403. Email activity started at 0810 and ended at 2245.

On June 6, he stayed in the hotel and left around 2100 for a flight. The PIC's wife and son did not report any time of wake, naps, or sleep for PIC. The PIC's cell phone activity began at 0031 and ended at 2110. He had extended breaks from 0031 to 1102; 1102 to 1232; 1232 to 1815. Text messaging began at 0905 and ended at 2105. He had extended breaks in activity from 0926 to 1026; 1044 to 1212; 1243 to 1640; 1644 to 1745; 1745 to 2023. Email activity started at 0905 and ended at 2105.

⁵ Incoming and outgoing calls.

⁶ Breaks in cell phone activity for 1 hour or more.

⁷ Incoming and outgoing texts.

⁸ Incoming and outgoing emails.

2.1.4 The Pilot's Background

A review of the pilot's FAA airman certification record revealed that on October 11, 1990, the pilot was served with an emergency revocation of all airman certificates.⁹ At the same time, the company for which he was director of operations, Cape Central Airways, Inc, also had their operating certificate revoked as a result of the actions of the pilot. In the *Order of Emergency Revocation*, the FAA listed eight regulations for which the pilot was noncompliant.

After waiting the required one year following a revocation, the pilot retested and earned his commercial pilot certificate with airplane multi-engine land and instrument ratings on October 16, 1991. On October 18, 1991, he passed an airman examination to add an airplane single engine land rating to the commercial certificate.

2.1.5 Pilot's Autopsy and Toxicological Testing

An autopsy of the pilot was performed by the Sanford Health Pathology Clinic, Sioux Falls, South Dakota. The cause of death was determined to be multiple blunt force injuries.

Post-accident drug and alcohol testing conducted on specimens taken from the pilot were negative for alcohol and illicit drugs.

3.0 The Airplane

Manufacturer's Serial Number (MSN): 1526 S.A.

The MU-2 is a high performance, twin turbo-prop, high wing airplane powered by two Honeywell TPE-331 series turbine engines flat rated to 715 shaft horsepower, each driving a Hartzell four bladed, constant speed, full feather, reversible pitch, 98 inch diameter propeller.

The airplane was equipped with spoilers for lateral control and extend almost full span outboard of the engines. The flaps extend almost full span and are double slotted.

Trim controls existed for aileron, rudder and elevator trim surfaces and are cable and chain operated through actuators mounted beneath the trim surface. The actuators had irreversible jackscrews which can be measured post-accident for reliable trim positions at the time of the accident. Figure 1 shows the location of the trim controls with a red circle as located on the center pedestal.

⁹ See attachment 5: Airman Revocation Letter.

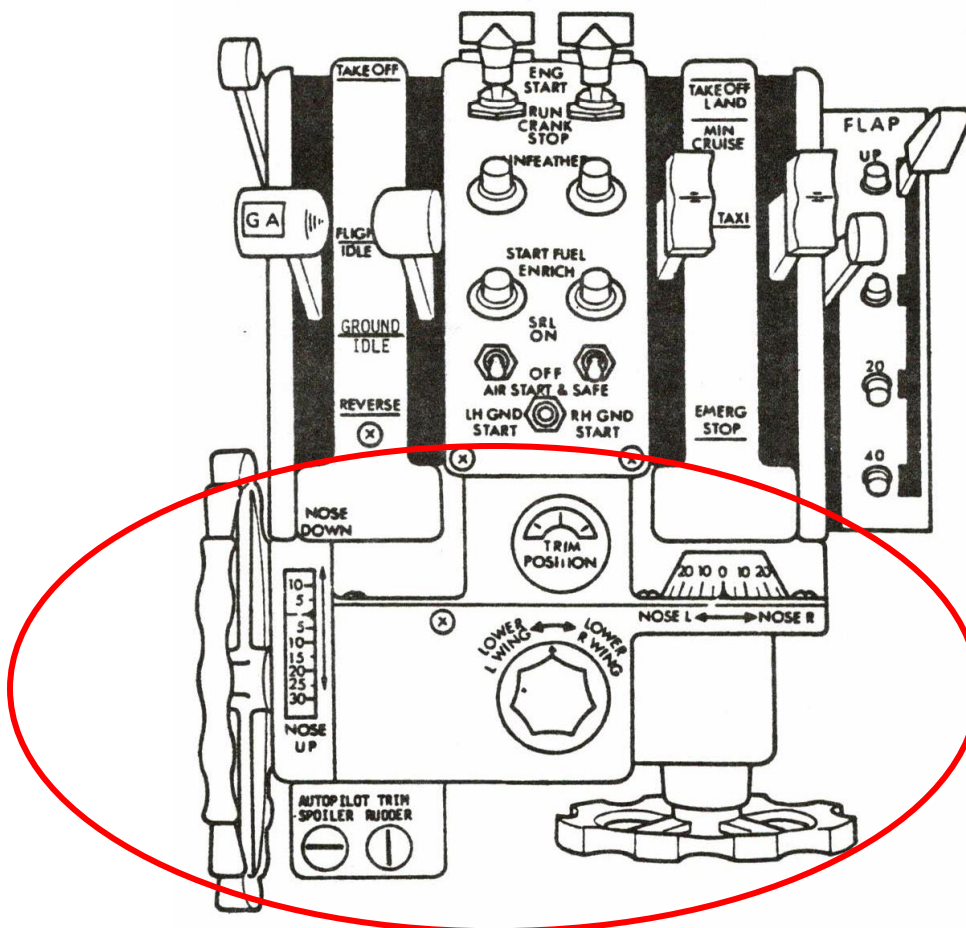


Figure 1: Center Pedestal of the MU-2.

3.1 Weight and Balance

No record of a completed weight and balance calculation was located with the aircraft wreckage. Section 3.14.3 of the General Operations Manual (GOM) under *Aircraft Load Manifest*, it stated that if a revenue flight is conducted in a multiengine aircraft, the Captain will record the results of weight and balance computations on the McNeely Charter Service, Inc. Aircraft Load Manifest in duplicate. The Captain will carry a copy of this completed Aircraft Load Manifest in the aircraft to its destination. McNeely Charter Service, Inc. will retain a copy of this completed Aircraft Load Manifest on file at its principal operations base for a minimum of 30 days after the completion of the flight.

Title 14 CFR 135.63(c) required operators of multi-engine airplanes prepare and retain load manifests.

The airplane had been loaded with about 300lbs of cargo, as 30 boxes weighing about 10lbs each. The exact distribution of the weight could not be determined.

4.0 Company Overview

McNeely Charter Service, Inc. is a 14 CFR Part 135 air carrier that holds on-demand specifications.¹⁰ The air carrier is authorized to conduct business exclusively under the business name “McNeely Charter Services, Inc.” The company headquarters is located in West Memphis, Arkansas. At the time of the accident, the company was operating 8 airplanes, of which 2 were Mitsubishi MU-2s, and employed about 12 to 14 pilots and three flight followers.

4.1 Operations Management

Section 2 of the McNeely GOM described the company’s organization, and the duties and responsibilities of managers. Absent from this section was an organizational chart, however, each position listed the position it was responsible to, such as the director of operations (DO) was responsible to the company president and the chief pilot was responsible to the director of operations. This section also listed an assistant chief pilot position that would have been responsible to the chief pilot, and flight followers were responsible to the director of operations or his designee. The director of maintenance was responsible to the director of operations.

The GOM identified the DO, chief pilot, and director of maintenance as individuals authorized to exercise operational control.

4.1.1 Director of Operations

The DO was the pilot-in-command of the accident airplane. According to an interview with the company president, he purchased the company from the accident pilot in 2007. The accident pilot remained involved as the DO in a salaried position. He was the only company pilot authorized to operate the two Mitsubishi MU-2 aircraft on the operations specifications.

Section 2 of the GOM stated that the DO was responsible for management of the FAA issued Air Carrier Certificate as well as the “administrative head for McNeely Charter Service, Inc. flight department, maintenance department and other operations personnel” and exercised operational control.

The GOM listed 26 duties and responsibilities for the DO position, one of which was the responsibility for the oversight of policies and procedures to ensure that the company operated within the limitations of the federal regulations, operations specifications, GOM and guidance documents. It stated that he may delegate any of the duties to “another qualified individual,” but would retain total responsibility for them. It did not elaborate or define what constitutes a “qualified individual.”

The chief pilot stated in an interview that the DO was involved in day-to-day operations.¹¹ He stated “[he] always wanted to be, and he always took that position. He was in the loop on everything that going on with regard to flights and maintenance and pilots. He was kind of the go-to guy, so he carried a lot of responsibility.” Later in the interview, he stated “[s]o he went

¹⁰ See attachment 6: Operations Specification A001.

¹¹ See attachment 1: Interviews and Statements.

between those two things. Primarily, being DO, overseeing the operations and oversight over all that. And then, when he needed to, he flew.”

4.1.2 Chief Pilot

The chief pilot began flying for McNeely in 1994 when it was purchased by the accident pilot. After leaving the company for a few years in the mid 2000’s, he returned in 2008 or 2009. In 2008 he became the chief pilot, a position he held until August 2020.

Section 2 of the GOM listed 15 duties and responsibilities for the chief pilot position, one of which was to ensure flight and duty time limits for flight crew was adhered to at all times in accordance with federal regulations. It stated that the chief pilot may delegate duties to “another qualified individual,” but would retain total responsibility for them. It did not elaborate or define what constitutes a “qualified individual.”

In an interview, when asked to describe the division of duties between he and the DO, he stated that the DO was very involved in all aspects of the operation, to include manual review and communication and scheduling of the pilots. He was also involved with the day-to-day operations such as flights, maintenance and pilots.

4.1.3 Flight Follower

The flight follower on duty at the time of the accident had been employed by the company for 25 years. She referred to her position as a “dispatcher” although she stated that she was not an FAA certificated dispatcher. She stated that she was trained for her position by the accident pilot when she was first hired and underwent training for about 6 months before being allowed to do the job unsupervised. She stated that there is no recurrent training for her position.

When asked to describe her job, she stated that it was mainly “just clerical, working the phones, dispatching...calling the pilots, setting up fuel and whatever else might need to be done.”

The GOM listed the following four responsibilities for the flight follower:

1. The flight follower will report to the DO or his designee of any operational problems caused by cancellations, delays, diversions, and mechanical interruptions.
2. Each flight follower on duty will remain on duty until each flight released by him has terminated or until properly relieved by another flight follower.
3. A flight follower will check with the DO or captain, as required, prior to releasing any flight that the flight crew is within their legal rest, duty and flight time limitations.
4. The flight follower is responsible for flight following of each flight within their jurisdiction.

The flight follower accident stated that once a trip was booked, she would call the pilots. She would give them the routing, the time they need to pick up the freight, what it was, the weight and there that would be picking it up and dropping it off. Additionally, the flight followers would arrange for fuel, but the crews would determine the amount.

When asked about flight locating, she stated that they used FlightAware.com and could refer to that site if there was a question about the location of an aircraft.

Normally her hours would be from 1300 until 1800, four days per week, and every third weekend. When working weekends, she would “have the phones” from 0800 Saturday morning until 0800 Monday morning. She compared the functions with being on call. She stated that when the airplane was in the air, she slept and would “either set an alarm or wait for an inbound call.” In the case of the accident flight, she was asleep when the aircraft had landed in Sioux Falls and was awoken by Active Aero looking for the flight. It was not until she called Huron (the intended destination) that she was told the flight had diverted to Sioux Falls. After speaking with the accident pilot, she received a call from the fuel servicer informing her that the airplane had taxied out. She then went back to bed and slept until she received a phone call from someone in Sioux Falls about the accident.

5.0 Company Operational Control Procedures

5.1 FAA Guidance for Inspectors for Operational Control

5.1.1 Two-Tiered Operational Control Concept

14 CFR 135.77 Responsibility for operational control states:

Each certificate holder is responsible for operational control and shall list, in the manual required by §135.21, the name and title of each person authorized by it to exercise operational control.

FAA Order 8900.1, Volume 3, Chapter 25, Section 5, 3-2029, G, states, in part:

The first tier is the assignment of flightcrew member(s) and aircraft for revenue service under the operating certificate. The assignment of crew and release of aircraft to revenue service is the responsibility of the certificate holder, and must be made by the management of the certificate holder or management delegates. In order to be delegated the authority to make these decisions, the management delegates must be trained, found competent, and designated by the certificate holder, be listed in the GOM (or in OpSpec A006, A039 or A040, if applicable), and be under management supervision. Management supervision means, for example, that the certificate holder tracks the actions of the management delegate or employee, samples the work of that employee (reviews a sample of the decisions made), and has the ability to enforce the certificate holder's standards through corrective actions such as retraining, requalification, or disciplinary actions such as disqualification, demotion, suspension, or termination. Because the certificate holder is responsible for the conduct of its employees or agents, it must have the ability to monitor and control their performance.

The second tier of operational control is more tactical. This involves the decisions made by personnel (such as the PIC) in the day-to-day conduct of operations. This may include the initiation of flights upon the PIC receiving a request from the customer directly (often the case in on-demand operations being conducted under a dedicated service contract,

such as offshore operations or emergency medical service (EMS)). This is acceptable if the PIC is authorized by the certificate holder to make those decisions on behalf of the certificate holder. To do so would require that the PIC be trained, found competent by the certificate holder, designated, be listed in the GOM (or in OpSpec A006, A039, or A040, if applicable), and be under management supervision. If maintaining a list of these personnel in the GOM is too cumbersome, a list of these personnel may be maintained at the air carrier's principal base of operations and referenced in the GOM. The method of maintaining and distributing this list to all affected parties must be described in OpSpec A008 or in the GOM.

The GOM (or other appropriate documentation) must contain guidance which describes the certificate holder's operational control system. The training program must provide the certificate holder's personnel with the knowledge and skills required to ensure that the operational control system is effective.

The GOM did not list anyone by name as having operational control other than the DO, chief pilot and director of maintenance. It was specifically stated that the assistant chief pilot was not authorized to exercise operational control. Section 3.2 of the GOM however did contain the statement "The persons delegated to exercise active operational control are termed Flight Followers." The name of these people were not contained in the GOM or OpSpec A008 as required by regulation.

When the flight follower on duty at the time of the accident was interviewed, she was asked if flight followers were delegated any operational control. She stated that she was unsure what was meant by that term. She stated that once a trip was booked, they would refer to the DO or company president on which crew and airplane to assign to the trip. When compared to the language from FAA Order 8900.1, as stated above, the assignment of crew and release of aircraft is considered tier 1 operational control, however, the company president is not listed in the GOM or OpSpec A008 as being authorized to exercise operational control.

When asked about the conduct of operational control while the DO was flying, the chief pilot stated that it was very unusual for him to be out of communication. Even when flying, he could be reached through relays with ATC or an FBO. It was rare for him to be unreachable, but when it did occur, the chief pilot and director of maintenance were always available.

6.0 Crewmember Rest

As previously mentioned, 14 CFR 135.267(d) states that each crewmember must have had at least 10 consecutive hours of rest during the 24-hour period that preceded the planned completion time of the assignment.

After initial interviews of the chief pilot and line pilots, a follow-up email was sent to the chief pilot to seek additional information:

1. “When a pilot goes on call on day one at say 0800 and gets a call about a flight at 2100, usually, when does that call come in? Meaning, is it a last minute thing or does it normally happen earlier in the day?”
2. When a pilot is called for a trip that happens later in the day/night, are they specifically put on rest or told that they are now on rest until that time?
3. Are they still expected to answer the phone throughout the day up until their flight?”

In a telephone conversation with the chief pilot, he stated that the concern was with the use of the term “on-call.” He said that at McNeely, pilots were never on call and were actually “always on rest.” He stated that they did not assign rest periods and they were allowed to call a pilot one time while on rest without it affecting the rest period. Also, he stated that pilots were not required to answer the phone or accept a trip, so therefore there is no expectation of a flight assignment. If a pilot did answer, they were still on rest until they showed up to the airport for the flight. Once the flight was complete, they were then back on rest. In a follow-up email, he stated that with regards to question #2, the pilots were aware they were in rest and they were not still expected to answer the phone throughout the day up until their flight. In his original interview, when asked how many times a pilot could deny a trip with no repercussions, he replied “I don’t know that where’s been any—there’s never been repercussions for it...you have to operate that way. You can’t penalize somebody for saying...they can’t meet the physiological requirements of the flight.”

6.1 Legal Interpretations

In 2016, the FAA published a legal interpretation of the rest requirements provided in 14 CFR 135.267(b) and (d).¹² The FAA’s interpretation stated:

“Section 135.267(b) provides that a one-pilot crew, not in a regularly assigned duty period, may not exceed 8 hours of flight time during any 24 consecutive hours. Each flight-time assignment must provide for at least 10 consecutive hours of rest during the 24-hour period that precedes the planned completion time of the assignment. In addition, under the “moving 24 consecutive hour” limitation of § 135.267(b), operators may use a duty or on-call schedule that requires pilots to respond and report for duty at varying times from day to day. Although § 135.267 does not contain an explicit duty time limitation, crewmember schedules must fulfill the rest requirements of § 135.267(d). The

¹² See attachment 7: FAA Legal Interpretation Kleiner.

FAA has consistently interpreted the term “duty” for purposes of § 135.267 to mean actual work for an air carrier or present responsibility to work should the occasion arise. Legal Interpretation to Mr. David Bodlak from Donald P. Byrne, Chief Counsel, Regulations and Enforcement Division (Oct. 28, 1991).

Regarding rest, a pilot’s rest for purposes of § 135.267 must be (1) continuous, (2) determined prospectively (i.e., known in advance), and (3) free from all restraint by the certificate holder, including freedom from work or freedom from present responsibility from work should the occasion arise. The hypothetical scenario you present for consideration does not clarify where the pilot’s rest would be determined in advance; the scenario only states the pilot may be considered for assignments at various times. Therefore based on the scenario you posit, the FAA cannot determine whether the rest is determined prospectively, or known in advance.

For the purposes of § 135.267, the period of rest cannot consist of required on-call or standby status while awaiting a possible assignment of flight duty throughout the entire 24-hour day....A 24-hour oncall schedule cannot meet the rest requirements of 135.267(d) because, in such a situation, the rest period is not known in advance nor is it free from all restraint.”

Although the term “on-call” was used during pilot interviews, two pilots stated in their answers to the follow-up questions that “on-call” was the incorrect term, whereas “available” was more accurate. One of the two pilots said that being available meant they were “around, generally within a hour to an hour and a half of the airport” and could take a trip if they were asked. He further stated that it did not mean they were on duty, just that they were available and could be called.

The other pilot mentioned above clarified the term “available” by stating “I am not at the airport sitting around waiting for a call I am on my own time could be at home sleeping, walking the dogs even go to the store I just know that I have to be responsible and don’t stray too far from home.”

When asked if after notifying the company that he was “available” was there any expectation that he would take a trip once called, he replied “I can’t speak for the company and their expectations but I would assume that they are expecting me to take the trip as that’s how the company makes money, however I have all right to no accept a trip as I see fit without been penalized.”

The NTSB provided a summary of the statements to the FAA in a request for further interpretation of 14 CFR 135.267.¹³ In the response, the FAA stated that more information was needed and that the analysis in the Kleiner interpretation remained valid and provided enough information for investigators to gather additional evidence for respective investigations. They ended the response by stating “Further, we decline to comment on the information provided in your request, as the impetus for the inquiry is a matter that could lead to enforcement action.”

¹³ See attachment 8: FAA Legal Interpretation to NTSB.