

DCA22LA126

OPERATIONAL FACTORS/HUMAN PERFORMANCE

Attachment 12: Interview Summaries with Fatigue Risk Management Personnel

Interview Summary

Interviewee: Zachary Alan Klink (FedEx), Memphis, TN

Representative: none

Date, Time: 26 July 2022; interview start 0930

Location: 3131 Democrat Rd, Memphis TN, Conference Room C-202

Interviewer: Dujuan Sevillian, Ph.D. (NTSB), Sabrina Woods, Ph.D. (NTSB), Todd Johnson (FedEx), Matt Rigsby (FAA)

During the interview, Mr. Klink stated the following:

Manager for the last 11 years and came over to the fatigue group summer 2017. April 2020 was promoted to manager of flight operations projects and in charge of the Fatigue Risk management program. Originally hired on to FedEx in 2001. Worked as crew resources scheduling until 2017. Background was in aerospace administration, and he was a private pilot.

Base program on predictive, proactive and reactive.

Predictive: FedEx Software was called FedEx Alert Safe and was a pairing risk analyzer and fatigue assessor. They use the Karolinska Sleepiness Scale (KSS) 1-9 scale from fully alert to incapacitated. A “7” is the point where they try to look at things and determine if more action needs to be taken. The algorithm was based on “block in – block out.” The program was a product from Washington State University. FedEx scans all proposed pairings monthly – then identifies pairings with potentially high fatigue scores as a “must fix” or “recommend fix.”

Proactive: The company used sleep hubs, crew facilities, recliners, private rooms (hotel), and human performance data collection based on identifying pairs that might be higher risk. Pairs that are identified as having a higher risk, they assess and make recommendations to the group. For data collection, measurement devices (acto watch) are used to track and monitor pilots. They download data from the watches to assess pilots and send off to WSU to determine if there is a need to fix or leave as is.

Reactive: Pilot calls in fatigue, crew scheduling is contacted and the duty officer creates an event. A report is completed, the pilot weighs in with how they feel, contributing factors and mitigations they tried. They also solicit for suggestions. Crews can also submit voluntary reports. The Fatigue Event Review Committee (FERC) which consists of two FedEx and two ALPA members, review fatigue report and make determinations on how it will pay out (reimburse sick time). They also take that info and roll back into predictive measures.

ALPA (pilot scheduling improvement teams) helps build the schedule with FedEx, and together they look at pairings with fatigue concerns. ALPA uses a different system to predict fatigue versus FedEx, ALPA uses an enhanced Karolinska Sleepiness Scale (KSS)/Psychomotor Vigilance Test (PVT) prediction system. A score of 7 is considered “tired but not struggling to

stay awake” and triggers further assessment. Instead of scrubbing the mission, mitigations are typically considered. On the PVT, “double digit” scores are considered high. ALPA’s system presents the two scores and can sometimes be higher than FedEx. FedEx and ALPA are required to resolve any disputes with fatigue scores. It goes to the chief pilot if no resolution is made. Life events data was not included in assessments but was included in fitness for duty personal assessments.

When the FERC feels they need to look at the pairing closer (e.g., pilots taking mitigations, such as sleep opportunities) then FedEx looks at the duty period. One mitigation was a hub turn where they have sleep rooms available. Modeling software predicts if a person will be tired within a specific pairing. If there is a high score a change is immediately recommended. Options typically include modify flights (shorten schedule), delay flights, or replace the crew (the latter only typically used if aircraft is at a hub). FedEx defines tired and fatigued differently. From his perspective, fatigue is related to alertness issues. The pairing assumes the crew is two and so the modeling predicts some inflight sleep as a prediction. They receive 35-40 fatigue calls a month out of over 100,000 legs. Normalized percentage is .012%. Fatigue can happen within a duty period even though a crew is fit for duty at show. The entire model was in process of being updated by WSU with data collected.

FedEx does not currently publish pairing scores and they do not advise that a crew “needs to nap.” Legal counsel will not allow the team to “prescribe” what is best for the crews. When crews are briefed, they are advised it is in their best interest to take advantage of what time they have to get rest. Some crews try to mitigate with split sleep strategy: pilot arrives, takes a short nap, gets up and remains active for a bit, then lays down and take preflight nap; later on a hub turn nap. When crews check in they are signifying that they are fit for duty. Fatigue reports are self-reports only and are non-punitive and encouraged if needed. Fatigue briefings to crews are recurrent and occur at basic indoctrination, recurrent training (18 mo and 36 mo) and upgrade training.

The FedEx FRMP is reviewed every two years and audited routinely. There is also a self-audit of the fatigue training program. The FRMP team is the subject matter expert for fatigue and management listens to what that team has to say and trusts the process.

Regarding the incident flight, the incident leg rated a 6.39 on the KSS. This was based on a nap occurring during the 2:43 min turn between Alliance and Tulsa. Without the nap, the score was 7.07. The PVT for the leg was 9 with a nap and 12.5 without. The captain did not take the nap opportunity and as a result was likely fatigued. The first officer should have spoken up that things did not look right.

The interview concluded at 11:15 CT.

Interview Summary

Interviewee: Captain Robert B. Bassett (FedEx MEC ALPA), Memphis, TN

Representative: none

Date, Time: 27 July 2022; interview start 0815

Location: 1770 Kirby Blvd Suite 300 Memphis, TN

Interviewer: Dajuan Sevillian, Ph.D. (NTSB), Sabrina Woods, Ph.D. (NTSB), Todd Johnson (FedEx)

During the interview, Mr. Bassett stated the following:

He said that he worked at ALPA for 10 years and brought on as vice chairman and that was when the company brought in the FRMP. About 5 years ago he took over as ALPA chairman. He has 3-4,000 hours as a Navy Pilot and flew for United (777, 727, A-320), then he was project manager for F/A-18 and has flown the 757 and Airbus and Captain for about 4 or 5 years. He was called by ALPA Safety Vice Chairman Jim Perry regarding the Tulsa, OK incident. Jim Perry (ALPA safety chairman) asked Mr. Bassett to complete a fatigue analysis. He asked Jim to give him the sleep log and quality of sleep. He analyzed the route and got the sleep patterns, then gave a presentation to MEC. Received a lot of information from the first officer but did not receive much from the captain in terms of data from the flight. He analyzed the data from the flight in a fatigue model. ALPA uses Safety FAST (used by 50 other companies) and they run every pairing separately. After incident, analyzed its pairing with the Institute of Behavioral Research.

If ALPA does not agree with FedEx on a crew pairing fatigue issue, they normally resolve it by reviewing the model. Sometimes fatigue reports come in and they analyze those against the model.

FedEx MEC (ALPA) is consistently trying to make the models the same. FedEx has a KSS score and PVT. But FedEx MEC (ALPA) is sometimes scored higher on the ALPA side versus FedEx which is sometimes lower, and they are trying to determine why there is a gap. He said that he feels that Safety FAST has a higher fatigue risk score.

In the analysis pairings and if there is a disagreement, they will break it down beyond the modeling, and then they determine why the score is high. One of the differences between ALPA and FedEx is that former runs each model through a pilot group for a subjective check of the data. FedEx uses "cards" that add complexity to the pairing such as if it crosses continents, oceans, multiple time zone crossings, etc. Sleep propensity is factored more heavily in the ALPA model than the company model.

Hub turn sleep- Airplane comes in at night and the pilot will have certain amount of time off and a sleep room. They build the sleep opportunity into the modeling. They use 40-50 minutes in

there modelling for crew sleep for hub turns of 2 hours 45min. They do not analyze full month schedules, including pairings. Nor does the model take into account anything before the pilot leaves their domicile. It presumes the pilot shows up fit for duty.

From Mr. Bassett's perspective, the captain did not discuss [during the turn prior to the incident leg] that he was fatigued. He noted that the system cannot model sleep quality and workload. He said that they do not know the recency of sleep for the pilot. They run approximately 10,000 pairings. ALPA's threshold for alert warnings for fatigue are 'middle'. With Safety Fast the scores come out 0-100 and it's a measure of effectiveness and it takes into consideration the PVT. KSS is a measure of sleepiness, PVT is a score of effectiveness, and that threshold is 70. If there are revisions made to the schedule, the model is not run again. There is no real-time modeling.

The onus is on the pilot to discuss the issues about fatigue before they fly however education might be lacking. Crews think they are knowledgeable because they sleep everyday however they don't understand how the system actually works. They might not understand the difference between tired, fatigued and exhausted. [Pilots] fly tired a lot; fatigue is debilitating your capabilities. Fatigue is reduced alertness, reduced response, reduced mental function. It is subjective for the person. The ability to deal with it is also subjective.

The interview concluded at 10:50 a.m. CT.