



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

June 24, 2020

Attachment 2 – Company Interviews

OPERATIONAL FACTORS/HUMAN PERFORMANCE

DCA19IA036

This attachment contains transcripts of interviews of the following Southwest personnel:

- William Charles Lamm, Dispatcher. Southwest Airlines
- Justin Kallestad, International Programs Manager – Network Operations Center, Southwest Airlines
- Tom Gressick, Senior Manager – Dispatch, Training, and Standards, Southwest Airlines
- Chris Schmidt, Director of Flight Operations Training, Southwest Airlines
- Grant LeClaire, Senior Manager of Procedures, Southwest Airlines

Interviewee: William (Bill) Charles Lamm, Dispatcher, Southwest Airlines

Representative: Larry Merchant, President/Safety Chair - TWU Local 550

Date / Time: December 13, 2018 / 1132 EST

Location: Teleconference

Present: Marvin Frantz, Sathya Silva, National Transportation Safety Board; Pat Hempen, Patrick Lusch, Federal Aviation Administration; Rich Lee, Boeing; Kevin Fergerson, Southwest Airlines; Greg Bowen, Southwest Pilots Association

During the interview, Mr. Lamm stated the following:

He was 61 years old and had been with Southwest for 18-19 years. He started at Southwest as a ramp agent. He then became an operations agent in Dallas. In 2004, he earned his dispatcher certificate (from IFOD) outside of work and began working as a dispatcher at Southwest in 2008.

On the day of the incident, he arrived at work about 6:50 am CST for a 7 am shift. He took over from the midnight person on his shift and then released between 40-45 flights over his 8 hour shift. His workload varies during the shift. He described the incident day as a normal morning. It was relatively busy leading up to the incident. The 30-45 minutes leading up to the incident was one of the busiest times of the day. He was handling a diversion, phone calls, and MEL issues on several flights and calls from other Captains. The first he heard about the incident was when he got a phone call asking if he knew anything about flight 278. During the call he received a call from the incident Captain.

When he gets on shift, he does a sector analysis. He puts runways (wet/dry), NOTAMs, MELs into the flight release. A flight release is then generated and "turned pink." This is a general flight release that is generated but not sent, and is untweaked. He then looks at departure, enroute, and arrival issues. He updates the release, then sends it out. When he does releases, he doesn't think of the flights in terms of flight numbers, but rather with respect to origin and destination airport. He does not recall being contacted by the incident flight during the flight.

The southwest flight planning system is referred to as SWIFT.¹ SWIFT generates the flight release. It assumes that an aircraft lands within the first 60% of the runway. When the release is sent, the landing numbers are updated in SWIFT if the wind is not input by the dispatcher. The system changed with PWB. He thought the wind was automatically input by the PWB system but was corrected by his representative that it was not. He considers the wind to be a performance issue. He plans using half of the steady state winds.

As he referenced the dispatch release, he noted that a headwind component (120@8 knots) was input for the flight, however he does not recall inputting winds for that flight. He did not know why the component was put in, or who put it in. Normally, this portion of the release shows winds calm. It was not normal for winds or weather to be a performance issue in Burbank.

¹ Southwest integrated flight tracking system

When a new METAR or TAF comes out, he looks at it. If it's insignificant, he doesn't update the crew. If it was significant, he would send it to the crew via ACARS if his workload permitted.

The call he received about flight 278 was through an internal intercom call. He does not know who was on the other end of the line. The captain of flight 278 called a few seconds afterwards so he hung up with the internal call to talk to the captain.

He did not remember any weather reports for Burbank. Dispatchers know what the landing runway is for arrival airports. SWIFT checks for updates to include ATIS to see if there are any runway changes but he does not recall any changes for Burbank.

He takes runways into consideration. He looks at the ATIS runway and thinks about if the airport will stay on that runway. If he thinks there may be a change later on, he flags it and checks again. For the incident flight, Burbank did not have a runway change. They planned for runway 8 and runway 8 was run at Burbank. There was not a concern about winds.

SWIFT interfaces into PWB. Operations agents at the stations use OTIS. OTIS also interfaces with PWB. He believes the release does not interface with PWB and referred to it as "PWB-stale" versus "PWB-active." Take-off and landing information on the release is from SWIFT. The information is updated by PWB when the flight requests it.

He is a private pilot with an instrument rating. He has about 300-400 flight hours but hasn't flown in over 10 years.

The dispatch office is in Dallas

He received the internal call about flight 278 about 1110 CST.

He works 100% Oakland departures. Destinations range from north to Seattle, Spokane, Portland east to Boise and Salt Lake City, and south to the LA Basin, Ontario and San Diego. South departures account for about 65% of his flights.

He recalled the weather the day of the incident. There were showers in the vicinity moving from the southwest to the northeast covering almost all of southern California. The showers would hover over airports, then move away from the field so aircraft were holding until the showers moved and would then come in and land. He didn't recall a cold front.

His desk rotates every 6 days. For example, he works desk number 61 for 6 days, has three days off, then works desk number 62, has three days off, etc. The incident occurred on "his Friday" or his last day of the rotation. The numbering of the desks is not continuous. East coast desks are low numbers, central region desks are in the 30s and 40s, and believes the west coast desks are in the 60s, 70s, and 80s. Over one year, he typically rotates through all of the desks.

He plans landing performance assuming that the landing occurs and aircraft stops within the first 60% of the runway. If it is a wet runway, they add an extra 10%. This is different than the operational landing performance calculations. He described operations agents as the gate

employees that are evident to the public. They handle fuel, weight of bags/freight/passengers, whether those are regular or heavy. They calculate the weight, send it to OTIS. OTIS interfaces with PWB, and from there the numbers get sent to the cockpit. On the dispatch side, they calculate weight based on bookings, and it doesn't reflect actual number of passengers due to dynamics of the actual operation.

He clarified that the term is "turn flight's pink" on their system to refer to a basic release. Dispatchers have different strategies for when they turn flight pink. He does the entire shift's flights at once. The dispatcher on midnight shift has flights planned out through 930 am. He shoots for having dispatches sent by 1.5 hours before the flight. So he sends out releases around 8am.

He was not aware of any written guidance for inputting wind into SWIFT. If SWIFT determines that there isn't sufficient landing distance, it reduces aircraft weight until the runway can be used.

The diversion he was working the morning of the incident was out of Long Beach. He classified his workload that day was that of an average day. He classified the previous 30-40 minutes before the incident call as the busiest.

Ops agents put paperwork in local time. The dispatch paperwork had winds 280T08, but he did not know what the "T" stands for. There was no "Tankered Fuel" planned, not something they do in Burbank. He had provided 2 alternates: he felt the close alternate would be in the same weather pattern so he provided a second one further away. Ontario and Las Vegas were the alternates.

He built flight 278's release and sent it about the time he released it. He had added the typical 35 minutes "dispatch add" of extra fuel. It equated to about 2700 lbs or 27 minutes of holding fuel. He had not heard of any holds or diversions at BUR.

He did his initial dispatch training with IFOD in 2004 (plus or minus 1 year). In 2008, he went through Southwest's dispatcher training program. It consisted of 6-7 weeks of classroom training, then 4-8 months on the dispatch floor with a trainer. Depending on seniority, you would then be upgraded to dispatcher. It sometimes took 1.5 years for dispatchers to complete the process. He spent 4 months on the floor training before he upgraded. There are about 300 dispatchers total and about 80 people per shift.

He last jumpseated in March 2018. He liked the program and preferred to jumpseat when he could.

Sometimes, go-arounds are heard on the dispatch floor. He did not know of any previous go-arounds at BUR. The alternates for flight 278 were ONT and LAS. Ontario had showers as well, so LAS was chosen as a long alternate.

He had the ability to offload some of his work by asking other dispatchers to help, but there was no formal process for offloading work.

His computer system gives alerts when new METARs, TAFs, and NOTAMs come out. He did not recall anything new coming out for this flight. His first contact with flight 278 was when he got information about the flight being off the runway. He does not actively send out ATIS information via ACARS to the crew and is not aware of how the crew gets that information through ACARS.

The SWIFT system would not know anything was wrong (winds) without dispatcher inputs.

When a flight conducts a go-around, he would learn about it from the crew via ACARS. He was not aware of a requirement for crews to report go-arounds.

He did not know how the BUR wind “120T08” got into the flight’s release.

The interview concluded at 1238.

UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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Investigation of:

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SOUTHWEST AIRLINES OVERRUN -
BURBANK

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Accident No.: DCA19IA036

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Interview of: JUSTIN KALLESTAD

International Programs Manager
NOCSouthwest Airlines Headquarters
Dallas, TexasThursday,
October 10, 2019

APPEARANCES:

MARVIN FRANTZ, Operational Factors Investigator
National Transportation Safety Board

SATHYA SILVA, Ph.D., Human Performance Investigator
National Transportation Safety Board

ERIC WEST, Accident Investigator
Federal Aviation Administration

GREG BOWEN, Training and Standards
Southwest Airlines Pilots Association

KEVIN FERGERSON, Flight Ops
Southwest Airlines

RICHARD LEE, Safety Pilot
Boeing

JEFFREY NOVOTA, General Counsel
Southwest Airlines
(On behalf of Mr. Kallestad)

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I N T E R V I E W

(10:24 a.m.)

DR. SILVA: We're on the record at 10:24. Okay. So as I mentioned, I'm Sathya Silva from the NTSB. Marvin?

MR. FRANTZ: Marvin Frantz. I'm an operational factors investigator for the NTSB.

MR. FERGERSON: Kevin Fergerson, Southwest Airlines flight ops.

MR. LEE: Rich Lee, Boeing safety pilot.

MR. BOWEN: Greg Bowen, Southwest Airlines, chair, Training and Standards for SWAPA.

DR. SILVA: You can go ahead.

MR. NOVOTA: Jeff Novota, Southwest Airlines general counsel department and representative for Justin.

MR. WEST: Eric West. I'm with AVP-100, FAA Headquarters.

DR. SILVA: So you are entitled to have a representative here with you. Would you like to have a representative?

MR. KALLESTAD: Yes.

DR. SILVA: And who is that person?

MR. KALLESTAD: Jeffrey Novota.

DR. SILVA: Perfect.

INTERVIEW OF JUSTIN KALLESTAD

BY DR. SILVA:

Q. Okay. Can you state and spell your name for the record, please?

1 A. Yes, it's Justin, J-u-s-t-i-n, Kallestad, K-a-l-l-e-s-t-a-d.

2 Q. Okay. And what's your title here?

3 A. My current title is international programs manager at NOC.

4 Q. And can you run through a Cliff Notes version of your
5 background in aviation and how you got to where you are today?

6 A. Yes. I have a degree in aviation, Bachelor of Science in
7 Aviation, from Minnesota State University in Mankato.

8 Q. Uh-huh.

9 A. Received that in 1999. I do hold a Commercial Pilots
10 License, aircraft single engine/multi-engine land instrument, as
11 well as Aircraft Dispatcher Certificate and an Instrument Ground
12 Instructor Certificate. I began dispatch career in December of
13 2000 at a carrier called Champion Air. I was a dispatcher and
14 what we call an SOC controller there through 2004.

15 I then was a -- hired as an assistant dispatcher/dispatcher
16 at Northwest Airlines until 2006 where I did both domestic and
17 international dispatch and then returned back to Champion Air in
18 2006 until 2008 as a manager of dispatch at that location.

19 And then in 2008, I moved back to December of 2008 is when I
20 was hired at Southwest Airlines as an assistant dispatcher where I
21 upgraded to dispatcher until 2011 and in June of 2011 I was hired
22 as a chief dispatcher at Southwest Air and then promoted in 2012,
23 the fall of 2012, to the dispatch training department as a
24 training manager.

25 And then was in that role until 2017 when I took over the

1 international programs manager position in the same department in
2 our standards and training department focusing, primarily, on our
3 ETOPS authorization at that time.

4 Q. Okay.

5 A. But I was assisting with the training and standards
6 department at the same time.

7 DR. SILVA: Okay. Can you run through what your duties and
8 responsibilities are in your position?

9 A. Yeah. Within the current position I primarily work a lot of
10 our projects, again, ETOPSS being a significant part of our
11 portfolio here in the past couple of years. I was responsible for
12 everything from participating as the NOC rep for the working team,
13 participating SRM, liaisoning with the FAA on the authorization,
14 working with the training department to get that stood up as far
15 as training our ETOPS dispatchers and focusing a lot on that.

16 As that has matured now and we have received the
17 authorization the focus is back assisting our training department
18 performing competency checks and also helping with some manual or
19 some programs, smaller projects that we have going on in the
20 portfolio as a SME or a member of the working team at the --

21 Some of the projects include things like PWB or performance
22 weight and balance as a working team member on current projects to
23 smaller scaled projects in the department to get manuals ready,
24 procedures developed and participate in the SRM process for a lot
25 of those.

1 Q. So regarding the PWB project, can you detail what your
2 involvement was and --

3 A. Yeah, that (indiscernible) was in the manager training role
4 so I was a member of the working team from an NOC perspective to
5 participate in the SRM process of that, assist with the procedure
6 development and from, again, the NOC perspective.

7 Q. Okay. How did procedures change?

8 A. We identified, early, on that we had a lot to change from the
9 dispatch role. We knew there was a lot of benefits from getting
10 PWB in there as far as controls and whatnot but we wanted to make
11 sure, from a change management perspective, it was minimized. So
12 we, really, just on designing it with the same philosophies
13 involved and a lot of the same concepts from a dispatch standpoint
14 as far as entries in a standard release format.

15 But we would deviate from that to get enhanced controls and
16 some automation in there. But primarily, the focus on our flight
17 planning was we wanted to keep, essentially, very stable or
18 consistent with the past practice so we can minimize, you know,
19 some of that change management we're talking about.

20 Q. Okay. Were you involved with developing training for that?

21 A. Partially. I helped with some of the recurrent training that
22 kind of led up to the PWB rollout and taught some of the earlier
23 recurrent training that we officially trained and then we got to
24 the bolts and the computer-based training and that was primarily
25 Tom's role.

1 Q. Okay.

2 A. Yeah.

3 Q. Okay. You mentioned that work with the FAA. How is that
4 relationship?

5 A. Good and open, especially when it came to the ETOPS, able to
6 leverage, you know, kind of the relationship to, you know, to get
7 ahead of issues before they arise, you know, to bounce ideas off
8 them. Is this going to work or is it not going to work? And I
9 would say it's a -- it's not an adversarial relationship at all
10 especially with the -- our dispatch inspectors out there.

11 You know, they're -- we're comfortable going to each other
12 and communicating, especially ahead of issues, and make sure we
13 get stuff clarified before we get to the manual write and the
14 formal submittals.

15 So, you know, I feel that we have a good relationship.
16 They're fair. They have, obviously, their ideas and we have our
17 ideas but, you know, we're able to usually come to that agreement
18 after, you know, discussing the pros and cons and our inspectors
19 is very big on, you know, going through the SMS process and, you
20 know, what it requires to do that, demonstrate that, and, you
21 know, so they ask a lot of questions which is good. It's not
22 rubberstamping anything by any means and --

23 Q. Right.

24 A. -- making sure that we've gone through all the checkboxes and
25 holding us accountable but at the same time, you know, working

1 with us and not just, you know, we submit something and then they
2 reject at that time. It happens from time to time but a lot of it
3 is, you know, working to get ahead of it.

4 Q. Right. So are you primarily working with the dispatch
5 inspectors or --

6 A. For a lot of the items, dispatch inspectors, when it came to
7 the ETOPS authorization, that was more of a -- the overall CMO
8 including the, you know, the POI, primarily on the ops inspectors
9 side. We would have a lot of briefings over at our CMO to brief
10 our status of the project and then when it came to the actual
11 authorization we had members from the AFS-220 were in a
12 significant period of time monitoring the authorization and the
13 validation flights and the tabletop exercises.

14 So it kind of -- that project kind of ran, you know, off some
15 levels but, you know, overall, our primary relationship in the
16 dispatch side would be with our dispatch inspectors.

17 Q. Okay. Does -- in terms of the Burbank incident, are you
18 aware of any safety initiatives that Southwest has internally
19 regarding landing on shorter runways?

20 A. Well, obviously Burbank, you know, Midway, those are from the
21 very beginning of your dispatch training, you know, you're kind of
22 briefed on some of those shorter runways, some of the limitations
23 as far as, you know, thrust reverser (indiscernible) and then
24 there's alternates and stuff like that.

25 So it's ingrained early as part of the training. You know, a

1 lot of it, you know, go back to initial training (indiscernible)
2 performance to demonstrate, you know, what that looks like from a
3 planning perspective as far as, you know, the weight limitations
4 in those shorter airports and, obviously, there's always ongoing
5 discussion about, you know, Burbank, you know, having an incident
6 like this, of course, you know, it gets people, you know, talking
7 and working and looking at doing assessments and whatnot, those
8 events.

9 Q. Okay. Regarding performance calculations, and this may come
10 from more of your dispatch experience, when you're assessing,
11 let's say, landing performance, pre-flight for the release, is
12 there any feedback that dispatch gets on kind of how tight that
13 margin is going to be for a runway?

14 A. Well, you know, we have obviously the ATOG. We use ATOG for
15 takeoff gross and that really is our primary feedback mechanism,
16 you know. We plan a weight, a maximum weight based on, you know,
17 the regs, you know, 195. And if that gets less, you know,
18 oftentimes it's structural; you know, if it's a long runway it's
19 often structural, but we do get some feedback in the sense if
20 we're restricted to something other than structural, whether it's
21 a field length, you know, we get those codes. Is it obstacle
22 clearance? Is it climb restricted? You know, we see those codes
23 and then can make adjustments.

24 But again, you know, we take the inputs and we plan the
25 maximum allowable takeoff weight that assures us to land within

1 the requirements of a 121/195 and, you know, I guess an occasion
2 beyond that you get the code, what is a limiting factor? Is it
3 field length, the climb limit or structural?

4 Q. Okay. Are there -- sorry I lost my train of thought. Are
5 there safety buffers built into those calculations?

6 A. Yeah, in the corporate level -- obviously, the reg itself has
7 a lot of conservatism built into it as far as you got to make sure
8 you going to land within 60 percent of that runway or 150 percent
9 and it's 2 percent of it's dry, right? So, I mean, the reg has a
10 lot of stuff built into it. And then, you know, we do have, based
11 on cross threshold, that 50 feet, obviously, landing, 1500 feet
12 down the runway is what we use. And then I know we also quote an
13 additional 15 percent buffer above and beyond that which, you
14 know, helps to, you know, recovery and yet it's conservative.
15 It's a very conservative number that we're aware of, and obviously
16 for the first one, in the operational landing range.

17 DR. SILVA: Okay. Great. I'm going to pause here.

18 MR. KALLESTAD: Okay.

19 DR. SILVA: Marvin?

20 MR. FRANTZ: Okay. Thanks.

21 BY MR. FRANTZ:

22 Q. Good morning, Justin.

23 A. Good morning.

24 Q. I'm going to dive right into the PWB system and dispatch
25 interaction or awareness of.

1 Is there any practice on the dispatch side that you're aware
2 that you practice or policy at Southwest to make sure that when a
3 flight is approaching a destination that the crew is using -- or
4 the captain and the crew is using the latest weather when they
5 request the landing solution through PWB?

6 Is that transparent, basically, to the dispatcher or does he
7 have an awareness? Does he have any responsibility to monitor
8 that?

9 A. We don't see any transaction on that. There's nothing that
10 gets fed back through ACARS system that they requested it. So
11 from a dispatcher point of view we don't see when that transaction
12 took place. We can see when they requested maybe a digital ATIS
13 but beyond that, not the transaction so --

14 Q. Would that be a request that would come to you guys to
15 dispatch, request for the latest ATIS?

16 A. We are backup but normal practice, that's not normal
17 practice. If they can't receive an ATIS for whatever reason, you
18 know, it rarely happens that they might request that. Maybe if
19 the airport did not have to delay us every now and then when I get
20 a request --

21 Q. When you say digital, do you mean -- what do you -- okay,
22 what were you talking digital -- receiving it over the VHF radio
23 or receiving it via ACARS?

24 A. Via ACARS. So we know that a lot of our airports have
25 essentially digital ATIS capability. We have visibility to that

1 same digital ATIS in dispatch that we can pull up. So if that
2 airport participates by sending out the ATIS digitally, and some
3 do it both for departure and arrival, separate ones, you know, we
4 can see that. The pilots can to request that. We can see it in
5 the dispatch in their SWIFT system and monitor those ATIS. But
6 that's for those airports that participate.

7 Q. Okay. So that's an airport authority function to have --
8 they either will or they won't have a system where a pilot can
9 request the ACARS digital ATIS. It isn't -- that request doesn't
10 come to you back in dispatch if they say I want the latest ATIS?

11 A. No, that's specific. I mean, AFD wouldn't publish or the
12 (indiscernible) publish it. The jet flights will publish if that
13 airport has digital ATIS or not by putting D-ATIS.

14 Q. How do they request it? What does the crew do to -- do you
15 know what --

16 A. I don't punch the button so I don't know exactly what the
17 request on -- I mean, I've seen them do it in the cockpit.

18 Q. It's via ACARS.

19 A. Well, it's --

20 Q. They receive it.

21 A. Again, I don't know.

22 Q. Okay.

23 A. I'm not the pilot so I don't request it. I just know that
24 when I go in the cockpit, I can see it on their screen, and how
25 they do the request is -- that's not my expertise. But

1 (indiscernible) --

2 Q. But it doesn't come from -- a pilot, typically, if they want
3 an update on ATIS they won't go back to dispatch via ACARS and
4 say, or send a request for ATIS and then you would --

5 A. Oh, no.

6 Q. -- that's not the normal channel. Okay. And so back to the
7 -- what's the responsibility of a -- of the dispatcher to monitor
8 the latest ATIS and other weather indicators at an arrival airport
9 as a flight's approaching that airport?

10 A. So obviously it's part of a flight follow. I mean, it's
11 baked in the reg and it's training from, you know, dispatch but,
12 you know, in the certificate level up through, obviously, the
13 training at the airlines, you know, you're monitoring those
14 weather conditions. We do have tools available to us at our -- in
15 our NOC that alerts us to updating METARs that meets the
16 requirements, changing TAFs. It does not alert us to digital ATIS
17 but, you know, we're primarily looking at the METARs and the
18 (indiscernible) usually get paired with an ATIS later on.

19 Q. Okay. So does a dispatcher -- will he receive an alert when
20 a special METAR would come out for a destination airport on one of
21 his flights?

22 A. Yes. We have a tool, and it's somewhat customizable as far
23 as at what level the dispatcher wants to alert at, but it defaults
24 and, you know, our dispatchers, the vast majority, will keep it at
25 less than 2,000 foot ceiling or less than 3 miles of visibility or

1 thunderstorms. And the METAR -- the TAFs all come out. We can
2 (indiscernible) every TAF. The METARs, they start meeting,
3 essentially, alternate min requirements or thunderstorms.

4 Q. Okay. So a wind shift or a change -- a significant -- any
5 change in winds, significant or not, would likely or most of the
6 time, not be something a dispatcher would have set to alert him
7 for a new METAR that reflected the change in the winds?

8 A. Not a -- not typically in our system. It's pretty much
9 monitoring the weather conditions and the visibility and ceiling.

10 Q. Did you talk to this dispatcher at all --

11 A. I did not --

12 Q. -- to get any visibility about what happened on this flight
13 from a dispatch point of view?

14 A. I didn't talk directly to the dispatcher myself. I mean,
15 other than just, you know, in our role we kind of go pull the
16 release and go through it and look at the weather packet and --
17 from more of a is this a training item that we need to discuss or
18 something we need to put into the standards group, you know?

19 Q. Do you know if this dispatcher had awareness of a METAR that
20 came out, you know, within the last 30 minutes of the flight?

21 A. I don't know that for a fact.

22 Q. Okay. Since this incident, have there been any changes in
23 policies and procedures in Southwest dispatch that relate to,
24 specifically, PWB performance, weather, any --

25 A. Not specific, no.

1 Q. No changes --

2 A. No --

3 Q. -- that you're aware of. Okay.

4 A. No changes, nothing specific.

5 Q. Are the dispatchers given any specific -- I know there's the
6 generic role of the dispatcher and his responsibility for the
7 flight. Are they given any specific guidance on when they should
8 reach out to a flight to relay anything about weather that they
9 feel that is going to -- could be impactful to that flight?

10 A. You know, it's trained anything that could impact the safety
11 of the flight, right. I mean, it's a very broad --

12 Q. Right.

13 A. -- category. We do call out specific words on the reg,
14 convective activity, low-level wind shear or turbulence but it's
15 really more, you know, kind of instilling in them the
16 responsibility if there's anything that could affect -- the safety
17 of flight has significantly changed from when the weather packet
18 or the release was generated the responsibility to notify them
19 about, you know, limiting them to certain elements.

20 Q. If you were on the desk that day and after the flight had
21 begun their descent, they departed the top of descent point, they
22 were on their way down, and you saw a METAR come out that it was a
23 significant change in the winds from the last METAR and it was now
24 in a tailwind zone and you also had awareness of the length of
25 this runway, I mean, would you be inclined at that point, say they

1 were 20 minutes from landing, would you be inclined to alert the
2 crew to that or to make sure the crew had awareness of that or
3 would -- or is it just assumed that, well, if I got the METAR,
4 they got a report. The crew's got it and they're dealing with it
5 or what is the thought process that would go on if you're sitting
6 at that desk?

7 A. If it were personally me, you know, knowing the Burbank
8 airport, short runway, knowing that they already had a tailwind in
9 the forecast to begin with, obviously, would -- I guess me, it
10 would heighten my alertness to the airport and definitely be
11 monitoring that for, you know, especially any tailwind exceedances
12 and whatnot.

13 So I can't speak to what that dispatcher was doing or
14 thinking but, I mean, I would have been definitely paying
15 attention and if I would have seen that I definitely would have
16 been, I mean, I would communicate on it, I guess. In my role we
17 preach over communicate. We want to make sure that, you know,
18 that's made known but --

19 Q. What is the tailwind limitation for Southwest operations?

20 A. Well, we use 10 knots maximum, but there's other, you know,
21 certain conditions, obviously, where that number could be reduced,
22 especially on short runway, wet runway. You know, it could be
23 less than 10 knots based on the performance itself.

24 MR. FRANTZ: Okay. I'm going to take a break. I think I'll
25 -- I think I might be finished but I'll think about that and let

1 Sathya pass it to someone else.

2 DR. SILVA: Eric?

3 MR. WEST: Okay.

4 BY MR. WEST:

5 121/195 doesn't bode well for this situation. Runway 8, and
6 I only have this one question. I didn't get much time to write
7 any others down. So Runway 8, was it the most favorable runway
8 given the conditions at the airport and the known wind direction?
9 You just basically spelled out that there wasn't so I'm going to
10 pass it to Tom. I have no questions.

11 DR. SILVA: Okay. Greg?

12 MR. BOWEN: I just have a couple questions.

13 BY MR. BOWEN:

14 Q. Good morning.

15 A. Good morning.

16 Q. Did you participate in the development of the training for
17 PWB for the dispatchers?

18 A. Like I mentioned, the main development was on Tom Gressick's
19 side. I developed some of the early, more introductory stuff for
20 recurrent training introduced ahead of the actual launch. So it
21 was more the internal of it, but not the official training --

22 Q. Did you review or a study of the training material that was
23 presented to the pilots that operate the airplane in that process?

24 A. I saw bits and pieces. I did not do the full course, take
25 credit for the full course or anything like that.

1 Q. Okay. I just have one last question. What is Southwest
2 policy, if there is one, that relates to the tankering fuel to
3 Burbank, Midway or the other short runway airports?

4 A. You know, it somewhat modified over the years, you know, we
5 can't look at not doing it but, you know, we've got policies in
6 places, obviously our tendering policy that restricts
7 (indiscernible) case to within 1,000 pounds of the -- whatever the
8 structural landing weight or the performance of the landing weight
9 would be.

10 Q. Do you remember specifically at the time of the incident in
11 Burbank what the policy was?

12 A. I don't remember. I know at one time we restricted there. I
13 don't remember the timing. I don't believe -- I don't remember
14 the exact timing of when that policy changed it would have been
15 but --

16 MR. BOWEN: Thank you. That's all I have, sir.

17 DR. SILVA: Okay.

18 MR. BOWEN: Thank you.

19 DR. SILVA: Richard?

20 MR. LEE: I don't have anything.

21 DR. SILVA: Kevin?

22 BY MR. FERGERSON:

23 Q. Are we allowed to operate on Runway 2-6?

24 A. We have prohibitions against it when we got the mountains on
25 the other side there and not that that would help us there anyway,

1 the visibility isn't --

2 Q. Yeah.

3 A. -- it's all we got to do in that situation with the
4 visibility and --

5 Q. Okay.

6 A. -- whatnot.

7 Q. You talked about the automated alert function, too, when a
8 special METAR would come out and had some customization available
9 to the dispatcher. To your knowledge, is any automated alert
10 similar to that available to the pilots?

11 A. As far as changing weather?

12 Q. Yes.

13 A. I can't speak -- not that I'm aware of.

14 Q. Okay. That's all I have.

15 DR. SILVA: Okay. I just had a few more follow-ups and we'll
16 go around one more time.

17 MR. KALLESTAD: Okay.

18 BY DR. SILVA:

19 Q. Let's say you're working and you got -- you see a wind shear
20 or whatever for an airport. What does that process look like for
21 you? Can you walk me through a scenario?

22 A. I mean, yeah, you'll -- you get an indication, especially on
23 like our FUSION display which is our aircraft situation display,
24 pop the symbol over the airport for us. You know, at that point,
25 you know, protocol is obviously, you know, that's one of those

1 things that you can specifically be called out for and thus
2 communicate, you know, to the crews any changing conditions
3 including rollover, wind shear so it would be a matter of, you
4 know, sending him a -- click ACARS and then you have low-level
5 wind shear at, you know, whatever airport it happens to be at
6 given the text of the PIREP that comes out there.

7 And it's -- we've got tools that make that a pretty simple
8 process as far as, you know, if it comes out and it's a PIREP it's
9 a -- right click it and hit the little flight display number and
10 then hit send and it just sends it right to the flight crew on that
11 particular flight.

12 Q. Uh-huh. Are you aware of any restrictions that the airline
13 has on landing with wind shear?

14 A. The standard guidance, you know, if it's wind shear at the
15 field report and you've got a wind shear alert going on if we're
16 not landing there, and you have the wind shear advisories in
17 effect, obviously, it's getting our attention to be mindful of
18 that report.

19 Q. Okay.

20 A. That is one of those nice things that we do get in with
21 digital ATIS that we don't get at the airports that don't
22 participate in that program. You know, when we have digital ATIS
23 we can pull it up and we'll see if the wind shear advisory is in
24 effect.

25 Q. Okay.

1 A. And that kind of helps us kind of plan a little bit more, you
2 know. So obviously, with convective activity we just anticipate
3 there's going to be low-level wind shear on the convective
4 activity at the airport so at that point it's more communicating
5 that convection over the field versus, you know, just a clear low-
6 level wind shear.

7 Q. Okay. So when you say that you plan for wind shear, what
8 does that mean?

9 A. Well, just extra fuel so if we even see in the forecast we
10 teach if it's, you know, more than ten mile in the gusts there's a
11 potential for low-level wind shear even if the sky cleared,
12 visibility great you get low-level wind shear advisories in effect
13 or if you, you know, have more than a ten-knot wind we've got
14 evidence that we can see go-arounds. You know, we teach the
15 dispatchers to put on extra fuel to anticipate the missed approach
16 and potential go-around and it's more about the clearer stuff.

17 Q. Okay. As dispatchers, do you have access to the,
18 essentially, instantaneous ASOS or AWOS data in a given airport?

19 A. I mean, we have the METAR data. We can -- we have both the
20 phone numbers for each airport so we can call the ASOS.

21 Q. Okay.

22 A. A lot of times we will do that in changing weather
23 conditions.

24 Q. Okay.

25 A. More if the METAR doesn't come through, for whatever reason,

1 we can call the ASOS and get the most current.

2 Q. Okay.

3 A. So -- but it is a phone call it's not -- I guess, it's the
4 only way we can access it.

5 Q. Right. Okay.

6 A. Absent the METAR.

7 Q. How often would you say that happens where you would call the
8 METAR or call the ASOS?

9 A. It's not often but it does happen, especially when you get,
10 you know, the situation with the visibility primarily is where
11 we're typically call it for, visibility and the METAR is kind of
12 hovering around. They want to know if it was an hour ago and we
13 know if fog has been fluctuating we will call the ASOS or if a
14 METAR fails to send and we got a flight in the air, then we'll
15 call the ASOS to see if we can get the most current METAR or the
16 most current weather information.

17 Q. Okay. How much flight time do you have?

18 A. I wish I had more, but only about 250 hours. I got to that
19 point and then decided to go with a dispatch career. So --

20 DR. SILVA: Yeah. That's fair. Okay. Cool. That's all I
21 have. We'll go around one more time.

22 MR. KALLESTAD: Okay.

23 DR. SILVA: Marvin?

24 BY MR. FRANTZ:

25 Q. Yeah. Let me follow up on the digital ATIS. You guys -- a

1 dispatcher has access to digital ATIS. Is it one of those things
2 that will automatically, when a new ATIS comes up, it doesn't come
3 up on the screen. He has to request it.

4 A. Request that. Correct.

5 Q. What would prompt him to request it, say, as a flight was
6 approaching top of descent or the end stages of the flight?

7 A. So --

8 Q. Routinely, what do you do?

9 A. I want to say that we're -- we -- as a dispatcher we're using
10 digital ATIS more to find out what the runway configuration is in
11 an airport. So you know, we'll get the METAR alert and that's
12 really what we're driving off of. That's the most important part
13 for us.

14 As far as getting it for 20.40.54 TAFs (ph.) and the other
15 part, I guess, we use it for would be braking action, stuff like
16 that, because we want to get the most weather they're reporting,
17 braking action that might be different than the flight
18 (indiscernible) because, you know, TAF is supposed to be all/end
19 all. We know there's variation around there and what the pilots
20 are hearing versus what we're hearing.

21 But again, we're going to get alerted to the METAR and that's
22 really what we're interested in as a dispatcher. Can we land?
23 Can we not land? What's going on there? We're not generally
24 pulling up the digital ATIS at landing except for maybe braking
25 action and stuff like that.

1 Q. How would a dispatcher become aware of wind shear at an
2 airport that one of his flights was approaching?

3 A. The biggest way is through PIREPs. I mean, one of the other
4 flight crews submit a PIREP and we get that in there, we get the
5 visual depiction of a -- that PIREP on our screen or if there is a
6 SIGMET out there for low-level wind shear, you know, obviously
7 we'll see the SIGMET out there but those are really the two,
8 primarily, that we're going to become aware of it.

9 Q. You mentioned a minute ago one of the things that gets your
10 attention when you're looking at ATIS, digital ATIS, is if there
11 was wind shear advisories. Do you know how a wind shear advisory
12 would end up on ATIS? What prompts -- what conditions have to
13 exist for a wind shear advisory to be in effect?

14 A. We know that wind shear was, you know, experienced at that
15 field and, I mean, I can't remember the exact timing of it, how
16 long that timer starts but I remember 20 minutes comes to mind but
17 I can't remember off the top of my head.

18 Q. Okay. And if you became aware of a digital ATIS which, you
19 said you wouldn't routinely check it but trigger items like
20 ceiling visibility or not got your attention. If you did become
21 aware of a digital ATIS, though, and the digital ATIS said wind
22 shear advisory in effect, would that prompt you to contact the
23 flight or what action would you take if the they -- they're past
24 top of descent now, now you see a digital ATIS that's fairly new,
25 brand new, and it says wind shear advisory in effect. What would

1 be the action?

2 A. I mean, it would depend. In an area, like I say, when it
3 comes to convection we're going to, you know, I mean, there's a
4 general knowledge that convection implies a little bit of a wind
5 shear, severe turbulence, you know, severe icing, stuff like that.
6 So in any event we're going to speak to the convection, that, hey,
7 we got a thunderstorm over the field and trust that the pilot's on
8 that same page and that's a common, you know, from my pilot
9 training to my dispatch training, thunderstorm implies low-level
10 wind shear.

11 If it's strictly low-level wind shear and you have advisories
12 in effect, you know, it depends. We'll monitor for PIREP data,
13 for sure, and see if a SIGMET comes out there but, again, we're
14 not generally looking at that part of the digital ATIS. We will
15 see it if we pull it up but we're not using that as a primary
16 tool. Again, the METAR and the TAF are more of our primary tool.

17 Q. And I think my last question, routinely, normal, standard
18 flight, does a dispatcher have any awareness of after the pilot
19 had requested their landing solution through PWB does the
20 dispatcher have any awareness of this stopping -- what's the term?

21 A. Stopping margin.

22 DR. SILVA: Stopping margin.

23 BY MR. FRANTZ:

24 Q. Stopping margin. Typically, is he aware of what that term
25 would mean?

1 A. Yes. And we have the ability, you know, we are a backup to
2 the pilots --

3 Q. And you can compute that.

4 A. -- and we can compute that.

5 Q. (Indiscernible) --

6 A. We don't generally do that.

7 Q. Okay.

8 A. Just that's more of a pilot function. We have the ability to
9 do it, though.

10 Q. Okay.

11 A. So all dispatchers know what their stopping margin is.

12 Q. But generally, you'd never see a --

13 A. No.

14 Q. -- stopping margin for flights?

15 A. (Indiscernible.)

16 MR. FRANTZ: Yeah. Okay. Okay. Thanks. That's -- I think
17 that's all I have.

18 DR. SILVA: Okay. Eric?

19 MR. WEST: Nothing.

20 DR. SILVA: Okay. Greg?

21 MR. BOWEN: Nothing further for me.

22 DR. SILVA: Rich?

23 MR. LEE: Well, just one.

24 BY MR. LEE:

25 Q. Heavy rain. If heavy rain's reported, does that trigger any

1 correlation to concern about stopping margin?

2 A. We do know that especially in, you know, if you know if that
3 runway is grooved or not, you know, obviously, even if it's
4 grooved, heavy rain, we tell the dispatchers that it could
5 potentially be less than just a five and plan across, you know,
6 something less than that, anticipate something less than that.

7 But with the exception of, like, right now I've got --
8 LaGuardia has one grooved runway so we'd know that they anticipate
9 potentially going down to a three with heavy rain, you know, then
10 we'll (indiscernible). But it's more the awareness that, yeah,
11 there's -- hydroplaning's a potential, especially on a non-grooved
12 runway but it may be less than five.

13 MR. LEE: Okay. That's all I have.

14 DR. SILVA: Great. Is there anything we didn't ask you that
15 we should have?

16 MR. KALLESTAD: Not that I can think of.

17 DR. SILVA: Well, if there's anything more you want to add
18 feel free to reach out. You have our information directly or you
19 can go through the airline. They know how to get a hold of us,
20 too.

21 MR. KALLESTAD: Okay.

22 DR. SILVA: But we appreciate the time.

23 MR. KALLESTAD: Absolutely.

24 DR. SILVA: You're off the hook.

25 MR. KALLESTAD: Nice meeting you all.

1 DR. SILVA: Yes. Thank you.

2 UNIDENTIFIED SPEAKER: Thank you very much.

3 MR. KALLESTAD: Thank you.

4 DR. SILVA: Off the record at 10:56.

5 (Whereupon, at 10:56 a.m., the interview was concluded.)

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CERTIFICATE

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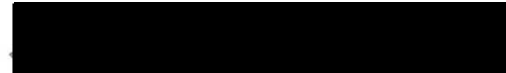
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 BURBANK
 Interview of Justin Kallestad

ACCIDENT NO.: DCA19IA036

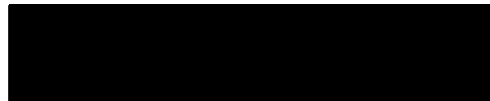
PLACE: Dallas, Texas

DATE: October 10, 2019

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Beverly A. Lano
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Autumn Weslow
Corrections made 6/17/2020

UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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Investigation of:

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SOUTHWEST AIRLINES OVERRUN -
BURBANK

* Accident No.: DCA19IA036

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Interview of: TOM GRESSICK, Senior Manager
Dispatch, Training & Standards
Southwest AirlinesSouthwest Airlines Headquarters
Dallas, TexasThursday,
October 10, 2019

APPEARANCES:

MARVIN FRANTZ, Operational Factors Investigator
National Transportation Safety Board

SATHYA SILVA, Ph.D., Human Performance Investigator
National Transportation Safety Board

ERIC WEST, Accident Investigator
Federal Aviation Administration

GREG BOWEN, Training and Standards
Southwest Airlines Pilots Association

KEVIN FERGERSON, Flight Ops
Southwest Airlines

RICHARD LEE, Safety Pilot
Boeing

JEFFREY NOVOTA, General Counsel
Southwest Airlines
(On behalf of Mr. Gressick)

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I N T E R V I E W

MR. FRANTZ: This is an interview with Tom Gressick from Southwest Airlines, October 10th, at Southwest Headquarters.

Tom, I've already given you the generic in-briefing, but just before we get started, I need to ask you -- you're allowed, as you know, to have a personal representative with you, someone of your choosing. And if you have someone that you've selected, could you just identify them now by name so that we can get them on the record?

MR. GRESSICK: It'd be Jeff Novota. He's here on behalf of us all.

MR. FRANTZ: Okay, thank you.

So, before we get started -- I know you probably do it, but just for the record -- or know it, but let's just go around and introduce everyone. I'm Marvin Frantz. I'm an operational factors investigator with the NTSB.

DR. SILVA: Sathya Silva, human performance, NTSB.

MR. WEST: Eric West. I am with the FAA Accident Investigation out of Washington, D.C.

MR. BOWEN: Greg Bowen, Southwest Airlines. I chair Training and Standards for SWAPA.

MR. LEE: Rich Lee, Boeing safety pilot.

MR. FERGERSON: Kevin Fergerson, Southwest flight operations.

MR. NOVOTA: Jeff Novota, Southwest general counsel department.

1 MR. FRANTZ: Thank you, Jeff.

2 INTERVIEW OF TOM GRESSICK

3 BY MR. FRANTZ:

4 Q. Okay, Tom, let me just start off with some generic stuff.
5 Can you give us your full name with spellings, please?

6 A. Sure. Full name is Thomas Gressick, G-r-e-s-s-i-c-k.

7 Q. And what's your current position?

8 A. Current position is senior manager of dispatch, training, and
9 standards.

10 Q. And how long have you had that position?

11 A. I have been in that role since 2011.

12 Q. And before that, were you at Southwest before that?

13 A. So, yeah, I can give you a quick little bio if you like.

14 Q. Yeah, sure, please.

15 A. So, pretty much aviation's been in my blood. I'm an Embry-
16 Riddle Aeronautical University graduate, bachelor of science in
17 aeronautics. Been working in the industry for various different
18 airlines, Midway, Delta, Air Wisconsin, Allegheny, US Airways
19 Express, doing different roles from ramp op, scheduling, dispatch.
20 Twenty-one years completed with Southwest Airlines now. In the
21 dispatch role here since 2003. Became an OJT trainer for dispatch
22 role in 2004. Became a chief dispatcher here 2008 to 2011, and
23 then moved into my current role as senior manager.

24 Q. Great, thank you. Do you have a pilot's certificate?

25 A. I do not.

1 Q. So, in your current role as senior manager of dispatch
2 training, can you give us just a quick description of your duties
3 and responsibilities?

4 A. Sure. Pretty much in my role, I'm in charge of the entire
5 program. I have people that work for me and work with me, not for
6 me, kind of with me. It's all one big team here. And we are in
7 charge of the training program, both training and standards, which
8 includes the comp check workpiece as well. So, we develop the
9 curriculum. We work closely with our Flight Ops partners for many
10 of the different topics that we cover. Obviously, theirs tends to
11 be more flying the airplane. Ours tends to be more on the
12 operational planning piece of it. So, some material crosses over.
13 Some does not. Anything that does not, obviously, we have to
14 develop ourselves, which is a vast majority of it. We literally
15 maintain the records of every dispatch with Southwest Airlines,
16 maintain their proficiency through their comp checks, through our
17 comp check examiner program, and we pretty much run the program.
18 So, we're a very small little group. There's only a group of four
19 of us that take care of a group of 400 dispatchers.

20 Q. Are you -- can you describe the basic use, especially from
21 the dispatch side of the PWB program that interfaces the use that
22 the dispatcher normally has with that system?

23 A. So, in dispatch, it's a two-pronged approach, right? So,
24 PWB's running behind the scenes for all of our dispatch
25 performance calculations. When we rolled it out in September --

1 or actually, March of 2017 for the landing, and then full access
2 was August of 2017. There really weren't any changes, physical
3 changes to the way our dispatchers do their job. The back end
4 calculations changed. They went from what used to be called an
5 Ops Win calculator to a PWB calculator. But as so far as how the
6 dispatchers did their daily job, it really didn't change. The
7 screens basically still looked the same. Some of the logic might
8 have changed, but we actually attempted in great length to keep
9 the processes as similar as we could from a human performance
10 standpoint. The less changes the better in how they actually do
11 their job.

12 Q. You mentioned a term Ops Win, and I've heard the OPC, I've
13 heard of that system, but I'm not -- the Ops Win?

14 A. The OPC was the calculator that was literally on the flight
15 deck, and we had some of those around the office as well. Ops Win
16 was the same performance calculator on a Windows-based computer,
17 so Ops Windows, if you would, I guess is probably what it stood
18 for.

19 Q. The same performance based calculator as the OPC had on board
20 the aircraft?

21 A. Yes, so those --

22 Q. It was just available on the desktop?

23 A. On the desktop. Yep, that's Ops Win.

24 Q. And that's gone now.

25 A. Correct, because it has been replaced by other tools, DFMP

1 for our calculations.

2 Q. When did that transition occur between OPC, Ops Win, and --

3 A. So, the full transition for dispatch took place August 3rd,
4 2017. So, the landing piece or phase of PWB started in March, but
5 that actually only was on the flight ops side and they were still
6 in parallel. Full switchover to PWB was August 3rd, 2017.

7 Q. So, in preparing a dispatch or dispatch paperwork or
8 necessary items for a particular flight, what interface -- or how
9 does a dispatcher use the PWB system at his station? What is his
10 input? What does he get out of PWB when he's setting a dispatch
11 up?

12 A. So, I actually can reference my picture. So, winds,
13 temperatures, pressures, runways, lead settings. What else I got?
14 Engine anti-ice conditions. Those are all the factors that the
15 dispatcher will make during his dispatch planning phase to meet
16 the dispatch regulations, which are slightly different, obviously,
17 than the actual landing performance of the dispatch landing
18 performance phase. But we use the same calculations based off of
19 the dispatch site.

20 Q. So, does the dispatcher have access on his console or desktop
21 to the PWB system? Is it an app?

22 A. So, it's actually imbedded right into our Swift software.
23 So, again, we didn't change any screens. So, the dispatchers
24 still went into all the things they normally do. We call it our
25 sector analysis or our one-way performance. And places where they

1 used to enter temperatures, they still enter temperatures,
2 pressures. They didn't have to enter temperatures or pressures.
3 It would auto ingest the PWB system what the forecast
4 temperature's supposed to be or the forecast pressure. But if
5 they wanted to override it and put in their own entries, just like
6 they always have done in the past, they could do that as well.

7 Q. This brings up a question for this particular dispatch. I
8 remember we saw that the dispatch paperwork for this flight, and
9 in the landing section, the landing analysis, I guess, it would be
10 to verify that, you know, the runways were suitable. There was a
11 wind in there that was labeled 120T/ -- I think it was 05 or 08.
12 And when we interviewed the dispatcher, he said that he was unsure
13 how that got there. Usually, they'll put in calm for rival
14 runways when they're preparing the paperwork before the flight
15 leaves. And he wasn't sure what 120T -- well, we asked him what
16 the T stood for and he wasn't sure. But we also -- he also wasn't
17 sure how that got there, because he said normally that's just
18 0000. Do you have any insight into --

19 A. So, it's very possible he did not clear out his sector. And
20 I was not there, so I don't know. If he says he does not know how
21 it got there, it's very possible that did not clear out previous
22 inputs from a previous dispatcher. So, if he takes over a desk,
23 those inputs are saved from the previous dispatcher. And if he
24 doesn't clear them out and start fresh on their own work, then
25 stuff can drift over back into his. It's taught and trained that

1 when you start your day, part of your startup flow is to clear out
2 existing entries, so that when you start your planning day, you
3 know what you're getting. Looking at the winds that you planned
4 or didn't plan, they were the winds from the 1900 tap line. So,
5 perhaps they were looking ahead. Perhaps he was looking on
6 flights. I don't know. I wasn't with him at the time. If he
7 doesn't think he planned them, then the most likely explanation is
8 he just didn't clear out a sector from the morning -- the previous
9 dispatch.

10 Q. Okay. Do you know what the T stood for?

11 A. Yeah, it's true. So, it's 120 true.

12 Q. And correct me if I'm mistaken. I think those were the
13 forecast winds for the destination at the time of arrival, is that
14 right?

15 A. No, actually, it's the next line on the tab. If you look on
16 the tab for his time of arrival, that was the 1900 line. They
17 were due in at 1720.

18 Q. Yeah, the earlier was different wind, if I remember, but they
19 were --

20 A. Yeah, the winds in the weather packet were variable at three.

21 Q. Yeah.

22 A. And the dispatcher's correct. The default for the system is
23 calm winds.

24 Q. And is that all that is required per regulation to plan -- to
25 look at a destination runway is to assume calm winds?

1 A. So, what we teach is calm winds, right, unless you are
2 knowingly going to land with a tailwind. In which case, then you
3 want to account for the tailwind. What we don't plan, normally,
4 is headwinds, right, especially for landing. We do occasionally
5 plan headwinds for takeoff. The system automatically cuts them in
6 half, plus we usually cut them in half at the time of departure to
7 get current conditions to help improve our takeoff performance.
8 We don't normally plan headwinds for landing. We can plan
9 tailwinds all the time. In fact, Phoenix is a great example.
10 Phoenix is very specific about how they like to operate east and
11 west during the morning or the afternoons, because they don't like
12 ATC looking out into the sun. So, they will knowingly land with
13 tailwinds there. You'll watch dispatchers every single day plan
14 the known tailwind, because it's either an east or a west
15 operation. So, we train and we check for comp checks that they
16 are planning tailwinds.

17 Q. And the forecast, again, correct me if I'm wrong, the
18 forecast for this flight was not for any tailwinds at destination,
19 right?

20 A. It was variable.

21 Q. It was variable.

22 A. And variable at three, which is pretty much light and
23 variable.

24 Q. Someplace I read, and I don't know if it was in relation to
25 this entry, but if anything was variable, but if anything was

1 variable, you had to assume it was a direct tailwind?

2 A. Most restrictive tailwind.

3 Q. Even if it was three knots, for example.

4 A. From the dispatch standpoint, for a variable wind of that
5 size, the calm computation would have worked. So, we would -- for
6 a variable at three, it would have -- the calm would have been the
7 entry the dispatcher would have most likely used.

8 Q. So, let's jump to the in-flight portion. What are
9 dispatchers -- what kind of training or guidance are they given to
10 monitor flights, and let's just go specifically to arrival weather
11 of flights. I mean, how generic or specific is the guidance that,
12 you know, they obviously have the responsibility to monitor the
13 flight, address or bring up safety concerns. But is there any
14 specific Southwest guidance that says, you should check weather
15 periodically, or you should make sure you, you know, verify this
16 or --

17 A. So, we actually have what's called the weather bulletin.
18 It's part of our Swift system, our dispatch system, and it alerts
19 us to changing METAR conditions. Every time a special's issued,
20 it literally pops up and says new weather from Burbank, new
21 weather Dallas, whatever the case may be. And those alerts would
22 go off. Oh, something's going on. So we know it's raining, know
23 it's heavy rain, whatever the case may be. We know the winds
24 change. We know the ceilings change. We do get alerted to those
25 types of things. What we don't normally do is send updated wind

1 information to the crew once they're past off of the set, because
2 they're normally getting it as they are running their performance
3 numbers because it pulls it in.

4 Q. So, there's a chance, it's likely, some level of chance that
5 this dispatcher, in the last 20 minutes of this flight, knew that
6 there had been a new METAR, a special come out of that airport
7 that indicated that -- kind of a significant change from the
8 previous one.

9 A. There is a chance.

10 Q. And that he did not have a requirement to communicate to the
11 crew. And perhaps he didn't because he felt -- I don't want to
12 put words in your mouth. Just tell me if you agree with this. He
13 felt that it was likely that while they're past this point now,
14 that they're certainly aware that ATC's passing this info.
15 They're aware that there's new ATIS, and they're dealing with it
16 accordingly.

17 A. Yeah. The process for landing is they will do what the ATC
18 tells them the winds should be a trigger to rerun performance. It
19 doesn't mean that -- I'm not excluding the dispatcher from keeping
20 them posted. We keep them posted throughout the flight about
21 changing conditions, turbulence en route, thunderstorms building,
22 stuff like that. But as so far as winds on arrival, it's not
23 normally part of our process.

24 Q. What kind of event, weather related, let's talk just weather
25 related, not necessarily winds, but any precipitation, visibility,

1 ceiling, anything like that. Is there any level of change or
2 event in the last 20 minutes or passed top of descent that the
3 dispatcher would feel compelled to -- I should reach out to this
4 flight for this?

5 A. So, if we get wind shear alerts, that's one of the things
6 we'll pass along. I know ATC will as well, but that's one of the
7 things we pass along is wind shear alerts.

8 Q. And how do you get -- how does a dispatcher get a wind shear
9 alert for --

10 A. So, one of two ways. Either a pilot comes in that ATC
11 usually puts in, or our weather provider is WSI, and as they start
12 seeing conditions, they actually can pop it in a turbulence
13 advisory or wind shear, and we'll see it that way as well. We are
14 about to see any time an airplane goes around for a wind shear or
15 goes around. ACARS is about to send us a note, and that's
16 something we've just been working on here recently that it's going
17 to automatically populate a message to us if they're a go-around
18 or a wind shear alert.

19 Q. And is that a change you're saying?

20 A. That is a change that's coming soon.

21 Q. And what drove that?

22 A. We, as dispatchers, often didn't know when flights went
23 around. We would find it, and WSI, we use a product called
24 Fusion. It would eventually show it went around, but if we were
25 busy or looking elsewhere at the time, we might not have noticed

1 it. Now, we're really going to get a pop-up ding message via
2 ACARS, saying that an aircraft has gone around or has reported --

3 Q. Okay. Going back to how the dispatcher would become aware
4 that there had been wind shear, NOTAM, or what was the other thing
5 that --

6 A. Not NOTAM, PIREP. If I said NOTAM, I apologize.

7 Q. No, you said PIREP. I said NOTAM. PIREP and what else?

8 A. So, it's literally a WSI SIGMET for wind shear that would be
9 over the field.

10 Q. And is that an alert or something that would pop up on a
11 weather section that the dispatcher was looking at?

12 A. We use Fusion and Fusion sets up an alert and you'll see it
13 as both practical and textual.

14 Q. Do you know if he -- if the dispatcher, and I don't know if
15 you talked to him or not in this particular flight, did he have
16 any awareness of wind shear?

17 A. I am not aware of what he had or did not for wind shear. So,
18 I did not talk to him on that piece.

19 Q. There was in the ATIS that came out, 20-some minutes before
20 the incident, there was low level wind shear advisory in effect.
21 So, what does that mean to you and to a dispatcher, low level wind
22 shear advisory?

23 A. So, if we were planning their arrival, if we were doing their
24 performance numbers, I mean, if we would have switched out on wind
25 shear as part of their performance numbers for landing.

1 Q. Okay, but it wasn't there when the aircraft departed.

2 A. Right.

3 Q. But it got there after top of descent, presumably. So then,
4 what would be expected. If he had seen the ATIS that said low
5 level wind shear advisory in effect, would you have expected him
6 to contact?

7 A. An ATIS would not alert us. So, we would not know it as a
8 new ATIS. We know when there's a new METAR. So, we would not
9 have seen or a new special. So, we don't get the alerts that --
10 so, we wouldn't have seen, unless we were looking at it right at
11 that time. I know I read the dispatcher's brief that he sent you.
12 I know he was dealing with a diversion on a different desk or a
13 different -- at a different city. I don't know if he saw it or
14 not. That part I don't know.

15 Q. Yeah, okay. If it had come as a PIREP, then presumably he
16 would have seen it. If there had been a PIREP at that airport low
17 level wind shear.

18 A. It would have popped up. It would have said this airplane's
19 headed towards a PIREP.

20 Q. And then, if that would have happened, according to
21 procedures, you should have contacted the flight and said --

22 A. Should have said, should have said --

23 Q. -- you're aware that there's --

24 A. Correct.

25 Q. Okay. So, is the degree that conditions are changing at any

1 particular airport -- you know, we talked yesterday with some of
2 the interviews about rapidly changing conditions, but we didn't
3 really nail that down what that meant. But is a lot of change in
4 weather conditions, is that in his guidance to -- now, if he knows
5 looking at, say a series of taps from METARs, boy, there's really
6 changeable here, I need to pay special attention to that. Does he
7 have special guidance to do that and to keep a crew abreast
8 outside of just the few things you mentioned where you should
9 contact the crew?

10 A. So, as far as keeping them abreast, yes. Keeping them
11 abreast once they're on descent, that's where we kind of get into
12 a gray area in dispatch. We do pass stuff along. Their chime
13 stops dinging at 23,000 feet, but we still encourage our
14 dispatchers, if they see something, say something. Send a
15 message, because they're still going to get it. It's just going
16 to come up as a message instead of a ding, so they'll get it.
17 What we pass along, rapidly changing conditions, again, it's
18 mostly visibilities coming down en route (indiscernible). We
19 dispatch it without an alternate, if they have to change, looks
20 like you need an alternate now. Amending the release for that
21 type of stuff. The change in the winds, not so much.

22 Q. Okay. You just mentioned something that I want to make sure
23 I understand. You said it stops dinging at 23,000. Can you tell
24 me what that means?

25 A. Yeah, so the ACARS chime that goes off on the flight deck?

1 Q. Right.

2 A. When we send them a message, just because in a critical phase
3 of flight, it's inhibited -- the chime is inhibited below 23,000
4 feet. The message is not inhibited.

5 Q. And you still get a message that says new ACARS or --

6 A. New message.

7 Q. -- whatever that message says on the screen. You just --

8 A. And we send them below 23,000 feet all the time.

9 Q. Just less you do. So, there's no -- is there any guidance to
10 dispatchers that below this altitude or within this time frame,
11 you should only contact flights for, you know, very important --
12 there's no particular cutoff?

13 A. No. Because the chime is inhibited, we actually encourage
14 the dispatchers to send flight-relevant information.

15 Q. Okay. From the dispatch point of view, from the people that
16 you oversee and that you train, are there any concerns with the
17 adequacy of the PWB system and its ability to, you know, provide
18 the right information to the right people at the right time?

19 A. No, actually, it's been really helpful. I wrote down a few
20 thoughts about why it is. Again, the philosophy between OPC world
21 and PWB world it really didn't change, right? And changing
22 weather conditions require changing performance work. We're all
23 in agreement there. What PWB has provided us that we didn't have
24 before and it kind of hits right to your area there in a human
25 factor, human performance standpoint, is it takes out some of the

1 error that we used to have running performance. If the crew -- if
2 their OPC was an op in the old days and we were running their
3 performance or if the crew was running their performance,
4 everything was a manual entry. Hit this, hit this, hit this, put
5 this number in and put that number in, every temperature, every
6 pressure. Did I need to turn on engine anti-ice? Did I not?
7 Everything was a manual selection. Did I remember to add the MEL?
8 Did I put that penalty in? And did they do it right 100 percent
9 of the time? Murphy's Law says, probably not 100 percent of the
10 time. What PWB provides as protections for us, automatically
11 includes every MEL penalty in every calculation that's done. And
12 that was a big thing for us. It provides high side and low side
13 weight protection or validation. So, if the operations agent
14 that's running the weight and balance transposes two numbers, if
15 it varies from what the dispatcher release shows by 2,000 pounds
16 or more, it alerts us and it actually stops the ops agent from
17 sending the paperwork to say, hey, let's verify these numbers, so
18 we've got a lot of -- a lot better controls around how much weight
19 is actually on our airplanes so that the performance numbers that
20 are run, then, are actually better.

21 If the crew forgot to select engine anti-ice on or the
22 dispatcher forgets to select engine anti-ice on, but the
23 conditions are wet, the temperature less than ten degrees, it
24 won't return performance, and you're not in -- you need to turn
25 engine anti-ice on. If they have it on and it's above ten

1 degrees, it literally will say it's outside of the parameters you
2 need to turn it off. So, there's a lot of protections that are
3 built in in the PWB system to help protect us from ourselves.

4 Q. Okay, thanks, good. So, I'm jumping around a little bit.
5 When the -- when a flight crew is approaching top of descent and
6 their guidance is, you know, now is the time we should run our
7 landing solution, request our landing data, and they do that, is
8 there any -- is the dispatcher, is he ever also, for just his own
9 purposes or per Southwest requirement, does he run a landing data
10 solution also for the flight at his --

11 A. Never. No, what you'll see on our release, though, and I
12 don't know if you've seen it or not. When we run our dispatch
13 landing calculation, and this is in the preplanning phase, mind
14 you, we don't only run the dispatch landing performance. We have
15 the second line on there that is the operational landing
16 performance, based on whatever winds, temperatures, and pressures
17 they put in. So, we do have that. We do run performance for the
18 crews occasionally, the actual landing performance. Sometimes
19 they have connectivity issues --

20 Q. Right.

21 A. -- whatever the case may be. The ACARS is out.

22 Q. But routinely?

23 A. Routinely, that is not -- the actual landing performance
24 numbers are not ours.

25 Q. Okay. And a dispatcher would not be aware of the actual

1 numbers that the crew had because he didn't have any reason, in
2 most cases, to run them himself.

3 A. Correct. Unless the crew calls and says, hey, it looks like
4 we're out of limits or whatever. And then, we'll go into our
5 tool, which is called the DFDP tool. We'll run it. We'll verify
6 it, say, oh, seeing the same thing.

7 Q. And is that -- okay, that tool, is that is a different tool
8 for inputting numbers into PWB and getting solutions from the
9 dispatcher?

10 A. Yeah. It's Desktop Flight Deck Performance. So, they have
11 the true flight deck performance, but it's literally the same
12 actual performance numbers.

13 Q. And it's all within the PWB?

14 A. PWB system. It's a pretty fun tool to play with.

15 Q. If a dispatcher has seen a PIREP that says, you know,
16 somebody just went around for wind shear, he should contact the
17 crew, is that --

18 A. Well, we won't see a PIREP for that unless they put one in,
19 right, for wind shear. So we don't necessarily see go-arounds.
20 And that was one of the reasons we're actually (indiscernible) --

21 Q. No, but if mentioned --

22 A. -- (indiscernible).

23 Q. -- wind shear, then he would see it.

24 A. If we see a wind shear PIREP, yes, we should pass those
25 along.

1 Q. Does the flight crew -- and I know you're the dispatch
2 manager or training manager, but does the flight crew -- what are
3 Southwest's policies or guidance for a flight crew when they're
4 approaching an airport and there has been reported wind shear at
5 the airport?

6 A. I am not familiar enough with what their procedures are.

7 Q. From the dispatch side, the requirement is the dispatcher
8 just needs to contact the crew if they become aware of wind shear
9 at the arrival airport.

10 A. Yeah, because that falls under hazardous conditions for
11 landing.

12 Q. And that would just be an ACARS.

13 A. Yeah, more than likely, unless we happen to be up on the
14 radio.

15 Q. How often does that radio link get used? Just as an aside.

16 A. So, yeah, we actually, it's funny. Forever, we were like the
17 last airline to come to ACARS, right? That was about 2003. So,
18 we used to always be really great on the radios. And then, ACARS
19 came in and a new generation came in. And ACARS became the way.
20 It's rapid, it's reliable, it's great communication, until there's
21 something non-normal. So, we've been training a lot lately in the
22 last several recurrent classes stuff is get on the radios for
23 different events. There's just so much more that you can tell
24 from a voice versus a message. You know, you're a great pilot and
25 an ACARS message can go about eight different ways depending upon

1 how you read it. But if they hear that from someone speaking it,
2 I either said, you're a great pilot, and he's, like, I know. Or
3 why is he being sarcastic? What does he think, I'm not a good
4 pilot? Right, you can tell that from the tone of the inflection
5 of the voice. You can't tell that from a message.

6 Q. But currently, you only have to use voice if ACARS is inop or
7 down --

8 A. ACARS is primary, but any time we're in the QRH, the non-
9 normal, the encouraged thing is to get on the radio.

10 Q. Does that work most of the time, voice?

11 A. Oh, yes. And so, we have a lot of station radios all
12 throughout, not only at our stations, but also throughout the
13 country, remote ops radios. And we have AIRINC, of course, too.

14 Q. All right, good. And you talked about there's going to be a
15 change coming up that is going to automatically record when a
16 pilot goes around?

17 A. Yeah, it's going to send us an alert that they went around.

18 Q. But that's not happening now or didn't happen at the time of
19 the incident, right?

20 A. Correct.

21 Q. So, a dispatcher -- well, the flight didn't go around, but if
22 it had gone around, the dispatcher wouldn't have any awareness
23 unless the pilot communicated back to dispatch, hey, we just went
24 around.

25 A. And he very well may see it on his ASD display on Fusion

1 that, hey, wait. He was just about ready to go in. But he would
2 have to be looking at it at that time to notice that that
3 happened.

4 Q. And if that did happen and a pilot sent an ACARS message,
5 hey, we just want around. Would the dispatcher have any
6 requirement to alert anybody else or report that go-around
7 anywhere else in the Southwest ops or the NOC system?

8 A. So, we would alert what we call our superintendents of
9 dispatch, our SOD group, let them know that the aircraft went
10 around. They may alert the chief, but a go-around's not a bad
11 event. In fact, a go-around is an encouraged event whenever
12 they're not properly set up. So, we, as when we got the alert
13 that they went around, what our dispatchers normally do is why did
14 they go around, right? Now I've got wind shear or they waved us
15 off, whatever the case may be, so that we have an understanding of
16 are we going to get in this time when we come back around? Should
17 we divert? Even in this example that we had that we're talking
18 about in Burbank, he had plenty of fuel on this case for what the
19 weather was. He had two alternates listed if he had gone around.
20 We had time to probably hold for a little bit, develop a plan, see
21 if the weather conditions changed. Or, if not, we could have
22 diverted as well.

23 Q. I think this will be my last question for now. We talked a
24 lot yesterday about the stopping margins, the data that appears on
25 a landing solution. Did dispatchers, normal operations, do they

1 have any visibility into that number?

2 A. If we run it in the DFDP.

3 Q. If you run it, but normally, normal ops, a dispatcher
4 wouldn't run it and he wouldn't know what the stopping margin was
5 for that.

6 A. Correct, because our regulation says we got to stop on 60 or
7 60 plus 115 percent for the wet. So, our calculation normally is
8 actually really conservative compared to what the actual
9 calculation is for most of that.

10 MR. FRANTZ: Okay, thanks. I'm going to take a break for a
11 minute and pass it to Sathya.

12 BY DR. SILVA:

13 Q. Along those lines on the stopping margins, do you get that
14 information also in the preflight release?

15 A. No. We do in a backwards way, right? So, remember, I said,
16 if we have a wet runway plan, we not only get the dispatch 60
17 percent and 115 percent with the penalty, we also get the
18 operational limit. And normally, the dispatch limit is more
19 restrictive once you start getting into RCC codes that are three,
20 like on a runway in Chicago, if it's a three, you're actually
21 going to see the operational weight go down. So, while we don't
22 see the stopping margin, you'll see the actual landing weight
23 ability go down, because of the fact that it can't land at that
24 weight.

25 Q. Okay. So, essentially, the operations get changed based on

1 the capability, essentially.

2 A. Right, and most places, we fly into three airports that have
3 really short runways, Burbank, Chicago Midway, and Orange County.
4 Most other places it could be a 14 RCC code. And the dispatch
5 limit for a wet is going to be more restrictive than that. But
6 when you go into places like Chicago, Burbank, or Orange County,
7 RCC codes for the operational weight could very well drive down a
8 lower landing weight, which is what -- how we'd see it on the
9 release.

10 Q. Okay, so dispatchers kind of get an idea of how close you
11 are --

12 A. Right.

13 Q. -- to the limit.

14 A. Because if they were over, obviously it says, okay, we got to
15 crank it down. We can't land at 128. We can land it at 125.
16 That would be the limit that would show on the release for us.

17 Q. Are those assuming specific auto brake or flap setting?

18 A. I don't remember what the brake setting is, because it's -- I
19 don't remember what it is. I'll have to get back to you on that
20 one.

21 Q. So, is there a default?

22 A. There is. Yeah, it's based off of something. I just don't
23 remember which table is hitting. So, I don't --

24 Q. And you mentioned that if you had a wind shear advisory, you
25 turn on wind shear in the performance calculation. What does that

1 mean?

2 A. So, if we're running their performance, right, we don't have
3 a wind shear for a dispatch perspective. When we're signing a
4 release, that's not a parameter that we do. But if we're running
5 the calculations or en route, the crew says, hey, can you verify
6 the numbers I'm getting? If there's wind shear advisories in
7 effect, automatic, it means we need to toggle on the wind shear
8 button in the DFDP.

9 Q. So, there's a toggle.

10 A. Yeah, there's a toggle switch.

11 Q. Is that equivalent to what the pilots have?

12 A. Uh-huh, yeah, they do it a little differently in their FMC,
13 the wind shear op.

14 Q. Do you have a -- is there a number associated with that or
15 just a toggle?

16 A. What do you mean a number?

17 Q. A number in terms of, like, knots or --

18 A. Wind shear advisory is wind shear advisory, so it's just a
19 yes or a no. Wind shear yes or wind shear no.

20 Q. Do you know what that does to the calculation?

21 A. So, for takeoff, it automatically forces a max thrust
22 takeoff. And for landing, it's going to affect the go-around as
23 well.

24 Q. What does that mean, affect the go-around?

25 A. Well, it'd be using more thrust and -- what else have we got

1 on there? Wind shear on landing is going to change the target
2 speed as well.

3 Q. And regarding the weather reports that you get in dispatch,
4 you mentioned you don't get the ATIS, but you get the METARs.

5 A. We see the ATIS, but we don't get alerted to it.

6 Q. You don't get alerts to it. But you get alerts to METARs.

7 A. Correct. METARs and TAF and special and all that.

8 Q. Okay. You know as to those, and those are as released by
9 National Weather Service or --

10 A. Yes, correct.

11 Q. Okay. Do you have access or can you get access to the
12 essentially instantaneous data from AWOS or ASOS?

13 A. Yeah, so we have a AVTEC radio system that we can dial into
14 any one of those ASOSs, if you wanted to.

15 Q. So, but that's something that you actively have to input
16 and --

17 A. Yeah, you'd have to actually dial in.

18 Q. Is there any condition where that would apply or people --

19 A. Only if the METAR isn't being transmitted through the normal
20 system, so we can dial into the ASOS during rapidly changing
21 weather conditions of ASOS, as was mentioned earlier. It's
22 sometimes a good thing to dial into that. Is it something we do
23 all the time? No, that would not be true.

24 Q. And now that you mentioned it, what does rapidly changing
25 mean?

1 A. So, very much similar to this, right? So, we see changing,
2 heavy rain, light rain, winds variable, winds changing, the
3 tailwind, headwind. Those are all rapidly changing. Normally,
4 it's not right at the landing phase. But it's certainly something
5 that throughout the course of the flight, it would be updating
6 them.

7 Q. So, is that something that's more than once an hour? Is it a
8 few times an hour?

9 A. I mean, the critical phase is going to be when they're
10 running their final performance, right? What is it then? And
11 that would be what they run. Our job in the dispatch world would
12 be to alert them that, hey, things are pretty crazy in Denver.
13 I'll just pick Denver. It's a crazy airport, right? Flight's
14 been holding, they've been reporting a wind shear. You know, dry
15 microbursts over the field. Those are the types of things we
16 alert them to so that when they're running their performance,
17 they're alerted to them as well.

18 Q. And you mentioned two different landing performances between
19 dispatch landing and operational. Can you describe the
20 differences?

21 A. So, again, ours is using the regs right out of -- right from
22 regulations, 60 percent of the dry runway or an additional 15
23 percent for a wet. The actual landing performance, oh, by the
24 way, we don't use -- in ours, we don't use thrust reversal credit
25 in the dispatch performance numbers. Actual landing performance

1 uses all of that. So, it assumes the float. It assumes
2 touchdown. And it has the 15 percent stopping margin at the back
3 side, too, that's (indiscernible).

4 Q. And when it comes to alert on -- in terms of weather alerts
5 on the system, are there -- can you describe what alerts exist and
6 what's typically checked in terms of -- or is there guidance on
7 that?

8 A. What alerts are you meaning as far as --

9 Q. Like you mentioned, with METARs, you get an alert, but you
10 don't get an alert on ATIS.

11 A. Right.

12 Q. So, are those options? Can you get an alert on ATIS?

13 A. No, we can't get an alert on ATIS. We probably could in
14 Fusion, but I don't know why you would, because actually it's kind
15 of tied to the METAR. But in the Swift system it's strictly
16 METARs and TAF that we get alerted to in that weather bulletin.

17 Q. Okay. Are those the only two weather sources that you
18 would --

19 A. Fusion or Swift for the weather bulletin.

20 Q. Let's split those out. So, start with Swift.

21 A. So, Swift, yes, we have what's called the weather briefing,
22 which is literally all the weather METARs, TAF, RVR values, things
23 like that. But we don't get alerted to all of it, but it's all
24 there. If we click on a city, we can see it all, the METAR, the
25 TAF, RVR values, RAF values, which is the RAIM (ph.) availability

1 forecast. That's all right there when we click on city. Even
2 when we're not looking at that city, we have a weather bulletin
3 tool that alerts you when new weather comes in. It pops up the
4 city. It pops up a different color. It's there to alert your
5 eye. You can click on it in the bulletin, and it will actually
6 update the weather that you see in your weather brief.

7 Q. Oh.

8 A. And it says, there's the new weather for Denver or what is
9 the METAR or the TAF? Because it says Denver TAF, Denver METAR.
10 It tells you what's changed.

11 Q. Okay. So now, in Fusion, how is that different?

12 A. So, Fusion, you can set up a whole bunch of different alerts.
13 But they're not actively looking for changing METARs and TAFs in
14 Fusion, because we already have that functionality built up in
15 Swift. They see the weather and they can build it that way, but
16 we use it in Swift.

17 Q. Is there -- can you give us examples of weather alerts that
18 you can put on Fusion?

19 A. Oh, you could do all the same. You could get alerted every
20 time there's a new TAF. You can get alerted any time there's a
21 new METAR. You can get alerted any time visibility goes below a
22 certain value. You can get an alert any time the runway condition
23 changed from one -- like a five to a four to a three. There's all
24 kinds of various alerts you can set up for field performance.

25 Q. Do dispatchers get training on PWB or that transition to PWB?

1 A. Oh, absolutely. So, we -- actually, even before it rolled
2 out, in 2016, we thought we were going to roll it out at the fall
3 of 2016, and then TALPA reared its head. So, we actually pulled
4 back on deploying it. So, actually in the 2016 recurrent training
5 cycle, that was the first time dispatchers had -- they were
6 introduced to what's coming with PWB. So, they already got
7 classroom training right ahead of it in 2016. When we delayed it,
8 we went right ahead again and had classroom training again in
9 recurrent of 2017, in the spring of that year. In July of that
10 year, we put out a two-hour CBT module, computer-based training
11 module, on the differences that they'll see with PWB. And that
12 was required to be completed before we actually made the full
13 switchover on August 3rd to the PWB system. And then, every
14 recurrent since then, spring and fall, we do some module on
15 aircraft performance, which takes in PWB.

16 Q. So, can you get into the details of what that training looks
17 like, the CBT and the aspects that are covered from the dispatcher
18 side?

19 A. Yeah. What we did cover?

20 Q. Uh-huh.

21 A. Absolutely. So, our curriculum for both the classroom as
22 well as the CBT, the PWB philosophy. So, some of those safeguards
23 that I was talking about earlier, that was some of the things that
24 were mentioned, because what's their first question? Why are we
25 changing, right? Well, that's what we talked about with the PWB

1 philosophy. Talked about system architecture, the dispatch
2 release inputs that by us putting in numbers in our sector
3 analysis or our runway performance tool, what would be passed to
4 the PWB data centers, right? How the performance limiting MELs
5 and CDLs were handled, what our default values are and what kind
6 of PWB logic is behind it. So, if you let the temperature field
7 blank, what would happen? Well, it would actually use an RPM
8 model and pick the forecast temperature for either your estimated
9 time of departure or your estimated time of arrival, right, based
10 on how it was going. That was different for them. They used to
11 always have to hand in, type in every single temperature and
12 pressure for what they thought it was going to be. Runway
13 selections and the naming conventions, the things are a little bit
14 different. Not major changes, but the naming conventions were a
15 little bit different. How does it work? If they left the runway
16 blank, which 99.9 percent of the dispatchers in there still to
17 this day, including myself, we'll actually select our runways
18 based on what the TAF shows so that we can plan it in to land into
19 a headwind. But even if they left it blank, PWB would do the same
20 thing. So, it would pick the runway that was most aligned to the
21 headwind. And then, barring any restrictions for you can't land
22 on this runway, whatever, it would choose the best performance
23 runway. So, we explained all that. Procedures for shortened
24 runways and what those look like, part of the naming convention.
25 How the flaps settings work. Performance messages that we get.

1 So, we actually get alerted if we've made an error. It literally
2 pops a little performance message in our thing saying, hey we
3 weren't able to compute this for this reason or that. So, we
4 helped explain what those performance messages were. It
5 physically won't let us in to release if the performance doesn't
6 calculate correctly. So, we talked about those things. Again,
7 that was a win with PWB for our side as well. We explained to
8 them engine fail procedures, because that was a change from what
9 we used to call a term procedure. We went through engine fail
10 procedures. It's either straight out or a turn, but it was just
11 different nomenclature. So, we covered that. We covered our new
12 standalone tool, so the DFDP that we talked about, to run actual
13 performance. A flight planning client, which is baked in the
14 Swift for us, but we also have a standalone one, in case for some
15 reason we needed to run dispatch performance numbers outside of
16 Swift, so we walked them through that. We walked them through the
17 weight and balance procedures, the -- we talked about high side
18 and low side validation. These were some of the things that were
19 covered. How the reroute planning tool works, the cross-wind
20 calculator, which was another tool that we entered. So, those
21 were all things that we covered.

22 DR. SILVA: Okay, thank you. That's it for me.

23 MR. FRANTZ: Okay, thanks, Sathya.

24 Eric?

25 BY MR. WEST:

1 Q. As I furiously jot down my questions.

2 A. It's okay if you don't have any by the way.

3 (Laughter.)

4 Q. Oh, I have some. Okay.

5 MR. WEST: Thank you, Marvin, for asking a majority of my
6 questions.

7 MR. FRANTZ: Happy to help.

8 BY MR. WEST:

9 Q. First question, is the dispatcher that was on this event
10 still here?

11 A. He is still here.

12 Q. Is dispatching aircraft into known high winds without an
13 alternate, is that a practice?

14 A. So, in our DOM, we actually outline reasons for additional
15 fuel or an alternate, right, and high winds is one of them.
16 Looking at this event, and I know I'm going off script, but the
17 winds actually weren't high. They were just in the wrong
18 direction. So, even at the worst half -- the worst half that was
19 out there showed it six knots.

20 Q. And these may not be in sequential mind order.

21 A. Sure.

22 Q. In calculating the original release, can a dispatcher figure
23 out if an aircraft will land overweight?

24 A. Yeah, our system will actually prevent them from landing
25 overweight, right? So, it will literally say you've exceeded the

1 landing performance limit. So, it will not even develop a plan
2 for us until we figure out, okay, I got to reduce my payload,
3 choose a different runway, or -- that's pretty much their options
4 there. So, it's either reduce your payload, or choose a different
5 runway.

6 Q. If there is an emergency declared, will the dispatcher be
7 informed that that aircraft is going to land overweight?

8 A. Yeah, actually, for that, we can actually run a performance
9 thing. It's called the reroute planning tab. It will show them
10 what their landing weight's going to be. Swift does not like them
11 to land overweight, but in an emergency, obviously, they can land
12 overweight. The crew will alert us -- let's just say it's a
13 medical emergency. Those happen every day. They divert -- land
14 overweight all the time. We let our superintendents know. We let
15 our maintenance controllers know. After they deal with the
16 emergency for the passenger, an inspection has to take place for
17 the overweight --

18 Q. Do you know other types of emergencies that come to mind?

19 A. From an overweight landing standpoint?

20 Q. Well, for any emergency, not just for overweight purposes,
21 but -- you mentioned medical.

22 A. Right.

23 Q. Can you think of any other --

24 A. So, any kind of system failure, engine shutdown, down to a
25 single source for an electrical system.

1 Q. That's great, beautiful, thank you. You mentioned a couple
2 of terms that I was unfamiliar with. One of them was
3 encouraged -- go-around is an encouraged event. I'm not sure how
4 you were utilizing that.

5 A. So, it's a flight ops philosophy, right? And it's trickled
6 into dispatch, because we share a lot of the same metal models,
7 the RM model. If something's not right, it's not a penalty to go
8 around. And so, we don't think of the go-around as the end of the
9 world here, because the pilots are not supposed to think of the
10 go-around as the end of the world, either. So, it's more of the
11 shared mental model aspect of a go-around. What is causing the
12 go-around might be a whole entire different event, right? It was
13 wind shear. It was awful. It was the worst thing ever. Then we
14 need to know about that for those reasons. But the fact that they
15 actually went around, which was what I was referring to, that's
16 not a bad thing. In fact, that would be encouraged.

17 Q. So, does the crew have to submit any kind of a narrative or
18 report on that go-around?

19 A. I am not 100 percent sure, but I do not believe so.

20 Q. Okay. The other one is known wind shear mean effective
21 go-around. I don't know what the effective go-around. I think
22 you mentioned that, didn't you? Was an effective go-around? You
23 asked that question.

24 A. How it would affect the go-around? Wind shear?

25 Q. No, just -- it says, wind shear means --

1 DR. SILVA: Yeah, how would it affect the go-around?

2 MR. WEST: Oh, okay.

3 BY MR. WEST:

4 Q. Means effect of go-around. Okay, I'll forget that one.
5 Okay. Do you remember what the field performance was for Burbank
6 on the initial dispatch release?

7 A. So, only because I went through it, there was a FICON for
8 555. And it was actually a pretty old FICON, but it was 555.

9 Q. 555? So, I'm sorry, could you just --

10 A. I'm sorry, that's good. It's wet, but it's wet good.

11 Q. So, it was already briefed that it was going to be --

12 A. And it was planned wet as well.

13 Q. Wet. Is Burbank a grooved runway?

14 A. I would have to look it up. Most runways in the United
15 States are. I assume Runway 8 is as well, but I would look it up.

16 Q. All right. How often are your dispatchers rotated from their
17 sectors, I guess, they're kind of sectors. They run certain
18 portions of the country or --

19 A. Sure. So, we have our workforce divided kind of between East
20 Coast, Central, and West Coast. So, that's the departure city,
21 all right? So, it kind of focuses on departure, and that's not
22 just one city. So, this particular day, the dispatcher was
23 actually working Oakland departures up and down the West Coast.
24 So, he was going up to Seattle, Portland, also went down to SoCal
25 to Orange County, Burbank, LA, and San Diego. So, that was kind

1 of his little sector. And it's true for all the desks. They work
2 a six-day rotation on that desk and then they move to another
3 desk. It'd still be a West Coast desk in this case. So, instead
4 of maybe Oakland departures, he was doing Seattle departures or
5 whatever the case may be. But it's based on where they're
6 departing from. West Coast departures often fly to the East Coast
7 and the Central, so it's -- we focus it on departure city, not on
8 the arrival city.

9 Q. Okay. The departure city, and how long do they stay in that
10 particular sector or --

11 A. So, we bid yearly, so if they're West Coast, they're going to
12 be on West Coast for the full year.

13 Q. Okay, so one year. And you bid it.

14 A. Yeah.

15 Q. So, it's possible he could stay there for two-three years?

16 A. Oh, yeah. We have some -- probably the most prized shift in
17 any dispatch office is the 7:00 a.m. West Coast shifts, because
18 those are usually the best weather decks.

19 (Laughter.)

20 Q. Are dispatchers informed when a crew declares an emergency?

21 A. We're supposed to be, right? Sometimes it's not right at the
22 second they declare the emergency, though. I'll give you the
23 example of losing an engine on takeoff, but they're going to
24 declare the emergency, but the last thing I need them to do while
25 they're trying to fly the airplane come back in around the patch

1 and land the airplane is to take even a couple seconds away to
2 talk to me. I'm going to notice them eventually, go, well, why
3 are they coming right back around? But they'll call me as soon as
4 they got on the ground or ACARS saying, hey, we lost an engine on
5 rotation. We declare it an emergency and then we get all kinds of
6 information from that.

7 Q. But eventually, you'll --

8 A. We do definitely find out, because with the joint
9 responsibility, we have to fill this out, all the same
10 irregularity reports as well, so we're going to gather the data.
11 We let our superintendents know as well, so they can send out
12 messages towards the company personnel that need to know about
13 these events. And then we wrote up our irregularities based on
14 that as well.

15 MR. WEST: Okay, thank you. That's it for me.

16 MR. FRANTZ: Greg, questions?

17 BY MR. BOWEN:

18 Q. Good morning.

19 A. Good morning.

20 Q. I just have a few questions here. Have you -- you're
21 responsible for the training for the dispatchers. Have you gone
22 through and done the pilot training modules (indiscernible)?

23 A. We have used some of them in our online training. So, you
24 guys have DLs. We have online spring, online fall, so online 1
25 and online 2. So, one of them that we just actually did, I wrote

1 it down. It's the contingencies.

2 Q. So, I guess more specifically to my question, do you use that
3 material as a resource when you built the dispatcher training or
4 was it the other way around?

5 A. We didn't get to use -- we didn't use that source, because
6 actually you guys were still developing them as well, too. And
7 what we focused on on our side, besides our standalone tools,
8 which was our DFDP and stuff like that, we didn't show them during
9 our initial training all the things the crew's going to do in the
10 FMC. What we focused on in our initial training was how does it
11 affect their role as a dispatcher? How do they still do their job
12 to generate a dispatch release? To show the performances on the
13 dispatch release? What do they do? How do they generate actual
14 landing or takeoff performance for the crew using our DFDP tool?
15 So, we focused on that side. So, from an initial standpoint
16 rollout, things that you guys show, not so much. In a recurrent
17 role, though, common strategies, non-normal landing procedures,
18 things like that, there's value for the dispatch to see that in a
19 recurrent role. So, they see some of the entries that they put
20 in. I think the last one I just remember seeing was the
21 difference between the flap disagree or flap asymmetry. There was
22 a DL on that. And we run performance, too. And so, it was a good
23 topic to say, all right, so you saw it there. How do we do it?
24 And we have the same ability in the DFDP to select the non-normal.
25 But there's a big difference between a disagree or an asymmetry.

1 Q. That kind of leads into my next question is what kind of
2 training did you guys provide for your dispatchers in the
3 selection of -- since you are a backup to the PWB system, right?

4 A. Uh-huh.

5 Q. In terms of selection and understanding of the non-normal
6 selections that are in the landing calculations for PWB.

7 A. So, literally, every recurrent, that's one of the spots that
8 we focus on. Because actual landing performance, when it does
9 fall to us, and granted, we're the backup to the backup, right?
10 You got your FMC, you got your EFB, and then we're the backup to
11 that. However, it happens, and we still run performance. So, we
12 actually put a big focus on that, because it's really pertinent
13 information. So, as so far as the non-normals go, we just had the
14 module in the spring, that dealt with non-normal procedures in the
15 DFDP. And it's not hard. It's not difficult. We'd run all our
16 normal landing performance and just do all the normal setup, and
17 there's literally a dropdown box that has every QRH non-normal.
18 You select the appropriate non-normal. It factors in their
19 performance.

20 Q. Thank you. Can you describe briefly what the risk management
21 model looks like that you use in dispatch?

22 A. So, we use the same green, yellow, red that flight ops does.
23 In fact, we often work together in development with that. And
24 dispatchers understand what it means for themselves to be in the
25 yellow or be in the red. And we also kind of focus in on what it

1 means for a crew to be in the yellow or the red, and how task
2 saturation can become a problem for both a pilot and a dispatcher,
3 how things that seem really easy when you're sitting on the
4 ground, you know, in an office might not be quite so easy when
5 they're in the air dealing with not only the weather, but dealing
6 with ATC. They're dealing with other traffic. They're dealing
7 with other issues that might be in the flight deck. So, that's
8 where our RRM training comes in with red, yellow, green.

9 Q. Just to clarify for my own, here, you mentioned earlier that
10 the T indicated the top left box of the release there where it
11 talked about the (indiscernible) winds for the landing, you said
12 the T stands for true.

13 A. Right, so as dispatchers in the dispatch performance module,
14 so where we put in our runway performance, we put in winds from a
15 TAF. That's what we're looking at, if we're going to use winds,
16 right?

17 Q. Right.

18 A. PWB will automatically take that true wind and do the
19 magnetic calculation.

20 Q. So, if you see it depicted and it says 120/08T --

21 A. That was 120 true at eight knots.

22 Q. Thank you. All right, you talked about dispatcher's alerts
23 that are available and filtering those alerts for the dispatcher's
24 use.

25 A. Uh-huh.

1 Q. Is there a standard or do you provide training that removes
2 alerts that shouldn't get eliminated, if you will? In other
3 words, is there a guideline or a standard that establishes you
4 will keep these alerts available to you?

5 A. Yeah, so in Swift, they're kind of hard-baked into the
6 system, right? They have to pull up the weather bulletin tool, so
7 they have to physically select it and say, okay, here's my weather
8 bulletin tool, but we always kind of tell them that's their --
9 don't file an ASAP tool, because it's going to alert them to
10 changing TAFs, changing METARs. Oh, I missed an alternate. Oh,
11 look, the weather changed, I need an alternate. So, they are
12 certainly trained and taught in the function of pulling up the
13 weather bulletin tool. They can change some of the parameters.
14 We set it up so it basically meets the 123 rule. Any time that
15 anything falls below, they're going to get an alert on a METAR if
16 it's below 2,000-foot ceilings and three statute miles. It will
17 also alert them any time there's any precip. So, even if it's
18 practically sky clear, but if it's raining, it's snowing, it's
19 doing something else, we'll get an alert every time when the METAR
20 includes some form of precip as well. And we get alerted to every
21 time a TAF is reissued.

22 Q. Thank you. I'm going to relay a personal experience just to
23 get a feel for -- that was a one offer --

24 A. Sure.

25 Q. -- from your perspective if it happens frequently. But in

1 reference to the comment about a ding going silent on the ACARS
2 below flight level 230, I experienced something not too long ago.
3 There was a lot of weather in Texas and I was coming from the West
4 Coast into Austin. And we were deviating around weather, so the
5 environment internally in the cockpit was obviously busy.

6 A. Uh-huh.

7 Q. And I was on the localizer inbound to the runway and noticed
8 that I had a message. Obviously didn't hear a ding, as it's
9 inhibited. And the message was, due to congestion on the ground
10 in Austin, divert to Houston. So, fired off a quick message.
11 Here's where I am, do you really want me to do this? And they
12 just came back and said, disregard. So, my question is, does that
13 happen a lot? Is that frequent, infrequent? Do you have any feel
14 for that?

15 A. So, is it a risk when the chime's inhibited below 23,000 feet
16 that you may miss some pertinent information? Yes. But we also
17 tell our dispatchers, if you don't hear back or a roger back or an
18 okay or anything within a reasonable amount of time frame, we get
19 the same complaint from the crews sometimes that, hey, you didn't
20 roger me back, right? If we haven't heard from them in a couple
21 of minutes and you really want them to divert, it's our
22 responsibility as a dispatcher to reach out through any means.
23 Try sending another message, but if it's inhibited, you probably
24 won't see that one either. We can always try bringing you up on
25 the radio. If we really need to do something, we can always go

1 through ATC. It's a last resort, but if that's really how we need
2 to do it, that's our responsibility to be able to rapidly
3 communicate with you.

4 Q. Do you think given weather conditions, the impact being the
5 workflow in dispatch, that that could be a manning issue as well?

6 A. Sure. Dispatchers have workload issues as well. We've
7 actually tried really hard in the last few years to bring down the
8 number of flights that are on any dispatcher's desk. CBA
9 agreements as well have brought down that number to what we
10 consider to be a manageable workload between TWU and the company.
11 And it's come down a lot in the last five-ten years. I often say
12 there's -- we see so much more today than we used to. Our tools
13 are so much better. But that also puts us on the hook for a lot
14 more, because we're much more situationally aware. We have a
15 bigger responsibility to alert and keep informed. And that's
16 really where our job is these days. Developing paperwork, there's
17 computer systems out there I'm sure you all know, that they can do
18 that. But our role really has come into a how do we help you and
19 assist you and keep you protected while you are share (ph.)
20 flying?

21 Q. All right, thank you. And the last question, are you
22 familiar with the dispatcher involved in the incident aircraft for
23 Burbank. You mentioned bidding position and duty. Do you have
24 any idea what his familiarity or time in service dispatching
25 flights into the sector that would represent Burbank?

1 A. You know, I should have pulled that up, actually. So,
2 obviously, in my training records, I can tell you exactly how long
3 he's been here and stuff like that. Right off the top of my head,
4 I'm going to put him at about eight years of dispatch experience,
5 which means, he's been on reserve, so he's floated around to all
6 the different areas. Even that day, I don't know if that's his
7 normal sector or not.

8 MR. BOWEN: I'll defer that to Mr. Frantz if he wants more of
9 that information or not, but I have no further questions, thank
10 you.

11 MR. FRANTZ: Thanks, Greg.

12 Rich?

13 BY MR. LEE:

14 Q. Just a couple things. As far as PWB, you mentioned that the
15 MEL is auto-populated. How is that working? How does that work?
16 What system?

17 A. So, Swift will actually pass the performance penalty, right,
18 so got an MEL on their thrust reverser or not, whatever the case
19 may be. By having it on our dispatch release and tied to our jet
20 plan number, when we hit send file, to send and file the release,
21 send it to the station, it also sends the fact that there is an
22 MEL tied to airplane for all the performance that there had been a
23 run for that flight, Flight 1234 from Dallas to Houston, and it
24 will automatically calculate all the penalties associated with the
25 thrust reverser (indiscernible).

1 Q. When calm is entered in --

2 A. Calm is the default, so they don't even need to enter it.
3 It's the default.

4 Q. Okay, so if calm is the default, does the performance model
5 use some sort of standard tailwind for calm or is it actually
6 zero?

7 A. Yeah, it's truly calm. Because what we train and teach is
8 we're planning the runway that's normally into a headwind, right?

9 Q. Yeah.

10 A. So, the thought there is, we plan calm. We plan the runway
11 that is into a headwind. We couldn't in this example, because
12 they were actually below minimums, 415 and 33, right? So, they
13 planned eight. Which is why you would have planned a tailwind,
14 right? But calm is truly calm. The thought is, we planned a
15 runway that should be into the headwind based on the TAF. So,
16 when the crew gets there, if they have a headwind, they actually
17 get better performance than what we planned on on release.

18 Q. And then, I think you mentioned you weren't sure what the
19 stopping -- does it use max manual for you to get --

20 A. I should know that. It just escapes me right now, but it is
21 based on one number, and I can't remember what it is. I think
22 it's max autobrake is what it actually is. In fact, I'm almost
23 positive it's max autobrake, because max manual braking should get
24 you a little bit better performance, but we tie it to max
25 autobrake. That is the answer.

1 Q. Kind of the DRM or have you noticed that -- I'm assuming that
2 gets evaluated during your recurring evaluations.

3 A. The dispatch resource?

4 Q. Yeah.

5 A. A piece of it, yeah. It's a recurrent module every year.
6 It's part of our initial training as well. Shedding work load,
7 there's actually a chapter in the DOM itself that talks about
8 workload and workload management and raising your hand and saying,
9 help. Everybody gets buried once in a while. There's no harm in
10 that. It's actually very similar to the go-around philosophy,
11 right? Your desk is swamped with weather. We're actually pretty
12 good, our chief dispatchers, with walking the floor, seeing who it
13 is, being proactive, calling out additional help when they need
14 to, redistributing flights off of people's desks, but they can't
15 be everywhere all at one time. This particular dispatcher I know,
16 because I read his report, he said he was dealing with weather
17 throughout SoCal. He was dealing with a diversion on a different
18 flight. He was probably busy. Could he have asked for help?
19 Absolutely. And would have help have been granted to him? Yeah,
20 I really believe help would have been granted to him. But
21 sometimes, we don't always know we're in the weeds when we're in
22 the weeds.

23 Q. I'm glad you went there, because that's kind of what I'm
24 asking about is that have you seen any issues with an experience-
25 level difference with people around that are supposedly going to

1 help asking for help? Is there -- we're all individuals. We're
2 different every day we come to work. Have you seen an issue with
3 the DRM part of experience-level differences between people in
4 their pod, I guess, is what we referred to it before, of asking
5 for help?

6 A. I want to say no. There's definitely experience-level
7 differences, right? We've got experienced dispatchers that have
8 been out there 20 years. We've got folks that have been out there
9 for three years now. We got folks that have aviation degrees or
10 pilot's licenses and things like that with folks that did not, but
11 they're all at different experience levels. But the pod concept
12 that you actually mentioned I don't know if you guys have visited
13 the NOC yet or if you're going to and to see it. First of all,
14 it's a really good work environment, and I'm proud of my team.
15 There's no way around it. But the way we set it up is you're
16 literally with your group of people. And they're all working
17 desks that are similar to your desk and you're back to back. We
18 call them six-packs. And it's literally because it's three on
19 this side, three on that side. And you're all so close that you
20 can talk to each other very easily. And if I'm struggling or I do
21 have something, it's real easy to turn to my right and say, hey,
22 can you take a couple flights off my desk? I'm dealing with this
23 stat MD call. Or I'm falling behind on my releases, do you mind
24 sending a couple for me? Right? And then it comes right back.
25 All of a sudden, they're busy and we can help them out as well.

1 It's really easy to switch systems, really easy to run anybody
2 else's flight, if we need to. It's not like they got to transfer
3 it over. We can just pull up a flight number and start typing it
4 in. Fusion's really easy to do flight following if we need to.
5 It's a really good group. Not everybody gets along 100 percent of
6 the time, but, boy, I'm telling you, when they're in that office
7 and they're in that environment, they really work together really,
8 really well. And the pod concept really helps create a
9 communication between them.

10 Q. So, you haven't seen necessarily any DRM issues during
11 evaluations or anything?

12 A. No. I mean, we want them to ask for help if they need it.
13 It usually starts with your pod mates. And if they're just as
14 busy, then it's going to have to go through a chief, which is what
15 the manual actually says.

16 Q. So, the last thing I have is you mentioned that there's
17 plenty of fuel on board. And it seemed like there was some extra
18 fuel for planning. And if I remember correctly, there was, like
19 the dispatcher might have added some and then the program added
20 some. There was -- seemed to be some extra notes. Did you look
21 at that or why was there so much extra --

22 A. So, he put 35 minutes of dispatch add on there, as well as
23 having Las Vegas and Ontario, which just looking at it, there is a
24 lot. It's a lot, right? I wasn't there that day. I don't know
25 what the conditions were. I did read his narrative. He did say

1 that besides the fact that it just showed showers there, there was
2 imbedded thunderstorms throughout the SoCal region with changing
3 weather conditions. And he definitely protected the fact that
4 this gives us a chance to hold. This gives us a chance to divert.
5 We don't want to have a perceived low fuel state amongst the crew,
6 right? We have time. We have options. So, from a dispatch
7 release standpoint, he definitely gave them options from that
8 standpoint. Did he need Burbank and Las Vegas and Ontario? I
9 wasn't there for that. Is there usually harm in adding a second
10 alternate? No, there's not.

11 Q. So, what I'm looking at is you said you have three short
12 runways that you guys do, and Burbank is one of them. And you
13 have two alternates and then you added on additional fuel. So, it
14 is something that --

15 A. So, I get what you're saying, but if the dispatch landing
16 performance, 60 percent or 115 of a wet, it says you can land at a
17 structural or this weight or that weight. Then, as long as you
18 can land at that weight, fuel, up until that point really isn't a
19 hazard. It can be a help for options, right? Hindsight's 20/20
20 today, right? Would a little less fuel have made a difference?
21 Yeah, maybe. But maybe it would have been different if we had
22 just gone around, held for a little bit and said, you know what,
23 let's go to Ontario. Let's go to Vegas. So, that's -- without
24 being in the seat at that moment, it's hard to give a say on that.

25 MR. LEE: All right, thank you. That's all I have.

1 MR. FRANTZ: Okay, thanks, Rich.

2 Tom, before we continue --

3 DR. SILVA: Kevin?

4 MR. FRANTZ: -- I'm going to take a break, short break. And
5 then we'll finish Kevin, and then we'll see if anybody has any
6 follow-up, so we're probably two thirds.

7 (Off the record.)

8 (On the record.)

9 MR. FRANTZ: Okay, Kevin.

10 MR. FERGERSON: Yes.

11 MR. FRANTZ: Any questions?

12 MR. FERGERSON: Just a few.

13 BY MR. FERGERSON:

14 Q. During recurrent training, is the recurrent training just
15 all, I want to say one way, training and/or evaluation. Are there
16 any scenarios provided?

17 A. Oh, yeah. It's --

18 Q. It's a high workload where they're expected to load shed?

19 A. So, that scenario in the classroom, obviously wouldn't be
20 real doable. But it's actually something that we actually do
21 observe as we're doing our yearly comp checks. And it's something
22 that we actually -- we talk about our MOs. We talk about workload
23 and the stressors that -- for the dispatcher. We talk about when
24 they're in the yellow and what that looks like and how they can
25 miss different things when they're in the yellow that they might

1 not if they were in the green. So, those scenarios are work
2 that's part of the comp check process. We talk about it in the
3 classroom in a DRM type of environment, but the scenarios
4 themselves and how it actually affects get kind of checked and
5 looked at during the comp check process.

6 Q. In kind of a scenario of this day, a go-around diversion
7 occurring at your desk, is that kind of a -- probably automatic?

8 A. It's not automatic because diversion's a fairly normal part
9 of --

10 Q. Yeah.

11 A. -- a fairly normal part of our day. You know, we provide the
12 diversion procedures. We keep the crew informed. The crew keeps
13 us informed. We alert our superintendents. We alert the
14 diversion city that you're on your way. It's -- if you would,
15 it's a very set flow, kind of, of what's going on. Is it an
16 additional event? Absolutely. Is it in addition to your
17 workload? Absolutely. But it's not something that we would
18 consider out of normal flow of what we do. And one of the reasons
19 we brought the workload as far as number of flights on the desk is
20 so we can be more attuned to those types of things.

21 Q. Is there any training and/or policy relative to heavy rain
22 and heavy rain resulting in a highly variable state of RCC values?

23 A. So, we do train. Obviously, we train the T-CAT for takeoff.
24 We train the L-CAT for landing. We train the different levels of
25 what we call clutter. It's, you know, a beautiful Southwest term

1 of more than 25 percent. We can talk about actually light rain
2 events with the rubber buildup on the runway when the rubber can
3 actually be the slickest. It's kind of similar to driving on a
4 regular road. Those things do all get trained.

5 Q. You spoke about the transition in March of 2017 went
6 initially with --

7 A. Landing.

8 Q. -- landing. And during that time, from March until August,
9 when full functionally the Ops Win was running alongside, as well
10 as the OPC --

11 A. Right.

12 Q. -- on aircraft?

13 A. At that time, Swift was not updated to do -- the full
14 switchover was when we went to takeoff as well, and that's when
15 Swift changes occurred.

16 Q. Okay. The, I think you called it the DFDP. And I assume the
17 D is -- the first D is desktop?

18 A. Yes, correct.

19 Q. Can you describe what that interface looks like? Is it a
20 single page for all your input and a single page for all the
21 takeoff data?

22 A. So, we have three different tabs. So, when you sign in, you
23 put the flight number in. You put the city pair and the aircraft
24 number in. It brings up the screen, and it has three tabs across
25 the top. It has takeoff, landing, and brake cooling. So, click

1 on the takeoff tab, it populates the screen. Different events you
2 put in, you select your runway. Why don't I just look at it?
3 It'd be easier to do it that way.

4 Q. It's different than what the pilots see --

5 A. It is, yes. We are not looking at an FMC type input or
6 anything else like that. It is a much more user friendly tool, if
7 you will. And by design, because if a dispatcher had a plane in
8 FMC, they would be lost.

9 I can show you the pictures of it, too, if you like. But as
10 so far as what we actually calculate, and that's not the greatest
11 picture, but just takeoff inputs. So, we have all the same ones
12 and you can kind of see, it's literally it's not line select in
13 all of this. It's actually much easier, but it has all --

14 Q. Dropdown menus.

15 A. Yeah, it has all the same things. So, it's tied to our jet
16 plan number. So, for takeoff performance, it's tied to a jet plan
17 number. You can run landing performance without a jet plan number
18 and you can make it go anywhere you want it to, and run any
19 scenario in there you want. You can pick up the three different
20 runways just like the CFDP can select up to three different
21 runways. Runway surface conditions, those are selectable options.
22 Six dry all the way through all of our clutter penalties. Wind
23 shear, this is one of them we talked about. It's literally -- and
24 see there, right now it says wind shear, no. You might not be
25 able to see it. It's literally wind shear, yes, and that toggles

1 that on. Max thrust, so if we wanted to turn on max thrust,
2 increase the stopping margin for the departure event, we can do
3 that. If you leave the environmentals for temperature, pressure,
4 and winds blank, it will literally pull in the most current
5 weather that's out there, which is what our policy is is to leave
6 them there. If you want to do scenarios to see how things went,
7 then you can type stuff in there and it will override whatever the
8 current winds are. And then, it looks very similar. You would
9 toggle to the landing page, same thing. Pick runways, pick your
10 environmentals if you want to, pick your surface conditions. It's
11 much easier in our mind, because it's a Windows-based platform.

12 Q. Yeah. Would you say, you know, with the training provided,
13 that's a fairly intuitive interface from a human factor
14 standpoint?

15 A. Yes, I would say so. And then, we actually put a decoder
16 ring out. It's actually in our DOM. So, for the outputs, if they
17 want explanations, whatever, we literally have everything outlined
18 about what the output is.

19 Q. The wind shear toggle that you pointed out there, that's a
20 takeoff only? There isn't a wind shear toggle on the landing
21 module.

22 A. Let me double-check. I don't think there is. Correct. Just
23 runway surface, and then we have environmentals. We have our
24 aircraft configurations for engine anti-ice, en route icing, A3
25 (ph.) mode. Right, so -- because that's a change in our landing

1 point. Flaps setting, that'd already be in the default for actual
2 landing, but the ability to go 15 or 40, the non-normals, as well
3 as your weights, zero fuel weight and landing weight.

4 Q. Selecting RCC values, is that a dropdown where you just click
5 on it and you see all the values --

6 A. Yes. Yeah, you can, you know I'll show it to you here. So
7 you can see surface condition and you can see it's a dropdown.
8 And literally, they're all listed there as well.

9 Q. Okay.

10 A. So, again, much more intuitive than perhaps trying to teach a
11 dispatcher. Initially, actually, when we first looked at rolling
12 off the system, we thought that we were going to have the same
13 backup app on our EFB that you guys have. But trying to teach
14 them how to use that and all the line select keys and stuff, what
15 if we do this instead? Make it a little bit easier for us.

16 Q. Talked about the alerts, like if a special comes out, special
17 observation comes out. Is the training and evaluation, the
18 expectation of a dispatcher is to recognize, okay, the weather --
19 here's the special. That that exceeds an aircraft limitation or
20 is below minimums for that approach?

21 A. Ideally, well, I do not (indiscernible). Ideally, I wish
22 they would recognize all the (indiscernible). What they're
23 probably going to focus on more than anything is the visibility,
24 right, because it's kind of our thing. Am I legal to continue, am
25 I legal to go, am I going to be below minimums? Should they be

1 looking at winds, things like that in consideration? Yes. But at
2 most airports, there's a reciprocal runway you can turn around and
3 come and land to. Burbank on Runway 8, with what we had that day,
4 that would have been one of those things he should have been
5 focusing on.

6 MR. FERGERSON: That's all I have.

7 MR. FRANTZ: Okay, thanks, Kevin.

8 So, we'll do another quick round to see if anybody has any
9 follow-ups, and I've only got a few.

10 BY MR. FRANTZ:

11 Q. And this is a little ancillary to this investigation, but can
12 you tell me what, from the dispatch point of view, Southwest point
13 of view, what the requirements are for listing an alternate for a
14 flight? When do you have to list an alternate? When do you have
15 to list more than one?

16 A. So, there's three situations where you always have to list
17 two alternates. If we use an exemption 3585, if we're using
18 another exemption that we call NextGen RVR, it's kind of a crazy
19 little tool (indiscernible) some other spot where you have to use
20 (indiscernible). Any time the weather is marginal at your
21 destination and first alternate, and marginal is defined as less
22 than 6 hundred and 2 at both places. Those are the three
23 situations where you automatically have to list two alternates.
24 Places where we do list two alternates is Florida all the time in
25 the spring and summer, because you don't know which side of the

1 thunderstorm you're going to get caught on. And we'd hate to drag
2 them right back through a line that they just passed through. So,
3 those are some of the practical reasons to list two alternates.
4 And so far as listing alternates, it's not strictly tied to the
5 123 rule. The 123 rule, quite frankly, is not a reason we usually
6 don't land, right? Ceiling of 1,500, whatever the case may be.
7 It's one of the reasons we have the exemption 15466, for the 112
8 or the 113 rule. So, we have things for gusty winds, single
9 runway operations, high traffic volume. There's a lot of
10 different reasons why would list an alternate, even if it wasn't
11 required based on the regulations of ceiling and visibility.

12 Q. Does a dispatcher, as he's building a release for a flight,
13 does the Swift system prompt him at any point to say oh, because
14 of condition X, you now need --

15 A. It does not.

16 Q. -- as second alternate or --

17 A. No.

18 Q. So, it's up to the dispatcher to look at everything and --

19 A. And recognize.

20 Q. -- and recognize and say, I got to put another alternate on
21 for this plane.

22 A. Correct. We're looking at a new system, hopefully. And that
23 one will, but Swift is a fairly old dispatch system.

24 Q. I know you talked about it, and I may have been distracted if
25 you covered this, but can you give me just a high-level view of

1 what's included when a dispatcher goes through his new dispatcher.
2 He's going through this DRM training. What are some of the topics
3 that he's covering? What is he focused on? What does it
4 emphasize?

5 A. So, the DRM piece, the teamwork aspect, the asking for help,
6 the shared mental model with the flight crew, understanding what
7 are triggers for being in the yellow, being in the red? How does
8 that affect you as a dispatcher? How does it affect what you're
9 doing? How does it affect when a crew's on in the yellow or the
10 red? How do you communicate with somebody that's in the red?
11 And, you know, it's always funny, because the first thing they say
12 is, oh, you want to be really nice and gentle to them. It's like,
13 no, it's actually just the opposite. You need to use command
14 language, because if they're in the red, they're not thinking for
15 themselves. So, it's just interesting to talk to the different
16 things. But those are some of the things that we deal with. And
17 the collaboration piece of all groups working together.

18 Q. Is that emphasis on the dispatcher, individual working with
19 his team and the people around him and the pod and other assets he
20 has available to him in the NOC? When you talk about all the
21 emphasis on communications and interaction or does that also have
22 a component that includes his interaction with the flight captain?

23 A. Yes, absolutely.

24 Q. And does the training at all address, you know, what they
25 used to call, you know, power differentials, you know, kind of

1 what the genesis of CRM was years ago with Captain NFO, and now is
2 a dispatcher in the group, but the dispatcher is it that could be
3 and there often is perceived differentials in power and control
4 between the dispatcher and a captain. Does the training address
5 that?

6 A. Yeah, as far as emergency authorities and things like that,
7 as well, yeah, it does address that in the initial training of
8 DRM, in initial class, too, it kind of goes over the history of
9 what even brought about CRM in the flight deck.

10 Q. The dispatch release lists the dispatcher as an instructor.
11 What does that mean?

12 A. So, it means he's a desk trainer. Whether or not he was
13 actually training that day or not, and I don't think he was, he is
14 a desk trainer. So, he's not an instructor. He's not an
15 instructor. He's not part of my instructor team that would teach
16 in the classroom and things like that. But once they get out of
17 class, we put them through six months to almost a year's worth of
18 OJT on the floor, working with different dispatch trainers, which
19 are -- shows instructor on it, but they're dispatch trainers. And
20 that means that a trainee, what we call an assistant dispatcher,
21 they'd be working under that dispatcher's authority, learning how
22 to do the job on the desk under that other dispatcher's authority.

23 Q. Going back to the low level wind shear, I looked at the ATIS
24 that came out about 25 minutes before the incident, and the ATIS
25 showed it -- the ATIS listed NOTAM low-level wind shear advisory

1 in effect. So, there was a NOTAM out for low-level wind shear
2 advisory. I looked at the PIREPs that we accumulated in our
3 investigation. I didn't see a PIREP at Burbank for low-level wind
4 shear. But there was a NOTAM for low-level wind shear advisories
5 in effect. What does that difference mean to you? A NOTAM for
6 low-level wind shear advisories versus seeing a PIREP that just
7 said wind shear.

8 A. So, I'm not sure why it would say NOTAM, so I'm a little
9 confused on that.

10 Q. I, as well.

11 A. I did not see that. Normally, if I would see that, I would
12 say that it means the advisories aren't available, if it's a NOTAM
13 for low-level wind shear, so that the automatic reporting is not
14 (indiscernible) --

15 Q. The NOTAM would often say low-level wind shear advisory is
16 out of service.

17 A. Yeah. That's what I would have expected.

18 Q. So, that's something I can look into further, because I'm not
19 sure.

20 MR. FRANTZ: Okay, that's all I have, thank you. We'll go
21 around one more time, see if anybody has any follow-ups.

22 BY DR. SILVA:

23 Q. Just wanted to clarify that green, yellow, red delineation.
24 What is that referring to?

25 A. So, kind of your mental state, right? I'll tell you all

1 right out. I came into work today in the yellow. I can't imagine
2 why, right? So, there's stress --

3 UNIDENTIFIED SPEAKER: Because the Dodgers lost.

4 (Laughter.)

5 MR. GRESSICK: This is the truth. I don't know if you heard
6 me, but that is the truth. I'll guarantee my daughter's feeling
7 that way right now.

8 A. It affects the way you work, right? It affects the way you
9 think. It'd be great to say we're always in the green, and that
10 our normal flows and our normal processes work 100 percent of the
11 time and they're perfect. They're designed that way, and the SMS
12 model helps us keep them that way, so it protects us from being in
13 the yellow or the red when we're there that we can still get back
14 on track. But we make errors, the more deeper into the color
15 scheme we go. And that's kind of how we look at it.

16 BY DR. SILVA:

17 Q. So, is that -- it sounds like it's self-disclosed.

18 A. As far as what?

19 Q. What color you're feeling?

20 A. Yeah. I mean, yeah, you wouldn't -- I'm not going to come in
21 today and -- well, I did now, but I wouldn't normally come in and
22 tell my pods, I'm in yellow today, right?

23 Q. Okay.

24 A. Most common reason about being in the yellow right off the
25 bat, probably fatigue, right? Certainly from a flight crew.

1 Dispatchers feel that same fatigue sometimes, too. They work six
2 days in a row. If they're working the 5:00 a.m. shift, six days
3 in a row of getting up, coming in in the middle of the night, you
4 can be fatigued as well. There's counter measures to that.

5 Q. So, where does that information go?

6 A. Oh, insofar as --

7 Q. How do you use it, yeah.

8 A. How do we use it? They have to self-identify. So, yeah, you
9 were talking about self-identification. They have to know. They
10 have to recognize that I am going to -- do we train other
11 dispatchers to realize that, hey, Tom's in the yellow today?
12 Yeah, and we're supposed to, hey, can I help you out? So, that's
13 how we train through our DRM process that you need to recognize
14 where other people are in different states. We should be able to
15 recognize when someone is in over their head. They're dealing
16 with diversions. They're dealing with weather. They're dealing
17 with reroutes. How do we help them? How do we assist them? What
18 can I do to make it easier for them?

19 Q. So, are those colors conveyed anywhere or --

20 A. Yeah, that's actually in our manuals.

21 Q. So, are you -- is there, like a card or something at the desk
22 where they view that or is it --

23 A. No, it's in the manuals. It's part of our process, but it's
24 not a desk tool. They don't get to hold up the yellow card today.
25 I'd like to sometimes.

1 Q. It's essentially an internal assessment.

2 A. Yes.

3 Q. Are you aware of any safety initiatives either before the
4 incident or after the incident regarding -- so internal safety
5 initiatives regarding short runways -- short runways
6 (indiscernible) --

7 A. I know we are currently working on a long landings on short
8 runways project. I don't know if that was started before or after
9 the incident. I'm actually part of the email chain, but I have --
10 I'm not part of the meeting chain. And I don't know if it started
11 before or after that.

12 DR. SILVA: (Indiscernible) my last question.
13 (Indiscernible).

14 MR. FRANTZ: Eric, any follow-ups?

15 MR. WEST: Yeah.

16 BY MR. WEST:

17 Q. What are the responsibilities of a dispatcher during the en
18 route portion of a flight?

19 A. So, besides monitoring the progress of the flight, obviously,
20 we can talk about the -- it's keeping the crew updated. Hey, they
21 just closed the runway we had you planned on, right? So, changing
22 airport conditions, changing weather conditions. The TAF change,
23 we need a new alternate. Your alternate weather is now below
24 minimums. We need to get you new numbers for a different
25 alternate. Or we can delete your alternate, because the

1 destination no longer needs it. Anything that can be part of
2 PIREPs that are along their route sending them information, new
3 FPGs, flight planning guidance, that come out. Anything that
4 could affect how our customers feel about that flight, and our
5 customers are the two folks sitting right up front, trying to keep
6 them well advised of any situation. The no surprises model, if
7 you will, is kind of our main philosophy. The TAF went without an
8 alternate, because it was above 2,000 as the case may be but
9 amends to 1,800. The crew's not going to have any issue getting
10 in. But if they're surprised by the fact that when they are
11 pulling up at 1,800 overcast, and the dispatcher didn't tell them,
12 that's a surprise. We want no surprises. So, we tell them --

13 Q. Is that in the dispatch manual?

14 A. Yes, we need to keep them advised, yes.

15 Q. Okay. Can you, off the top of your head, is there a chapter?

16 A. Yeah, that would be Duties and Responsibilities. That'd be
17 Chapter 3 from the dispatch manual.

18 Q. Dispatch manual, Chapter 3. Is gust information part of the
19 landing data solution?

20 A. So, on the dispatch module in Swift, it is not. In the DFDP
21 tool, it is. So, for the actual landing performance, it is. And
22 that's no different OPC or PWB. That's always been the case.

23 Q. Can you explain the access dispatchers have to ASOS and AWOS
24 data?

25 A. So, we can pull it up. We mentioned that earlier. We

1 have -- we use the AVTEC radio phone system. And literally, for
2 every city, we have a bunch of different numbers which may be
3 used, whether it's operations. And one of the numbers that you
4 can always dial up is the ASOS. So, if for some reason the METAR
5 wasn't being transmitted through the normal circuits and we needed
6 to get the current conditions, we can now write it to the ASOS.

7 Q. So, in other words, if the ATIS is not available, then that
8 would be an alternate way of getting --

9 A. ATIS or the METAR, right.

10 Q. Or the METAR.

11 A. Sometimes the ATIS is available, but the METAR is not,
12 because the tower got it, but it's not being transmitted to the
13 server.

14 Q. So, it's not part of a regular --

15 A. Right. We don't normally dial up ASOS unless we need to.

16 Q. Got it. Okay. And I'd like to make a formal request for
17 the -- as an action item, the list of alternates. You mentioned
18 alternate airports.

19 A. Oh, as far as when you should plan an alternate or --

20 Q. Yes.

21 A. -- when we need two alternates?

22 Q. Yeah, you mentioned that.

23 MR. WEST: So, Marvin, I'd like to make a request for that.

24 DR. SILVA: Is that guidance in your DOM?

25 MR. GRESSICK: Yeah.

1 MR. FRANTZ: Is it in the Dispatch Operations Manual?

2 MR. GRESSICK: Yeah, DOM, as far as when --

3 MR. FRANTZ: I have a copy of that.

4 MR. WEST: Thank you. That's all I have.

5 MR. FRANTZ: Greg, what you got?

6 MR. BOWEN: I just have one follow-up question. And it may
7 have been addressed and I might have been asleep at the switch,
8 but I just want to make sure.

9 BY MR. BOWEN:

10 Q. You talked about in dispatch planning for a flight and
11 looking at available runways. You referenced runway length versus
12 weight versus wind. Does the dispatcher also look at the minimum
13 weather conditions for an approach to those runways?

14 A. Absolutely, because we plan most suitable. So, suitable
15 goes, is into a headwind? That's what we try to plan. That's
16 obviously our preference. Can we land up to a 10-knot tailwind?
17 Sure, we can, but we try to plan into a headwind. That's why we
18 plan things calm the most period of time. But it's no sense
19 planning it to a runway that if you got there, it was below
20 minimum. So, looking at the approach plates, seeing what the
21 minimums are for that approach, that's part of our --

22 MR. BOWEN: I just didn't hear you mention that. I just
23 wanted to clarify.

24 MR. GRESSICK: Yes, thank you.

25 MR. BOWEN: That's all I have.

1 MR. FRANTZ: Okay, Rich, any follow-ups?

2 MR. LEE: Yes, just one more follow-up.

3 BY MR. LEE:

4 Q. You mentioned that, you know, the best desk to get is the
5 7:00 a.m. SoCal desk. And with that, you know, there's good
6 weather out. Do you assign someone that's typically at a good-
7 weather desk more flights to monitor versus an area in Florida?
8 A. So, yes and no. So, the West Coast desks do tend to have
9 more flights on them. So, we have a workload committee that's
10 actually a PWB workload committee. They kind of are the ones that
11 figure out how much work load can each desk take? West Coast
12 desks for short hauls tend to have a few more flights on them than
13 the East Coast desks where they're dealing with all kinds of GDPs
14 and AFPs and thunderstorms and all that. However, no matter which
15 side of the country you're on, if you're on a long-haul desk,
16 those desks automatically have fewer flights on them, because
17 while you're dispatching fewer, you're going to have more in the
18 air at any given time, and so, your responsibilities to flight
19 follow and pass along pertinent information and monitor changing
20 conditions. You have a lot more airplanes you're dealing with in
21 the air, so you have less to dispatch. As so far as the short up
22 and downs of the West Coast, the SoCal to NorCal or vice versa,
23 they may have a few more flights on them, but our average for all
24 desks can't be more than 75 flights per desk for the entire 24-
25 hour period. So, some flights will have less, some flights will

1 have slightly more than that, but 75 is the average.

2 Q. So, that assessment group that divvies that out, how
3 responsive is that? Is that, like Southern California is having
4 bad weather today. Can you that day reassess or is it a monthly,
5 yearly --

6 A. They would not -- they wouldn't do it. And they get together
7 monthly to reassess how the desks are working. And it changes
8 whether it's a spring or fall or winter or summer month as well.
9 But what does happen on a daily basis is our chief dispatchers are
10 actively monitoring, where's the weather going to be? I believe
11 you guys are going to sit in on a brief this afternoon. You'll
12 see all the things that are discussed there. And they're going to
13 say, we're going to have problems in Southern California today,
14 visibility issues, wind issues, wind shear, heavy rains, whatever
15 the case may be. That prompts the chief to start thinking, do I
16 need additional help out here? So, they can call in additional
17 dispatchers, and then they take flights off of the normal desks
18 and put them on the spare desk.

19 Q. Do you know if that happened during this day?

20 A. I do not know if that happened.

21 MR. LEE: All right, thanks.

22 MR. FRANTZ: Okay, Kevin, any follow-ups?

23 MR. FERGERSON: (Indiscernible).

24 DR. SILVA: I have one

25 MR. FRANTZ: I have one, too. Sorry, one double follow-up?

1 Is that allowed? Double follow-ups?

2 BY MR. FRANTZ:

3 Q. Was the dispatcher for this flight, was he debriefed,
4 interviewed, talked -- spoken to at all about this event after the
5 fact? Was there any kind of informal or formal investigation that
6 involved talking -- interviewing the dispatcher?

7 A. So, he definitely was interviewed. I was not part of that
8 formal interview process. We did talk to him afterwards, though,
9 just to review some of his thoughts on what had been the release,
10 which some of the very same things he said in the formal
11 debriefing he told us as well.

12 Q. Did you read his -- was there a summary of his debrief that
13 you guys did?

14 A. Yeah, I got a copy. I didn't make a copy of mine, but I got
15 a copy of what he did in this one little --

16 Q. As a result of whatever Southwest did for this, was there any
17 additional training or anything given to this dispatcher?

18 A. While we were talking to him, we were showing him the best
19 practices again, so in his side of it, he's, like, I don't know
20 how that got there, which we pretty much reminded him how to clear
21 off the sectors for previous entries if he didn't actually put
22 that entry in the --

23 Q. And was that the primary concern about how he needed -- what
24 was (indiscernible) showing best practices? Was it just the fact
25 that the 120T and how -- where that came from? That was the main

1 concern?

2 A. And it still put it as structural, but as he had planned the
3 tailwind as is common practice, we would have had a lesser max
4 takeoff weight, so we had a more restrictive landing weight.

5 Q. And why should he have potentially planned a tail wind, so
6 the variable --

7 A. So, it's actually that the TAF -- or the METAR -- the TAF
8 that he actually dispatched and sent that release off of, showed
9 winds 260 at 6, I believe. It updated literally ten minutes after
10 he sent it to variable wind free. The one he actually sent it at
11 showed a tailwind, which would have been a normal prompt for a
12 dispatcher to plan a tailwind.

13 Q. And then, that would have led to a lower landing.

14 A. You would have -- you wouldn't put a restricted weight on
15 anything.

16 MR. FRANTZ: Okay, thank you.

17 Sathya?

18 BY DR. SILVA:

19 Q. You mentioned the gusts were included in the calculations.

20 A. Gusts were included in DFDP or actual flight calculations.
21 They're not part of the Swift dispatch performance limitation.

22 Q. Do you know how they're calculated in in terms of best
23 factor? Are you (indiscernible) --

24 A. As so far as on the dispatch side?

25 Q. Yes.

1 A. So, again, we plan calm as our normal rule, right? If it's a
2 tailwind, it's 100 percent of the wind, right? So, when we plan a
3 tailwind, if we put in 260 at 6, it takes the full 6 knots. On
4 the takeoff side -- well, that's for the tailwind. On the gust
5 side, there is no half of that half or anything else. We
6 literally don't have the gust in the dispatch module portion of
7 it.

8 Q. You don't have it on the dispatch side.

9 A. Right.

10 Q. So, from what you understand, the PWB system, the pilots
11 would get -- would incorporate the gusts.

12 A. Just like our DFDP told us, yes. When we run an actual
13 performance, we get gusts.

14 Q. So, let's say your 260 gusting to 20. Are you using that
15 full 20 knots?

16 A. Not in the dispatch module.

17 Q. Not on the dispatch side, but do you know what it is on the
18 pilot side of the --

19 A. Yeah, it would literally show the 20 and then it would adjust
20 the targets.

21 Q. And when you were discussing limits to flights per day that a
22 single desk --

23 A. Desk, not a dispatcher. So, it's not 75 flights per
24 dispatcher.

25 Q. Right.

1 A. We have an a.m., a p.m., and a midnight shift. It's 75
2 flights per day.

3 Q. Okay, so that's a limit. You mentioned both limit and
4 average. I wanted to clarify.

5 A. So, that's an average. There are some desks that have more
6 than that. Just like I was talking about long-haul desks have a
7 lot fewer (indiscernible). Maybe they only have 45 flights for
8 the day, so that means some flights -- or some desks have more
9 than the 75 that are on there. I can't remember if it's 70 or 75.
10 I'd have to look at the CBA. But it's an average per desk.

11 Q. Okay.

12 A. So, the West Coast desk may have had 90. I don't know. That
13 part I don't know.

14 Q. Is that a limitation, though? Like are those -- are you
15 working to not exceed 90 at that specific desk?

16 A. So, the way the CBA's worded, it's -- I'm going to say 75.
17 It may be 70, but it's -- I'm going to say 75, because it's
18 sticking in my head. But it's an average, right? And when our
19 desk average exceeds 75 flights per desk, that means we need to
20 open new desks. We need to hire more people. We need to get more
21 people on the floor. That's how that model works.

22 DR. SILVA: Okay. Now I understand.

23 MR. GRESSICK: Does that explain it the right way?

24 DR. SILVA: Yeah.

25 MR. FRANTZ: Okay.

1 UNIDENTIFIED SPEAKER: Just one.

2 BY UNIDENTIFIED SPEAKER:

3 Q. Did the dispatcher -- was he eligible for ASAP and did he
4 file for ASAP?

5 A. I don't know that answer. I think he did file ASAP, but I
6 don't know that answer for sure.

7 UNIDENTIFIED SPEAKER: Thank you.

8 MR. FRANTZ: Okay, Tom, thank you. Before we wrap up, is
9 there anything that we didn't ask you about that you think we
10 should have? Or is there anything else that you think we need to
11 know about this particular incident?

12 MR. GRESSICK: No. I think you guys asked a lot of
13 questions, and hopefully, I gave you answers that made sense for
14 you. Appreciate your time.

15 MR. FRANTZ: Okay, thank you.

16 (Whereupon, the interview was concluded.)
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CERTIFICATE

This is to certify that the attached proceeding before the

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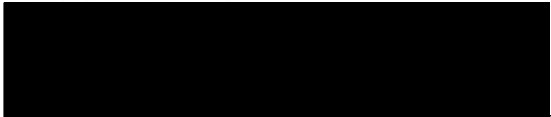
IN THE MATTER OF: SOUTHWEST AIRLINES OVERRUN -
 BURBANK
 Interview of Tom Gressick

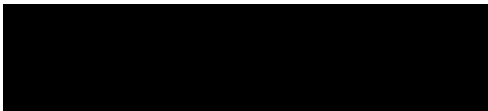
ACCIDENT NO.: DCA19IA036

PLACE: Dallas, Texas

DATE: October 10, 2019

was held according to the record, and that this is the original,
complete, true and accurate transcript which has been transcribed
to the best of my skill and ability.


Wendy C. Cutting
Transcriber


Autumn Weslow
Corrections made 6/17/2020

UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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Investigation of:

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SOUTHWEST AIRLINES OVERRUN -
BURBANK

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Accident No.: DCA19IA036

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Interview of: CHRIS SCHMIDT

Director of Flight Operations Training
Southwest AirlinesSouthwest Airlines Headquarters
Dallas, TexasThursday,
October 10, 2019

APPEARANCES:

MARVIN FRANTZ, Operational Factors Investigator
National Transportation Safety Board

SATHYA SILVA, Ph.D., Human Performance Investigator
National Transportation Safety Board

ERIC WEST, Accident Investigation
Federal Aviation Administration

GREG BOWEN, Training and Standards
Southwest Airlines Pilots Association

KEVIN FERGERSON, Flight Ops
Southwest Airlines

RICHARD LEE, Safety Pilot
Boeing

JEFFREY NOVOTA, General Counsel
Southwest Airlines
(On behalf of Mr. Schmidt)

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I N T E R V I E W

(12:35 p.m.)

MR. FRANTZ: This is a interview with Chris Schmidt, Southwest Airlines, 10 October at 12:35. And Chris, I've just given you a brief introduction. Before we get started, can you tell me if you'd like to have a representative? It could be someone of your choosing. It should be someone of your choosing but can you tell us who that would be if you would like to have a representative?

MR. SCHMIDT: Yes. We've elected to -- I have elected to have representation with Jeff Novota.

MR. FRANTZ: Okay. Thanks. Okay. Let's briefly, for the recording, just go-around the table and we'll have everybody introduce themselves and tell you where they're from. Sathya?

DR. SILVA: Okay. As Marvin mentioned, Sathya Silva, human performance at the NTSB.

MR. SCHMIDT: Nice to meet you.

MR. BOWEN: Greg Bowen, Southwest Airlines. I'm chair of training and standards for SWAPA.

MR. WEST: Hi. This is Eric West. I'm with AVP-100, FAA accident investigation out of Washington, D.C.

MR. LEE: Rich Lee, Boeing safety pilot.

MR. NOVOTA: Jeff Novota, Southwest Airlines General Counsel department and representative for Chris.

MR. FERGERSON: Kevin Fergerson, Southwest Airlines flight

1 operations.

2 MR. FRANTZ: As I said, Marvin Frantz. I'm an operational
3 factors investigator with the NTSB.

4 INTERVIEW OF CHRIS SCHMIDT

5 BY MR. FRANTZ:

6 Q. Could we start with just your name and any spellings that are
7 appropriate or that would be questionable for us, Chris.

8 A. Sure. Chris Schmidt, S-c-h-m-i-d-t. Director of flight
9 operations training in my 12th year here at Southwest Airlines.
10 I'm a Dallas-based captain.

11 Q. And how long have you been in this position?

12 A. Since June of '18.

13 Q. Okay. Did you have any other managerial or director level
14 positions at Southwest before this?

15 A. Yes, sir. I did. Prior to this I was the senior manager of
16 flight operations training for just over 2 years. Prior to that,
17 I was the manager of flight operations training for 1 year and
18 prior to that I was part of the 737/800 introduction team and our
19 initial efforts to (indiscernible) operation as part of one of our
20 pilot SMEs.

21 Q. You may have said this, but how long have you been at
22 Southwest?

23 A. Since of April of '08, so I'm in my 12th year.

24 Q. Can you give us a quick sketch of your aviation background?

25 A. Yes, sir. Started flying in 1997 as a flight student in the

1 United States Navy. I went through all of the aviation
2 introductions through the United States Navy, selected F-18s, flew
3 the F-18 A through F models for 12 years on active duty. And
4 after that, during that time I was going from a leadership of
5 general enlisted to a standardization officer, a training officer
6 and then I went into some program management work as a staff job.
7 Did some program management work there. Then after my active duty
8 time I moved on to the Navy Reserves where I flew the Navy 737 for
9 10 years, and I retired after a combined 22 years of service on
10 June 1st of open (indiscernible) 2017.

11 Q. And what are your -- what's your total flight time?

12 A. Total flight time.

13 Q. Approximately.

14 A. So between both F-18, 737s here and the United States Navy,
15 over 6,000 -- 6,000 to 8,000. I don't have the exact number.
16 Since everything's electronic now, I don't keep a paper logbook.
17 I don't plan on getting another job.

18 Q. How many hours do you think you have in the 737?

19 A. 737, probably 3,500 hours.

20 Q. Okay. And how many hours do you fly per year, per month, for
21 Southwest?

22 A. In prior to --

23 Q. No. Currently.

24 A. -- currently? Probably fly about 60 -- 50 to 60 hours a
25 year.

1 Q. Okay. What are your responsibilities and duties as director
2 of flight ops training?

3 A. So as the director of flight operation training I oversee our
4 unionized flight instructor group, which is TWU 557, which numbers
5 about 150 people, currently, in the ranks there. Oversee our
6 advanced qualification program and our training production team
7 that does all of the design, development and implementation, all
8 of our classroom, online and simulation training.

9 Q. We -- so one of our focuses here is on the PWB system. Were
10 you -- what was your involvement, if any, with the initial rollout
11 and training of that system at Southwest?

12 A. Yes, sir. So I do have a little bit of a human factors and
13 human performance background with my time in the Navy so I
14 represented, as one of the pilot SMEs, the initial FMC design
15 layout of the performance weight and balance transition.

16 MR. WEST: Chris, could you speak up? This (indiscernible)
17 is hard to hear.

18 MR. SCHMIDT: Yes, sir. No problem.

19 MR. WEST: Thanks.

20 MR. SCHMIDT: So I was part of the initial performance weight
21 and balance team working group. I helped design the MCDU layout
22 and interfaces, if you will, via ACARS on that system. All the
23 backend stuff was not me. I just worried about how the pilots
24 would input and receive the material. So that -- I worked on that
25 working group and then after that I obviously oversaw the teams

1 that did the analysis and the design work for the implementation
2 of performance weight and balance via online training in
3 conjunction with our bulletins and our procedures previous and
4 then all of the content that happens year after year in our
5 recurrent programs.

6 BY MR. FRANTZ:

7 Q. Could you briefly describe the components, the length of the
8 initial training that a new hire pilots gets on the PWB system?

9 A. So a new hire pilot going through our performance weight and
10 balance it's the same computer-based training as their initial
11 introduction to it after reading the appropriate manual references
12 in our AOM and our FOM. They'll read that then they'll do the
13 homework with the computer-based training and then when they come
14 into the classroom we go through a series of exercises with the
15 iPad emulator, the CFDP app and they practice that and every
16 single simulator session that they do has a corresponding
17 performance weight and balance dispatch release system that they
18 do as if it's an actual line flight and the expectation is that in
19 lieu of the FMC solution they use the CFDP app as that device.

20 Q. And then the -- does Southwest call it recurrent training,
21 the annual --

22 A. Well --

23 Q. -- or is it continuing qualification? What's the
24 terminology?

25 A. For -- because our recurrent programs, if you will, are under

1 the advanced qualification program we do call it the CQ.

2 Q. Continuing qualifications.

3 A. Yes, sir.

4 Q. Okay. And what is that -- what's the PWB component of that,
5 of the continuing qualification? Is it CBT?

6 A. It's -- on a quarterly basis we do our computer-based
7 training.

8 Q. Okay.

9 A. So it's anywhere from an hour, 45 -- this isn't just
10 exclusive to performance weight and balance but it's our holistic
11 based on our task analysis qualification standards. It's anywhere
12 from an hour thirty to 3 hours of content, depending on what the
13 need is per quarter and then every single event that is performed
14 here in the schoolhouse has a building block approach so if it's
15 data-driven, which all of our stuff is scenario-based so there is
16 a corresponding performance weight and balance component to our CQ
17 program over the 3-day or 4-day footprint.

18 Q. Okay. So let me talk specifically about the landing
19 solution, the request for landing data that the crews are going to
20 make sometime during the flight. What's the guidance that
21 Southwest provides to a crew as to what time in the flight they
22 should be performing this request for landing data?

23 A. Correct. Yes, sir. So if you look at the manual guidance,
24 it's at some point prior to the top of descent. Typically 50
25 miles is what our manuals reference. The crews are expected to

1 get the weather conditions, airport conditions and their landing
2 solution at that time and then based on any weather changes or any
3 other events, an ATIS change that would be of significant
4 difference, the crew is to recalculate their landing performance.

5 Q. Is that guidance that you just mentioned there, written
6 anywhere in either the AOM or the FOM --

7 A. Yes, sir.

8 Q. -- about recalculating based on changes?

9 A. Yes, sir.

10 Q. Do you know what that wording is or where we find that?

11 A. It's in the AOM or FOM. I'm mixing up either Chapter 12 or
12 Chapter 15 of the manual.

13 Q. Okay. That talks about recalculating based on changes in
14 weather or a new ATIS or does it say significant changes in
15 weather? Does it say any new ATIS, you know?

16 A. I'd have to look.

17 Q. Okay.

18 A. But I mean significant is, yes, I know for a fact that that
19 information is on the -- in the manual guidance.

20 Q. Okay. At what -- let me put this as a sort of a scenario.
21 You are -- let's say a flight has departed the top of descent and
22 in the final 15 minutes of the flight, the ATC tells them that
23 there's a new ATIS available and, typically, you know, I guess
24 when you hear the ATC announcement they'll say it's Alpha is now
25 current and they'll often highlight what the -- if there are any

1 significant changes from the previous ATIS like, this Alpha is
2 available and is current winds 270 at 11. If a crew heard that
3 after they'd run the landing solution, they were say 10 minutes
4 out and they got that from ATC here, as the latest, what would you
5 expect them to do?

6 A. To recalculate their landing performance.

7 Q. Is there any point in that final 10 minutes where you would
8 say they would be best to just request vectors or go-around and
9 recalculate or they could continue and recalculate as they
10 continue? Is there any range there where you'd say go-around
11 versus continue and we'll run the numbers as we continue?

12 A. Really, truly the only time that that is directly specified,
13 and we have what's called risk and resource management and
14 utilizing our ABCDs and the first one being assess, we would
15 expect the crews to assess based on what that airport is, what is
16 that terminal environment that they're dealing with, how much
17 weather are they dealing with, all of these conditions would
18 affect each individual crew's performance in doing so.

19 So the specific guidance that says to perform a go-around is
20 any time they're on the final approach segment and you're in that
21 terminal phase where landing is more of a priority and, otherwise,
22 it's time to go-around and take a vector to recalculate that
23 information.

24 Q. Are crews given any guidance in training as to how they
25 should utilize the number that comes on a landing solution that's

1 labeled stopping margin? Is there anything that they are told
2 about that number, whatever that number comes up and how they
3 should treat it or analyze it?

4 A. Yes, sir.

5 Q. Anything -- so what guidance would they have or should --
6 what would they expect a crew to have when they see a stopping
7 margin number?

8 A. Uh-huh. So there's a number of variables that we can discuss
9 with respect to those numbers. If it's a corresponding autobrake
10 setting, we have very specific guidance that if it's dashed or nil
11 that you are to use the next higher autobrake setting. So that's
12 laid out very clearly in there.

13 Otherwise, everything is predicated on the touch down
14 calculation at 1,500 feet down the -- from the usable runway
15 threshold unless, of course, you select an A3 mode in which case
16 the fly distance is based on the flare, would be added to that
17 calculation and that's all part of our standard performance
18 calculation training that we go through from an initial to an
19 upgrade to our recurrent programs. We reiterate those numbers.

20 Q. So it seems to me having -- well, if that number came back
21 for my intended runway and it was 2,000 feet was the stopping
22 margin, I might be less sensitive or less inclined to react to
23 changes in the weather than if that number came back as 300 feet.
24 Is that a fair statement that the value of that stopping margin
25 number you would expect it, at some level, to cue the pilot's

1 interest and have him be more aware of conditions there, the
2 smaller that number was, that stopping margin number? Is that a
3 reasonable assumption to make?

4 A. I would -- something I've learned is make no assumptions but
5 what the guidance is is that any time that a crew lands beyond the
6 1,500-foot point that they have invalidated whatever that stopping
7 margin is and, therefore, any time that you do that that you
8 should have a heightened sense of awareness to what you're
9 performance is going to be.

10 Q. Okay. But 10 minutes out I'm planning on landing at the
11 1,000-foot markers or by 1,500 feet. I've always -- I always do
12 that so that's my plan.

13 A. Yes, sir.

14 Q. And I see that my stopping margin is 2,000 feet so that
15 should be okay and if ATIS changes and the winds have changed by 5
16 or 10 knots, maybe I'm not as concerned. Maybe I should -- would
17 pay attention but if that stopping margin instead of 2,000 was 300
18 when I ran the numbers, I'm still planning on landing at 1,500
19 feet but if I was sitting in the jump seat and I was observing
20 this would I expect that the pilot to say if he heard of a new
21 ATIS to say, well, I'm going to definitely jump on that because I
22 only have a 300-foot stopping margin when I ran the numbers so I
23 want to know if that's going to be affected.

24 Is that something that would be a reasonable expectation of
25 -- get rid of assumptions -- is that something I should expect the

1 crew to do?

2 A. I suppose we're human so anything's possible.

3 Q. Okay.

4 A. I just -- I mean, there's no absolute on, hey, if you have
5 300 do this, if you have 2,000 do that. I think there's so many
6 variables that I would have to take into consideration from what
7 airport are we landing at --

8 Q. Okay. Sure.

9 A. -- what's my terrain around me? Am I planning a flaps 30 or
10 a flaps 40? There's a whole bunch of decisions that we would
11 expect the crew to go through their assessment phase.

12 Q. Are you aware of the general conditions that surrounded this
13 incident, weather conditions and the field conditions?

14 A. I do not have visibility to that.

15 Q. No? Okay.

16 A. And our crews are asking for that all the time because they
17 want feedback and with an open investigation we just -- I haven't
18 been given all the details.

19 Q. Do you have the ATIS information or the weather information
20 that was --

21 A. I do not.

22 Q. -- in effect at the time?

23 A. No, sir.

24 Q. You don't. Okay. Does anyone at Southwest?

25 A. I'm sure --

1 Q. Do you know if it's --

2 A. I'm sure the safety investigation teams have looked at it and
3 then whoever has had access to anything else. I'm sure the
4 dispatchers that you visited with have.

5 Q. Have you heard that Southwest -- have they conducted their
6 own investigation? I know that they have.

7 A. Yes, sir.

8 Q. And is that a -- is there a document, a product of that
9 investigation? Have they finished something and has that been
10 distributed out amongst the --

11 A. Not at all.

12 Q. -- Southwest?

13 A. I am not familiar with anything of that formality or
14 anything.

15 Q. Do you know if -- has anything operationally changed at
16 Southwest especially regarding, you know, landing solutions and
17 PWB and short runways at particular airports? Has anything
18 changed since this incident that you know of?

19 A. I know of no changes.

20 Q. Okay.

21 A. I've seen nothing in our manuals as a result of that.

22 Q. Okay.

23 A. The guidance is pretty well established in the manuals.

24 Q. What would the training be and what guidance should the pilot
25 be following if during an approach, during the final moments of an

1 approach or a landing, the pilot realizes he is going to be
2 touching down beyond 1,500 feet. What would you expect him to do?
3 A. Yes, sir. So the manuals are very clear about that. As long
4 as you haven't deployed your thrust reversers that go-around is
5 always an option.

6 Q. And what consequences, actions would a pilot expect or should
7 take if he executes a go-around because of something -- he decided
8 the best option here is go-around. I didn't look -- didn't look
9 like I was going to touch down by 1,500 feet. What kind of
10 reports, what kind of questions is he going to have to answer at
11 the end of the day when, you know, after he's on the ground and is
12 he going to get a call? Is he going to make a report? What
13 happened with the go-around? What were the conditions?

14 A. So our operational priorities are safety, customer service
15 and then efficiently on-time and when safety is first and foremost
16 there has never been a question. Our pilots execute a go-around.
17 They take a delay. We'd never -- there's never been any punitive
18 action. There's never been any hostile interrogations or
19 questioning associated with that. The only thing that's asked is
20 that an irregularity report be filed as a result of the go-around.

21 MR. FRANTZ: Okay. Thank you. I'm going to take a break and
22 pass it to Sathya.

23 MR. SCHMIDT: Yes, sir.

24 MR. FRANTZ: Thanks.

25 BY DR. SILVA:

1 Q. That irregularity report, what happens with that?

2 A. It goes into a review process and from there, depending on
3 what the incident itself was, they will send it into our data
4 assimilation or our data integration groups and we evaluate that
5 based on maybe there's an issue with a certain ATC. Maybe there's
6 a certain arrival or an approach design that is lending itself to
7 these so it's used as a process improvement or a continuous
8 improvement effort.

9 If there's -- I'm not part of that working group but we do
10 use the information every year when we're creating our training
11 content and our materials to see if there's something systemic or
12 something that bubbles up based on data for us to want to address
13 or integrate into our scenario-based training events.

14 Q. So is that work kind of done on the flight ops side or is
15 that safety?

16 A. That's a great question because it -- things move around
17 within the structure here at Southwest so I don't know. It used
18 to be a flight ops functions but it is -- there's probably a
19 component of flight ops that's part of that but I don't think that
20 department lives in flight operations. I think it is a safety
21 investigations --

22 Q. Okay.

23 A. But I don't know. I'll find out.

24 Q. Okay. That's fine. Thank you. In your experience flying,
25 have you ever had to manually input weather into the PWB?

1 A. Yeah, I have.

2 Q. How often is that?

3 A. It's pretty rare for me, personally. Like I said, I fly
4 every second to third month just based on the other
5 responsibilities I have here. I maintain my currency as a captain
6 but all things being equal one of the nice parts, the benefits
7 that came with using the AeroData product in our solution was that
8 it extracted the METAR data and used that and helped populate that
9 to eliminate any human performance issues or human factors issues
10 with transposing information in our former tablet.

11 Q. Right.

12 A. And unless the data is expired you're going to get something
13 back from that METAR. But as far as actually doing it I have used
14 it specifically just to see what the performance calculations --
15 how it varied or how it changed something, just out of curiosity.

16 Q. Okay. Nothing necessarily --

17 A. Operationally required due to --

18 Q. -- required --

19 A. -- due to an overdue METAR over 50 minutes or an hour, I've
20 never experienced that in my operational use of it.

21 Q. Have you, in any of those scenarios, been looking at it for
22 changing weather or was that just curiosity.

23 A. That was out of curiosity, correct.

24 Q. Now when it comes to the landing solutions what I'm trying to
25 understand is how often is it that you get a single solution, max

1 autobrakes, max flaps with whatever the runway remaining is and
2 you don't, necessarily, have any other options on the autobrakes?

3 A. So you're saying a maximum 40 flaps, 40 (indiscernible) --

4 Q. Flaps 40 --

5 A. -- and I have a max autobrake based on a runway condition
6 that requires me to use maximum --

7 Q. Yes.

8 A. -- and I've gotten a nil or zero full dashes?

9 Q. You have that one. You have a number for that one.

10 A. The maximum.

11 Q. Less say it's 200 feet.

12 A. Okay.

13 Q. But you don't have any for the other -- for any other
14 autobrake.

15 A. Correct.

16 Q. Have you encountered that kind of scenario? Personally?

17 A. I think one time maybe in Chicago.

18 Q. Okay.

19 A. But that was just out of happenstance.

20 Q. Okay. So that's kind of what I'm trying to gather is how
21 often operationally --

22 A. Yeah.

23 Q. -- you might see those kinds of conditions where --

24 A. I think it just really depends on the weather --

25 Q. Yeah.

1 A. -- what's happening, what the runway assessments are.

2 Q. Uh-huh.

3 A. I've been fortunate. I've not had anything that's been that
4 degraded that has resulted in a very low runway condition code so
5 I personally have not seen that and I've landed in some pretty
6 good snow and never had anything that's been that adverse.

7 Q. Restricted.

8 A. Correct.

9 Q. Yeah. Okay. I'm going to switch topics here to wind shear.

10 A. Okay. Sure.

11 Q. So does Southwest have policies on landing with reported wind
12 shear or wind shear advisories?

13 A. Yeah, we train that also in our CQ --

14 Q. Okay.

15 A. -- program. We have that as one of our maneuvers. So it's
16 any indication of wind shear be it an airspeed degradation, sink
17 rates that picks up or stagnates. All of those indications the
18 guidance is to go-around.

19 Q. Is an -- let's say you've got a wind shear advisory from the
20 tower.

21 A. Uh-huh.

22 Q. Is that classified as reported wind shear? Is that a
23 mandatory go-around or is that --

24 A. If there is observed wind shear in the area --

25 Q. Okay.

1 A. -- then that -- he will cease operations until and wait a
2 certain amount of time in holding or choose to divert.

3 Q. Uh-huh. Is there a set amount of time that there's a
4 reassessment?

5 A. I believe there is. I'm feeling like 20 to 30 minutes is in
6 that regime somewhere but I'd be guessing at this point so I can
7 look at the manual and give you the exact time.

8 Q. And if you have -- let's say an aircraft that landed or
9 attempted to land before you went around full wind shear.

10 A. Correct.

11 Q. Say 10 minutes in front of you.

12 A. Uh-huh.

13 Q. Would you consider that reported wind shear and abort your
14 approach or is that, again, more or less a cautionary --

15 A. If someone had active reported wind shear I would choose to
16 discontinue my approach.

17 Q. Okay. Is there any guidance that Southwest has on what
18 reported wind shear actually is defined as?

19 A. Yes. It's in our manuals. It talks about -- well, active
20 wind shear events with respect to what we would see on the flight
21 deck?

22 Q. Uh-huh.

23 A. Yes, there is guidance on that.

24 Q. Is that an AOM, from what you know?

25 A. They're so close to each other --

1 Q. It's okay. We can find it.

2 A. I always blend the AOM and the FOM.

3 Q. Yeah.

4 A. I'm sorry but it's in -- when it used to be one manual it was
5 really easier to remember so --

6 Q. Okay. So. Yeah. No worries.

7 A. But -- and the wind shear is independent of aircraft type so
8 that being the philosophy that we use, it would be an FOM item.
9 That would be the first place I would look because it's -- wind
10 shear is wind shear.

11 Q. Okay.

12 A. So --

13 Q. From your understanding of the PWB system, actually, probably
14 it's just performance in general, is there an expectation on that
15 calculation from when you transition from autobrakes to manual
16 braking?

17 A. An expectation?

18 Q. An assumption, essentially, going into that. Is that -- once
19 you touch down do you have autobrakes on through the plane ops or
20 is it autobrakes on or the runway that that's the kind of
21 information --

22 A. I'm trying to remember. I know there is for stowing the
23 thrust reversers but with respect to overriding the autobrakes to
24 manual braking, whether that calculation is based on the airplane
25 stopping completely on its own or some intervention, I'm trying to

1 think right now. Sorry.

2 Q. Okay. That's fine. Again, I don't know is a perfectly good
3 answer.

4 A. Well, I don't like those answers so --

5 Q. Let's see, is there -- and we're talking about weather
6 changes and putting in weather manually.

7 A. Uh-huh.

8 Q. Is there specific training that pilots get on manually
9 inputting weather data into the PWB?

10 A. Yes.

11 Q. Okay.

12 A. Yes.

13 Q. What does that training look like?

14 A. So during the initial training --

15 Q. Uh-huh.

16 A. -- that they received be it the landing module that we reveal
17 initially or later on in the takeoff module, we went through all
18 of the scenarios, normal utilization of it or then contingency
19 utilizations or any time that a manual input would be required
20 there are scenarios that were created and the crews were
21 responsible for calculating those via their CFDP app and then
22 inputting the correct answers for the return into the assessment
23 that happened at the end of the training. And then that's
24 something that the new hires and the upgrades will also do
25 manually during their classroom training events or as they move

1 into their simulator events.

2 Q. Okay. (Indiscernible) training.

3 A. Okay.

4 Q. Can you just give me an overview of what that program looks
5 like, the phases, how long --

6 A. How much time do we have? So we converted from or expanded
7 the scope of crew resource management to risk resource management
8 that some -- and I have kind of step back for a second and I
9 apologize because in the Navy we use operational risk management
10 and we use the same exact model.

11 So the Volant Model is what we use and I want to say that was
12 2015 that we started with the risk and resource management. It
13 was '14 or '15 that we started implementing that and we did it via
14 computer-based learning through our distance learning modules as
15 well as during our CQ and then the new hires go through multiple
16 touch points of that. They have a full dedicated review of that.
17 They go through former lessons learned here at Southwest Airlines
18 and what crew factors contributed to events and how you would
19 apply our current risk and resource management to each of those
20 episodes.

21 We've done a number of training modules on every single
22 quarter and as part of our AQP risk and resource management and
23 human factors is completely basked into it so one does not exist
24 without the other.

25 So our upgrades go through a full refresher day on the model

1 and the content and what it's like to be a captain and to lead in
2 our operation and evaluating and assessing risk and then, like I
3 said, every CQ time it's a very intensive data collection piece
4 that we do with our crews. Again, it's the -- it really is the
5 foundation of our AQP, is human factors, and that -- the
6 application of risk and resource management.

7 Q. The classroom training or the ground training --

8 A. Uh-huh.

9 Q. What does that look like? Is that lectured-based, simulator-
10 based?

11 A. It's facilitated conversation so we utilize scenarios. We
12 will do -- it's usually led by a line pilot. It's reinforced and
13 evaluated by our instructors and our evaluators during various
14 times while they're at the schoolhouse as well as when we do
15 observations and line checks. It's one of the data collection
16 points that we have. Every bit of our data collection has what
17 part of risk and resource management was utilized, overlooked or
18 incorporated into the collection at that time. So facilitated by
19 an instructor, by a flight, by a pilot be it a check airman or one
20 of our line pilots so --

21 Q. Does your upgrade training include captain's leadership?

22 A. Yes.

23 Q. What does that look like?

24 A. That's a full day of captain leadership. It's unfortunate
25 you just missed it. We had a full day of it on Monday and it

1 really goes into the full detail of moving from the right seat to
2 the left seat and being, ultimately, responsible and the
3 responsibilities placed on a captain per the CFR.

4 The dual dispatching control, we focus on that, dual
5 responsibility of the captain and the dispatcher. We focus on
6 customer service issues. We talk about operational issues, those
7 impacts, and what tools and resources. So again, using the ABCD,
8 so assessing everything, how are we balancing all of those
9 resources via our resource blocks? I could run through those if
10 you'd like and then how are you going to communicate that really
11 building a shared mental model.

12 We really focus hard on that and, again, we do scenarios of
13 that not only in the classroom for initial and upgrade but we do
14 it throughout all of our quarterly system -- quarterly distant
15 learning CBTs.

16 Q. Do captains get to observe in dispatch at all?

17 A. So today actually is the day that we do that so Thursday is
18 an operational day. They spend -- I might get it backwards. The
19 new hires get 3 or 4 hours and the captains get 3 or 4 hours.
20 It's one of the two. It just depends on the number of questions
21 and all that but I think the new hires are usually programmed at 3
22 hours but they usually go to 4 and then after that they just grab
23 a lunch and they go into the NOC and they spend 4-plus hours.

24 There's no end to the day there. They sit in on our mid-day
25 operational brief so they get to hear everything that the NOC

1 receives from the outstations, from all the megas, all the mini-op
2 centers out there and they talk about all that.

3 They get a good briefing by the chief pilot of the NOC during
4 that time. The supervisor of dispatch, the maintenance control
5 chief, all visit with them and then they're turned loose on the
6 floor and during that rest of the day they visit with our
7 schedulers because there's nothing greater than having a plan and
8 then getting that phone call that you're going to a different
9 destination or you're going someplace else or you're being
10 rerouted and how that affects you.

11 And so they sit down and they listen in on phone calls to
12 flight attendants or pilots and they sit down with a dispatcher,
13 with our meteorology teams and they have full access to all of
14 those individuals to witness the day, both new hires and upgrades.

15 Q. Uh-huh. Okay. That's it for my questions. Pass the buck
16 back over. Thank you.

17 MR. FRANTZ: Okay. Eric.

18 MR. WEST: Okay.

19 BY MR. WEST:

20 Q. Okay. So are you familiar with 121/195?

21 A. Yes.

22 Q. Okay.

23 A. I'm familiar with the number. You have to remind me what the
24 title of it is.

25 Q. Operational landing distances.

1 A. Okay.

2 Q. Okay. We had a scenario here where airport dispatch
3 dispatched aircraft into known area of precipitation and in
4 weather that included turbulence and rain and so forth. So I just
5 wanted to set you up with --

6 A. Set me up.

7 Q. -- the scenario.

8 A. Copy. Set me up. Yes, sir.

9 Q. Okay. I think you answered this question but if a pilot
10 declares, and this doesn't necessarily have to do with this
11 particular event, but if a pilot declares wind shear on an
12 approach, where does it say that they should break off further
13 approaches, specifically, in any type of written documentation in
14 Southwest's -- what am I trying to say?

15 A. In our manual structure.

16 Q. Yeah. Manuals or --

17 A. I'd have to look at it. It just to me it's one of those
18 things that we talk about it all the time.

19 Q. Right.

20 A. And we evaluate it all the time and it's -- I feel strongly
21 that it's in there somewhere. I can't quote you chapter and verse
22 which one it is but, again, based on assessing the environment
23 that would be something that would be taken into consideration.

24 Q. So you're the director of flight ops training --

25 A. Uh-huh.

1 Q. -- that sort of thing so can you take events such as Burbank
2 and Bradley and so forth and incorporate them into future training
3 scenarios or anything like that?

4 A. When we are given the okay that that information can be used
5 --

6 Q. I see

7 A. -- to do so.

8 Q. Okay.

9 A. I'm not saying that we might not have something that's
10 representative of that. Our 2020 product that's coming out has a
11 lot of elements to rapidly changing conditions in the terminal
12 environment.

13 Q. Given that scenario that I just described, the wind shear
14 event, should there be an alternate airport assigned when there
15 are high sustained winds associated with high gusty winds?

16 A. I'm sure there's a rule or an FAR somewhere that the
17 dispatchers use for that type of guidance.

18 Q. But you don't know of any --

19 A. I don't have knowledge of that firsthand.

20 Q. Okay. Is landing overweight an emergency situation?

21 A. You are violating an airframe limitation.

22 Q. Okay. Okay. Can you close your eyes and picture this
23 scenario, please. I'm just kidding. Aircraft landing with a
24 15-knot tailwind, this is the tower now telling the aircraft.

25 A. Okay.

1 Q. Corporate jet then goes around heavy rain over the airport,
2 tailwind is 9 knots, tailwind is 10 knots, tailwind is 11 knots.

3 A. Okay.

4 Q. Would you land? You personally?

5 A. I would not.

6 Q. Okay. Or would you go-around?

7 A. I would seek another runway to go to.

8 MR. WEST: That would be a better scenario. Okay. I'm done.
9 Thank you. I appreciate your candor.

10 MR. SCHMIDT: Thanks. Sorry.

11 MR. FRANTZ: Thanks, Eric. Greg?

12 BY MR. BOWEN:

13 Q. Good afternoon.

14 A. Yes, sir.

15 Q. I want to --

16 A. Of all of you, this is the guy I'm most worried about.

17 Q. Nothing to worry about, yet.

18 A. You're among friends.

19 Q. I want to unpack just a couple of things for the benefit of
20 everybody.

21 A. Yes, sir.

22 Q. Do you always have to use autobrakes when you land with
23 Southwest Airlines?

24 A. No, sir.

25 Q. When do you have to use them?

1 A. Based on the -- it's when you sit here you kind of lose
2 everything (indiscernible) right. There's the four conditions
3 that you have to. Obviously, it's contaminated runway if you're
4 using the RVRs less than 4,000.

5 Q. By contaminated you mean wet, snow covered, et cetera?

6 A. Yes, sir.

7 Q. So if it's raining the runway's less than dry --

8 A. Correct.

9 Q. -- use autobrakes.

10 A. Yes. That's the language I'm looking for.

11 Q. What about crosswinds? Or gusty winds?

12 A. It is recommended to do so. From -- I mean, I use them all
13 the time so I feel like that's one of the four.

14 Q. What if an engine's out?

15 A. Yes.

16 Q. So those are kind of the --

17 A. Correct.

18 Q. -- primary times you have to use them. When PWB returns a
19 landing solution and you code -- you don't put an RCC code in
20 which assumes dry --

21 A. Yes, sir.

22 Q. -- does it still return an autobrake solution?

23 A. It can, yes.

24 Q. But based on what you just said, you don't have to use it.

25 A. You don't have to use it.

1 Q. And it never returns a solution to a lower brake setting of
2 what's calculated in landing performance. So in other words, you
3 don't have the option if on a dry runway if the PWB solution
4 requires for example, autobrakes 3 --

5 A. Uh-huh.

6 Q. -- you can't, because you're not required to use them anyway,
7 use autobrakes 2.

8 A. That's --

9 Q. Is that right?

10 A. That is a -- that is correct. That is the policy that you
11 cannot.

12 Q. All right. And for clarification --

13 A. Uh-huh.

14 Q. -- when you're requesting a landing solution with PWB does it
15 select your flap setting or is that something you do manually?

16 A. Pilots do so manually.

17 Q. Right so you choose which flap setting you want to use and
18 then if it comes back with a solution that's close to the margins
19 you go back in and redo it with a --

20 A. That is correct.

21 Q. -- higher flap setting.

22 A. Yes, sir. That is correct.

23 Q. Thank you for that. You said you were involved in the design
24 of the output screens in the initial PWB system. Is that
25 accurate?

1 A. That is accurate. Yes, sir.

2 Q. And once you were done designing it how did you test that
3 design for functionality?

4 A. Wow, you're making me go back here. So we had -- we had the
5 AirTran (sic) iPad app that we utilized just from an interface
6 transactional standpoint as we were assessing that. There was a
7 transition period, I apologize that when I left being an SME to
8 going to be the manager or the senior manager during that
9 transition time that I was no longer directly involved on that
10 team so this is a gap for me. Because the only solutions that
11 were provided back were from -- provided by the vendor to us as to
12 what that free text formatting looked like.

13 Q. Did you test them within your group or did you socialize the
14 output screens to a wider audience, so random --

15 A. We had --

16 Q. -- pilots or whatever?

17 A. Yes, sir. We have a quality assurance team that does
18 operational tests and evaluation and they were brought in as a
19 stakeholder to bring in check airmen from the line, line pilots,
20 local Dallas pilots to be part of that, the small group tryouts.

21 Q. Okay. All right. Thank you. Same question but slightly
22 different. Were you involved in the design of the training
23 product for pilots for PWB?

24 A. I oversaw the team that was responsible for the designing and
25 delivering that product, yes.

1 Q. Any particular problem areas or troubles that you ran into?

2 A. No. The way that we reveal the landing component was in DL,
3 our third quarter DL. We ran that concurrent, allowed the pilots
4 to use that system concurrent to our tablet system at the time and
5 the assimilation rate was very quick. Remember at that time a
6 quarter of our pilot group had used previously at the AirTran or
7 from other carriers that had experience using an FMC-generated
8 solution. But during our testing for the landing we had zero
9 issues whatsoever with that.

10 Q. I'm sorry, what's DL?

11 A. Distance learning. Our computer-based training, the
12 quarterly distance learning.

13 Q. Okay. Thank you. Would you briefly describe for the
14 introduction of PWB the outline of -- I think you said, correct me
15 if I'm wrong please, you had a DL. It was a primary product for
16 training the new PWB system.

17 A. Uh-huh.

18 Q. Associated with that there was an RBF --

19 A. Correct.

20 Q. -- given to the crews. Would you kind of describe what the
21 training product looked like in terms of general content outline
22 and then, more specifically, the content and what was included in
23 the read before fly to (indiscernible)?

24 A. Right. So we have a multi-faceted approach to everything
25 that we do in flight operations when it comes to change management

1 and using SMS. So generally speaking we have a bulletin that goes
2 out which would be regulatory. We have our procedures previews
3 which are just good -- just rag to read, if you will. More of
4 interest, conversation sparkers for the crews.

5 We used to have a training topic that would go along with
6 things like this but we've decided to incorporate all of those
7 into one product tree. So with respect to the landing phase we
8 put that out in the third quarter of '16 and, as I said, we used a
9 bulletin to highlight how that changes operationally, procedures-
10 wise for the crews from our former on-board performance tablet to
11 the FMC-generated solution.

12 So the crews had time to read all of that. It was reinforced
13 via the online training, the distance learning or computer-based
14 training, whichever of the monikers you prefer to use. And then
15 following that we got some experience with the crews interfacing
16 with the FMC which they already had a lot of ACARS interactivity
17 so they had involvement with that so it wasn't a completely new
18 interface.

19 And then when it came to the takeoff phase we did another
20 read-before-fly with a bulletin that activates the read-before-fly
21 that covers operationally, step-by-step, everything that the crew
22 would be expected to do in the AOM to support their landing or
23 takeoff performance or abnormal performance calculations.

24 And then from that we had a special dedicated online training
25 event that went through the entire program that had a

1 corresponding workbook that the crews went through those scenarios
2 and did those calculations with which they used to answer the
3 assessments within that special DL or that actual DL.

4 Q. So you had the online training and there was knowledge
5 testing questions and answers included in that.

6 A. Yes, sir.

7 Q. But beyond that it was the bulletin, the read-before-fly so
8 there was no actual in-person knowledge validation other than what
9 was in the testing.

10 A. Only for the new hires and the upgrade folks or if someone
11 was here for a CQ they got to experience those things firsthand.

12 Q. Okay. Is ACARS PWB available in the simulator for training
13 and evaluation?

14 A. The screens are available because of the OFP for the FMC but
15 no one in the industry has an operable weight and balance or
16 performance calculating engine in a full flight simulator to date.
17 So, no. In that regard we rely heavily on the CFDP app on the
18 iPad to help us emulate that environment.

19 Q. Okay. Back to all the stopping questions you recapped today.
20 Based on our manual guidance, what's the most effective stopping
21 technique, max autobrakes or manual brakes?

22 A. I guess it depends on --

23 Q. I should have said max (indiscernible).

24 A. Yeah. I think it depends on the individual and the
25 environment and what they're doing that max autobrakes is the most

1 effective instantaneously upon landing because it's applying
2 braking action and then it's providing symmetrical braking, as
3 well.

4 Q. Do our manuals address that? That's really the question.

5 A. Yes, they do. Sorry.

6 Q. Thank you. All right. Are you familiar or aware of a safety
7 alert for operations into Burbank that resulted from this incident
8 attached to the SIP pages?

9 A. Oh a safety. I thought you said SAFO.

10 Q. Safety alert.

11 A. Yes. Safety alert.

12 Q. And is that bulletin highlighted anywhere in training for
13 pilots?

14 A. That specific airport and that specific -- I am trying to
15 think if it was incorporated into any of our online events but I
16 am drawing a blank on that. I don't think so.

17 Q. Okay. And do you recall, just in general, when you talked
18 earlier about the training providing instruction on how to
19 manually input winds in the input screen for landing on PWB, do
20 you remember how much training time was devoted to that particular
21 subject?

22 A. That specific subject between both the landing one and the
23 takeoff one?

24 Q. Specifically landing --

25 A. Specifically landing?

1 Q. -- where you manually input wind information.

2 A. So the -- I would say in the 4 to 5 minute on just the
3 weather section for manual entering, about 4 to 5 minutes.

4 Q. Okay. You spoke earlier about significant changes in weather
5 and in close proximity to the airport --

6 A. Uh-huh.

7 Q. -- going around or delay vectors to reestablish accurate
8 landing data.

9 A. Correct.

10 Q. Do you have any personal knowledge of yourself or any pilots
11 at Southwest that have actually gone around to reinterpret landing
12 data?

13 A. I do, yes.

14 Q. Do you know if FDAP tracks go-arounds?

15 A. We have access to that, correct. Yes.

16 Q. So is there any data that shows a percentage of flights that
17 abandoned an approach or go-around for re-obtaining performance
18 data?

19 A. The decision, that level of detail, FDAP does not because
20 it's de-identified. There is no way to correlate those two pieces
21 of information.

22 MR. BOWEN: That's all I have. Thank you.

23 MR. FRANTZ: Before we go on to Rich, can you tell us what
24 FDAP is?

25 MR. SCHMIDT: Flight data analysis program.

1 MR. FRANTZ: Is that like FOQA.

2 MR. SCHMIDT: FOQA.

3 MR. FRANTZ: Is that a Southwest name for that program?

4 MR. SCHMIDT: Yes, sir.

5 MR. FRANTZ: Okay. Okay. Rich?

6 MR. LEE: Sure.

7 BY MR. LEE:

8 Q. Just one topic. When you found out that the crew receives
9 some additional training, were you involved with the decision to
10 do that and were you briefed on it or on what kind of training
11 they received?

12 A. Was I directly involved in that?

13 Q. Or were you --

14 A. I'm trying to remember --

15 Q. -- aware of it?

16 A. I'm trying to remember if this crew came in via the ASAP
17 channels and they went through ASAP training which we have. We
18 support each other in a lot of areas and we have, on our teams,
19 the staff that does provide that training so I do know that our
20 team is part of the training and remediation for those types of
21 things. I just don't recall how this crew came into the training
22 center to get their training, if it was via the safety side or if
23 it was via another lever of that was executed.

24 But our teams do support in that training of that material
25 and it is always specific to the events that surround it, the

1 reason for their coming in.

2 Q. Okay. Thanks. One other thing about the threat and error
3 management. What do you guys call the new CR?

4 A. Risk and resource management.

5 Q. Risk and resource management.

6 A. Yes, sir.

7 Q. As far as the scenarios that is taught if you know this to
8 the detail, typically, in the past was some thought of a gradient
9 between the left seat captain being very experienced and the right
10 seat captain or the right seat FO, not, you know, being
11 intimidated not to speak up. That's kind of the old view
12 scenario.

13 Do you have a scenario in your training program that has
14 almost the reverse where you have two very experienced people but
15 not necessarily in the company and there might be an issue there?
16 Is that addressed in any of the -- in your risk management
17 program?

18 A. We always talk about the human dynamic, regardless of who you
19 are, your experience base and all of that. For us at Southwest,
20 since we are a single fleet type, the uniqueness of a captain
21 being inexperienced in the airplane in that model, just, our
22 captains are upgrading at 12 years, 10- to 12-year point.

23 So there's a lot of experience in the left seat in the
24 airplane but maybe not as a captain. Our hiring philosophy is we
25 hire captains. Everyone has PIC time when they are hired here at

1 Southwest. They've been a captain elsewhere.

2 So unlike other carriers where there's multiple fleets and
3 upgrade times and seat hopping and potentially having too
4 non-experienced or too overly experienced or any derivative of
5 that, is not something we have here but we talk about experience
6 level. We focus very much in our new hire or our initial training
7 being that new person and how are you going to communicate to that
8 captain even depending on if they're very accommodating or they're
9 very standoffish, what tools and resources you're going to have to
10 do your job.

11 And then likewise we talk to the captains about the new hire
12 that is new to Southwest but is not a fledgling pilot and we've
13 had new hires save the day on a pre-flight sitting in the jump
14 seat giving their observations. We've had a new hire ask a
15 captain a specific question and that event happened to happen
16 during the flight and they had a great shared mental model and a
17 thorough briefing.

18 So one of the things that we are -- we really focus on is
19 that humility piece and the (indiscernible) leadership piece. So
20 we cover the entire spectrum of that during all of our leadership,
21 risk and resource management, human factors, CRM, all of those
22 things, very, very thoroughly.

23 MR. LEE: All right. Thanks. That's all I have.

24 MR. FRANTZ: Kevin?

25 BY MR. FERGERSON:

1 Q. Come back talking about the down at the PWB outputs, the
2 displays.

3 A. Yes, sir.

4 Q. For the FMC, MCD, UCD and kind of use those terms
5 interchangeably.

6 A. Yes, sir.

7 Q. Were there any concerns or any threats identified going to a
8 multipage output versus a single page, single screen display of
9 either takeoff or landing performance?

10 A. Yes.

11 Q. And I guess was that risk assessed or what was that -- what
12 was the kind of genesis of making peace with that, I guess?

13 A. Yes, sir. That was a challenge for us between the Mark II
14 Plus and the Mark III MCDU because of the number of lines of text
15 that were available to us and that changed our design strategy
16 with what the free text outputs look like.

17 As far as all of the inputting data and then the pertinent
18 checklist output data, we designed it to be as linear as possible
19 to what the checklist request was to the pages so there would not
20 be any back and forth, that you could just progress in a linear
21 fashion through the display outputs. And then when doing the no-
22 kidding comparisons as if the OPC, which was our tablet output,
23 that screen was replicated as precisely as we could to replicate
24 the flow of the checklist, the expected population on the FMC side
25 so a side-by-side comparison could be performed with minimal

1 confusion in that output.

2 So there was that, of all things, was the one item that we
3 spent painstaking every character spacing detail, everything, we
4 made sure was as precisely comparable as we could make it. So
5 yes, a lot of hours were spent specifically on that piece.

6 Q. Was there any consideration to requiring printers to support
7 PWB?

8 A. There were dialogue and conversations to that. The airplanes
9 that we acquired that had them, but then we were pursuing oceanic
10 operations and those airplanes do have them and those are
11 operationally necessary. But a number of carriers, and Southwest
12 itself, operated without printers and through the assessment
13 process and review process, the decision was made to not use
14 printers.

15 Q. You mentioned 25 percent of pilots had previous AeroData or
16 similar. Do you have any idea how many of those -- of that 25
17 percent operated either with or without printers, whichever way
18 you want to look at it?

19 A. No, sir. I have no --

20 Q. Okay. Are you aware of any pilot being unable to complete
21 initial upgrade or continuing qualification due to PWB issues?

22 A. Zero.

23 Q. Okay. And oh, we talked about making a -- having to file a
24 report in the event of a go-around. Where would a pilot find the
25 requirement -- that requirement?

1 A. It's in the irregularity reporting table in the FOM.

2 MR. FERGERSON: Okay. That's all I have.

3 MR. FRANTZ: Thanks, Kevin. Okay. Chris before we start a
4 second round, do you want to take a break?

5 MR. SCHMIDT: Unless I can have a few minutes to just look up
6 some of the things I want to give you an accurate answer to, I'm
7 good.

8 MR. FRANTZ: Okay. Anybody else need to take a break?

9 UNIDENTIFIED SPEAKER: I do.

10 (Off the record.)

11 (On the record.)

12 MR. FRANTZ: Back on the record, 1350. Okay. We'll just do
13 one more round to see if anybody has any follow-up questions,
14 Chris, and I'll start off.

15 BY MR. FRANTZ:

16 Q. Not necessarily a follow-up, but the DAP?

17 A. Yes.

18 Q. You know what it is? Are you aware of any study or analysis
19 of the DAP data specific to Burbank on landings at Burbank or
20 departures but I guess more landings?

21 A. I'm very confident that the data was collected and has been
22 reviewed but I have not been privileged to see that information.

23 Q. Who -- what operation or what element or what office at
24 Southwest would be the -- what's the name of that group that would
25 do that, the analysis of the past 6 months at Burbank landing

1 data. Who would that be?

2 A. Yes, sir. So if an app is under our flight ops safety
3 program, it's in the safety assurance world under senior manager
4 of those programs, and that's Captain Scotty Evans. Underneath
5 him is Jerger Holzer (ph.). He's the one that's the manager of
6 the FDAP program.

7 Q. Okay.

8 A. So the process for that on that particular airplane, I
9 believe, is a manually done process via a PMCIA card that has to
10 be downloaded at a maintenance station and transmitted back to the
11 gatekeeper where the information is de-identified.

12 Q. All right. Fine. Okay. I want to go back to the autobrake
13 question and it may have been answered and if it has I apologize
14 but what is the -- what is taught to a new hire in the simulator
15 as far as use of autobrakes go? Let's say you're in a scenario
16 where you're required to use it, one of the scenarios you
17 mentioned or the landing solution came back and the only options
18 was autobrakes 2 or autobrakes max and you knew you had to use
19 them.

20 A. Uh-huh.

21 Q. What is taught to that new hire pilot about how long you have
22 to use them, how long you have to let the autobrakes brake after
23 you touch down and they've started versus how long before you can
24 engage manual braking on your own and still fly?

25 A. Sure.

1 Q. Because you've landed with autobrakes on.

2 A. Yes, sir.

3 Q. So is there any cutoff to that period of time?

4 A. Rule of thumb that has been taught is 100 -- don't touch them
5 prior to 100 knots.

6 Q. Okay.

7 A. So let the airplane do its normal deceleration rate. Once
8 you've assured that you've -- by that point you've done all your
9 callouts, you've made sure that the airplane is correctly
10 configured and it is decelerating at its normal rate but the crew
11 could get on them immediately if they chose to do so but --

12 Q. I understand.

13 A. -- let the airplane decelerate, do your callouts, make sure
14 that your situational awareness is such and override to get a
15 higher braking performance, if necessary, going to full 3,000 PSI
16 on those brake pedals, if necessary.

17 Q. And again, I know we talked about this, has it -- do you know
18 if it's been determined by the manufacturer that -- or by
19 Southwest, that autobrakes max will be more effective than max
20 manual braking or is there -- do you know if there's -- that
21 determination's been made.

22 A. It's -- again, that's a human performance question so if you
23 have an ideal test subject that can apply consistent pressure with
24 a maximum of 3,000 pounds of pressure to those tires equivalently
25 then the max manual will be the more so than the autobrake system

1 because of the deceleration rate that takes place.

2 Q. So the max autobraking wouldn't apply as much pressure as a
3 very strong, capable pilot could?

4 A. You could land putting the full weight that you have in
5 manual braking and have, instantaneously, 3,000 pounds of pressure
6 on the brake whereas in a max manual or in a max autobrake
7 scenario it is a programmed deceleration rate.

8 Q. And what does that mean? What's a programmed deceleration
9 rate?

10 A. So based on the anti-speed calculations and the computers and
11 all of that, again, it comes down to the computer or the autobrake
12 system is going to give you a consistent deceleration product but
13 a pilot could put full 3,000 pounds on immediately over and stop
14 the airplane with that full pressure the entire time whereas with
15 the autobrake system it's going to regulate and do a programmed
16 deceleration to stop within whatever that performance criteria is
17 that they designed for max 3, 2, 1 of the system.

18 Q. Okay. Okay. Thanks. Did you know either of the pilots
19 involved in this incident?

20 A. I don't know their names. No, sir.

21 Q. Okay. We talked about the training that they went --
22 additional training they had to go through afterwards. Did you
23 say there was additional training or there was something
24 additional required then but you weren't involved in it?

25 A. I'm not directly involved in every single pilot's remediation

1 strategy. I have visibility to the events that are coming back to
2 the training house but we train 10,000 pilots annually. We have a
3 constant stream of new hire and requalification pilots that are
4 coming back so it's one of just any number of events that happen
5 here on a daily basis that I don't give any particular heightened
6 awareness to any particular crew that are here in the schoolhouse.

7 We give them the top quality training that every single pilot
8 at Southwest deserves so this crew, specifically, I don't recall
9 what their remediation strategy was but I can tell you what almost
10 every pilot gets when they come back for some type of remediation
11 and that's going to be some academics probably, and some human
12 factors training, as well as some type of device or full flight
13 simulation training depending on what the event required.

14 Q. So when you say remediation you mean when someone comes back
15 outside their normal cycle of training because of something that
16 has occurred -- observed or occurred online, is that
17 remediation -- who formulates what that remediation consists of?
18 Who is the actual person that says in the sim for this person you
19 need to do X, Y and Z? Who's -- who creates that?

20 A. Sure it's a board, a pilot review board, performance review
21 board and, again, it depends if it comes via the ASAP channel, a
22 pilot on their own accord wants to come in for some additional
23 training they can do so. If it's identified via a check ride by a
24 check airman. A check airman highlights the specific issues that
25 the crew was not standard in or if a chief pilot decides that a

1 crew needs to come in then that training is tailored based on
2 principles -- the sitting principles within the training team and
3 the standards check airmen team.

4 Q. And do you have any idea how many remediation events
5 typically occur in a year?

6 A. What's an event? What would you count as an event?
7 Academics? Simulators? One person coming in for a 1-day, a
8 multi-day?

9 Q. Simulator.

10 A. So for a simulator event outside the normal training program,
11 I think less than 20. It's not a normal occurrence.

12 Q. Okay. So Southwest profiles contain a target speed for a
13 final approach V target and that's based -- I think I've seen some
14 different -- some guidance on how that's calculated based on winds
15 or other conditions. But you start a V ref and then you add an
16 additive of some sort and you become -- you get a V target. So
17 pilots are taught to fly the coach V -- at V target. Okay. Is
18 there any point that their taught that they should transition from
19 V target to V ref or is V target all the way to touch down?
20 What's the guidance or the training?

21 A. So crossing the threshold, I bleed off the target speed to
22 landing at ref.

23 Q. Okay. So from what you know about this incident, what do you
24 think went wrong?

25 A. I -- again, I have not been briefed on all of the details of

1 it. So I know that a crew flew into Burbank, had some weather
2 changes to the landing environment, and I don't even -- I can't
3 even tell you what their touch down point was. I can't tell you
4 any of that. So all I saw was the termination event where the
5 airplane was sitting in the EMAS. So that's -- there was a
6 performance limitation that was exceeded either due to a touch
7 down point or an improper application of the landing environment
8 or something like that. That's the only deduction I can make.

9 Q. Was there some product that, I don't know, safety or some
10 department at Southwest, distributed based on or after this
11 incident? I'm not sure what it was titled but (indiscernible)
12 product, all pilots, say, watch out for this or pay special
13 attention to that or -- that was driven by this incident? Was
14 there something that went out?

15 A. There's always these things called station information pages
16 so with over 100 cities that we serve, every station has some
17 uniqueness to it so it is the expectation that the crew, during
18 their briefings, will review whatever is germane to their event at
19 that airport, be it the departure, be it pushback, be it cape
20 codes, be it safety alerts and the safety alerts could be anything
21 from hotspots from taxiing to prohibited taxiways due to taxi
22 widths to operational considerations such as, again, hotspot or in
23 this particular case, the environmental of the distinctions of the
24 runway be it the color transitions, markings, VASIs, PAPIs,
25 threshold crossing height differences. Those types of things are

1 called out on those pages.

2 Q. Were there any changes to the Burbank pages after this
3 incident?

4 A. I believe so, yes.

5 Q. Do you know anything specific about what they might --

6 A. Specifically --

7 Q. -- what the changes might have been?

8 A. From my knowledge is that the awareness to the threshold
9 crossing height is not 50 feet, it's 73 feet that the VASIs and
10 the glide slope are not coincident with one another but that's all
11 on the approach plate, on the approach pages from Jeppesen and
12 then specifically the visual considerations of the concrete to the
13 blacktop of the runway and that their -- the discerning touchdown
14 point is a taxiway intersection for 1500 feet for a visual
15 reference.

16 Q. Okay.

17 A. I don't know if those were all changed but those were all
18 things that I've heard discussed in a working group, specifically
19 around Burbank.

20 MR. FRANTZ: Okay. Okay. Thank you. Those are all -- see
21 if anyone else has any questions.

22 BY DR. SILVA:

23 Q. Along those lines, are you aware of any safety initiatives
24 about when they run shorter runways that the airline has been
25 involved with either before the incident or after the incident?

1 A. Safety initiatives.

2 Q. Yeah, any type of identification of a hazard and mitigations.
3 Anything -- any kind of initiatives like that?

4 A. Other than we've always -- obviously, Southwest operates in
5 tight airports, tight ramp space, shorter runways and that's been
6 the lifeblood of our company.

7 Q. Uh-huh.

8 A. We have the special airport pages that we review.

9 Q. Uh-huh.

10 A. Those are always emphasized. The -- I think that everybody's
11 very cognizant of Chicago and our landing performance record there
12 is stellar with the exception of the one event that, you know,
13 braking action reporting or prior to when all that stuff was --
14 had the fidelity that it does today. You know, when we operated
15 in Key West we had a lot of awareness to that so we do. We focus
16 and that's -- those are our big airports and we focus very
17 intently on that so safety is always our number one operational
18 priority.

19 Q. Uh-huh.

20 A. So, yeah, we focus on that a lot. But any specific changes
21 as a result of this just reinforcing the basics.

22 Q. Uh-huh.

23 A. Fly the airplane and be mindful of your operating
24 environment.

25 Q. Okay. Once you click send on the PWB for your landing data,

1 is that the term? You click send, right?

2 A. Yes, ma'am.

3 Q. Okay. How long does it take to get a response?

4 A. There's a number of variables that go into that but most
5 transactions could be as short as 15 seconds, as long as 40, 45
6 seconds.

7 Q. Okay.

8 A. Somewhere in there.

9 Q. Okay.

10 A. So pretty -- it's really fast.

11 Q. Okay. Do you interact with the FAA at all in your position?

12 A. I interact with the AFS-280, the AQP advanced qualification
13 program management team, the CMO, specifically the APMs because
14 they're all principals as part of our AQP so those are my -- the
15 primary focus that I have interactivity with. Obviously, with the
16 Max we've had some exposure to some of the other leadership teams
17 that have come down here to talk to us about the Part 25
18 recertification process. But otherwise, those are the two areas
19 that I focus on as the training

20 Q. Okay.

21 A. -- (indiscernible).

22 Q. Okay. How has that relationship been with the FAA?

23 A. I have a great professional working relationship with them.
24 Yeah.

25 Q. Any challenges?

1 A. How so?

2 Q. Just difficulties, issues in working with them?

3 A. No, the beauty of what we have is as an AQP is it's all data-
4 driven and they are a principal that sit there in our data
5 integration groups. They evaluate our data. They see our data
6 and they're part of the post-design phase. We present everything
7 to them. Post-development phase. So, yeah, I feel like it's --
8 from the training identification and development, I feel like we
9 have good working relationship there.

10 DR. SILVA: Okay. Great. That's all I have.

11 MR. BOWEN: Just a couple of quick --

12 MR. SCHMIDT: We are going in the same order?

13 MR. BOWEN: Oh, we are.

14 MR. WEST: No, I'm fine. No questions.

15 MR. BOWEN: Just --

16 MR. FRANTZ: Okay.

17 MR. BOWEN: -- a couple questions, sorry.

18 MR. FRANTZ: No, that's fine. Greg?

19 BY MR. BOWEN:

20 Q. Are you part -- a member of the Southwest Performance Review
21 Board?

22 A. Performance Review Board. I'm not. Not my -- that's above
23 my level, actually.

24 Q. But you are familiar with the term line disqual for a line
25 event?

1 A. Correct.

2 Q. So would you mind describing the AQP process that's required
3 with special tracking associated with a line disqual in terms of
4 remedial training?

5 A. Correct. So the way that that would happen is that a crew
6 would be disqualified on the line. They would get a write-up on
7 what exactly the disqualification event was and, as I said, the
8 remediation strategy that we would have. If it's a human
9 performance issue which pretty much everything that we do has a
10 human factors touch to it.

11 We have a team so all of that would be reviewed by the
12 director team and other check airmen and also our flight
13 instruction team that has over 25 years of flight instruction
14 experience here at Southwest Airlines. They've seen the evolution
15 of everything. We all get together. We take the recommendations
16 of whoever did the disqualification or the event. We create a
17 remediation strategy. They go through additional training. After
18 they do their additional training they go into our Tier I strategy
19 so they through --

20 Q. So do they go straight to Tier I or they go through and
21 continue with the qualification first?

22 A. They go -- I was getting to that. Yes, sir.

23 Q. Okay.

24 A. Sorry. They go to this additional training and then they go
25 through our CQ program again because they have to get requalified.

1 Once they're qualified they go into the Tier I strategy where at 6
2 months they come back and do an additional evaluation. I'm
3 drawing a blank on exactly what the term is because it's so rare
4 that it happens here. And then after they do that they'll come
5 back again at the 1-year point and do their -- the following year
6 CQ and then after that they're whole and they go back into the
7 normal qualification process.

8 Q. Okay. Do the (indiscernible) use supervised line flying
9 associated with -- after their training?

10 A. Yes. They do, sorry.

11 Q. Are they?

12 A. Yes, there is supervised line flying and that is performed
13 with one of our line check airmen and they have to obviously
14 clearly demonstrate because they've been disqualified they're
15 requalifying in the seat and getting the appropriate training.
16 Sorry I --

17 Q. Thank you. One last thing.

18 A. Yes, sir.

19 Q. Kevin Fergerson asked you earlier about failures or failure
20 to progress where it relates to training for PWB or an evaluation.

21 A. Yes, sir.

22 Q. And this year's continuing qualification program,
23 specifically, the systems and procedures evaluation, is there an
24 evaluation there for PWB performance where it relates to non-
25 normal?

1 A. Yes, sir.

2 Q. And have we had any failures there?

3 A. We have not.

4 MR. BOWEN: Okay. Thank you. That's all I have.

5 MR. FRANTZ: Eric, you said you had nothing.

6 MR. SCHMIDT: Follow off the SPE.

7 MR. WEST: No, I don't.

8 MR. FRANTZ: Okay. Rich?

9 MR. LEE: Nothing.

10 MR. SCHMIDT: Well, I don't think we've had -- we've had a
11 SPE. That's what I wanted -- I feel like we might have had one,
12 actually, where a crew was unable to calculate the brake cooling
13 module. Yeah. That was part of that SPE so we have had one with
14 calculating brake cooling but that module is exactly the same as
15 it was with our on-board performance module so the interfacing
16 interactivities is identical.

17 BY MR. BOWEN:

18 Q. So brake cooling is an additional feature of a performance
19 weight and balance output screen, correct?

20 A. Correct.

21 MR. BOWEN: Thank you.

22 MR. FRANTZ: Kevin?

23 MR. FERGERSON: Yes, please.

24 BY MR. FERGERSON:

25 Q. Was the crew involved in this incident disqualified?

1 A. That's what I -- honestly, I can't -- I just can't recall.
2 I'm sorry. I don't remember.

3 MR. FERGERSON: Okay. That's all I have.

4 BY MR. FRANTZ:

5 Q. Would you be surprised to hear if they weren't disqualified?

6 A. I would be surprised, yes.

7 Q. Okay. But at your level, you're a director of flight ops
8 training, you don't know if they were disqualified or not.

9 A. I think that -- again, I don't want to say yes or -- within
10 an affirmative on that.

11 Q. Okay.

12 A. I just -- I can't remember. But yes, I mean, if they -- if
13 you were involved in an incident like this I do believe that every
14 indication is is that you would be disqualified. So --

15 Q. Okay.

16 A. But I don't remember what --

17 Q. Fair enough.

18 A. Again, we really try to, in our products, everybody comes in
19 and they're an individual. I don't remember names. I don't --
20 when people come back if they've had a remediation at some point,
21 I don't remember them the next year. I really don't because we
22 focus so much on making sure that all of our crews meet the
23 standard and, as I said, 10,000 people every year that flow
24 through here and I don't see every single class and I don't see
25 every single pilot personally. That's what we have the staff for.

1 So -- but, yes.

2 MR. FRANTZ: Okay. Very good. I think we're finished. Yep.
3 I think we're done. Do you -- anything you want to add? Anything
4 we didn't ask you that you think we should have?

5 MR. SCHMIDT: I guess my only question is will I get a
6 transcript of this so that I can review my answers and make
7 corrections to them or fill in the blanks that I was unable to do
8 so at this point, other than the ones that I've written down thus
9 far?

10 MR. FRANTZ: Well, when you say make corrections, are you
11 worried about a mistake being made between -- during the
12 transcription process or correcting your -- you would recognize
13 something that you said wrong and you would want to change it. Is
14 that what you mean by that?

15 MR. SCHMIDT: Yeah, so like with the autobrake requirement,
16 you know, that question when we were talking about that, I didn't
17 have all three of the criteria at that time and, you know, get
18 that --

19 MR. FRANTZ: Oh.

20 MR. SCHMIDT: -- so you guys have access to that.

21 DR. SILVA: What I told Jeff yesterday is a copy of this
22 transcript will be part of our public docket. It's going to take
23 a while.

24 MR. SCHMIDT: Okay.

25 DR. SILVA: It's probably going to be 6 months or so.

1 MR. SCHMIDT: Uh-huh.

2 DR. SILVA: But once it becomes public you'll have that
3 opportunity.

4 MR. SCHMIDT: Uh-huh.

5 DR. SILVA: And if there's any discrepancies or anything you
6 want to change, you can route that through Aaron (ph.) to get to
7 us and we can append those changes or comments to the transcript.

8 MR. SCHMIDT: Yeah.

9 DR. SILVA: Is that fair?

10 MR. FRANTZ: Yeah. Yeah. Because typically at this point
11 the group will have a chance to review the transcript once it's
12 produced everyone in the group will be reading it but it's usually
13 not passed to the interviewee to make comments or whatever at that
14 point because it's accepted. Once the group looks at it, it's
15 accepted and once it's transcribed it's accepted as this is what
16 was said.

17 MR. SCHMIDT: Uh-huh.

18 MR. FRANTZ: So if something -- you didn't advance or was I
19 don't know or I'll have to look that up, we don't desire -- we
20 don't have a need to have that filled in at some later point just
21 for the purpose of the transcript, no.

22 MR. SCHMIDT: I was just trying to make sure you had a very
23 complete package so that you could -- whatever determination or
24 whatever the whole output or end product of this is, is --

25 MR. FRANTZ: Sure. No, absolutely. And, but we'll --

1 MR. SCHMIDT: -- what my interest is.

2 DR. SILVA: We'll ask you if we do.

3 MR. FRANTZ: Yeah. We'll go back to you or we'll seek other
4 sources if there's something that you said I don't know to and we
5 really need to know we -- if we come back to or we can go
6 somewhere else to manually dig it out or something if we need to.

7 MR. SCHMIDT: Yeah.

8 MR. FRANTZ: Okay.

9 DR. SILVA: So we'll let you know.

10 MR. SCHMIDT: Okay.

11 DR. SILVA: Thank you.

12 MR. SCHMIDT: Thank you.

13 DR. SILVA: We appreciate your time.

14 MR. FRANTZ: Yes. Okay. We'll go on -- off --

15 (Whereupon, the interview was concluded.)
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CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF: SOUTHWEST AIRLINES OVERRUN -
 BURBANK
 Interview of Chris Schmidt

ACCIDENT NO.: DCA19IA036

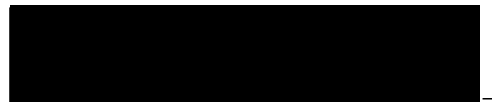
PLACE: Dallas, Texas

DATE: October 10, 2019

was held according to the record, and that this is the original,
complete, true and accurate transcript which has been transcribed
to the best of my skill and ability.



Beverly A. Lano
Transcriber



Autumn Weslow
Corrections made 6/17/2020

UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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Investigation of:

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SOUTHWEST AIRLINES OVERRUN -
BURBANK

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Accident No.: DCA19IA036

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Interview of: GRANT LeCLAIRE
Senior Manager of Procedures
Southwest AirlinesSouthwest Airlines Headquarters
Dallas, TexasWednesday,
October 9, 2019

APPEARANCES:

MARVIN FRANTZ, Operational Factors Investigator
National Transportation Safety Board

SATHYA SILVA, Ph.D., Human Performance Investigator
National Transportation Safety Board

ERIC WEST, Accident Investigator
Federal Aviation Administration

GREG BOWEN, Training and Standards
Southwest Airlines Pilots Association

KEVIN FERGERSON, Flight Ops
Southwest Airlines

RICHARD LEE, Safety Pilot
Boeing

JEFFREY NOVOTA, General Counsel
Southwest Airlines
(On behalf of Mr. LeClaire)

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I N T E R V I E W

(2:02 p.m.)

DR. SILVA: Okay. We're on the record at 2:02.

So what I'll do is I'll kind of run through our basic preamble, see if you have any questions before we start.

MR. LeCLAIRE: Sure. Thank you.

DR. SILVA: And we'll also run through introductions so you know who you're talking to if you don't already. I'm Sathya Silva. I'm a human performance investigator with the NTSB.

MR. FRANTZ: Marvin Frantz, operational factors investigator with the NTSB.

MR. LEE: Rich Lee, Boeing safety pilot.

MR. FERGERTON: Kevin Ferguson, Southwest Airlines.

DR. SILVA: Okay.

MR. BOWEN: Greg Bowen, Southwest Airlines and SWAPA Training and Standards.

DR. SILVA: Eric?

MR. WEST: Eric West, AVP-100. It's the FAA Accident Investigation Division out of Headquarters in Washington, D.C.

MR. LeCLAIRE: And I'm Grant LeClaire, labs/procedures (ph.), Southwest Airlines.

DR. SILVA: Great. So have you gone through any NTSB interviews at all before?

MR. LeCLAIRE: I have not.

DR. SILVA: Are you familiar with our process? So you're

1 talking to a bunch of us, and that's a reflection of our party
2 process. While we as the NTSB have expertise in investigating, we
3 rely on the rest of the industry and the FAA for the subject
4 matter expertise.

5 The purpose of our interview is air safety. We're not here
6 to assign blame, liability, any of that sort. What will happen is
7 a copy of this -- sorry -- this recording will get sent out for
8 transcription, and a copy of that transcript will become part of
9 our public docket once our factual information gets released,
10 anywhere between 6 months to a year from now.

11 You're the expert. We want to learn from you. If you don't
12 understand a question, feel free to ask for clarification. If you
13 don't know the answer, that's fine, too. If you need a break,
14 just let us know. Pretty informal in that sense.

15 You are entitled to have a representative sit with you today.
16 Would you like to have someone with you?

17 MR. LeCLAIRE: I would and I do have --

18 DR. SILVA: Okay. Who is that person for the record?

19 MR. LeCLAIRE: This is Jeff Novota, Southwest Airlines Legal.

20 DR. SILVA: Great.

21 So Jeff, you are free to ask Grant to step outside and
22 discuss anything, but please don't answer questions for him. You
23 know the drill.

24 MR. NOVOTA: Understood.

25 DR. SILVA: Okay.

1 MR. NOVOTA: Thank you.

2 DR. SILVA: Okay. Great.

3 So the format we'll run through is I'll start out with a
4 handful of questions, and then we'll go essentially around our
5 room, usually twice to make sure all the questions get asked. Any
6 questions before we start?

7 MR. LeCLAIRE: No. Thank you.

8 INTERVIEW OF GRANT LeCLAIRE

9 BY DR. SILVA:

10 Q. Okay. Start with the easy stuff. Can you state and spell
11 your name for us?

12 A. Sure. Grant LeClaire, G-r-a-n-t, L-e-C-l-a-i-r-e.

13 Q. Perfect. And what is your title?

14 A. Senior manager of procedures.

15 Q. Can you run through a brief history of your -- sorry --
16 CliffsNotes versions of your background in aviation and how you go
17 to where you are now?

18 A. Brief? No, sure. Be happy to. I was 4 years old -- no, I
19 started flying when I was younger. Went to school at the
20 University of North Dakota. Graduated from there. Went to
21 school -- or excuse me -- worked for a small 135 operation in
22 Duluth, Minnesota. I worked for a small 135 operation in Juneau,
23 Alaska, and was lucky enough to get hired by Mesaba Airlines, was
24 at Mesaba Airlines for about 2 years, just short of 18 months, I
25 should say, not 2 years. Then I was at Sun Country Airlines from

1 October of 1993 until December of 2001. And then AirTran in 2002,
2 January of 2002, and that flowed through, obviously, to the
3 acquisition, and here at Southwest now.

4 Q. Okay.

5 A. And then -- well --

6 Q. Go ahead.

7 A. That's it. Oh, following that, as far as my position today,
8 some of the other stuff I've done, I worked early with ICAO just
9 on the development of the south -- or excuse me -- of the
10 satellite voice communications procedures, worked with the FAA on
11 the writing of OpSpec B045 and then just worked in procedures
12 writing different manuals and different content at both -- at Sun
13 Country, AirTran, and Southwest.

14 Q. Okay.

15 MR. WEST: My apologies for interrupting, but at those
16 airlines, what were your positions at the airline?

17 MR. LeCLAIRE: I was a pilot at all of them.

18 MR. WEST: Pilot?

19 MR. LeCLAIRE: Um-hum.

20 MR. WEST: That's all I need to know. Thank you.

21 BY DR. SILVA:

22 Q. How long have you been with Southwest?

23 A. I've been -- once I transitioned, from that date?

24 Q. Um-hum, yeah.

25 A. The transition date was December 29th of 2014.

1 Q. 2014. And how long have you been in your specific position?

2 A. I've been in this position since May of 2015.

3 Q. Okay. Do you have any idea of how many total flight hours
4 you have?

5 A. Just short of 13,000.

6 Q. Okay. Do you have any time in the 7-3s?

7 A. I do.

8 Q. Okay. Do you know how much approximately?

9 A. I'd be approximating about probably 5300 about.

10 Q. Okay. All right. In your position now, can you run through
11 what your duties and responsibilities are?

12 A. Certainly. Essentially, I'm responsible for accepting inputs
13 from industry, the regulator, and company, and changes and
14 modifications to the manual, running those modifications through
15 the process that exists -- that is compliant with our Part 5, and
16 then working with the groups, making sure the cross-departmental
17 work is done. Then bringing those documents to the FAA,
18 coordinating with others and then working with the publication and
19 communication of the new procedures as they come out.

20 Q. What does your day-to-day look like?

21 A. Busy. Day-to-day it varies. It depends. Normally, we have
22 many scheduled meetings that are reoccurring, that are associated
23 with the manual process, with the Part 5 process, SMS, and then
24 just the normal process that exists here at Southwest for
25 publication change. A lot of the meetings are based on that,

1 taking input and setting things forward as they move through the
2 process, and basically get approval to publication. And the it's
3 supporting other groups, be it our general questions that come in
4 from pilots or questions that come in from other groups that we
5 work with that are both within the operational side and outside
6 the operational side of the airline.

7 Q. Okay. Did you work directly with the PWB transition from
8 OPC?

9 A. My team was very involved in it. I was not one of the
10 specific writers for the transition and the conversion, but my
11 team was deeply involved with it, I guess, would be the best way
12 to explain that.

13 Q. Okay. And you were in charge of the team or were you --

14 A. I was in charge of that team -- it was -- my team handled a
15 portion of it. Certainly not all of it.

16 Q. Okay.

17 A. Basically, my team accepted inputs from many other groups,
18 and you know, what it would look like as it came to fruition, and
19 then we used the previous template that was the OPC and how pilots
20 worked and followed the path in order to just completing their
21 jobs and getting performance for, obviously, operations, and then
22 took that near that and tried to bring that from the OPC into the
23 PWB world and then publishing that, and then working with other
24 departments on bringing it to the pilots so they could operate
25 with it.

1 Q. Okay. Can you go into a little more detail on that process
2 for the PWB development?

3 A. I guess when you say that, exactly what aspect of it, because
4 it was very multifaceted.

5 Q. Okay. So let's start with development of the software
6 itself?

7 A. That would really be outside my scope. I'm really not --

8 Q. Okay.

9 A. I'm the procedures guy. All of those folks came to us
10 with -- you know, once they had a product that was complete, you
11 know, then we worked with them to say, okay, this is, this is the
12 functionality, how will that functionality work and apply to the
13 end-user or the pilot.

14 Q. Okay.

15 A. That's really more my role. As far as anything around that
16 level, there's really other groups that you'd have to ask that
17 question to --

18 Q. Okay. That's fine. We can focus on the procedures side,
19 then.

20 A. Thank you.

21 Q. So, again, you mentioned kind of high-level -- the process
22 that you used, but is there more detail that you can provide
23 regarding steps of the process, any certification actions, things
24 like that?

25 A. For just a manual change? Is that what you're asking?

1 Q. For, yeah, specific to the PWB transition.

2 A. Well, for any -- so my side, again, is just the manual side.
3 As far as the manual and the transition completely all the way
4 over really is --

5 Q. Great.

6 A. -- outside of that, outside of my side of it. My side is
7 really purely as the information came in to us, we wrote the
8 procedures to really instruct the pilots how to utilize the end-
9 product that was PWB. It's really not my side -- if I -- I might
10 be missing your question. I apologize if I am, but --

11 Q. No. That's fine. I mean, if you can focus on the manual
12 side, but --

13 A. Sure. So any manual change --

14 Q. Okay.

15 A. -- not just a PWB change, there's a specific process that's
16 laid out in our manual system.

17 Q. Sure.

18 A. So on -- Chapter 7 is essentially what it's called. And we
19 basically start with an intake process. So any changes come in
20 through an intake process and are assigned a level of priority.
21 From that point, we bring it in. We assign workgroups. And then
22 workgroups work as a team. They bring it through a multifaceted
23 governance process, depending upon the level, if it's cross-
24 departmental or not.

25 As it gets through the governance gates, and we have a lot of

1 peer reviews that occur with both internal and external to the
2 actual office itself, per se. We do some testing. We work with
3 SWAPA and other groups occasionally on that testing as we're
4 moving forward, just kind of proofs of concept, to make sure what
5 we're writing makes sense. Just trying to make sure we're not
6 missing anything at all. That's why we bring in others, of
7 course, from that standpoint.

8 As we move through, that continues through the -- I'm just
9 moving down because it's a long process. As we move through that,
10 eventually we get to a point where we do a walkthrough with the
11 FAA. For this specific process, they were involved in some of the
12 actual testing, the FAA was, from that standpoint. Walked them
13 through to what we have, and then the submission occurs when we've
14 completed that and get the final governance gates done.

15 We submit that to the FAA through the portal. Actually, my
16 team doesn't do the submission. The Central Publications Team
17 does the submission to the FAA. And in that case, it's usually a
18 15-day turnaround time, 15 business days, comes back, and we
19 publish.

20 That's, you know, a very quick review, but that's essentially
21 the process.

22 Q. All right. Regarding development of the procedures, can you
23 talk a little bit about how that part of the process is done in
24 terms of what goes into the manuals, how those are decided, how
25 that's decided?

1 A. Sure. So specifically, as these were developed, like we do
2 with any procedure, we -- or any change -- as the information
3 comes in, depending on the scope and the cross-departmental view
4 of the work, we would engage other groups. At the time, it was
5 QA, Flight Ops QA was one that we engaged quite a bit because of
6 the change. And we write, we work collaboratively,
7 collaboratively -- excuse me -- I have Invisalign, so if I'm not
8 doing --

9 Q. Okay. Yeah.

10 A. Collaboratively with -- you know, it makes it tough to talk
11 sometimes -- collaboratively with those guys on testing. We look
12 at the testing, look at the results, see if the manual changes are
13 understood, can be clearly communicated by, you know, the end-
14 user, being the pilot. We brought not just people within QA, but
15 actual flight line pilots came in, were part of the actual testing
16 just to make sure they could accept and understand, not so much
17 accept, but understand, and utilize the changes.

18 That goes back and forth through that testing process, and
19 above that testing process, there's the governance process that
20 continues through the development. Once all parties were
21 satisfied with the product and the testing showed that pilots were
22 able to accommodate and function within the new systems that were
23 being published, that continued through the approval process and
24 then published as I articulated before.

25 Q. Okay. I lost my train of thought. Give me one second.

1 A. Okay.

2 Q. So regarding the PWB manual changes or development, from what
3 we understand -- actually, let's step back one sec. What does the
4 guidance say about when to conduct or request the landing data?

5 A. To request landing data, it's articulated in the -- before
6 top of descent guidance right there.

7 Q. Okay.

8 A. So prior to top of descent is when it's procedurally
9 suggested that you get your PWB data. That's your original plan
10 with the data that you have at that time.

11 Q. And how does that change when let's say you have changing
12 weather?

13 A. If you have changing weather, it recommends in the landing
14 section -- it doesn't recommend -- you have to -- in the landing
15 sections of the AOM that if you recognize changing conditions
16 being from dry to wet, calm to tailwind, or significant
17 precipitation change, you're supposed to get new data if it looks
18 like it's going to affect your performance.

19 Q. Are those listed specifically, those examples of when -- what
20 changing conditions means?

21 A. They are close to what I said, but, yes, specifically, it
22 does list what I stated --

23 Q. It does list. Okay.

24 A. It's that -- it doesn't -- it's not all-encompassing, because
25 certainly there's many other conditions than what, you know, which

1 could be included in just in the list, but there's a "for example"
2 list of things that would do that.

3 Q. Okay. And along those lines, what would qualify as "rapidly
4 changing conditions"?

5 A. Rapidly changing? That's a little --

6 Q. Or what is your -- what's the verbiage that the procedure
7 uses?

8 A. The procedure just says if it changes like I articulated from
9 dry to wet, headwind to tailwind.

10 Q. Okay.

11 A. And as you go further into the procedure, if there's a
12 significant change in precipitation rate -- I believe it's
13 contamination. That I'd have to verify. I can't remember that
14 off the top of my head, but basically, you know, change in
15 precipitation rate is, you know, brought out specifically.

16 Q. Okay. Is there any guidance that exists for the timing of
17 any recalculations?

18 A. You're not supposed to conduct any modifications or any work
19 on the FMC as you get below 1,000 feet. That's for obvious
20 reasons.

21 Q. Okay.

22 A. But basically, if you recognize that there's changes, you
23 have the opportunity to either, you know, discontinue the
24 approach, which is one of the things that's recommended if you're
25 that far down, and then capture new data if necessary.

1 Q. Okay. Were you involved with developing training at all for
2 the PWB?

3 A. Not directly. I assisted with the -- as they gave --
4 provided the training, I was one of the folks that was associated
5 with reviewing the training and then application just as somebody
6 that would -- you know, they'd pick people that had different
7 levels of experience, and they'd pick me just as somebody just
8 as -- well, I was just one of the people they picked, and then
9 just do it as part of that test.

10 So from that part of it, I was involved. But as far as the
11 actual development of the training, no, I was not directly
12 involved.

13 Q. Okay. Okay. I'm going to pause here and let somebody else
14 talk.

15 A. Sure.

16 DR. SILVA: Marvin?

17 MR. FRANTZ: Okay. Thanks.

18 BY MR. FRANTZ:

19 Q. Hi, Grant.

20 A. Hello.

21 Q. How you doing?

22 A. Doing good.

23 Q. I want to go back briefly to something Sathya was talking
24 about, procedures, and you were discussing procedures, and she
25 talked about, well, where does it say, you know, you should go

1 back and redo this if you -- if this weather changes and --

2 A. Um-hum.

3 Q. What are we talking -- where are these procedures that you
4 were describing, and then you gave the specific examples of
5 headwind to tailwind, and precip to no precip. What document are
6 we talking about that --

7 A. The Aircraft Operations Manual.

8 Q. The AOM?

9 A. Um-hum.

10 Q. And that'd be, like, chapter 17?

11 A. Twelve.

12 Q. Twelve, and is that called -- is that the one that's called
13 PWB?

14 A. It's called landing.

15 Q. Okay.

16 A. Landing, landing, essentially.

17 Q. Okay.

18 A. I'm not exact when I say that, but it is chapter 12 is
19 landing --

20 Q. And it's also in AOM, is it 17 that has the PWB description?

21 A. Um-hum, that's correct.

22 Q. And does chapter 17 list pilot procedures and techniques, or
23 not techniques, but pilot procedures and guidance for using the
24 PWB system? Isn't that in 17?

25 A. It does.

1 Q. So there's also things in the AOM in chapter 12 in the
2 landing, under landing, that also describes how you should go back
3 and use the PWB to recalculate data. Or it doesn't probably say
4 PWB, or does it, in chapter 12 that you're talking about?

5 A. Chapter 12 is more the operational policy.

6 Q. Okay.

7 A. As far as, you know, what to consider, what you should do.

8 Q. Okay.

9 A. The, you know, some of the Boeing suggested guidance
10 instructions was in that, too, but that's in chapter 17 --

11 Q. Okay.

12 A. It's more the expansion of the actual functionality, button-
13 pushing if you will, for PWB.

14 Q. Right. Okay. Okay. So 12 would be the guidance that would
15 just say you should reevaluate your performance info if these
16 weather -- as one example, if weather changes from this to this
17 or --

18 A. Yeah.

19 Q. Is that correct?

20 A. Um-hum.

21 Q. Chapter 12 -- see, I learned something right there. Okay. I
22 may have also missed it at the beginning. Did you fly the 737 for
23 Southwest?

24 A. I do.

25 Q. Oh, you still do?

1 A. Um-hum. Yeah. I'm an active pilot, so --

2 Q. Okay. And you have a senior manager position as -- doing
3 this?

4 A. Um-hum.

5 Q. So you don't -- do you fly a regular line schedule or you --

6 A. I'd like to, but I don't. No, I don't fly as much as --

7 Q. You get to pick and choose your --

8 A. I'm sure that's why Greg laughed a little bit when I said I'm
9 an active pilot. I'm a pilot. I'd like to fly a lot more than I
10 do, but I do get out and fly, so --

11 Q. Okay.

12 A. The throat clearing was appreciated, though, to Greg.

13 Q. So give me a high-level version, if you can, of the
14 differences between the OPC and -- procedures between OPC and PWB
15 that would -- the typical pilot would have to go from doing these
16 steps or learning -- knowing this to learning this when he went to
17 PWB. What are the significant changes that the crew had to learn
18 about when they switched over?

19 A. Procedurally, the base concept is the same from a policy
20 standpoint. The actual use of, you know, where the interface is,
21 you know, that's clearly where there difference is. I would --
22 it's the interface, which is really the difference, really the
23 same points as far as when a pilot would calculate or, you know,
24 reach to instead of using the device that they had -- well,
25 they're both onboard the aircraft, but the independent device,

1 which was the OPC.

2 Q. Right.

3 A. Obviously, I was a first officer, and we were going to use
4 the OPC because I reach that way instead of that way, but the --
5 so that concept really didn't change from a procedural standpoint.
6 It's more, you know, the actual capturing and getting the data and
7 the procedures associated with the send, that is what's changed.

8 Q. So the inputs that the crew would make were similar?

9 A. The inputs for --

10 Q. Say in an example of requesting landing data specifically,
11 say --

12 A. So from the requesting specific runways, the wind, the
13 weight, the fuel, those concepts are all the same.

14 Q. Okay.

15 A. The interface just being different. So I think I'm capturing
16 what you asked.

17 Q. With the OPC system, did the crew have to manually input
18 weather data?

19 A. Yes.

20 Q. So they had to -- they would -- typically, would they get an
21 ATIS from over ACARS and then they would take that data and enter
22 it into the OPC when they are requesting a land -- or trying to
23 calculate landing?

24 A. Typically, yes.

25 Q. Okay. Okay. So that's a difference, is it not, between OPC

1 and PWB?

2 A. It is.

3 Q. PWB, the system tells you -- well, the AeroData tells you
4 that they go out and they grab the latest METAR when --

5 A. Yes, that's correct.

6 Q. -- they're going to calculate the data that you just
7 requested of them?

8 A. Um-hum.

9 Q. Okay. So in the procedures to use the PWB, is there any
10 policy or practice that Southwest has incorporated to ensure that
11 the latest weather data is included in the numbers, the landing
12 performance numbers that they get back?

13 A. So when you make the requests, it does capture the latest
14 content, the latest METAR. If the METAR is more than 60 minutes
15 old, it doesn't provide you the data.

16 Q. Okay.

17 A. That is the architecture of how that works. It's incumbent
18 upon the pilot if he recognizes a change to make an additional
19 request, or if you're, you know, the ATIS changes just as --
20 normally when you transition from the -- to the en route structure
21 to the terminal structure, one of the first questions from
22 proposed control, you know, if you don't communicate the current
23 ATIS, they tell you what the current ATIS is, and you grab it.
24 Those would be indications from that standpoint.

25 Q. Anywhere in the procedures that Southwest uses, is that

1 stated that, you know, yeah, PWB is going to use the latest METAR,
2 but if you have rapidly changing conditions, you, the pilot, you
3 know, you need to be on top of that and determine maybe you need
4 to make another request later. Is that anywhere spelled out in
5 the, you know, the instructions on how to use the PWB system?

6 A. In the policies in chapter 12, it states if there's rapidly
7 changing conditions --

8 Q. Chapter 12?

9 A. -- you may have to recalculate.

10 Q. Okay.

11 A. It may not use those exact words, but it's --

12 Q. Right, okay. Nothing that you're aware of in chapter 17, the
13 one that describes this --

14 A. It alludes --

15 Q. -- screen-by-screen sort of in full with the PWB and how
16 to --

17 A. It may allude to that, but more of the purpose of 17 is just
18 how to get in and, you know, what are the keystroke, per se. The
19 policies are more predominant in chapter 12.

20 Q. Okay. Did the OPC system, once they put in all the numbers
21 and got the solution, did that provide stopping margins for the
22 runways that they had selected?

23 A. Yes.

24 Q. And are those the same equivalent stopping margins? Does it
25 mean the same thing as it means when you see stopping margins?

1 I'm not sure how it's labeled, but when you see it on the PWB, it
2 means the same thing? Back when they were using OPC, it meant,
3 you know, if everything works right, on this runway I should stop
4 with X number of feet left, and it means -- that's just means the
5 same thing on the PWB system, when it says stopping margin.

6 A. Following the same policies and procedures?

7 Q. Yeah.

8 A. And touching down in the same spot?

9 Q. Right, right.

10 A. Yes, it does.

11 Q. Okay. Was there any guidance that you're aware of in either
12 the OPC crew instructions or crew guidance, or the PWB, that
13 pointed crews -- not pointed crews, but led crews on what to do
14 with that information or its relevance, or if there should be any
15 consideration that they should give to it, to the stopping margin
16 data?

17 Was that highlighted as this equals this and is this
18 important or is it just, well, its title stopping margins are
19 self-explanatory and not elaborated on?

20 Do you know in either guidance for either system, OPC or PWB,
21 other than just saying -- defining it, well, here's a column that
22 gives you a stopping margin, was there other elaboration of what a
23 stopping margin was and what it could have meant?

24 A. The definition of a stopping margin is the same under OPC as
25 it is under PWB, and the guidance relative to what a pilot needs

1 to do to ensure that you maintain that stopping margin is the
2 same. The words may have changed a little bit relative to the
3 technology, but as far as what a stopping margin is specifically
4 is the same.

5 Q. And there's no requirement for that number to be anything
6 other than greater than zero; is that correct?

7 A. That is correct.

8 Q. Okay. And that's always been like that even back in OPC
9 or --

10 A. Always is a long time, but I would say yes, it's been -- it's
11 true.

12 Q. Okay. I was looking at the PWB training part of the CBT
13 training that Southwest sends out. Kevin set us up with that very
14 kindly. And one thing that struck me was when the pilot is
15 requesting landing data, like, going in and they're going to make
16 the request prior to top of descent, one of the things they have
17 enter in is zero fuel weight and arrival fuel. The pilot has to
18 manually -- am I correct that he has to punch those numbers in as
19 part of his --

20 A. That's not correct any longer. That was -- I believe, and I
21 can't give you an exact timeline -- I believe it was shortly after
22 implementation of landing that changed pretty quickly. I don't
23 think that existed when we went to full implementation of PWB.
24 It's been a couple of years, so I'm not 100 percent on that. But
25 today, and even for the last few years, a pilot using PWB, those

1 numbers are auto-populated, so you do not have to enter those
2 anymore. That's correct.

3 Q. Okay. All right.

4 A. Or --

5 Q. Yeah.

6 A. No, you're not right. It's correct that it does auto-
7 populate.

8 Q. It auto-populates on those two.

9 A. Yeah.

10 Q. Okay. What does a pilot have to enter before he pushes a
11 button to send for his landing request, landing data request?
12 What does he have to put into the PWB?

13 A. On the landing page, there's two pages. There's box items
14 that you need. Those are required. You need to enter the base,
15 the airport, which should have auto-populated. So, basically, let
16 me start again on that one.

17 All the content should auto-populate. The runways are the
18 only thing that you need to -- runways and any other specific
19 information about the runways you would need to enter. If there
20 was anything on the second page, you know, weather conditions,
21 those you would -- you know, beyond just wind, temperature, dew
22 point, QNH, if it's, you know, RTC changes, things like that, and
23 any icing configuration, those things you do have to enter, but
24 everything else auto-populates.

25 Q. Okay. And does a pilot have an option on his first request,

1 before he pushes the button to send his first landing data
2 request, does he have an option of putting weather data in
3 himself?

4 A. Absolutely.

5 Q. And as opposed to not relying on the latest METAR that
6 PWB --

7 A. That's correct.

8 Q. -- or that AeroData has, he can enter data if he wants?

9 A. Yes.

10 Q. And then that, the PWB system, when it receives it in Phoenix
11 and crunches the numbers and sends it back, it will send it back
12 with the same weather that he put in when he sent it as far as --

13 A. That is correct.

14 Q. Wind, as an example?

15 A. Um-hum.

16 Q. If a pilot does a go-around, a pilot-initiated go-around,
17 what's the procedure that he has to follow to -- what kind of
18 reports or how does he have to get that information back to the
19 company or does he have to file a specific Southwest report that
20 says I did a go-around at this airport, here's why? Does he have
21 to file anything? Does a dispatcher have to notify anybody that,
22 hey, flight such-and-such just did a go-around? You know, what
23 happens when a pilot, as opposed to an ATC-initiated, but a pilot
24 initiates a go-around?

25 A. Just a pilot-initiated go-around, you're fine. You're okay.

1 Q. But I mean does it have to get reported? Does he have to
2 submit -- does the pilot have to fill out a form at the end of the
3 day saying I did a go-around at this airport for this reason? He
4 doesn't?

5 A. No.

6 Q. Does the dispatcher -- do you know -- maybe you don't know
7 this. Does a dispatcher make a record that, oh, flight such-and-
8 such went around at such-and-such airport, and that goes in some
9 report somewhere or --

10 A. They most likely wouldn't have knowledge of -- they could
11 have knowledge of that. It depends, I guess, but no, they don't
12 have -- a go-around does not require --

13 Q. If a pilot did a go-around just because he figured as he was
14 inside the outer mark, but he decided, you know, I'm not
15 comfortable with these weather conditions or I think things have
16 really changed, or something really gets my attention here, I'm
17 going to go around and either try again or hold for 15 minutes,
18 does that make it into the system that we were just talking about?
19 Is there a report he would have to --

20 A. The holding for -- if they were holding for 15 minutes?

21 Q. Um-hum.

22 A. Yeah, that -- your example, in that case, the pilot would
23 most likely reach out to dispatch and, you know, tell them, hey,
24 we went around, this is why. You know, if you're holding for 15
25 minutes, that's longer than I would say you normally would, so

1 that would be something where you'd query dispatch and say, you
2 know, this is, this is the current situation. You'll get their
3 opinion, just following operational control, keeping in touch with
4 your dispatcher.

5 Q. Okay. What if it was 5 minutes, and he did it because he
6 realized, hey, I better go around and recalculate my landing data,
7 because I think conditions have significantly changed, so even
8 though I was inside the marker, suddenly I decided, oh, I'm going
9 to do and redo my data, so give me 5 minutes, maybe just get
10 vectors?

11 So he does that. Everything is fine. Is he going to get a
12 call that night or the next day from somebody saying, hey, I saw
13 you did a go-around and you delayed your landing by 10 minutes at
14 this airport, what's up with that? I mean, is somebody going to
15 ask him to just explain that, or is he going to get queried from
16 the company at all as far as --

17 A. No.

18 Q. No?

19 A. No, it's being a pilot, from that standpoint.

20 Q. Let's see. Maybe one more. Oh, are there any restrictions,
21 and this is just as a general Southwest pilot and not as in your
22 managerial position, but is there a Southwest policy on how crews
23 should -- or any limitations or practices they will have if
24 they're going to an airport that -- let's say ATIS says low-level
25 wind shear advisories in effect, other than just their awareness,

1 is there anything else they have to do to continue their approach
2 and landing at that airport?

3 A. If it's just advisories that are in effect?

4 Q. Um-hum.

5 A. They can continue. It's not reported wind shear. It's just
6 advisories that are in effect.

7 Q. Okay.

8 A. So it would be incumbent upon the crew to brief that and
9 discuss it to be prepared for that, but yeah.

10 Q. Okay. And what if it was an aircraft that attempted to land
11 10 minutes before them and went around for wind shear, and ATC
12 made them aware of that? Then what would the crew be expected to
13 do?

14 A. If actual wind shear was reported and a pilot report was
15 made, then you would have to wait until the condition that caused
16 the wind shear no longer existed before you continued in -- being
17 a front moving through, you know, whatever it might be. You know,
18 if that condition is no longer -- the microburst isn't there
19 anymore.

20 Q. So determining what that means, wait until the condition no
21 longer exists, is up to the judgment of that crew, then?

22 A. If there's a subsequent report that, you know, if somebody
23 else flew in, they did not have wind shear, or yes, if you're the
24 only airplane there and wind shear existed, the event then,
25 clearly, that caused it has left, then, yes, it is up to the pilot

1 to make the determination. He's going to use all of his external
2 sources, dispatch, tower, and get the weather reports, and stuff
3 like that. It wouldn't be a person out there acting on their own.
4 It would be a person reaching out to other groups. If you're
5 waiting for another event, you'd use your resources that are
6 available to you.

7 Q. Okay. So just I think I'm getting this. If ATC tells me,
8 yeah, an airplane 10 minutes ago went around, reported wind shear,
9 loss of 10 knots, they went around, I can say, if I'm 10 minutes
10 out from landing, I can say, well, keep me posted, let me know if
11 there's any other report of wind shear, what's your winds now, but
12 other than that and maintaining an awareness of it, I can, I can
13 continue as a Southwest --

14 A. At 10 knots you can continue.

15 Q. Okay. If it was 20 knots?

16 A. Then you would want to make sure that you did not have
17 additional -- anything that may have caused the wind shear, the
18 frontal system that moves through, the thunderstorm that was
19 there.

20 Q. Okay.

21 A. If that had passed -- the life of a thunderstorm sometimes
22 can be shorter, you know, 10 minutes. If that had passed through
23 and was no longer there, then you could continue.

24 Q. Okay. Good. Thank you.

25 A. Yeah.

1 Q. Let's see. And again, just as a 737 pilot, outside of your
2 position, how common is it when you have rapidly changing
3 conditions -- rapidly is a subjective word, but an airport where
4 the weather is going to be -- is changing and you're aware of it,
5 is it common for you as a captain to reach out to dispatch and
6 say, you know, what's the latest data, sort of keep me posted, or
7 are you more likely to just interact with ATC and have them give
8 you the latest conditions as you're, say, 10 minutes out?

9 A. Ten minutes out, so the intent -- if there was weather in the
10 area, what I would do as a captain is reach out to dispatch and,
11 you know, get the information as much as I could to get the status
12 of the airfield. ATIS you can get yourself, of course, so I
13 really wouldn't ask them for that because I can monitor that. I
14 can listen to that from that standpoint.

15 But the things that are bigger than ATIS, as far as outside,
16 you know, the 5 miles that really is just ATIS, you know, what's
17 happening in the area, talking to dispatch, they have all the
18 tools available. You've been through the NOC (ph.), I'm sure.
19 They have a lot of information. You'd query them and see what's
20 the situation not just at the airport, because it's not
21 important -- I mean, the airport is important, but it's what's
22 coming to the airport that's important. That's really what I
23 would ask.

24 Q. Okay. That's good. Thank you. I'm going to stop there for
25 now and pass it back to Sathya.

1 A. Thank you.

2 DR. SILVA: Eric?

3 BY MR. WEST:

4 Q. Okay, Grant, are you familiar with this particular event in
5 Burbank?

6 A. Only what I've seen reported, and then in the news, you know,
7 and then some of the safety data that came back just minimally as
8 far as point of touchdown, and things like that.

9 Q. Okay.

10 A. But other than that, no.

11 Q. So as -- I'm sorry -- I got your -- as the senior manager of
12 flight operations; is that correct?

13 A. Procedures, just procedures.

14 Q. Oh, procedures.

15 A. Yup.

16 Q. Flight procedures.

17 A. I don't want Bob Waltz to think I'm moving in on his job or
18 anything.

19 Q. All right. All right. Well, I'm trying to picture now your
20 position and what exactly it is you do here. So you follow the
21 manual changes when they go into effect or when you get them or
22 receive them, or generate them? Where do you fit into the whole
23 thing? Do you actually help write these procedures?

24 A. Sometimes. My team does, yes.

25 Q. Your team does?

1 A. If a SAFO publishes that information, anything from the
2 regulator, not just SAFO, anything comes in, we ingest that. We
3 look and see are we compliant within our manual structure -- like
4 any change. Is there something -- are we compliant with our
5 manual structure? Is there a change we need to make? We bring
6 that to really an intake process --

7 Q. Right.

8 A. -- where it's not just us as individuals saying, yeah, we
9 think we should do this. We bring it to a larger group, where
10 everybody has an opportunity to look at -- yes, we believe this
11 impacts different aspects of the operation. We agree that there
12 should be a manual change. Then my team would write the words, as
13 you said, that would go in the manual. And then there's a
14 governance process that we follow.

15 Q. Yeah. So you mentioned that before. Can you give just a
16 quick example maybe of the last one that you can remember that you
17 did, a specific example of what that change might be?

18 A. Of a governance?

19 Q. Of what you just -- a change to the manual.

20 A. A change to the manual? Sure. I'm just trying to think of
21 one that would make logical sense. ADS-B is a good one.

22 Q. Okay.

23 A. Obviously, you know, the mandate that's coming very shortly
24 here on January of 2020, that was obviously driven by a mandate.
25 That's something we're going to do.

1 Q. Yes.

2 A. We don't have a choice, which is fine. It's going to be,
3 going to be a great project. It'll work very well. It'll be good
4 for all of aviation. So as that came through, we were aware of
5 the mandate. So many other groups in the company, you know tech
6 ops accommodated equipage, dispatch accommodated their side of it,
7 we accommodated our side. What are the changes going to be to the
8 pilot?

9 So we work with tech ops, dispatch, and other groups in the
10 company saying, okay, these are the changes that we will make from
11 the AOM side of it, from the pilot-facing side of it, that will
12 occur. We make sure we line up with everybody's other -- all the
13 other changes like the ADS-B change that just went active last
14 night. So we had written a bulletin or the words that pilots will
15 use procedurally. Complementing that, dispatch had written
16 something from the dispatch side of the equation.

17 So those move through. We work collaboratively together,
18 made sure that the language made sense to both the dispatcher and
19 pilots, and obviously, there was some money that needed to be
20 spent from the tech ops side for equipage of aircraft. So that
21 was at a governance level. So that came in also.

22 We moved through together until people have an opportunity to
23 review the suggested changes in the language we were going to
24 provide. We have peer reviews with pilots and different groups as
25 it moves through until we get to the governance and to a

1 deployment, where we say, okay, we are prepared for a deployment,
2 you know? People in a meeting that's called OCM get together.
3 They all discuss and say, yes, everyone is prepared for
4 deployment. We'll go live on day X. The date happened to be
5 October 9th. So we're going to go live on that date. Everybody
6 agrees.

7 We submit those changes to the CMO. In fact, we briefed the
8 CMO 3 weeks ago, I think it was, on that -- and talked to them and
9 did a walkthrough. This is how Southwest is going to comply with
10 the 2020 mandate. They see the data. We get it done. We send it
11 to them. They have a 15-day approval process on the CMO side.
12 They approve it.

13 And when it comes back from them, it feeds back through what
14 we call our central publications group. They see it come through.
15 They say, hey, the CMO has approved the changes that we briefed
16 them on, and then we agree on a deployment date, which was last
17 night, and then deploy the change. And that bulletin is published
18 and available for the pilots to --

19 Q. So you're a giant coordinator?

20 A. That's a fair way of putting it, yes.

21 Q. Okay. I just wanted to get --

22 A. No, it's a very fair question.

23 Q. -- for what you do, yes.

24 A. It's not just me. It's many groups that work together. But
25 I do, with the assistance of many others, coordinate a lot of the

1 changes, yes.

2 Q. All right. Okay. And I'm trying to figure out where you fit
3 with dispatch.

4 A. We are just a group, you know, as a pilot, you know,
5 obviously, that's just -- so that -- in that role, just as any
6 pilot would, you know, the operational control standpoint, working
7 with dispatch. But as far as me in my position --

8 Q. Right.

9 A. Sometimes work that we do -- pardon me -- affects dispatch.
10 Sometimes it doesn't ADS-B, clearly there's a dispatch side to
11 that, so that's where we work with them, when there's an
12 interface, per se, on procedures. If there's something that's
13 purely just a flying standpoint, I mean, something like we're
14 going to change our dress code policy, some of the more exciting
15 things we get to work on --

16 Q. There you go. That's kind of what I was looking for.

17 A. Yeah.

18 Q. So --

19 A. That would be more purely us perhaps working with different
20 groups. So then we would do that.

21 Q. Correct.

22 A. If we're working directly with ADS-B, that might be dispatch.
23 If we're working with the installation of a new sat com, we might
24 be working directly with tech ops from that standpoint. So we
25 have the opportunity to reach out and work with many groups at the

1 company.

2 Q. Okay.

3 A. And so --

4 Q. Beautiful.

5 A. The coordinator is a fair --

6 Q. Giant coordinator I'm going to say. Okay.

7 A. I have a lot of help. It's a very great group of folks that
8 do all the work, not just me --

9 Q. Okay. So when Mark had mentioned something about
10 discontinuing the approach, who actually does that? You've
11 mentioned that line, yet I didn't, I didn't quite gather who would
12 be responsible for doing that.

13 A. That would -- well, in the situation or the example that was
14 utilized on approach if -- it's the pilot.

15 Q. Right.

16 A. And if you see something for any number of reasons, you know,
17 there's several reasons we go around as pilots, and that's part --
18 that's normal operational stuff for a pilot.

19 Q. Thank you. And if you recognized a change in conditions, it
20 implies that the dispatch is monitoring the flight; is that
21 correct? They monitor the flight throughout?

22 A. There's a level of monitoring that they -- absolutely they
23 monitor the flight without -- that is, that is correct. That's
24 right, yes.

25 Q. Okay. Let's see. Okay. I'm going to ask you this nebulous

1 question regarding policy versus procedure. So you mentioned that
2 chapter 12 landing operations is policy?

3 A. Policy and procedure to some extent, yes.

4 Q. Okay. So policy being overall -- can you describe what
5 policy is to you?

6 A. Sure. Of course. Like, one of the policies might be, you
7 know, taking it another way, you know, when don't we land. When
8 we don't -- we wouldn't land, you know, if there was wind shear,
9 for that example, you know? We would not land. That's a policy.

10 Q. Okay.

11 A. So it articulates -- you know, it's one point, but it
12 articulates -- pardon me -- when we would be required to use
13 autobrakes when they're operational, when it's recommended that
14 you use flaps 40. All those are policies that were within that.

15 Q. Okay. And versus procedures that --

16 A. And procedures, there's some procedural guidance in those
17 chapters also, but for the most -- generally speaking, they're
18 combined. But the procedures, if there's an actual what was
19 articulated correctly, chapter 17 for PWB is the actual button-
20 pushing on the interface in the MCDU. Chapter 12 might contain
21 some of that, but more -- that is broken off more over in the
22 chapter where the operational philosophy policy and procedures are
23 more in the chapter -- for landing are in chapter 12 of the --

24 Q. Very good.

25 A. Excuse me.

1 MR. WEST: Okay. I think that's good for me. Thank you.

2 DR. SILVA: Okay.

3 BY MR. BOWEN:

4 Q. Good afternoon.

5 A. Yes.

6 Q. Start with a couple of things here just to clear up -- to
7 dovetail on a couple of Marvin's questions he had earlier. He was
8 asking you about the stopping margin output on the PWB solution,
9 and you said you're legal to land and greater than zero. Did you
10 mean zero or greater or greater than zero?

11 A. Zero or greater, yes. That's --

12 Q. Gotcha.

13 A. Yeah.

14 Q. Just wanted to clear that up.

15 A. Yeah, that's fine. Thank you.

16 Q. And the other thing, when he was asking you about selectable
17 items in the landing output or the landing screens, and you said
18 there were two pages, and you go through and you put the runways.
19 Is the desired flap setting for landing one of those choices also?

20 A. Yes, it is.

21 Q. So that's selectable?

22 A. Yes, it is.

23 Q. Between what setting?

24 A. 15, 30 and 40.

25 Q. All right. Thank you. Let's see. So that's that one. So

1 you also talked, when you were discussing differences between the
2 OPC and PWB, you talked about reaching around and pulling out the
3 OPC manually and putting the data versus obtaining a solution
4 through PWB. Could you approximate the differences in the time
5 required using each of those two items, which is faster and which
6 is not, considering the time delay to bounce to the server and
7 back, and so forth and so on?

8 A. Depending on the conditions, the OPC was faster.

9 Q. Okay. And you said at the beginning you were with AirTran,
10 right?

11 A. I did, and I was, yes.

12 Q. Okay. Did you use the AeroData product at AirTran?

13 A. I did.

14 Q. And did you have a EFB with a CFDP app for backup? Was that
15 the primary backup for AeroData at AirTran?

16 A. I wish we had EFBs, but we did not, no, at AirTran.

17 Q. So how did you get a different solution after you had your
18 original solution? Was that from a -- was it called a TLR?

19 A. There was a TLR that was available. That's correct.

20 Q. Can you describe how that was used and what information was
21 available and how that would apply to changing conditions?

22 A. A TLR was utilized as a backup, as you stated, from that
23 standpoint. There were different ranges of information that were
24 available that were defined, definite ranges. As long as you're
25 within that range, the temperature specifically tended --

1 temperature and weight tended to be the specific ranges that were
2 identified there.

3 Q. Thank you. So how would that look if you were in a landing
4 solution or looking for a landing solution, and you had change in
5 conditions, such as you're crossing the outer marker and the winds
6 changed? Was there information on the TLR that would give you
7 guidance as to whether or not it was safe to continue the landing
8 for a legal solution?

9 A. There was a range, and if you were within that range, you may
10 be legal. If you got outside of that range, you might not be. It
11 was just a range of weights and weather. So there was -- it
12 wouldn't necessarily capture every eventuality.

13 Q. But it would give a pilot -- if I heard you right, it would
14 give a pilot perspective of where that range is at a glance, is
15 that a fair statement?

16 A. As I recall, I do -- it's been a few years since I've used
17 one, but as -- I'd say that it was -- there was a range, but it's
18 been coming up on 6 years, 5 years since I've used one, so I can't
19 visualize it completely in my brain. But I do know that there was
20 an operational range and some flexibility that was provided. It
21 wasn't -- there were some specific items and different levels that
22 were available, as I recall, but it's been quite a while.

23 Q. For takeoff, did it give the pilot, if you remember, did it
24 give the pilot the ability to make different selections in terms
25 of flap settings, or if you were sent to a different runway, was

1 there guidance there? Did you have to go back and re-retrieve new
2 data from AeroData?

3 A. There was a limited number of runways available and limited
4 options, but they were limited.

5 Q. Okay. So you said earlier that if the conditions
6 significantly change in this example for landing, based on a
7 headwind to a tailwind I think you said, et cetera, triggers a
8 requirement to look, so -- or to reestablish data. The FAA in
9 some of the discussion uses the term "most current data." So is
10 there written guidance in our manuals, for example, if you're at
11 the outer marker inbound and you have a shift, is there a specific
12 requirement to go around?

13 A. If you have a shift in weather that is going to cause you
14 to -- is going to be different than the conditions at which you
15 programmed your PWB, so your data would no longer be current, then
16 you should go around.

17 Q. And what part of the manual is that? Where is that exactly?

18 A. That is a policy in chapter 12.

19 Q. Chapter 12. Thank you, sir.

20 MR. FERGERSON: That's all I have. Thank you.

21 DR. SILVA: Um-hum. Rich?

22 BY MR. LEE:

23 Q. Just one question. It's a little bit of a piggyback about
24 the -- did your manual, ops manual, for the PWB mention any type
25 of delay in receiving the data one they do hit send? Does it talk

1 about a possible, you know, delay in getting the information back?

2 A. I can't recall specifically if it discusses a delay in
3 getting the information back. I know in the training, it was
4 discussed that there'd be a slight delay in getting the data back,
5 but I don't recall any specific time number assigned to that.

6 Q. So a follow-up on that again is you mentioned that there's
7 kind of a trial period where you bring in the peer review. And I
8 think you mentioned that you got in the sim and saw how it worked.
9 Did you -- how the PWB would work. Or how did the peer review
10 work, and was there any concerns noted about that difference in
11 the time delay during the peer review when you're working through
12 writing the manual?

13 A. The sim doesn't have the functionality to --

14 Q. Yeah.

15 A. -- do PWB from that standpoint, so -- today at least. The
16 data -- I'm just trying to recall. It's been a while as far as
17 the testing. The OPC was faster than or was faster than PWB. I
18 don't recall that being a specific item that was brought up, but
19 it's just me not recalling, honestly.

20 Q. Okay. Do you remember any issues that the peer review came
21 up with that would stick in your mind? Any issues with
22 transitioning and the peer review for writing the manual and
23 getting it approved for the PWB? Do you remember anything that
24 possibly stuck out about that?

25 A. Just the interface change. You know, pilots had used the OPC

1 for several years at Southwest, so like any new product, it was
2 going to take them a little bit to get used to. But that's why
3 the training was conducted the way it was.

4 MR. LEE: All right. That's all I have. Thank you.
5 Appreciate it.

6 DR. SILVA: Kevin?

7 BY MR. FERGERSON:

8 Q. Greg brought up the TLR in your experience at AirTran as far
9 as having -- you using the TLR as far as contingency if, say,
10 ACARS was down, you had takeoff and landing data.

11 A. Um-hum.

12 Q. Was there ever a consideration to include that in the TLR
13 that Southwest ended up with?

14 A. There was a consideration.

15 Q. And can you discuss why it wasn't? Was it a cost issue, real
16 estate issue, training issue or just thought it not necessary as
17 far as the reliability?

18 A. That was addressed more from the core group, the core
19 development group from that standpoint, looking at the operational
20 reliability that it would provide, and there would -- it was
21 tested, and the additional operational reliability it would
22 provide over time was not -- it didn't gain us much as far as
23 time. It gained us another 30 minutes of operation. And you
24 still had -- basically, the way it's established at Southwest
25 Airlines right now, you still have to hit the server, per se, in

1 order for that to work.

2 Q. Okay.

3 A. So if the server is down, the server is down.

4 Q. Server is down.

5 A. You're not going to get the information that the -- you know,
6 from a very high level, I certainly don't have an understanding of
7 the depths, but the architecture was different between the two
8 airlines, so the functionality was different.

9 Q. Okay.

10 A. So it really would be -- it's an apples and oranges
11 comparison to look at them that way.

12 Q. Okay. You were talking about, you know, it's a new interface
13 versus the OPC, going through the FMC. Was there ever any
14 consideration to using the FMC which -- and you know, modern day
15 flying with so many RNAV procedures and, you know, automation
16 agility, how you have to change programming to basically use a --
17 basically, our interface is a device that's --

18 A. Sure.

19 Q. -- part of our instrument scan almost.

20 A. Um-hum.

21 Q. It isn't exactly there, but it's kind of -- there is some
22 overlap in --

23 A. And I want to correct -- I said interface. The MCDU is
24 something we always use. There already existed the ability to get
25 performance data on the MCDU with the current -- that was one of

1 the backup procedures if the OPC didn't work, because you could
2 use that. So pilots were already used to using the MCDU from that
3 interface. That -- it was the -- it was a different -- that is
4 what existed today. So pilots didn't have trouble with
5 utilization of the MCDU. It was just a change, a new way of
6 inputting and getting data.

7 So it was incorrect for me to say they weren't familiar with
8 the interface. They certainly were and had previously already
9 used the MCDU to get data. So that was not -- it was just a new
10 method of getting data, using a different, basically, different
11 keystrokes. It was just learning different keystrokes and getting
12 something -- getting used to something that was new from that
13 standpoint.

14 So to answer your question, Kevin, I guess the -- it's
15 something we already had, and pilots are well-aware. It is
16 something that's part of our scan that we use all the time. It's
17 really part of flying any jet that has FMCs associated with it.
18 So did that capture your question? I want to make sure I got it
19 right.

20 Q. Yeah.

21 A. Okay.

22 Q. Was there any consideration to the printers on the airplanes
23 associated with PWB?

24 A. That was really more at the executive steering group level.
25 I did not hear specifically where that fell, if that was a

1 consideration at one point specific to PWB. There may have been a
2 consideration above and beyond that for the fleets. If it was
3 specific to the implementation of PWB, I don't recall if it was
4 just alone that. I know if that was looked at, it was much more
5 holistically, at the whole operation, so --

6 Q. Based on your experience, when you used the AeroData product
7 at AirTran, did you have printers there?

8 A. We did.

9 Q. Did that make it any easier or better situational awareness
10 in your opinion?

11 A. The opportunity to have the data available on a sheet of
12 paper was convenient from that standpoint, yes.

13 MR. FERGERSON: Okay. That's all I have.

14 DR. SILVA: Okay. How are we doing? Do you need a break?

15 MR. LeCLAIRE: I'm good. Keep going.

16 DR. SILVA: How are you guys doing? Want to get coffee?

17 UNIDENTIFIED SPEAKER: Hey, yes.

18 DR. SILVA: Okay. Let's take a 5, 10-minute break.

19 UNIDENTIFIED SPEAKER: Did somebody say coffee?

20 DR. SILVA: Off the record at 3:02.

21 (Off the record.)

22 (On the record.)

23 DR. SILVA: All right. We're back on the record at 3:10.

24 BY DR. SILVA:

25 Q. Okay. So let's see. Some short ones. You mentioned that if

1 a METAR is over 60 minutes old, the PWB will not give a data --
2 provide the data?

3 A. That's correct.

4 Q. What data?

5 A. It will not provide landing data, and it will indicate that
6 it does not -- that the pilot will have to enter the actual
7 landing data.

8 Q. Okay. So can you run through the procedure for inputting --
9 manually putting in weather to the PWB?

10 A. So if a pilot wants to input data himself or as previously
11 described the data doesn't come in --

12 Q. Right.

13 A. Literally, it's just typing the wind, hypothetically
14 speaking, you know, 360/10, and hitting the line select key just
15 like any function would be on the MCDU. It's not unique. They're
16 specifically labeled wind, temperature, and QNA -- QNH -- excuse
17 me. And you just enter that right in using the line select keys.
18 Same functionality used for any line select key on the MCDU.

19 Q. Have you ever had to do that in flight?

20 A. I have.

21 Q. How often does that happen?

22 A. Very rarely. Rarely might be the best --

23 Q. Um-hum. Can you give me an idea in terms of, like, have you
24 done it, like, once in the last year?

25 A. (No audible response.)

1 Q. So longer than that?

2 A. Yup.

3 Q. Okay. Is there guidance onboard on how to put in that
4 information?

5 A. The AOM has that guidance.

6 Q. Okay. Is that in --

7 A. Chapter 17.

8 Q. Chapter 17? Okay. How often do you fly?

9 A. I fly probably four to five times a month, but it's single
10 legs, and I try -- I fly my commute. I live in Atlanta, so I fly
11 from Atlanta to Dallas, and then occasionally, I'll fly back, and
12 I'll try to pick up a trip as often as I can, you know, just to --
13 because I enjoy flying, try and get out there as much as I can.

14 Q. Do you interact with the FAA at all?

15 A. I do.

16 Q. Who is it that you're working with out there?

17 A. Many of the APMs out there at the CMO. Mostly I would say
18 Gary, Gary Parks, Jerry Jeffreys, Rich Cunningham, occasionally
19 with Bobby Long, but not very much anymore. When he was an APM, I
20 worked with him quite a bit. Depending on the activity, we do
21 work with the CMO often.

22 Q. How is that relationship?

23 A. The relationship I have with them is good. It's very
24 collaborative. We work together well.

25 Q. Have there been any challenges working with the CMO?

1 A. Just like any workgroup, there's challenges, but we get
2 through that. I mean, I wouldn't expect everything to be perfect
3 at all times. You know, if somebody doesn't -- everyone has to
4 have an opinion. If you are never challenging one another, then
5 it's not an effective workgroup. I think it works well as an
6 effective workgroup.

7 Q. Okay. I know we've talked a lot about the time it takes to
8 get a PWB solution. In your experience, is this -- can you give
9 me an order of magnitude? Are we talking a few seconds, a few
10 minutes, more than that?

11 A. Less than a minute.

12 Q. Less than a minute? Okay. How does that work operationally?
13 Is that something you sit there waiting on? Are you multitasking
14 at the time?

15 A. You have the opportunity to multitask. You hit -- while,
16 you're briefing, you can hit, you know, hit the send button,
17 continue with your briefing. And then as the data comes in
18 appropriately, you can load it in as necessary for landing like
19 we're speaking. So it's not impactful, doesn't change my
20 procedures at all from that standpoint.

21 Q. Is there a buffer built into the performance data that's
22 provided?

23 A. Yes.

24 Q. Do you know what that is?

25 A. Fifteen percent.

1 Q. Okay. Is that something that crews normally are aware of?

2 Is that something that's trained from what you understood --

3 A. It's in part of the training, as I recall. The operations
4 engineers give a brief to both new-hire training and upgrade
5 training, providing performance information, and it is, I believe,
6 articulated in chapter 17. I can't unequivocally state that it's
7 there, but I believe that that is also articulated there.

8 Q. Okay. And going back to this wind shear conversation, I got
9 a little confused, so bear with me. I might ask the same
10 questions. What quantifies as reported wind shear?

11 A. Fifteen knots.

12 Q. Fifteen knots?

13 A. And that's when it's wind shear, yes, or -- and there's a
14 loss of speed and then there's actual wind shear. A 15-knot loss
15 or gain would be the better way to say that.

16 Q. Okay. Now, you mentioned if the pilot report -- or pilot
17 reports they're going around for wind shear, and they get a PIREP
18 on that?

19 A. It's our responsibility, I would say, if we experience wind
20 shear, other event, severe turbulence, anything like that, we are
21 from a regulatory standpoint supposed to report those --

22 Q. Okay. Now, I just want to understand is that something --
23 would you consider hearing that on the radio as reported wind
24 shear if you were coming in behind that airplane?

25 A. Well, the statement -- so the tower will say that wind shear

1 was reported by whatever, you know, the aircraft was --

2 Q. Yeah. Okay.

3 A. So, yes, I mean, if it's reported, it's reported.

4 Q. Okay. I just wanted to make sure you're not delineating
5 something that's recorded in the NAS PIREP database versus what's
6 said on the -- on frequency?

7 A. Yeah. I mean, at that point in the operation, you know, en
8 route, on arrival that, you know, if somebody -- the example that
9 was articulated, if it's reported ahead of us, if we were on
10 approach control and switched over to tower, and tower just said,
11 you know, the last aircraft on approach reported a 15-knot loss,
12 you know, that's wind shear --

13 Q. Okay. And you said that if you do get that 15-knot loss, for
14 example, that's a mandatory go-around?

15 A. If you, yeah, if you have wind shear, you have to go around.

16 Q. Okay. Where is that in the procedures?

17 A. The specific --

18 Q. Response to wind shear.

19 A. That is more articulated in the QRH right there, and it
20 breaks down what is wind shear and what the response should be.

21 Q. Okay. So it has both the definition and the response?

22 A. Yes.

23 Q. How is that trained?

24 A. Chris Schmidt is the better --

25 Q. Okay.

1 A. -- for training, is the better person to ask as far as
2 specifically how it's trained. It's, well, it's captured in our
3 training specifically. They have wind shear events in the
4 simulator. But how they set that up, I'm just not the training
5 guy.

6 Q. That's fine.

7 A. But I mean, I've had training, so, obviously, I know what it
8 is.

9 Q. You've encountered it during training?

10 A. Yup. Um-hum.

11 Q. Okay. Along those lines, in training, have you ever -- I
12 think I know the answer to this based on some of the other
13 questions, but have you ever encountered a situation where you've
14 had to manually redo a PWB calculation?

15 A. In training, well, yes, they -- so the sims themselves don't
16 have that capability to do that. They -- we do utilize the CFDP
17 and as I recall, I don't know if they've had -- I just don't
18 recall the scenarios, if we've actually done that on an arrival.
19 For takeoff, we've recalculated that, but I don't recall on
20 arrival if we've -- if the scenarios have been set up for us to
21 recalculate because we can't utilize that in the simulator. I
22 don't believe that's the case, but I just don't recall, honestly.

23 Q. Okay. That's fine. And we talked about the stopping margins
24 being as long as you have a zero or greater stopping margin,
25 you're able to do that approach. Is that guidance written

1 anywhere?

2 A. Yes.

3 Q. Okay. Where is that?

4 A. That, I believe, is articulated in chapter 17. It's probably
5 in 12 also.

6 Q. Okay.

7 A. I'd have to look it up, honestly.

8 Q. That's fine.

9 A. I don't recall exactly. I know that guidance is there
10 specifically, but I don't recall exactly where that is.

11 Q. Okay. That's fine.

12 DR. SILVA: All right. Marvin?

13 BY MR. FRANTZ:

14 Q. Okay. Yeah, I do have a couple of follow-ups, but they're
15 not organized. So did you know either of the pilots involved in
16 this incident?

17 A. No, sir.

18 Q. During a standard approach, when is a Southwest pilot trained
19 to transition from V-target to V-ref?

20 A. As far as you bleeding the speed off per se, you would do
21 that as you're transitioning into the landing flare. You'd --
22 well, as you're transitioning into the landing flare, essentially,
23 in that range, you would bleed off the speed at that point. And
24 target to ref isn't necessarily the exact way that that works out.

25 Q. Okay. Is the pilot taught, basically, to maintain the target

1 until they're in a flare, then, and then they -- and are they ever
2 taught that you should reach V-ref by this point or at touchdown,
3 or is it just, say, maintain V-target until flare? What's the
4 general guidance, or what's the training --

5 A. Bleed off the gust factor and maintain the -- to landing.

6 Q. By gust factor, you mean whatever was added to V-ref to get
7 V-target?

8 A. Well, it's half the steady state in all of the gust factor is
9 what is added to V-ref, so --

10 Q. Okay. But if there was no gust, you would still add half the
11 steady state, right?

12 A. Um-hum.

13 Q. And the guidance should be that I should cross the threshold
14 about 50 feet and at V-target, and I should hold that, try to
15 maintain that V-target all the way down until I'm getting ready to
16 flare --

17 A. Start bleeding the speed off, yeah.

18 Q. Okay. So here's another hypothetical. If you're coming in,
19 say you're 10 minutes out -- wait a minute -- yeah, you're 10
20 minutes out, and you hear -- and you've got your landing solution,
21 and everything is all set. And you hear ATC say ATIS information
22 bravo current, winds, blah, blah, blah, so it indicate, uh-oh,
23 there's been a change, right?

24 A. Um-hum.

25 Q. Because otherwise, they wouldn't announce it. So outside of

1 your actions that you would expect the captain to do this, do
2 that, take this into consideration, would you be expecting to hear
3 a little ding, indicating that, yeah, here comes an ACARS message
4 from dispatch saying there's a new ATIS up? Would you expect
5 that? Would you be looking for that? Or at that point, is com
6 with dispatch out the window -- not out the window, but I mean, is
7 it less relevant? Are you strictly dealing with everything at
8 real-time or more real-time than you were 30 minutes ago? Or
9 would you still be at 10 minutes out, saying, oh, I wonder why
10 dispatch hasn't sent me the new ATIS; they just said there was a
11 new ATIS, but I don't have it yet.

12 A. Dispatch wouldn't be responsible for sending us a new ATIS.

13 Q. They would not?

14 A. In that, that, where you're discussing it there. That would
15 be the pilot responsible for getting the new ATIS at that point in
16 the flight. If there was a significant change that dispatch
17 noted, they could certainly give you a heads-ups. But really at
18 that point, it's more real-time than us as the pilots getting that
19 data.

20 Q. Okay. So what would your action be if you heard that, and
21 you were 10 minutes out, you'd done your briefing, you got your
22 landing solution, and you heard that there was a new ATIS, and the
23 winds were different than the winds on the ATIS that you were
24 familiar with?

25 A. If the winds were going to be impactful to the performance, I

1 make another performance request.

2 Q. Can you draw a line, and this might be hard to do, a timeline
3 between where you would tell the FO why don't you run a new
4 landing solution because we've got time, or you know what, we're
5 just going to go around and run a new landing solution. Is that,
6 like, 2 minutes out, 5 minutes out you would say we should
7 probably just go around, take a breath, and get a new solution,
8 or, oh, no, it looks like we got time, go ahead and run it? Is
9 there some point and time where you'd say that would be a
10 reasonable cutoff?

11 A. It really would vary from airport to airport. You know, some
12 are -- traffic density is much different than it is in other
13 places, so I would -- you know, there's a point at which, you
14 know, we are not going to be -- it becomes more critical, we'd
15 just be flying the airplane, we'd just go around, but it's very
16 subjective. It's not -- there's no specific line in the sand at
17 which, you know, that would occur every time.

18 Q. If you asked your FOs, you know, run a new landing solution,
19 would you expect that, I think, kind of going off what Sathya was
20 talking about, would you expect that you could -- based on all
21 your previous experience of running these, you could probably get
22 a new landing solution in a minute or less?

23 A. Yes.

24 Q. And so if you've got 10 minutes, you'd probably be okay to
25 continue? I mean, is that a reasonable assumption that I would

1 think that a captain could make?

2 A. Yeah, if you had 10 minutes, I would say that would be -- it
3 would be reasonable to request another data solution at that
4 point, yes.

5 Q. And how would you characterize the workload or the level of
6 distraction from flying duties that's required to, oh, now we got
7 to run a new landing solution? What are you losing in the flight
8 deck by having somebody now say, okay, we got to request -- put
9 the new data in or make another request? I mean --

10 A. Minimal. It's a minimal impact. It's not -- you would have
11 the same -- it's less impactful than it is to make a runway
12 change.

13 Q. And it requires some amount of head-down time while somebody
14 is entering data, is that correct, though?

15 A. It does require some amount of head-down time, but it's less
16 than it would be to make a runway change.

17 Q. Right. Okay. Have there been any manual -- regarding the
18 PWB system and usage, have there been any manual or policy or
19 procedural changes in that since the Burbank accident that you're
20 aware of?

21 A. Within the manual system itself, we have not made any
22 procedural changes specific to the Burbank accident, no. Within
23 the manual itself, we haven't. There was a safety alert that came
24 out after the Burbank incident that specifically addresses that,
25 but there's nothing --

1 Q. Can you characterize or just give me a summary of what that
2 safety alert said or what -- how -- what it, you know --

3 A. I'd have to look. Off the top of my head, it just -- it more
4 or less discusses the length of the runway, the criticality of,
5 you know, following the policies and procedures you have to know
6 as far as touchdown point, and the criticality of floating beyond
7 your stopping margin and touchdown point.

8 Q. Okay. Almost done. Maybe I am done. Do you feel like
9 Southwest -- again, as your role just as a captain -- Southwest
10 dispatchers are able and willing and even encouraged probably to
11 speak up and send a message up to a crew if they see some concern,
12 weather or any other concern that they become aware of, and they
13 see the captain or the flight doesn't seem to be taking any action
14 to address this, or haven't heard anything from the captain, do
15 you have a high confidence that dispatchers at Southwest would
16 have no problems saying here's an ACAR, captain, what about X, Y,
17 Z, I've noticed this?

18 I mean, do you get messages like that where a dispatcher is
19 trying to call your attention is something that they think maybe
20 you haven't -- weren't aware of or weren't taking action on? Is
21 that common? Is that really uncommon?

22 A. I can't speak for dispatch and what their policies are, but I
23 don't think that would be --

24 Q. No, just in your experience.

25 A. I've always had good information and interaction from

1 dispatchers. I find them to monitor the flights well, and if
2 there's something that they think is going to be impactful, I get
3 ACARS messages that are applicable and timely.

4 Q. Okay. All right. Thank you.

5 MR. FRANTZ: That's all I have.

6 DR. SILVA: All right. Eric?

7 BY MR. WEST:

8 Q. Yes. Just a follow-up based on what Marvin asked you. He
9 touched upon the Part 5 issue. You have anything to do with that
10 at all, risk mitigations and --

11 A. Yeah, SMS, from that standpoint.

12 Q. Okay. So let's just chat about that for a second. Okay.
13 Regarding the Burbank event, were there any Part 5 hazards
14 identified?

15 A. Prior to the Burbank event?

16 Q. No, no, after the Burbank event, were there any hazards
17 identified as a result of the Burbank event that you know of?

18 A. There's an -- it's called an ops risk registry, and there
19 were hazards that were identified.

20 Q. And were there any risk mitigations that came about as a
21 result of those hazards?

22 A. The safety alert came out.

23 Q. The safety alert?

24 A. Um-hum, for Burbank specifically.

25 Q. Okay. And that safety alert was then passed out to the pilot

1 community, is that --

2 A. It's available on our EFB, from that, so all pilots received
3 it.

4 Q. Okay. A safety alert. Same question regarding the Bradley
5 event.

6 A. I'm not familiar with the Bradley event, only that I know
7 that it occurred as far as there was -- know there was a system
8 assessment associated with the Bradley event. I don't believe
9 there was -- I don't recall specifically any communication
10 associated with the Bradley event that has come out from that
11 standpoint.

12 Q. Okay. And Philadelphia? That was basically the same
13 timestamp as Bradley, almost identical to what happened at
14 Bradley.

15 A. I guess I'm not familiar with --

16 MR. WEST: Okay. All right. Okay. I just wanted to touch
17 on your point there, Marvin. That's all I have.

18 DR. SILVA: Okay. Greg?

19 BY MR. BOWEN:

20 Q. I just want to expand on Eric's question just a little bit.
21 Would you take just a moment, please, and describe what our SIP
22 pages are for the group, and specifically, safety alerts being
23 linked to SIP pages?

24 A. For our normal C-70 aircraft -- airports -- excuse me --
25 where we operate out of, we provide station information pages.

1 Many other airlines have called them 10-7s in the past if you've
2 worked with other ones that -- Delta calls them 10-7s. I think
3 JetBlue has a similar product that's available.

4 And that basically provides station-specific information,
5 gate locations, other, you know, arrival and departure information
6 that would be available to the pilots that is not -- or that --
7 let me say that another way -- that is not available to the pilots
8 from the Jeppesen 10-9, and other information like that. It is
9 more company-specific. It is more company-specific.

10 On those SIP pages, we also have links to specific
11 information, some of those being safety alerts. So if we have --
12 it's something we're concerned about at an airport, to make it as
13 accessible as possible to the pilot, it's -- the SIP is something
14 that we brief as we come in to each airport, so it's there and
15 available, and there's an indication if there's a safety alert,
16 that's right on the front page. That makes it very noticeable, so
17 you can make the selection and see it.

18 Q. So based on what you've said, it is a requirement for our
19 pilots to review the SIP page prior to arrival at an airport, is
20 that true?

21 A. It's part of the briefing, yes.

22 Q. Right. And if there is a safety alert for that airport,
23 there is an icon in the center of the first page that comes up
24 that says "safety alert"?

25 A. It's very prominent, yes.

1 Q. And the intent is the crew is supposed to review it at that
2 time, is that right?

3 A. That is the intent.

4 Q. Okay. Thank you.

5 MR. FRANTZ: Called them a what? SIP?

6 MR. BOWEN: SIP, station information page.

7 MR. FRANTZ: Very good. SIP.

8 MR. BOWEN: Thanks. That's all I have.

9 DR. SILVA: Okay. Rich?

10 BY MR. LEE:

11 Q. Yeah, I just want to -- there's been a lot of questions about
12 that margin, so when a margin comes back, and it says zero,
13 there's still the 15 percent, correct?

14 A. Zero does not mean -- yes, to answer your question, there is
15 a -- if there is a 15 percent margin that is part of --

16 Q. On top of that, so the data that comes back and it says zero,
17 that's using the actual landing performance, not the -- so the 15
18 percent buffer is not included in that margin?

19 A. So I just -- the 15 percent is part of all calculations
20 that -- all of the information that a pilot receives for landing
21 includes 15 percent margins. So the lengths that are indicated as
22 far as the required distance includes a 15 percent margin.

23 Q. Okay. So when they get back zero, that means that 15 percent
24 margin is in that zero --

25 A. The distance that would bring it to zero?

1 Q. Yes.

2 A. Includes a margin, yes, a 15 percent.

3 Q. Okay.

4 A. Does that capture where you're going?

5 Q. Yes.

6 A. Okay.

7 Q. Yeah. The other question about wind shear or not wind shear,
8 if as a pilot and you hear on the radio that airplane such-and-
9 such in front of you has just gone around for a 10-knot wind
10 shift, what would you do about that?

11 A. Usually it's plus or minus 10 knots is what they would say.
12 That would -- it's not wind shear. That's something that, you
13 know, obviously, it's like anything. You're going to use your --
14 what we call RRM tools, risk and resource management, look at
15 runway length, approach, the wind, what are the other conditions,
16 and consider not that independently, but look at the whole picture
17 and make a determination.

18 So that on itself might not be a determination for you to go
19 around. You'd look at everything associated with it, and then
20 perhaps, perhaps that would send an airplane around, but it's
21 really not that -- you wouldn't look at that just at itself.

22 Q. Okay. Thanks.

23 MR. LEE: That's it.

24 BY MR. FERGERSON:

25 Q. Does Southwest have a flight crew training manual?

1 A. They do not. A lot of the flight crew training manual
2 material is in the AOM, but there is not an independent flight
3 crew training manual.

4 Q. Okay. Is there any policy specifically directed towards
5 landing in conditions of heavy rain?

6 A. Any specific policy relative to landing in conditions of
7 heavy rain?

8 Q. Just more specifically, the conditions on the runway can be
9 variable, and heavy rain, you would have different braking actions
10 in different parts of the runway especially with heavy rain, as
11 pooling could occur. So that is really more the bigger -- what's
12 articulated, as far as the concerns from that standpoint.

13 Q. And last thing. Is there a requirement to brief a go-around
14 point, like, short runway, if we're not on the ground by this
15 point, that we should reject the landing?

16 A. Yes. It's a touchdown flight, an exit plan --

17 MR. FERGERSON: Okay. That's all I have.

18 BY DR. SILVA:

19 Q. Okay. I have just a few, actually, follow-ups on those.
20 Following up with what Eric mentioned in terms of the SMS, were
21 there any hazards identified prior to the Burbank case regarding
22 hazards that are similar to what was encountered?

23 A. There was discussions on Burbank relative to longer landings
24 on short runways, and that was in process when that happened.
25 So --

1 Q. Can you elaborate on that? What was in process specifically?

2 A. Just the review of landings on short runways as far as
3 performance.

4 Q. Okay. Had you all received reports from pilots in terms of
5 safety issues?

6 A. We had not received any that I'm aware of, any reports from
7 pilots specifically on safety issues landing in Burbank, no.

8 Q. Do you recall what brought about the assessment for long
9 landings on short runways?

10 A. We look at data all the time just through the, basically, the
11 assurance process and the normal Part 5 requirement to continue to
12 look at information as we operate.

13 Q. So in your understanding of the PWB system, if you are --
14 let's say your landing solution includes max autobrakes.

15 A. Um-hum.

16 Q. What's your understanding of how long you're going to be on
17 auto versus manual braking?

18 A. Well, I guess can you ask --

19 Q. Okay. Let me ask it a different way. So when you're coming
20 in to land, and let's say you got a solution that includes max
21 autobrakes. When would you typically take over manual braking?

22 A. Override the brakes? As you start slowing to taxi speed or
23 to -- and then you're going to override the brake, especially with
24 manual -- or excuse me -- with max.

25 Q. So about what speed would that be?

1 A. As you start getting less than between 30 and 40 knots,
2 you're going to start taking over from that standpoint and really
3 overriding the brakes. So some of that is dependent upon the
4 conditions, by all means. More severe conditions, you're going to
5 let it run longer, but that's it, in that range.

6 Q. Okay. Are there any policies or procedures you have in place
7 for when that transition takes place from --

8 A. They are articulated in chapter 12 there as far as when you
9 should and -- when you should take over from that standpoint.

10 Q. Okay. And regarding braking, essentially, effectiveness, is
11 it -- is max auto going to give you better braking than manual
12 max, manually pressing down maximum --

13 A. I believe Boeing provides the guidance that if a -- I might
14 not say the words correctly, but a maximum effort manual braking
15 can be more effective than max autobrakes.

16 Q. Okay. Do you have anything to add that we didn't necessarily
17 ask you but we should have?

18 A. I would say your questions have been very thorough, and I
19 appreciate the opportunity to speak with you today.

20 Q. Okay. Sounds good. You have our information. If you think
21 of anything else you want to add or correct, feel free to reach
22 out. Otherwise, thank you for your time.

23 A. Thank you. It was a pleasure.

24 Q. We appreciate it.

25 A. Enjoy the day.

1 UNIDENTIFIED SPEAKER: Hold on a second. Marvin, may I make
2 a request? Is there any way we could get that safety information
3 page?

4 DR. SILVA: Yeah, let's add it to our list.

5 MR. FRANTZ: Let's see if we can pull it up.

6 DR. SILVA: Let's do that.

7 UNIDENTIFIED SPEAKER: What are we asking for?

8 DR. SILVA: The safety alert.

9 UNIDENTIFIED SPEAKER: The safety alert or the --

10 DR. SILVA: The safety alert.

11 MR. LEE: The one that was called the SIP --

12 UNIDENTIFIED SPEAKER: For Burbank?

13 UNIDENTIFIED SPEAKER: The safety alert.

14 DR. SILVA: Let's do a formal thing on the --

15 UNIDENTIFIED SPEAKER: Yeah, I appreciate it.

16 DR. SILVA: Okay. We're off the record at 3:44.

17 (Whereupon, at 3:44 p.m., the interview was concluded.)

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CERTIFICATE

This is to certify that the attached proceeding before the

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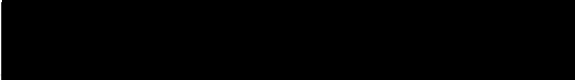
IN THE MATTER OF: SOUTHWEST AIRLINES OVERRUN -
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 Interview of Grant LeClaire

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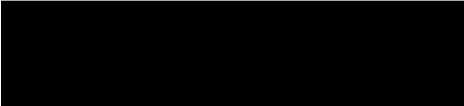
PLACE: Dallas, Texas

DATE: October 9, 2019

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Danielle VanRiper
Transcriber



Autumn Weslow
Corrections made 6/17/2020