



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

June 24, 2020

Attachment 3 – FAA Interviews

OPERATIONAL FACTORS/HUMAN PERFORMANCE

DCA19IA036

This attachment contains transcripts of interviews of the following personnel from the Southwest Airlines FAA Certificate Management Office:

- Bobby Long, Supervisory Principal Operations Inspector
- Jeffrey Rees, B737 MAX Aircrew Program Manager
- Robert Fulton, Aviation Safety Inspector

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: BOBBY LONG

Supervisory Principal Operations

Inspector

Southwest Airlines FAA Certificate
Management Office
Dallas, TexasWednesday,
October 9, 2019

APPEARANCES:

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(On behalf of Mr. Long)

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I N T E R V I E W

(10:50 a.m.)

MR. FRANTZ: Okay. On the record at 10:50 at Southwest CMO Dallas, Texas, and this is an interview with the Southwest supervisory POI Bobby Long. So I'll give you a quick briefing and we'll get everybody introduced and then we'll let you know what's happening.

We're here looking at the Southwest Burbank incident that happened last December and I don't know if you've ever been involved with NTSB investigations so I'll give you a quick rundown. We typically form different groups to look at different aspects of any accident or incident that we investigate and so for -- in this case we formed what's called an operational factors and it's a combination group it's operational factors and human performance with Dr. Silva.

So we formed a combination of operational factors human performance group and then in that group when we have the core elements from the NTSB we pick outside experts because we don't have that expertise in the NTSB.

So we have a Boeing person that knows all about the airplane and we have a couple Southwest people -- or a Southwest person that knows about Southwest operations and training and flight ops and we have someone from SAPA who knows the same things plus has the union background information and then we have someone from the FAA in this case Eric Long who --

1 MR. WEST: Eric West.

2 MR. FRANTZ: Sorry, Eric West. You're Bobby Long, sorry.
3 And so we'll take this group and we'll go and gather other
4 information that we need. And, well, the first thing we did as a
5 group was we interviewed the crew and the dispatcher over the
6 phone right after the accident happened.

7 And this is our second formal gathering of the group to
8 conduct interviews here. We're doing -- we've done some
9 interviews here, you're the last interview here and then this
10 afternoon and tomorrow we'll be over at Southwest interviewing
11 some people.

12 So our interviews even though it's recorded the recording
13 won't become part of the public docket but we'll have a transcript
14 made of the recording and that will ultimately be part of the
15 public docket, so we can't guarantee any confidentiality or
16 immunity or anything like that on anything that we talk about here

17 But we're only -- the NTSB only has investigative and
18 recommendation powers, we have no enforcement, no regulation power
19 so we just try to get all the information, determine a probable
20 cause and then from that make safety recommendations that will
21 hopefully prevent things like this in the future.

22 I'll have -- I'll go around in just a minute and everyone
23 introduce themselves but when we start the questioning we'll just
24 do one at a time, we'll go around the room and then typically we
25 might have a second round in case anybody has any follow-up

1 questions from the first time around.

2 It's not sworn testimony, it's an informal interview so it's
3 fine to say I don't know, I don't remember, I can't recall or, you
4 know, I can look that up and get back to you if you like, those
5 are all fine.

6 Also later if you realize you said something, you're mistaken
7 -- mistakenly stated something earlier you can -- it's fine to go
8 back and correct it. After the interview if you come up with
9 something else you wish you would have told us, you can certainly
10 contact us and get us more information, add on, there's nothing
11 wrong with that.

12 You are -- we want -- have to let you know you're entitled to
13 have a representative present of your choosing and if you do have
14 someone that you would choose just for the record could you just
15 state who that person is?

16 MR. LONG: That would be Mark, I'll let Mark pronounce his
17 last name I'll mutilate it.

18 MR. TOMICICH: I'll introduce myself.

19 MR. LONG: Okay.

20 MR. FRANTZ: Okay. So let's -- we'll just go around real
21 quick and everybody introduce themselves and tell you who they
22 are. I'm Marvin Frantz, I'm an operational factors investigator,
23 operational factors from our point of view deals with training,
24 company manuals, procedures, oversight, dispatch anything that you
25 could put in the realm of operations, that's the things that our

1 section looks at, operational factors.

2 DR. SILVA: And I'm Sathya Silva, I'm a human performance
3 investigator with the NTSB.

4 MR. TOMICICH: Mark Tomicich, Office of Chief Counsel
5 representing the witness.

6 MR. WEST: Eric West, I'm with the AVP-100 I'm out of
7 headquarters Washington, D.C. for the FAA.

8 MR. BOWEN: Greg Bowen, I chair training and standards for
9 SAPA.

10 MR. FERGERSON: Kevin Fergerson, check airman Southwest
11 Airlines.

12 MR. LEE: Rich Lee, Boeing safety pilot.

13 MR. FRANTZ: Okay. So before we get started do you have any
14 questions of us?

15 MR. LONG: Nope.

16 MR. FRANTZ: How about me?

17 MR. LONG: No.

18 INTERVIEW OF BOBBY LONG

19 BY MR. FRANTZ:

20 Q. Okay. All right. Well, let's start with the easy things,
21 could you state and spell -- I guess you don't need to spell but
22 state your name?

23 A. My name's Bobby Long.

24 Q. Okay. And what's your current position?

25 A. Current position is supervisory principal operations

1 inspector.

2 Q. For Southwest?

3 A. Yes.

4 Q. Okay. How long have you had that position?

5 A. A little over 2 years.

6 Q. And what -- can you give us just a high level overview of
7 what your responsibilities are in that position?

8 A. Yeah, my responsibilities are overseeing the operations
9 portion of the CMO which is dispatch, cabin safety and a pilot
10 flight ops group which includes aircrew program managers who
11 receive the training and check airman designee programs at
12 Southwest Airlines. Think I covered everybody and we have some
13 ASIs too -- straight aviation safety inspectors are not assigned
14 to a particular specialty.

15 Q. Okay.

16 A. And other parts of that responsibility are they oversee
17 Southwest Airlines as far as their operations group over there, I
18 deal with the director of operations Jeff Hamlet and also 119
19 chief pilot is Bob Waltz so and there's other programs that I
20 oversee, we've got an ASAP program with Southwest Airlines, so
21 that's one of my responsibilities to oversee that. We've got a
22 manager that works with them and some -- a couple assistants that
23 work with that program.

24 Q. Okay. A little over 2 years?

25 A. Yes.

1 Q. Before that what'd you do?

2 A. I was an aircrew program manager on a 737 at Southwest CMO.

3 Q. And how long did you have that job?

4 A. I had that one job for about 2 years.

5 Q. And then before that what'd you do?

6 A. Before that I was a -- basically what they call a geographic
7 ASI, aviation safety inspector when I first came into Southwest
8 Airlines CMO, prior to that I was an assistant aircrew program
9 manager at the American Eagle now known as Envoy CMO on the
10 Embraer 145 and I was in that position for I think about 3, 3½
11 years.

12 Q. How long have you been with the FAA?

13 A. Eight years.

14 Q. Okay. Can you give us a quick sketch of your aviation
15 background?

16 A. Okay. I, air force -- I was in Airforce for 9 years. Last,
17 airplanes I flew in the air force were the EC135 and the AWACS E-
18 3A. After, I got out after 9½ years, I flew a couple years --
19 about 3 years as a cooperate pilot flying Learjets and MU2s.

20 And then I got a job with a startup called America West,
21 started out as a first officer there and 6 months later was a
22 captain on a 737. I was there for about 9 years; I flew the 737
23 200s and 300s. I guess I better include the 100 in that because
24 they had some 100s at first then I transitioned to the Boeing 757
25 there.

1 After completing about 9½ years Southwest -- excuse me,
2 America West was in bankruptcy at the time and didn't look good so
3 I went and took a job with Japan Airlines on a contract with a
4 contract company called IASCO.

5 Worked for Japan Airlines under contract for 17 years flying
6 a 747 and classic cargo passengers and passenger 747 400s. At
7 that time they did away with all -- in 2009 they did away with all
8 there Expat pilots, they were downsizing the airline getting ready
9 to ground all their 747s. They were in financial problems so they
10 determined that they didn't need foreign pilots anymore so they
11 laid us off.

12 I spent about 2 years working real estate Phoenix, Arizona so
13 that wasn't aviation so I took a hiatus from aviation for 2 years
14 and then during that time I had my application in with the FAA and
15 came to work for the FAA in 2011.

16 Q. Okay. Thanks. At America West did you ever come across a
17 pilot named Roger Cox?

18 A. The name's familiar, I can't put a face to it right -- I left
19 there in '92 so --

20 Q. Okay.

21 A. Yeah.

22 Q. He was a predecessor of mine at the NTSB --

23 A. Oh, really, yeah.

24 Q. -- and he had a long career at America West.

25 A. Yeah.

1 Q. I think that's where he ended his flying career.

2 A. Yeah.

3 Q. Probably the same reasons you left America West as they
4 weren't America West anymore.

5 A. Yeah.

6 Q. Okay. One of the things I want to focus in on initially is
7 the system that Southwest uses for performance, weight and balance
8 calculations are you familiar with that the PWB system?

9 A. I'm familiar with it, yeah.

10 Q. Can you describe what your role was or -- oversight or any
11 issues or concerns that arose as Southwest was -- from your point
12 of view as Southwest was transitioning to this system from their
13 previous I think it was -- called OPC system?

14 A. Yeah, OPC and this happened about the same time right before
15 they -- I wasn't put as the point of contact in the office for the
16 PWB that was Jeff Rees who would have oversaw that as an assistant
17 APM. He was an assistant APM at that time and so -- and I was an
18 APM at the time.

19 So I didn't get too involved, I initially was involved with
20 it from the aspect I was the POC for the EFB program, electronic
21 flag bag program and initially they -- that group thought that
22 they would be the ones doing all the certification of the software
23 package.

24 Sometime during that process NOC who basically headed up the
25 network operation center at Southwest group took over the

1 certification process of Southwest, when they did that they took
2 it away from the EFB group and just basically kept it in-house.
3 So Jeff -- there were some problems at first. Jeff came to me one
4 day says, well, I just got a letter asking for Phase 5 approval of
5 the AeroData application.

6 And we at that time had not seen any of the Phase 1, 2, 3, 4
7 process that was required to certify a new program. So we had to
8 kick it back. Jeff didn't ask me about it he -- I mean he asked
9 if we should kick it back, I said, why haven't they done any --
10 haven't they done of the Phase 1 through 4 because you can't ask
11 for Phase 5 until you've done all the other stuff.

12 So they've been doing some testing of, you know, a group of
13 pilots. They had a few pilots qualify to utilize that program in
14 their op specs during a test phase. So I did know about that but
15 -- and I became the POI during the process when they finally --
16 right about time I became POI they decide about a month or so
17 later they had gotten all the paperwork straightened out and had
18 gotten -- they were in Phase 4 at the time of certification.

19 And I guess I must have -- I've been the one to probably have
20 signed the final paperwork on certifying the AeroData application
21 during that process back in 2017 I think it was.

22 Q. Yeah.

23 A. Yeah, summer of 2017.

24 Q. Okay. So other than the Phase 5 approval which they
25 requested without having done the previous work, were there any

1 other issues or concerns that you became aware of that were
2 causing a problem with the moving -- the forward movement of to
3 get this program online and get Southwest approved to use it?

4 A. I didn't see any big issues at the time, I didn't see
5 anything.

6 Q. Okay.

7 A. I don't recall any big issues during the approval process.

8 Q. Did you know either of the pilots involved in this incident?

9 A. No.

10 Q. No. Is it fair to say that you primarily relied on Jeff Rees
11 then to do the ground work, the basic work on the certification
12 and the approval of this based on guidance he had or guidance he
13 had provided and you were just over -- you had oversight
14 responsibility over that process, is that --

15 A. That's correct.

16 Q. Okay.

17 A. Do you have -- have you ever spent any time over observing
18 dispatch operations at Southwest?

19 Q. I've been over there a few times I -- my dispatch -- I depend
20 on my dispatch inspectors to do most of that work but I have gone
21 over there a couple times to observe their operations.

22 Q. Do you know if Southwest has a policy on reporting go arounds
23 to -- an internal policy, I mean a South -- an airline policy and
24 if you do, do you know what it is?

25 A. I can't recall if there is a policy for report -- it's one of

1 the required reports, it's in the FOM if it is.

2 Q. Okay.

3 A. Yeah.

4 Q. How about landing with wind shear reported or wind shear
5 advisories, is there a policy that you're aware of that Southwest
6 has about that?

7 A. For the pilots to report?

8 Q. No, for them to actually -- like a landing at an airport
9 where either there are wind shear advisories or wind shear had
10 been reported recently?

11 A. I'm not -- I have no knowledge of that -- any policy.

12 Q. Okay. Are you familiar with the -- any of the details about
13 how the PWB system operates, how flight crews and dispatch use it?

14 A. Uh-huh.

15 Q. So flight crews make a request during -- I think we've been
16 told that typically it happens around top of descent -- just
17 before top of descent they request landing data for the airport to
18 go into. Through the PWB via ACARS through PWB and then they get
19 information back.

20 Part of that information they get back is it's a list of
21 whatever runways they've asked about and whether auto brakes use -
22 - what level of auto brakes and then something called stopping
23 margin, do you know what that stopping margin means and is there
24 any guidance that you know of the crews have to -- to do anything
25 with that data, any utilization, any limits on it, anything like

1 that when they get that data back?

2 A. And I think there was some discussions during the timeframe
3 when they had OPC that they -- I'm going back a little bit in
4 history. You've asked a question about any issues that have come
5 up, concerns, is that they initially, I believe, was 2000 feet was
6 what they allowed for, what the OPC gave them a 2000 foot margin
7 and I think I'm recalling this from 3, 4 years ago then they
8 reduced it to 500 feet.

9 When they implemented the -- my understanding when they
10 implemented the PWB or AeroData system they reduced it down to the
11 runway length, there was no, no margin at that point which is
12 appropriate they can do that if they decide to do that as far as
13 the regulations are concerned.

14 Q. Are you aware of -- has that issue of reduced stopping
15 margins or reduced performance that is now allowed or is now given
16 because the new PWB system and use, has that ever caused any
17 concerns or issues from pilots from the crew that anyway made it
18 up to the CMO level concerns, complaints, anything?

19 A. There's nothing been officially expressed to me on it. I
20 have heard discussions that one of our APMs has heard that there
21 are pilots that were concerned about it and they didn't feel that
22 they had gotten -- they had the knowledge when at first it was
23 applied that it was going to go from 2 whatever it was 500 foot
24 down to no margin. But that's third hand because I wouldn't say
25 second hand because that came from an APM; I've never been

1 approached by any pilots that had that concern.

2 Q. Okay. Are there any -- going back to the PWB system are
3 there any ongoing concerns or issues right now that you're aware
4 of that are in the process of being resolved or addressed as far
5 as use of that system goes with Southwest?

6 A. There was some discussion which we went and looked at, I had
7 sent one of my guys -- one of my dispatchers Tony Gillenwater to
8 look at an issue about there was some discussion that they were
9 "tricking" the software. The software was showing 10 degrees
10 cooler than the temperature, actual temperature if you didn't put
11 say 50 -- 60 degrees it would be 50 degrees.

12 So I sent an inspector over just to verify that and he worked
13 with their performance engineer over there at Southwest and they
14 went through the charts. AeroData gets its data strictly from
15 Boeing provided data, it does not -- it's not a separate
16 performance program. All the numbers come strictly out of Boeing
17 performance and he checked all the numbers and they all matched
18 within, you know, as far as fee speeds were all within a knot of
19 what the Boeing data would have showed when they ran the numbers.

20 So that little discussion I felt was -- and we even went into
21 the -- he even went into the simulator to see it applied in the
22 simulator would the airplane stopped within the required distance
23 and it did. So even the simulator simulated the same data.

24 MR. FRANTZ: Okay. I'm going to pause here and let's go
25 around the room --

1 MR. LONG: Okay.

2 MR. FRANTZ: -- and see if anybody else has any questions.
3 So I'll go to Sathya next.

4 BY DR. SILVA:

5 Q. Do you have an idea of what you're total flight is?

6 A. My total flight time about approximately 21,000 hours.

7 Q. 21,000. Do you know how much of that is in the 73?

8 A. 73 probably about 6, 5 or 6.

9 Q. Okay. We talked a lot about your duties but what does your
10 day-to-day kind of look like, can you walk us through that?

11 A. Day-to-day, okay. First thing I come in in the morning I
12 check my email see if there's anything important that's come up
13 that needed to be -- needs to be handled right away, usually from
14 the office management also from Southwest.

15 Every day is different because some -- I go to meetings. It
16 seems like I'm in one or two meetings a day at least so it varies.
17 And then, of course, my inspectors will come in and talk to me
18 about issues they've seen when they've been out doing observations
19 and/or they come in and ask questions about policies and
20 procedures. Of course, I usually say what -- have them do the
21 research, look it up and come back to me. If they have a concern,
22 particular concern that's why I request them to do the research,
23 bring it back we'll have a discussion.

24 Q. Okay.

25 A. So that's my general

1 Q. Okay. So --

2 A. And there's also -- and I'm talking about just office routine
3 usually I've got a couple meetings a week over at Southwest with
4 their DO or the 119 chief pilot.

5 Q. Okay. So that was my next question is what does that
6 interface look like between you and the airline?

7 A. I think we've got a -- we've got a healthy; me and the DO and
8 the 119 chief pilot have a healthy relationship there. They are
9 open with me about any issues they see, I'm open with them when I
10 see new issues coming that they need to probably start working on
11 it.

12 I usually call them out, I said you're going to be getting a
13 letter here in just a couple days on a concern or you're going to
14 get a letter, have you -- how you're applying a certain AC or a
15 notice so a lot of discussions around that.

16 We have a weekly meeting every Tuesday afternoon either I'm
17 over there or I do a telecon with them because my schedule here in
18 the office sometimes precludes me from going over there, but we
19 talk for about an hour about my -- first of all, usually what my
20 concerns are, latest issues. Also they bring up what they have
21 for concerns and issues.

22 Then on Thursdays I go over for another call to operational,
23 we call it OCM. I can't remember what the C stands for but OCM
24 meeting which is a good meeting that for -- I'm encouraging my
25 people to attend as much as possible because that's the place

1 where Southwest presents their newest projects they're working on
2 whatever it may be.

3 You know, maybe they're going to implement a new EFB change.
4 They talk about the ORR which is their SRM process that they look
5 at risk on any changes, so all that material is presented in this
6 meeting and projects that are underway they'll also do the same
7 thing and give an update on where they're at so --

8 Q. How receptive is the airline to concerns that you may have?

9 A. They've been very -- I'd say most cases they're very
10 receptive.

11 Q. Are there any in particular that you don't feel that they
12 were as receptive (indiscernible)?

13 A. Well, I wouldn't, I would say -- I'm not really too
14 concerned. One of the latest things is the language in the -- I
15 believe it's the FOM that says talking about overweight landings
16 and declaration of emergencies.

17 I'm not crazy about the language of it but they ran it
18 through their SRM process and determined it was acceptable so, you
19 know, when they use their SMS process and determine there's no
20 risk or very little risk then really I have no way to change it --
21 have them change it.

22 They know it's a concern, we're going to still address it
23 with them, continue to address it with them through some other
24 actions in the office but and I've -- I have expressed that with
25 the DO in that area and he understands that that's our process and

1 they get to answer our letter so --

2 Q. Is there --

3 A. And that's an example I'm saying, we pretty well get a lot of
4 things accomplished just by talking, it never rises to the level
5 of a letter.

6 Q. Okay. Are you familiar with the PWB training?

7 A. Just, it's been a couple years so I'm not, I'm not
8 intimately.

9 Q. Okay.

10 A. I depend on my APMS to provide that information to me, so I
11 have not had the PWB training, AeroData training. I do have an
12 EFB which I've been unable to keep up-to-date because I'm too busy
13 in my job as an SPOI so --

14 DR. SILVA: Okay. That's all I had for now. Hand it back
15 over to Marvin, thank you.

16 MR. LONG: Uh-huh.

17 MR. FRANTZ: Okay. Eric.

18 BY MR. WEST:

19 Q. Wow, you touched on a subject that I was going to bring up.
20 I hope I'm not opening up Pandora's Box here but this overweight
21 landing business.

22 A. Yes.

23 Q. Okay. I did look into it and I had a consultation with one
24 of our professional pilots in our group. So an overweight landing
25 according to 919 is a limitation, all right. And according to a

1 limitation a pilot is required to declare an emergency, and in
2 respect to that declaring an emergency requires that they inform
3 air traffic control of their progress.

4 So I just, I just wanted to ask you about where that stands
5 in relationship to what Southwest Airlines is supposed to do when
6 there's a situation that they have an overweight landing
7 situation?

8 A. I think, I don't want to disagree with you because this is a
9 continuing conversation we're having --

10 Q. Right.

11 A. -- where it's probably going to take a legal description of
12 captain's authority to declare an emergency. So I think the
13 proper term -- there's a term in the regulation for this. I'm
14 having a senior moment right now.

15 Nowhere in the regulation it says you have to declare an
16 emergency. Captain can use his emergency authority. It talks
17 about emergency authority in the regulation but there's no
18 connection between what that means as far as declaring an
19 emergency officially with it.

20 So that's the issue I'm working with my inspector that's
21 concerned about this, provide me the guidance. First of all,
22 provide me the regulatory requirement for declaring an emergency.
23 So that's -- see where I'm going with this. It's not a black and
24 white discussion and that's why we need, I feel personally we need
25 a legal interpretation of that.

1 Q. So that's where it's going next a legal interpretation?

2 A. Well, I hope. When we assign an assignment to an inspector
3 in this office if they feel that it is a violation of some sort or
4 a non-compliance of some sort, they need to justify it by the
5 regulatory and by guidance.

6 I've got to be to connect those pieces. In this area it's
7 kind of difficult to connect the declaration of an emergency with
8 using his emergency authority. Granted, in my mind you should,
9 anytime you use emergency authority you should declare and
10 emergency but I can't find in the regulation that it directs us
11 that that's a requirement, it just says captain can use emergency
12 authority.

13 Is it emergency authority to land the aircraft overweight
14 because it's a limitation? And, like I said, there's no, you're
15 right but there's no real direct link saying if you go over a
16 limitation do you declare an emergency, it says you have to use
17 captain's authority.

18 Q. This stopping distance business kind of bothers me a little
19 bit. So if you see something that an airline is doing as the FAA
20 can you step in and say to them, zero stopping distance? That
21 doesn't look good to us as the FAA.

22 A. I wouldn't say zero stopping distance. It's, well --

23 Q. Or margin or whatever you want to call it.

24 A. Margin. Well, regulatory wise they can do that. The
25 regulation says, you know, as long as you have these 15, 115

1 percent all the requirements for planning the approach and all the
2 other stuff. As long as you stop that airplane within the
3 confines of the runway that is legal.

4 Now, granted they've used for years 2,000 feet because I
5 think they weren't quite as confident. That's me speculating they
6 weren't quite as confident in the OPC data capabilities that they
7 are with an AeroData system they have now.

8 Q. Provided everything is working correctly on the aircraft?

9 A. That's correct. And, once again, you've hit the proper thing
10 because one thing about AeroData if you have other problems, MEL,
11 maybe a flap issue or, I can't think of one right now. Something
12 like that, that is accounted for in AeroData so it will reduce
13 your -- in other words, you're going to be limited, weight
14 limited, number one, because you're going to have to still stop
15 that airplane within the confines of the runway.

16 Q. Okay. That, is that found in the op specs then, is that
17 something we agree with to have approved or --

18 A. That's regulatory, regulatory, that's covered under the
19 regulation. I don't have the regulation in front of me right now
20 but --

21 Q. Okay. Do you know the crew; do you know what happened to
22 them following the Burbank event after they were accepted
23 (indiscernible)?

24 A. First of all, they were -- their quals were pulled, my
25 understanding is what the 119 chief pilot, Bob Waltz told me they

1 immediately pulled the qualifications of the pilot which means
2 they were pulled off the schedule.

3 Q. Okay.

4 A. They're not in the scheduling system anymore. They can't be
5 scheduled while the investigation's underway. After about a week
6 or so they were -- they did immediately, of course, go into ASAP.
7 There were some discussions because I was concerned about little
8 knowledge I knew like the conditions at the airport, where they
9 landed, you know, it was quite obvious.

10 I didn't have to do an investigation, the news was out there.
11 There was a picture there of the plane landed about halfway down
12 the runway. I had concerns --

13 Q. Right.

14 A. -- about the qualifications of the crew members to have
15 continued the approach and landing under those conditions. A
16 discussion came around to they were telling, how do we get these
17 pilots back -- their qualifications back because the 119 chief
18 pilot he could have probably said I'm going to put them back out
19 on the line, but they've got their own procedures at Southwest to
20 determine when a pilot is requalified to go back on a line after
21 an incident.

22 But they knew I had concerns because I mentioned I was
23 thinking about a 44 709 on the crew just to see qualifications.
24 If they were an ASAP they were getting, they were getting ready to
25 do basically a -- they were talking about doing a SIM session with

1 the crew to see and give them the same conditions that they had
2 when they had that incident.

3 And at the time I said, you can do that but I still have the
4 right to do a 44 709 on the crew because that's my responsibility.
5 But I said what my problem with a 44 709 is so focused in scope
6 that are we going to actually capture what happened that day?

7 Because, first of all, there appeared to be there might be
8 some judgment issues here. We put -- we've done this before. I
9 haven't but in the past in this office I've talked to APMs that
10 have done 44 709s in this office, he says, yeah, you just give
11 them that, you give them the say scenario because you're limited
12 in scope.

13 Basically you do takeoffs and you do the approach and stuff.
14 If they do it -- he said, most of the time these guys -- well,
15 it's only been one time, I think, in Southwest history where they
16 had a 44 709 and the guy didn't make it and rightfully so. The
17 rest of them they've had they haven't had that many, the guys
18 performing the way they're supposed to perform as far as pilot
19 qualifications.

20 I felt that this was going to be difficult to actually
21 identify a root cause, why did they do what they did and that's
22 why I told the ASAP group and I told the 119, said, I'd rather see
23 it be a robust where they give these training, put them in the
24 simulator, their annual qualification program.

25 I think these guys have gone through it 2 years prior, 2

1 months prior or something like that to this incident. So they
2 were fairly fresh out of their annual qual program under AQP. So
3 I said, well, let's put them back in the simulator. And this is
4 between me and the chief pilot. But them back in the simulator,
5 simulator check, both of them passed the check.

6 But one of the things I said, that's great for the simulator,
7 what about -- and its qualification program but I think they also
8 gave them the same scenario that happened that day in Burbank
9 besides the requal or qual program.

10 I said, now Bob said, I said, at least have an APD or program
11 designee go out and fly with them because if they've been
12 basically approved to type ratings and determine qualifications as
13 far as ATP/type rating. And Bob and me agreed that 3 days was
14 going to be a good chance for an APD to determine whether that
15 individual's judgement was proper and he had the airmanship to do
16 what he needs to do out there on the line.

17 Well, and the way that was setup it wasn't with the captain
18 and first officer flying together it was an APD flying in the
19 right seat with the captain and on another flight for 3 days, for
20 3 days. The first officer was flying with another APD for 3 days
21 online.

22 The first officer passed his, his 3 days of line flying. The
23 captain did alright in simulator session but during his 3 days out
24 on the line the APD determined he had some questions about the
25 captain's judgement capability, decision making capabilities. So

1 the company put him back into a more robust training program that
2 included more information and more training on decision making,
3 judgment.

4 So he went through another SIM session. Group sent me under
5 the AQP program, went back out with another APD for a 3-day line
6 check, line observation. He passed it the second time through
7 so --

8 Q. Do you know what that period of time was --

9 A. From the incident?

10 Q. -- from the initial APD check or the initial SIM and then APD
11 and then SIM and then APD, do you know what timeframe that was by
12 any chance?

13 A. Well, I know -- now, I'm estimating this because this all
14 happened -- a lot of this happened during the furlough and I
15 was --

16 Q. Oh.

17 A. -- in the office but was busy trying to keep up with it.

18 Q. All right.

19 A. And they called me up and told me the outcome of it. I'm
20 thinking, the first officer, I think, made it back online toward
21 the end of January, first part of February. I don't -- I'm
22 estimating this.

23 Q. Okay. That was during the furlough.

24 A. The captain because of the other thing, I don't think he made
25 it back online until toward the end of February or sometime in

1 March.

2 Q. Okay, all right.

3 A. These are all estimates because I didn't --

4 Q. All right. So you definitely answered my question there. So
5 I guess, I guess you felt comfortable with the system in place at
6 Southwest?

7 A. Yes. I felt good. I felt I had confidence in the training
8 program that they would get the results and they did get a result.
9 They didn't put him back online after the first attempt.

10 MR. WEST: And you answered my final question then. All
11 right. I'm okay.

12 MR. FRANTZ: Thanks Eric.

13 MR. WEST: You're welcome.

14 MR. FRANTZ: Greg.

15 MR. BOWEN: No questions. Everybody so far has answered the
16 questions that I had. Thank you.

17 MR. LONG: Uh-huh.

18 MR. FRANTZ: Kevin.

19 BY MR. FERGERSON:

20 Q. I only have a couple. Was there any certificate action
21 against the pilots or dispatcher, involved?

22 A. No, there has not been any certificate certification issues
23 with them.

24 Q. And we're talking about --

25 A. Now I want to preface this, it depends on what happens to the

1 NTSB investigation, I may readdress the 44 709 issue but that's --
2 I still have that option --

3 Q. Okay.

4 A. -- my toolbox.

5 Q. The 2,000 foot, 500 foot stopping margin change.

6 A. Yes.

7 Q. Prior to PWB, Southwest Airlines, was Southwest Airlines
8 allowed to go to a zero stopping margin?

9 A. My understanding, yes, they could have.

10 Q. Okay.

11 A. They could have gone, gone all the way at that point. It was
12 just a management decision as far as I know before my time.

13 Q. And the 2,000 foot changed to 500, that was a change of
14 reduced thrust on takeoff, is that what that was?

15 A. I believe so.

16 Q. Okay. It wasn't anything associated with landing?

17 A. No.

18 Q. Okay.

19 A. Yeah.

20 MR. FERGERSON: I was going to ask if you knew Dave
21 (indiscernible), but other than that I'm done.

22 MR. FRANTZ: Okay, Rich.

23 MR. LEE: I don't have any questions.

24 BY MR. FRANTZ:

25 Q. I have a couple follow-ups. We've heard over the last couple

1 months as we looked at some of this about issues with weight and
2 balance irregularities and loading irregularities and problems
3 with Southwest.

4 Can you give me from your position as an SPOI 30,000 foot
5 view of what those issues are, what led to them and then what's
6 being done to address them?

7 A. Initially the -- I think you're talking about the bag
8 situation, what they call commodities at Southwest, loading of
9 bags and not being accurate in their bag count program. Southwest
10 for a 30,000 foot look, Southwest initially was fully manual
11 counting so they manually count it, put it on a form, take it up
12 to the gate agent.

13 They'd enter it into their OTIS, which is their performance
14 program, and it feeds -- or performance program, I'd say it is a
15 performance program that feeds it. And there's a lot of room for
16 error there, human error, human factor errors, because people
17 notoriously can't count, especially on a noisy ramp and
18 distractions and stuff, I think.

19 Initially this came to our attention back in November,
20 December 2017, yeah, 2017 timeframe. Initially it was showing up
21 in some of the ASAP reports from pilots that were reporting that
22 they were getting what they call dispatch advise after takeoff,
23 they were getting errors in their weight, on their load manifest
24 reported to them, discovered after takeoff.

25 So the pilots would input that stuff and correct, correct

1 what they needed to do in the system so that it showed the proper
2 weights for the airplane. We also had a few, my understanding a
3 few whistleblowers also from out -- from the company from some
4 people in the company at several different cities, they were ramp
5 people that felt that the company was not -- they were getting --
6 offloading more bags than what they thought they should have been
7 offloading according to the load plan.

8 So we approached the carrier on that and 121 665 requires
9 accurate load manifest, regulatory wise. It was interesting. We
10 started that with a CA, compliance action with them. That
11 compliance action as part of the -- actually it's called action
12 plan. They developed an action plan for us on how to start going
13 towards accuracy.

14 That action plan required them to first of all realize what
15 kind of air rates they actually had because they couldn't tell me
16 how many flights went out with inaccurate bag counts at that time.
17 So I setup a 25 percent audit which means 25 percent of every --
18 daily 25 percent of flights that left or flew would have to be
19 audited, which they did.

20 Initially the data showed about a 70 percent error rate, 70
21 percent of the flights they audited had some error of some sort on
22 them. They implemented some new procedures. One of the big
23 things was there seemed to be a lot of transpositional errors when
24 you write stuff down on a form and then take it up to -- or they -
25 - even putting the information on the form transpositional errors

1 or when they gave it to the ops agent up at the counter and they
2 input that.

3 They would even fat finger changes and make mistakes, so
4 there was a lot of that. There was also some counts were wrong.
5 People, it took them about 6 months to realize as far as their SRN
6 program that people can't count in an environment like that with
7 the number of bags that they're loading, they lose track, they get
8 distracted, which is normal.

9 We've even sent an inspector out there one time, you can
10 teach a kindergartener how to do this job count, count bags. He
11 went out there; I guess he isn't qualified as a kindergartner
12 because he lost count too because of distractions on the ramp.

13 Southwest determined about 6, I think about 6 months in the
14 program they knew they were going to have to go to a scanning
15 system. So they went out, my understanding went out in the
16 industry to find out who provided a good scanning system.

17 So it takes time to gather the resources to put these in
18 place and in the interim they said until we get the scanning
19 system let's do a couple studies and look at different ways we
20 could improve our manual counting system. Well, both systems they
21 used they found out wasn't much better than counting bags.

22 One of them was put them 1, 2 on the bags as they went
23 through. Well, that's fraught with error too. You're not going
24 to -- you can still make errors because you'll get distracted,
25 three bags pass by before you come back and where did I stop

1 counting the number, what number did I put up.

2 They used little stickers, that's the dumb -- what they call
3 the Dunbar system. Dunbar is an armed car company and that's what
4 they utilized, I believe, was a sticker system to make sure they
5 had -- they had a sticker sheet and they had -- supposed to have
6 50 mail -- moneybags on board. There should be 50 blank spots on
7 the sheet when they got done.

8 Well, they tried that for a little bit and they found out
9 that doesn't work and the weather conditions, the wind and all the
10 other stuff. So by the time they figured that out they were on
11 their way to starting to look at scanning.

12 They started implementing their scanning system the first
13 part of this year, about a year after the start of them knowing
14 what their problem was. During that timeframe they've got data to
15 show this where they started out 70 percent now their rates are
16 down around less than one percent rates right now but they've
17 still got errors. That's an industry problem it's not just
18 Southwest.

19 So by the -- they're almost to -- by next month they'll be
20 fully, I think scanned, scanning at all their stations. The one
21 part that still needs to be covered is that they're still taking
22 the numbers off the scanner right now in a form taking it out fat
23 fingering. That's where some of their errors is coming from.

24 So what they've done with that is that the software company
25 that they contracted for the scanner system, it's rewritten

1 software so it will work with their system, their Otis system, it
2 will automatically put it into the system, all the gate agent has
3 to do is go up there and verify and hit the enter button.

4 So they know what -- they can compare what they're supposed
5 to have with what's not there and then they can send it. They
6 expect that percentage of error to drop quite a bit, what's left.
7 Right now if you averaged it they say their average weight is
8 down. Error is around 60, 60 pounds when they do have an error
9 it's about -- average out about 60 pounds.

10 Granted you've got someone off so one of the things is
11 balance. You're supposed to put X amount of pounds in the forward
12 cart compartment instead it's in the aft cart compartment. So
13 once in a while they have those escapes so they're working on ways
14 to verify that doesn't happen anymore.

15 As far as that CA earlier on, we went to an EIR, enforcement
16 action, I guess. They were providing all the audit material and
17 here in the last couple months we closed the EIR with no action.
18 The reason was legal said you cannot use audit material the
19 company's providing you; you have to have your own observations to
20 do an EIR.

21 So we were -- we dropped out of the, out of the -- took no
22 action. As we speak today we are out there sending teams out to
23 look at their program and see where they're at and we have setup a
24 program to see how accurate their offloads are compared to what
25 it's supposed to be. Right now we're still showing one or two bag

1 errors once in a while but not every flight.

2 Q. Okay. So the concern as far as you know is always with just
3 bag count not with other cargo or not with passenger counts or
4 loads?

5 A. No, not necessarily. That was the big, that was the initial,
6 that was the initial drive that drove us that direction.

7 Q. Was the bags?

8 A. The bags.

9 Q. But then after you got driven that direction, was there other
10 things that came to light about weight and balance?

11 A. Yeah, there's some issues about if they split. Usually
12 got -- I wouldn't say -- they have a bunch of boxes that come in,
13 they're weighed and they decide not to put them out
14 (indiscernible). Well, you know that a number of boxes weigh,
15 that total number of boxes weighs so much.

16 Well, if all of a sudden you decide to change that, split
17 that load, well, are all those boxes of equal weight? So that's
18 one of the issues we're dealing -- and they are working on
19 including the cargo into their scanning system program so that's
20 come to the next step.

21 The other issue is the people issue. People, they're working
22 this issue right now is that you've got -- somebody gets off on a
23 through station, gets off to go maybe to get something to eat.
24 They get back on the airplane. Well, as he gets, he doesn't get
25 counted. They do a seat count of a people count for through

1 flights, well, that person got off before they did that count so
2 now they're one off.

3 They maybe not scanned somebody when they initially get on
4 board the airplane. They maybe set it down and the airplane
5 pushes back and that count is not there, the one or two, three
6 passengers hasn't been scanned in the system. They're on board
7 the airplane to get scanned in but the airplane's already left.
8 So those are the type of errors that we're seeing and they're
9 addressing right now.

10 We get a weekly briefing from them on their progress and what
11 they're doing.

12 Q. Okay. The overweight landings issue --

13 A. Yeah.

14 Q. -- that Eric was talking about a minute ago, is that related
15 to this weight and balance concern that was --

16 A. Not so much.

17 Q. So what is driving -- what are the overweight landings about
18 that he was talking about, what's the issue there?

19 A. It was just -- where it came up is on a manual review this
20 inspector was looking at a revision and about a year ago, excuse
21 me. About a year ago and he -- besides the revision he always had
22 this issue about this way it was worded in here.

23 In the wording of the manual and I'm paraphrasing it is, the
24 overweight landing is not basic cause, reason enough for an
25 emergency declaration, it's the event that causes the overweight

1 landing, like an engine failure, something like that, because
2 you've got a 737 is not -- you can't dump fuel on a 737 so you've
3 either got to burn it off or you're going to land overweight or a
4 medical emergency.

5 They see a lot. I think probably Southwest -- I haven't
6 looked at the numbers but I think Southwest has the most
7 overweight -- not the most. I improperly worded this. If they do
8 an overweight landing the cause is usually because of a medical
9 emergency. Usually it's not a mechanical issue it's usually a
10 medical emergency. So they're always declaring an emergency
11 because of the medical emergency which came before, first the egg
12 or the chicken or the egg type of thing. That drove -- that
13 drives the call for an emergency declaration.

14 He was -- this inspector was concerned about it and
15 rightfully so. I'm not crazy about the wording either but I just
16 don't know where we can go with it.

17 Q. Okay. So it wasn't driven by the overweight landing concerns
18 about getting an update after they had taken off that, oh, we
19 really have X bags instead of Y so now we have to --

20 A. Yeah. Well, and that could be, it could affect. I hadn't --
21 we hadn't seen anything where they had so much weight that it
22 created an overweight landing at destination.

23 Q. Right. Okay.

24 A. And if it had, here's what would have happened. I'll have to
25 have -- my understanding, this is my understanding, for overweight

1 landings in the PWB, I mean, in the AeroData if you put that data
2 in there it will give you a warning that you're overweight if
3 there's enough runway to land of. If there's not enough runway it
4 won't give you data, that's my understanding.

5 Q. Did you -- did the CMO or you as the SPOI, was there some
6 sort of investigation of this Burbank incident conducted within
7 your office here, formal or informal investigation?

8 A. There was never really a formal. I wouldn't identify it. I
9 know we're not supposed to do an investigation because NTSB has
10 that responsibility, we're to assist. The only thing we did in
11 this was is assist ADP 100 whenever they asked for anything, I
12 think, might have to ask Eric West about that, to assist.

13 That's the only thing we did investigation wise. I guess
14 you'd consider it a quasi-investigation when I looked at the
15 qualifications of the crew members. I don't want people out there
16 flying and waiting for NTSB to do their investigation to see if
17 they're qualified. So I guess you could say I did do some
18 investigation on that.

19 Q. Okay. Do you have any indications from anything you're
20 learned since this incident that there were any weight and balance
21 irregularities on this particular flight, the incident flight?

22 A. That's interesting because the question came up, I do know
23 for a fact that the chief pilot gave me a call the day of the
24 incident and they were -- I think Van Nuys initially took the IC
25 position until the NTSB could show up on scene.

1 They had 60 -- I don't know how many bags it was. Anyway,
2 this is -- he made a comment he said, boy am I happy about this,
3 he said, because the bag counts matched what was on the load
4 manifest.

5 Q. He said he was happy about that because they --

6 A. Yes.

7 Q. Okay.

8 A. Yeah, and that was the conversation.

9 Q. And that's because that was driven by the fact that there had
10 been previous concerns about bag counts and mistakes or errors?

11 A. Yeah, yeah, yeah. And the reason why I drove is because the
12 Van Nuys individual didn't want to release the bags to the
13 passengers.

14 Q. Okay. So that was a positive?

15 A. Yes.

16 Q. That was a comment that, yeah, this part was correct and you
17 don't have any knowledge of any other concerns or anything about
18 other weight and balance concerns for this flight --

19 A. No.

20 Q. -- the accident flight, incident flight?

21 A. No.

22 Q. Okay.

23 A. Once again, reason that came up wasn't because I asked about
24 it, it's because he called me up because they wanted to release
25 the bags to the passengers.

1 MR. FRANTZ: Okay. I think that's all I have. Thank you.
2 Let's, we'll do -- see if anybody else has any follow-ups?
3 Sathya.

4 DR. SILVA: The only one I had was, are you aware of anything
5 that Southwest has done since the incident to address any issues
6 regarding that?

7 MR. LONG: think they've looked at some of their procedures
8 and dispatch procedures. I think they've reviewed some of that.
9 One of the things that they're really waiting for the filing of
10 the NTSB report to come up of it.

11 DR. SILVA: Okay. Great. Thank you.

12 MR. LONG: And I think too, one more thing I'll add is
13 that --

14 DR. SILVA: Go ahead.

15 MR. LONG: This process we use for requalifying the crew to
16 get back on status, I think we're probably -- we plan on using
17 that more often because, like I said 44 709s are very limited in
18 scope. But I will use a 44 709 if I see the need.

19 DR. SILVA: Understand. Thank you.

20 MR. FRANTZ: Okay. Eric, do you have any follow-ups?

21 BY MR. WEST:

22 Q. I just wanted to ask Bobby about the policy on wind shear.
23 If Southwest has a policy when they encounter wind shear on an
24 approach?

25 A. Oh, yeah.

1 Q. So give me everything you know.

2 A. As far as I know right now, I'm going back to my APM days on
3 this. They do have a procedure, if they get a wind shear alert
4 they immediately do a go around procedure and they'll fly it and
5 do the go around, fly into the bars and --

6 Q. Are they -- it's okay then to come back and try another
7 approach then?

8 A. That's, once again that's up to the judgment of the pilot.

9 Q. Okay.

10 A. I don't think they've got -- they have a written policy that
11 says once you've got wind shear you never go back to that airport
12 or you go to your alternate. It's not at that place.

13 Q. What if you don't have an alternate?

14 A. If you don't have an alternate. Well, some conditions you
15 don't need an alternate.

16 Q. Right.

17 A. I think I know where you're going with this.

18 Q. Yeah. I just wanted to know if the --

19 A. There's been conditions.

20 Q. Not assigned an alternate and you've experienced a wind shear
21 alert on the initial approach, do you know if there's anywhere
22 written that a crew now needs to either contact dispatch to go to
23 another airport? Is that written somewhere, that's what I'm
24 trying to get at?

25 A. They've got a policy in those conditions. Any kind of, any

1 kind of weather conditions like that they're supposed to be
2 keeping the dispatcher advised.

3 Q. Okay.

4 A. Not just wind shear.

5 MR. WEST: Very good, that's it for me. Thank you.

6 MR. LONG: Uh-huh.

7 MR. FRANTZ: Okay. Greg.

8 MR. BOWEN: Nothing more from me, thank you.

9 MR. FRANTZ: Kevin.

10 MR. FERGERSON: I'm done.

11 MR. FRANTZ: Give me just a second I might have a follow-up
12 follow-up but I'm not sure.

13 MR. LONG: I probably said something that --

14 BY MR. FRANTZ:

15 Q. No doubt. (Pause.) Just real quick, on the PWB system and
16 the pilots use of it when they use that system to request landing
17 data for their destination, are you aware of any policies or
18 procedures in place at Southwest that would ensure that the crew
19 when they make that request is getting the latest data of the
20 situation at the airport specifically, the weather, and
21 anything -- and then second to that, anything that would prompt
22 the crew or tell the crew they need to follow-up on that if
23 conditions change at the airport?

24 A. I can't speak to that because I'm not that well versed in
25 exactly the wording on that particular area.

1 Q. Okay. Okay. I think we've been around twice and ask you
2 everything. Do you have anything that you think we should have
3 asked you about regarding this incident that we didn't and you --

4 A. Well, I think, one of the things I have is FICON, field
5 condition reports and granted this particular incident FICON
6 probably couldn't have been updated fast enough because, you know,
7 when weather comes in like that and you have a big downpour in a
8 field but there ought to be some way to -- at least besides saying
9 something to the effect there's, whatever the term was, there's a
10 heavy shower over the field.

11 Well, there ought to be besides that maybe further warning
12 about possible runway conditions depending on the airport,
13 especially some places have got short runways. I don't know how
14 well grooved the runways are over a period of time. There seems
15 to be a lack of real good guidance as far as braking conditions on
16 an airport, not only, not only in this condition but other
17 conditions where they give braking reports for midfield when
18 they're telling airplanes to go to the end of the runway and the
19 end of the runway it's got a poor braking condition but they never
20 report it.

21 That kind of stuff. I think 139 operations at airports needs
22 to be tuned up a little bit as far as field condition reports.

23 Q. Okay. I did think of my follow-up question if it's okay?

24 A. Sure.

25 Q. Since you've been here at the CMO, either in your current

1 position or previous positions, how many 709 rides have you seen?

2 A. I have seen none since I've been in this -- in the office.

3 Q. And that's been for since 2016?

4 A. '14.

5 Q. '14, okay.

6 A. There was one right before I came in the office.

7 Q. Okay.

8 A. I do know of.

9 Q. Are you aware of anybody that has ever recommended -- from
10 the office has recommended a 709 ride and somebody at a higher
11 level or another position up has said, no, we don't need to do
12 that or, no, that's not -- we're not going to do it?

13 A. While I've been in the office that hasn't been the case, no.
14 Part of my decision making on this particular case, I included my
15 APMs on that decision, talked to them, you know, what do you
16 think, and two of them definitely -- one of them definitely has
17 done a lot of 44 709s.

18 He says in this condition, yes, I don't see what good it
19 would do to do a 44 709 because we're looking at human factors and
20 judgment. You've got to have a different program to identify that
21 unless the guy's really out of, out of whack, you're not going to
22 catch it in a 44 709.

23 Q. Okay. All right.

24 A. Yep.

25 UNIDENTIFIED SPEAKER: (Indiscernible).

1 MR. FRANTZ: Follow-up on the follow-up.

2 BY UNIDENTIFIED SPEAKER:

3 Q. You may or may not have heard this so I -- and this may or
4 may not be true, but I keep hearing that the aircraft from the
5 Bradley event was ferried back to Dallas?

6 A. Yes.

7 Q. And included in that ferried crew was the entire maintenance
8 crew on board the aircraft. I don't know if that's true or not?

9 A. I have heard that's not --

10 Q. Were you aware of that?

11 A. I was -- that discussion came up and no they weren't, there
12 wasn't an entire maintenance crew on that flight.

13 Q. Okay. Thank you for answering that question. I wanted to
14 establish that either that was true or not true because you can
15 only take the one --

16 A. Yeah, essential.

17 Q. -- one essential person on board so --

18 A. The flight crew.

19 UNIDENTIFIED SPEAKER: Thank you. That's all I have.

20 MR. FRANTZ: Okay.

21 DR. SILVA: Great.

22 MR. FRANTZ: Thank you, sir.

23 MR. LONG: Thank you.

24 MR. FRANTZ: Appreciate your time today.

25 (Whereupon, the interview was concluded.)

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 Bobby Long

ACCIDENT NO.: DCA19IA036

PLACE: Dallas, Texas

DATE: October 9, 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.

[REDACTED]

Transcriber

[REDACTED]

Autumn Weslow

Revised 01/26/2021

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: JEFFREY REES
B-737 MAX Aircrew Program Manager
Southwest CMO, FAASouthwest Airlines FAA Certificate
Management Office
Dallas, TexasTuesday,
October 8, 2019

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Southwest Airlines

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I N T E R V I E W

MR. FRANTZ: Okay. Marvin Frantz, NTSB, Ops Human Factors Group, DCA19IA036 investigation -- is the investigation number. We're at Dallas, Texas at the FAA Certificate Management Office for Southwest Airlines, and this is an interview of Jeff Rees, who is with the Certificate Management Office here in Dallas. October 8th, 2019.

So, Jeff, I've already introduced myself but I want to do it again for the purpose of the recording. I'm Marvin Frantz with the NTSB, Operational Factors -- actually with AS-30, and I'm an operational factors investigator.

And I would like to just go around the room and have everybody again for the purpose of the recording say who they are and what their -- what organization they're representing. And we'll start with Rich.

MR. LEE: Okay, Rich Lee, Boeing Safety Pilot.

MR. FERGERSON: Kevin Fergerson, Southwest Airlines, Flight Ops.

MR. BOWEN: Greg Bowen, Southwest Airlines Pilots Association, Training and Standards.

MR. WEST: Eric West, I'm an accident investigator with the FAA, AVP-100, Washington, D.C.

MR. TOMICICH: Mark Tomicich, Office of Chief Counsel, representing the witness.

MR. REES: Jeff Rees, I'm the MAX APM for the FAA at the

1 Southwest CMO.

2 DR. SILVA: Sathya Silva, human performance investigator with
3 the NTSB.

4 MR. FRANTZ: Okay. Jeff, as you know the NTSB, we're an
5 independent federal agency and we're charged with investigating
6 all aviation accidents, but we are not part of the DOT and we have
7 no enforcement or regulatory powers. We're strictly -- we
8 investigate, we determine probable causes, and then we make safety
9 recommendations to -- in attempts to prevent accidents such as
10 this or incidents like this from happening in the future.

11 We're going to make a recording of this for transcription.
12 We've already talked about that. We're trying to determine the
13 probable cause of this event, not trying to assign blame or
14 liability, strictly just the facts, type of investigation.

15 We cannot, as part of the investigation, allow or tell any of
16 our witnesses we can provide them with confidentiality or any kind
17 of immunity, and this -- not the recording itself but a transcript
18 that we'll have produced will eventually become part of the public
19 record and it will become part of the docket, which is the public
20 record of this investigation.

21 What we'll do is we'll go around the group and we'll take
22 turns over -- each person will have a chance to ask questions, and
23 then when they're finished we'll pass it to the next person.

24 I've asked the group -- you know, we'll just have one
25 questioner at a time so we don't have anybody else asking

1 questions or throwing something in when one person is asking
2 questions; we'll just do one person at a time. After we go all
3 the way around, we'll see if anybody has any follow-ups based on
4 anything that they heard or learned from someone else's
5 questioning, and then we may have a second round to see if anybody
6 has any other questions.

7 We ask that you just answer the questions to the best of your
8 recollection. It's not sworn testimony; it's just an informal
9 interview. If you don't know an answer, that's fine, and if you
10 misstate something or later you want to go back and correct
11 something you said earlier, that's fine too. Or even after the
12 interview's over, if you have something you want to add or change,
13 you can get in touch with Sathya or I or Eric and amend or add to
14 the testimony -- not testimony to the interview if you'd like.

15 Try to avoid answering questions with just a nod or, you
16 know, because of the recording, so we need good yeses or noes or
17 whatever your answer would be.

18 I have to let you know you're entitled to a representative to
19 be with you, and if you selected a representative and you -- he's
20 here, or if you've selected one, I need you to just state who you
21 selected as your representative for our record.

22 MR. REES: Sure. I selected Mark for my representative.

23 MR. FRANTZ: Okay, so Mark. And do you have any questions?
24 Well, let me ask, Sathya, did I miss anything on the in-briefing?
25 I never get these briefings --

1 DR. SILVA: I don't think so.

2 MR. FRANTZ: Okay. So do you have any questions for us
3 before we get started?

4 MR. REES: Not at this time, no.

5 MR. FRANTZ: Okay.

6 INTERVIEW OF JEFFREY REES

7 BY MR. FRANTZ:

8 Q. Jeff, just to get started, could you tell us your name; spell
9 it for us if you think we need to, if it's not a common spelling?
10 Go ahead.

11 A. Sure. Yeah, it's Jeffrey Rees. The last name is R-E-E-S.

12 Q. Okay. And what is your current position?

13 A. I'm the B-737 MAX Aircrew Program Manager at the Southwest
14 CMO.

15 Q. Okay. How long have you been in that position?

16 A. I've been in this position for 24 months.

17 Q. And before that what did you do?

18 A. I was assistant APM on the 737 800 fleet.

19 Q. And how long did you do that?

20 A. I did that from 2011 until 2017, when I was selected to be
21 the APM on the MAX, with the exception of 4 months that I did a
22 detail, a management detail down the hallway at the 142 CMO. So
23 other than 4 months, I've been either an assistant APM on the 800
24 or the APM on the MAX ever since 2011.

25 Q. Okay. Can you give us just a quick sketch of your aviation

1 background?

2 A. Sure. I was -- started off flying in the Navy in 1986 and
3 flew P-3s for the Navy. I did a flight instructor tour, non-
4 flying tours on a carrier, and then Department of Ed tour at the
5 weapons school, my Department of Ed tour in the fleet, and then I
6 transitioned to the reserves in 2000.

7 So from '86 to 2000 I was active duty Navy, and then in 2000
8 I transitioned to the reserves and I went to fly for American
9 Airlines. I was there for 3½ years: 72 F0 as a new hire and then
10 an A300 F0 a little later on. And was furloughed over there, but
11 in the same time frame, from 2001 through 2007, I was recalled to
12 active duty five times. So basically I was going back and forth
13 between American and active duty, and then after furloughed from
14 American I was hired by JetBlue in February of 2005. That's
15 right. And I flew over there as an Airbus F0 for a year and then
16 an Airbus A320 captain for 6 years.

17 And in 2011, I was hit by a drunk driver, broke my back, lost
18 my medical, and I left JetBlue on medical leave and came over to
19 the FAA in July of 2011. That's where I've been since.

20 Q. Okay. Thank you. Did you know either of the pilots involved
21 in this incident/accident?

22 A. No.

23 Q. Did you have involvement -- describe your involvement with
24 the PWB system and Southwest's adaption, adoption and rollout of
25 that system.

1 A. Sure.

2 Q. What was your role there?

3 A. In 2015 -- actually October of 2015, Southwest Airlines
4 informed the CMO that they were considering transitioning from the
5 onboard performance computer, which they'd used for about 30 years
6 -- 20, 25 years, 30 years, 25 years, to an off-ship product called
7 -- they have coined it and it makes sense, as performance weight
8 and balance, PWB, and they use an off-ship system called -- from a
9 company called AeroData.

10 So in October of 2015, the CMO was notified that they were
11 considering making this change and the -- I had used very similar
12 software at JetBlue for 7 years. I'd used a very similar
13 performance system to the OPC system that Southwest used. So I
14 had sort of by default become the SME in the CMO for OPC.

15 So when the transition, the decision by them to transition to
16 AeroData came up, the POI assigned me to be the certification
17 program manager. And the date I've got for when that began was
18 May 11th of 2016, is when -- the first time I have an entry that I
19 was the CPM for the AeroData PWB transition, and I worked closely
20 with Steve Crystal and Gunther Herwig, two management captains at
21 the carrier, I worked closely with them for about 2 years as we
22 went through the process of developing and -- well, they were
23 developing and I was observing and providing input from our
24 perspective.

25 And then in the fall of '16, the landing-only module of PWB

1 was rolled out, and so they at that -- from that time, from the
2 fall of '16 -- it would have been actually August of '16 through
3 July of '17, they were using the landing module on PWB and they
4 were using the OPC for takeoff.

5 And then in the late spring/early summer of '17, Southwest
6 had the pilots go through the training to use PWB for both the
7 takeoff and the landing, and at that point they transitioned all
8 the way over to PWB in August of '17. And then OPC was off the
9 aircraft by the end of October of '17.

10 So I was involved with the five-step certification process.
11 So Southwest Airlines went through an extraordinary process to
12 design and develop with AeroData the product that they were going
13 to use, and the assumptions that it was going to use and all that
14 sort of thing, and the procedures for the pilots and the
15 dispatchers to use it. And all those types of manual revisions
16 and reviews I was involved with.

17 Southwest, we conducted a tabletop exercise with Southwest in
18 June of '17 and that involved all their work groups, and we went
19 through basically some dry run scenarios with pilots and ops
20 agents and dispatchers and all the different operational work
21 groups to demonstrate that the system seemed like it was going to
22 work effectively, and the tabletop went well.

23 And then we made the -- or they made the full cutover, as I
24 stated before, in August of '17, and then after the full cutover
25 I've continued to be involved on some level as the SME within the

1 CMO for PWB.

2 Q. Okay.

3 A. Did that answer the question?

4 Q. It did. Thank you. Can you just briefly describe the PWB
5 system, what it does and then how it does it, but --

6 A. Sure.

7 Q. -- limited detail, but just, you know, kind of a big picture
8 thing for us?

9 A. If it's acceptable to you, it might be a little easier for me
10 to sort of compare and contrast the previous system and the new
11 system?

12 Q. Sure.

13 A. The onboard performance computer system, the OPC system that
14 Southwest introduced, they were the -- it was their brainchild and
15 it was a phenomenal concept. So they had a tablet in a charging
16 cradle behind the captain, and the FO would pull out that tablet
17 and calculate all of their takeoff or landing performance.

18 And under the OPC system the ops agent would provide the
19 pilots with the passenger count and the bag count, and the first
20 officer would enter all that along with the weather and the
21 information off the dispatch release, and then the OPC would
22 provide them with their takeoff performance, V speeds, field
23 length, all those sorts of things that they needed.

24 And then when they're in flight they would get the latest
25 weather for the airport, the latest ATIS. The FO would enter the

1 ATIS information -- and when I say the FO, the captains did it
2 sometimes but it was normally the FO's responsibility. So the FO
3 would run the landing performance through OPC and that would give
4 them their reference speed for landing and it would provide their
5 stopping margin and then all that information that they need --
6 brake, automatic brake settings and so forth.

7 The decision to switch to the AeroData product, my
8 understanding of it was, it was primarily driven by the growth of
9 the airline and the age of the tablets, difficulty finding or
10 replacing the tablets and the growth, including international and
11 some of those things were just beyond the capability of OPC.

12 So the carrier made this transition. So AeroData operates a
13 little differently than OPC did. So AeroData is physically,
14 geographically they're based in Phoenix, Arizona. They've got a
15 system of computer banks there. They have two other sites where
16 they have backup computer bank systems setup that they can shift
17 to if the primary system fails.

18 But AeroData essentially is sitting there in Phoenix and as
19 Southwest goes through their daily flight schedule of 3800 plus
20 flights the dispatcher will start the process of going through
21 their pre-flight process to plan a flight and they're going to
22 look at the destination weather and all the information the
23 dispatchers look at and they provide -- and they use a software
24 system called Swift which provides information to AeroData in
25 Phoenix.

1 So the destination alternate airfield requirements, fuel
2 requirements, all those sort of things are primarily handled
3 through the dispatch piece in Swift. Then the operations agent at
4 the airport is responsible for interacting with the ramp lead and
5 the ops agent receives the -- or has from interacting with the
6 flight crew and also swiping the boarding passes, the ops agent
7 collects the number of passengers onboard and from the ramp
8 collects the cargo bin loading schedule, which provides not only
9 the count but the distribution and also the cargo and the bags.

10 And the ops agent manually enters that information at the
11 computer terminal at the top of the air stairs at the airport and
12 all that information through a software system called Otis, that
13 information all leaves the airport and that goes to Phoenix to
14 AeroData as well.

15 And then the flight crews have interaction with AeroData
16 through their flight management computer via ACARS is their
17 primary means. They do have a backup through the iPad which I can
18 go into later if you have questions on that, but the primary means
19 is through the flight management computer via ACARS.

20 So the flight crew when they get in they go through a log in
21 process and then they start to interact with AeroData and the
22 operations agents will receive back from AeroData they're going to
23 receive the flight plan, the load sheet, weather, takeoff and
24 landing report, those types of pieces of information into a packet
25 that they're going to provide to the flight crew.

1 And then based on all that information the crew's going to
2 know pretty much everything that they need to know and they'll
3 program information from that into the flight management computer.
4 Some of it will auto-populate and this is via AeroData talking
5 back to the aircraft via ACARS into the flight management
6 computer.

7 And then the -- if there's changes or something like that the
8 flight crew can make those adjustments, change in runway, for
9 example, they can make those adjustments via the flight management
10 computer to interact and then the flight operates.

11 So all the calculations that were done on OPC on the tablet
12 in the cockpit are now done at the AeroData Facility in Phoenix on
13 their servers.

14 Q. Okay.

15 A. And then once the flight becomes airborne as they approach
16 the destination the AeroData System when the -- it's normally the
17 FO that -- well, I guess it's the pilot monitoring that does it,
18 that would be more accurate.

19 Pilot monitoring will go into the flight management computer
20 and they'll send, you know, information to AeroData on where
21 they're going into and, I mean, it's got some of that information
22 from the flight plan and then they'll send, basically send a
23 request and they'll get a landing report back that will give them
24 all the detailed information that they need for that particular
25 airport and runway so --

1 Q. Okay.

2 A. I think that's sort of --

3 Q. Yes, that's good.

4 A. Did I leave anything major out as far as structurally? Thank
5 you.

6 Q. So you were the FAA subject matter expert and you were the
7 program -- sorry, what was the title?

8 A. Certification program manager, CPM.

9 Q. Yeah, for this rollout?

10 A. Correct, for the transition and the roll out.

11 Q. Okay. Were there any major hiccups, problems, concerns
12 during that rollout period with the system, the PWB system?

13 A. There were, there were a couple.

14 Q. Could you just briefly give us --

15 A. Sure.

16 Q. -- a sketch of what they were?

17 A. The first issue that came up was after AeroData had gone live
18 in August of '17, when I was basically organizing my files to put
19 a binder away for the CMO for posterity of the whole process, I
20 came across some issues that had to do with reduced power takeoffs
21 that didn't make sense for how I understood the system to work.

22 I contacted the chief engineer for Southwest, Brian Gleason,
23 and I asked him a question about the reduced power takeoffs and he
24 responded to me with what the answer was, and it opened up a
25 series of questions and some concerns from us in the office.

1 And what it had to do with was -- and actually I have a
2 picture from Southwest here that's a pretty good way of showing
3 it. But essentially what happened was Southwest, at some level
4 the company made the decision when they switched from the OPC to
5 AeroData that they would make changes to the curtailments,
6 curtailment calculations and buffers in the performance
7 calculations that the system was -- you know, the assumptions it
8 was making and the restrictions it was placing. Southwest changed
9 those assumptions and restrictions with AeroData and we at the FAA
10 did not have visibility on that.

11 So the most significant difference was that Southwest raised
12 the assumed temperatures for the reduced power takeoffs by 10
13 degrees centigrade roughly. It was slightly different by jet.
14 The 700s they raised the maximum assumed temperature from 54
15 degrees centigrade to 62 degrees centigrade and on the 800s they
16 raised the max assumed temperature from 54 degrees centigrade to
17 64 degrees centigrade. So essentially, roughly a 10-degree
18 centigrade increase in assumed temperature which has the result of
19 reducing the, reducing the reduced power significantly.

20 And the logic of it which tracks, it's logical is that the
21 goal here is to maximize the lift of the aircraft while minimizing
22 the turbine, turbine wearing fuel burn, which I understand. The
23 issue or the concern that we had was that we weren't aware of it
24 when we went through the certification process and when the
25 AeroData System went live, under the previous system, under OPC

1 there were built-in stopping margins of -- well, for a reduced
2 power takeoff it was 2,000 feet.

3 So they had built that in in the OPC and that was removed
4 with AeroData. And I was trying to remember if there was -- did
5 you keep a 500 foot margin on the flex power?

6 UNIDENTIFIED SPEAKER: Yeah.

7 MR. REES: So was it reduced -- what they -- they went from
8 2,000 to 500 --

9 UNIDENTIFIED SPEAKER: Yeah.

10 MR. REES: -- when they went from OPC to AeroData, and that's
11 for a reduced power takeoff. And then for a max power takeoff
12 they allowed -- under AeroData they allowed it to go down to a
13 positive stopping margin which by the regulatory definition is
14 zero feet of stopping margin is considered positive under the
15 regulatory calculations or regulatory guidance.

16 So what the practical effect of this was is that under OPC
17 when the aircraft is taking off the call-outs would be 80 knots V1
18 rotate. After AeroData was introduced it would be 80 knots V1,
19 and you're waiting for the rotate.

20 And so there was -- I saw takeoffs where we were rolling for
21 1,000, 1100 feet between V1 and VR. Now that's not unacceptable,
22 that's not unsafe but it's different. And the pilots with the
23 AeroData System were also seeing flap -- different flap takeoff
24 configurations than they had previously seen, so on the 700 the
25 maximum takeoff flaps that the pilots were seeing before AeroData

1 was a Flaps 5 takeoff. With AeroData that went to a Flaps 15
2 takeoff is the maximum, and then with the 800s the maximum flaps
3 for takeoff went to 25.

4 So just like the assumed temperature changes, since it's
5 seeking a true balanced field, their takeoff rolls are longer,
6 sometimes quite a bit longer. And the same way the flap changes
7 affect the aircraft's performance. If you're doing a reduced
8 power takeoff at Flaps 25 and you lose a motor at V1, the airplane
9 is going to be a little bit more sluggish and a little bit more
10 challenging to takeoff to fly out than if the airplane is at Flaps
11 15 or Flap 5.

12 So we weren't aware of these changes when we certified the
13 system. We discovered them a couple of months after we certified
14 the system and then we worked with the carrier to try to --
15 essentially in a catchup mode to try and provide the pilots with
16 situational awareness and training for the differences.

17 As an aircrew program manager my largest concern was the
18 reduced power Flaps 25 V1 cut and the pilots getting some
19 experience with what that was like because it was quite a bit
20 different than what they'd been experiencing flying under OPC.

21 The company accommodated that request and this was -- this
22 would have been early winter of or the end of the year of 2017 and
23 the company actually flexed and put into the 2018 CQT training for
24 the pilots a Flaps 25, 73-800 V1 cut out of LaGuardia.

25 So they responded to this and they did provide the pilots

1 with training the following year. Ideally we would have had it
2 built in before the pilot started to fly it but we caught it, we
3 worked together and we made the training adjustment.

4 So in the initial certification process and in the first year
5 the changes to the assumed temperatures and the software program
6 being designed to truly seek a balanced field up to and including
7 a max power Flaps 25 bleeds off takeoff with a zero foot stopping
8 margin which is -- that's using everything the airplane pretty
9 much has available to you.

10 Those were the concerns that we had. The assumed temperature
11 change and the flap configuration differences, I feel like we've
12 done a good job of addressing those and so I'll stay on PWB.

13 Q. Okay.

14 A. There was a second piece though that was a concern and that
15 was when Southwest contracted with AeroData, AeroData had two
16 facilities, two facilities with identical computer systems, a
17 primary and a backup.

18 Southwest required AeroData to add a third facility, correct
19 me if I'm wrong, and so now AeroData had three facilities, three
20 locations with essentially identical computer systems available
21 for redundancy so that if one location went offline Southwest
22 wouldn't be caught with jets in the air or on the ground wanting
23 to go flying.

24 The AeroData told Southwest and us that the odds of all three
25 locations going down was 10 to the minus 49th. In November of '17

1 about 2 months after AeroData went active all three systems went
2 down and 163 Southwest jets were caught in the air with no way to
3 get AeroData help, so they had no way to -- no AeroData method to
4 get their landing performance.

5 So what they, what the pilots did, some of them went into the
6 aircraft operating manual where there's tabulated data from Boeing
7 available and they can calculate. It's conservative but they can
8 calculate it that way. Some of them did that.

9 Some of them called their dispatcher who -- since AeroData
10 was down system wide couldn't really do anything for them but they
11 also provided the tabular data and a few of the crews pulled the
12 OPC system back out, which was still on the jets and it was still
13 current, where they had been careful to make sure it stayed
14 current during the transition period, the 90 day transition
15 period.

16 Some of the pilots pulled the OPC out and used that to get on
17 the ground. Everybody got on the ground safely. Those were the
18 two issues in the first year with the system that brought concerns
19 up to us at the FAA.

20 Q. No concerns -- were there any concerns about the landing
21 calculation or landing portion of PWB system and the data it
22 produces --

23 A. No.

24 Q. -- initially?

25 A. No, there were not.

1 Q. Okay. Did the OPC system provide -- when you did landing
2 calculation did it provide a stopping margin?

3 A. It did.

4 Q. And if you ran them, if you ran them through the OPC and PWB,
5 same data, you'd get -- would you get the same stopping margin
6 ideally?

7 A. Yeah, it was very close and we spent months and we looked at
8 over 6,000 scenarios, ops engineering at Southwest and myself.

9 Q. Is the stopping margin as part of landing calculations or
10 landing performance calculations, is that a requirement that that
11 be -- that an airline produce that piece of data as part of their
12 landing performance calculations, a stopping margin?

13 A. Well, they're required to calculate it and verify so -- I
14 mean, the short answer is yes but there's a lot of nuances so
15 before the flight dispatch is required to verify that the jet can
16 land essentially within 60 percent of the available runway.

17 Q. Right, right. No, but for just the -- when they do the
18 inflight landing calculations and they get back -- either whether
19 it is done through OPC or PWB now, they get back the data, part of
20 the data says stopping margin and it has X number of feet, is it a
21 requirement from the FAA's point of view that whatever system they
22 use or however they calculate landing data that it come up with a
23 stopping margin or is that just a byproduct of the process but
24 it's not -- doesn't have to be there or --

25 A. I would have to, I would have to -- I believe I know the

1 answer but I -- I'm not comfortable answering without researching
2 it to be sure.

3 Q. Okay.

4 A. So I can --

5 Q. So what is stopping margin, what does that mean?

6 A. Well, that --

7 Q. When you get that number, 5,000 feet, 200 feet, 1,000 feet,
8 what is that?

9 A. So what that number is is the -- that is the estimate of the
10 aircraft stopping within whatever the -- with whatever the margin.
11 You know, the margin is going to be the runway that's left
12 available in front of the aircraft.

13 The considerations are the jet's going to cross the threshold
14 at 50 feet. The way that Southwest Airlines calculates it they're
15 expecting the touchdowns on point to be 1,500 feet under visual
16 conditions all the way down to a CAT II. If it's a CAT III
17 approach then the touchdown point is assumed to be 2,500 feet down
18 the runway.

19 So the assumptions are that the -- I mean, the crossing the
20 fence at 50 feet and, I mean, the assumption is that they're going
21 to -- the aircrew is either going to use the automatic breaking
22 system or they're going to use manual breaking. For the
23 calculation, the thrust reverser credit is not included in the
24 pre-flight calculation by the dispatcher and I'd have to double
25 check to see whether the inflight thrust reversers can be used for

1 credit or not but I believe they can for the actual real-time at
2 the destination calculation.

3 Q. Okay.

4 A. And then, of course, it looks at runway condition, right, so
5 you're going to look at the -- contaminated or not, if it's
6 contaminated whether it's grooved and crowned or not. Obviously
7 winds are a major factor. It's going to look at the winds.

8 Now one, one area actually that I'm not entirely positive on
9 with AeroData, I believe I know the answer to it but I -- again, I
10 would dig a little bit deeper to give you a concrete answer. But,
11 when AeroData runs landing performance it looks at steady state
12 crosswind or crosswind component that it calculates but it does
13 not look at the gusts.

14 And my understanding from talking to other APMs over the last
15 6 months is the two airlines that don't consider gusts and landing
16 calculations are Southwest and Alaska and the rest of the majors
17 they look at gusts, crosswind gusts as part of their landing
18 calculations too. So that's just one area that's a little bit --

19 Q. Okay.

20 A. -- potentially a little bit different here at Southwest and
21 at Alaska. But, again, I would like to, you know, absolutely
22 confirm that. I guess I would say I'm 90 percent sure that that's
23 the case.

24 Q. No, that's fine. Yeah, what -- when you were assigned this
25 task of certifying the system and bringing -- helping Southwest

1 bring it onboard and get it approved, what guidance did you have
2 from the FAA to follow to do that job?

3 A. The primary guidance that I used was the 8900.1, the
4 inspector handbook, and then there are a handful of advisory
5 circulars that provide guidance. I could provide you with a list
6 of those after we're finished if you would like.

7 Q. No, that's -- the 8900 -- so there's a section in there that
8 gives inspectors guidance for approving performance systems and
9 that --

10 A. There is a section in there that specifically discusses the
11 certification of an automated, computerized landing performance
12 system like AeroData.

13 Q. Okay.

14 A. And it includes options for the POI and in my case since I'm
15 representing the POI, it was for myself and for the POI, there's
16 options in there for how to handle whether it's an established
17 vendor or if it's a new vendor.

18 In the case of AeroData they were being used by several major
19 carriers before Southwest so they were an established vendor, so
20 there was a little bit different guidance for how we handled that
21 for the certification process. It goes through the process, it
22 explains how -- you know, like basically sort of the big picture
23 questions we need to be asking.

24 It provides guidance on the steps in the certification
25 process, required documentation. The evaluations including the

1 tabletop exercise, for example that we did. It provides guidance
2 on that when it's required and how to do it and we used all of
3 that to structure the certification process.

4 And then, like I said, there's advisory circulars and then
5 there's also in this case when you're talking about takeoff and
6 landing performance and contaminated runways, there's also, at the
7 time there were two SAFOs available.

8 Q. Part of the process of calculating landing performance
9 involves inputting the latest weather, the most recent current
10 weather from your destination. Are you aware of any -- can you
11 think of anything in the guidance that you had that specified or
12 gave any guidelines for how, when, what weather was supposed to be
13 used in that calculation?

14 A. So the guidance from the FAA recommends that the latest, and
15 the very latest available weather be used and that if -- and that
16 it -- and this is primarily the advisory circular, it discusses
17 that if you're operating at an airport where the conditions are
18 changing rapidly that you should be -- you should take that into
19 consideration and that you may want to -- so if the weather
20 reports are updating and changing frequently, more frequently than
21 the normal top -- you know, once an hour, twice an hour, for
22 example, with ATIS, then you may need to delay your arrival or
23 your takeoff in order to fully assess.

24 The guidance provides specifics about when the FAA recommends
25 you not operate and if you include the SAFOs there's quite a bit

1 of information since we've gone to TALPA now, the takeoff and
2 landing performance system that we're using with the 1 through 6
3 codes and so forth.

4 There's a little bit -- even a little bit more information
5 now and, in fact, just recently Boeing changed their guidance and
6 their flight crew training manual or operating manual, I can't
7 remember which one it was, basically just telling the operators
8 that their wind limitations do not -- when they provide wind
9 limits in their source documents they don't consider gusts, I
10 believe is what the new guidance says from Boeing.

11 So there are -- the answer to your -- short answer to your
12 question is, yes, the guidance provides us with a comprehensive
13 way to evaluate the operator's model and how the FAA recommends
14 the operator does these calculations.

15 There are some regulatory absolutes and then there's a whole
16 lot of recommendations. So when we worked with Southwest on the
17 AeroData transition I can speak with confidence that all of the
18 regulatory requirements were completely covered in the system.

19 When it comes to some of the recommendations from advisory
20 circulars and so forth, as with any other program, certification
21 program by the carrier, it's a give and take process and so there
22 were some recommendations that they incorporated and there are
23 some that didn't meet their model of the carrier's operation so
24 they really didn't apply. And then there were some that, you
25 know, they did safety risk assessments on and chose not to

1 incorporate.

2 A change from OPC to AeroData is that in the OPC the pilots
3 were receiving the ATIS from the airport and entering that into
4 the OPC for the landing performance. When they -- when Southwest
5 went to AeroData, AeroData pulls the METAR Data and it uses that
6 for the landing calculations.

7 So in -- and this is one of the areas that we discussed
8 during the certification process with Southwest and Southwest
9 agreed. And Southwest provides guidance in their operating
10 manuals to their pilots that if they're arriving at an airport or
11 if they're anticipating departing an airport where the conditions
12 are changing rapidly, that the crew in AeroData in the interface
13 through the flight crew or the flight management computer, the
14 crew has the ability and the company tells them to manually enter
15 the very latest ATIS information that they have.

16 So really the only time that the crew is directed by the
17 company to manually enter the data and not allow it to run off of
18 the METAR Data is when the conditions are changing rapidly and it
19 could be -- there could be a hazard there, so they tell the crews
20 to enter the information from the ATIS manually.

21 Q. And that guidance exists in a Southwest Flight Ops Manual?

22 A. That's in a South -- correct.

23 Q. Is that correct or is it in the AOM?

24 A. It's in the Aircraft Operating Manual.

25 Q. AOM?

1 A. Yeah.

2 Q. Okay.

3 A. For both. So Southwest has a NexGen AOM and a MAX AOM and
4 that information is the same in both.

5 Q. And was that -- did you say that was an issue or a topic that
6 you looked at as part of the certification of the system was how
7 that would work when there was changing conditions?

8 A. Right.

9 Q. And as far as regulatory requirements they were there?

10 A. Yes.

11 Q. On this -- in this realm?

12 A. Both regulatory and they were following the advisory circular
13 recommendation.

14 Q. Okay.

15 A. Because they were providing with the pilots -- they provided
16 their pilots with a way to interact with the system to put
17 additional or more restrictive weather in if the conditions were
18 changing and degrading at the field in between when the METARs
19 were being published.

20 Q. Did you have any involvement in Southwest's -- in the
21 creation or the initial approval of the training that they came up
22 with to train their pilots on the PWB system?

23 A. Yes.

24 Q. And was this, what we just talked about, the manual input of
25 weather and rapidly changing conditions, was that part of the --

1 do you recall if that was part of the training that made it to
2 whatever the final product was all the pilots got on the system?

3 A. I don't recall if that was in the actual. So the way that
4 the pilots were trained was through a computer based training,
5 Level B, computer based training. And I took that training 2
6 years ago and I just, off the top of my head, I don't recall.

7 It would be very easy to find out but I don't recall if that
8 was specifically addressed or not. However, I do know that it is
9 specifically addressed in the aircraft operating manual.

10 Q. Okay.

11 A. The way that Southwest has that setup in their manual for
12 their pilots is that in the chapter on PWB in their aircraft
13 operating manuals they take them -- they take their pilots through
14 pre-flight to post-flight and they don't -- in addition to
15 providing verbal descriptions of what to do they've got actual
16 flight management computer screenshots all the way through the
17 manual that show them what they're looking at and what their
18 options are and what they should be doing.

19 Q. So you have no concerns, had no concerns at the time of the
20 approval of the program and the training site that this was not
21 being covered adequately, this particular realm, landing
22 performance and weather? You were -- nothing, do you recall
23 anything, any concerns you had or issues that came up during that
24 initial approval and development or the training for the PWB?

25 A. I don't recall any specific concern. I mean, so I recall we

1 discussed it and I recall that Southwest addressed it in their
2 manuals and in their guidance to their pilots. I don't recall
3 whether -- I mean, I can tell you that I don't recall us having a
4 specific conversation about this needing to be part of the CBT per
5 se and I don't recall if it was in there or not.

6 But I also don't believe that I had concerns about that --
7 this particular piece needing to be part of the computer based
8 training. If you look at the actual PWB system and you look at
9 the interface it's extremely -- this piece of it is particularly
10 straight forward and pretty simple.

11 I mean, it literally just -- you pull up the ATIS and you
12 just enter in the temperature and the dew point and the winds and
13 the altimeter and you've now overridden that METAR Data that's
14 coming in and it's going to use your numbers.

15 MR. FRANTZ: Okay. Thanks. I'm going to take a break and
16 see if anybody else has any questions so --

17 MR. REES: Okay.

18 MR. FRANTZ: I'll give it to Sathya for a few minutes.

19 DR. SILVA: All right. How are you doing, do you need a
20 break?

21 MR. REES: I'm okay so far --

22 DR. SILVA: All right.

23 MR. REES: -- but I don't know if anybody else does.

24 DR. SILVA: All right, we'll keep trucking. Just holler.

25 BY DR. SILVA:

1 Q. So going back to the assumptions that went into the PWB
2 calculations, do you have any idea what kind of braking
3 assumptions were -- went into that calculation? Are you assuming
4 a time in which auto braking begins or manual braking begins or
5 transition to manual braking, do you recall anything along those
6 lines?

7 A. Well, so -- okay. So AeroData provides the crew with the
8 recommended auto brake setting for that field based on all the
9 information that it's gathered, so that's going to include your
10 weather, of course, the runway length, the terrain, all that kind
11 of stuff because you have to be able to clear, you know, clear the
12 mountains, for example, if you go missed approach and all that
13 sort of thing.

14 All that's being calculated by AeroData. The crew gets a
15 recommended or an AeroData auto brake setting which they set and
16 then the -- I mean, you know, basically the auto brakes, once they
17 get weight on wheels -- now, going to put me on the spot for
18 exactly what the triggers are for auto brakes to activate.

19 Q. I can find that out.

20 A. But anyway, so that's it.

21 Q. Yeah.

22 A. You know, it calculates it, it tells the crew which auto
23 brake setting to use and they use that setting anytime there's any
24 type of a weather issue. So, in my experience with Southwest, the
25 only time that I've seen the crews not select an auto brake

1 setting and just rely completely on manual braking is when they've
2 got a dry, clean runway and a long runway and they're in visual
3 conditions and so they -- sometimes they'll land manual braking
4 under those circumstances.

5 But anytime there's any kind of a contaminated runway or
6 weather conditions or a short runway or anything like that, the
7 crews 100 percent of the time in my experience are going to use
8 the auto brake system for that and AeroData will tell them which -
9 - it will actually tell them which auto brake setting they need to
10 use or it will give them a line of dashes if they're overweight
11 for landing, if it can't come up with an auto brake setting that
12 will get them stopped.

13 Q. So do you know if it assumes that the auto brakes are active
14 the whole rollout or up to a certain speed or down to a certain
15 speed?

16 A. Normally when -- as the airplane is approaching 60 knots
17 normally the pilot flying is going to be coming out of thrust
18 reverse by 60 knots and normally if the pilot hasn't done it
19 they'll disengage the auto brakes at that point. Sometimes
20 they'll disengage them a little bit before that. But in the 80
21 knot range, in the deceleration is normally when the pilots
22 disengage the auto brakes.

23 Q. Okay.

24 A. Does that answer your question?

25 Q. Yes, it does. Thank you. Okay. So we were talking about

1 stopping distance, stopping margin, sorry. I think you were
2 talking about it with respect to takeoff, you know, Marvin brought
3 up land calculations.

4 Was there a buffer required for landing stopping distance
5 before PWB or was that always you have to be positive?

6 A. For landing under -- I believe under both OPC and AeroData
7 landing just has to be a positive stopping margin.

8 Q. Okay.

9 A. I don't recall any fixed distance.

10 UNIDENTIFIED SPEAKER: Landing has the 15 percent pad on top
11 of it also.

12 DR. SILVA: Okay.

13 MR. REES: The which now?

14 UNIDENTIFIED SPEAKER: 15 percent pad on it.

15 MR. FRANTZ: Sorry, Jeff, we just want to interview you.

16 UNIDENTIFIED SPEAKER: I'm sorry.

17 MR. FRANTZ: Yeah. We just want -- and that way if you don't
18 know, if you're not sure, that's fine but --

19 MR. REES: Okay.

20 MR. FRANTZ: -- we can -- you know, we can find that stuff
21 out if we need to but otherwise --

22 MR. REES: Understood.

23 MR. FRANTZ: It's okay, that's okay.

24 MR. REES: So the -- in the dispatcher's preflight
25 calculation the regulation requires them to consider a 15 percent

1 margin. The FAA recommends that the crew calculating landing
2 performance in real time uses that same margin but to the best of
3 my knowledge it's not a regulatory requirement for a stopping
4 margin when it's actually calculated in flight by the crew.

5 It's recommended that they keep a 15 percent buffer but it's
6 not regulatory. I don't believe that there was any change in
7 landing performance between OPC and AeroData --

8 DR. SILVA: Okay.

9 MR. REES: -- that change in curtailments and buffers were
10 all on the takeoff side as far as I know.

11 BY DR. SILVA:

12 Q. So between OPC and PWB from what I understand that you said,
13 there's not a requirement for that 15 percent buffer but it was
14 recommended and from your knowledge that wasn't in place for
15 either of those systems?

16 A. That is correct, that's the way I understand it.

17 Q. Okay.

18 A. That there is definitely, that I know of, no regulatory
19 requirement. There is a recommendation from the FAA, one of the
20 SAFOs and I don't believe that the OPC or AeroData includes the 15
21 percent buffer. What Southwest does do that's a little different
22 than other carriers, is most carriers use an intended point of
23 landing of 1,000 feet which is what -- which coincides with the
24 way that the FAA marks the runway, instrument runway.

25 They're going to put the two white thick boxes are at 1,000

1 feet for the intended point of touchdown. Southwest uses 1,500
2 feet as their intended point of landing so that the effect of that
3 is that there's potentially a 500 foot buffer there to the
4 positive side for Southwest, in other words, their landing
5 calculations are generally going to be 500 feet more conservative
6 than a carrier that's not doing that.

7 Now the only way to realize that 500 foot benefit is if the
8 crew touches down at the 1,000 foot point --

9 Q. Right.

10 A. -- which sometimes crews do and sometimes they land outside
11 of the landing zone.

12 Q. Okay.

13 A. But that's sort of a separate issue.

14 Q. Okay. Do you recall, in the evaluation scenario where you
15 did look at changing the weather inputs manually, do you recall
16 what that scenario was or details of that scenario? When did you
17 get an update of the weather, how long did it take that kind of
18 stuff?

19 A. So there's -- I need to unpack that a little bit.

20 Q. Okay.

21 A. So in the certification process there's multiple
22 conversations between myself and the carrier about a variety of
23 concerns that we had along the way as we were going through this
24 process. At some point along that certification process I had the
25 conversation with Steve Crystal and Gunther Herwig about what

1 weather AeroData was using, when it was getting it and whether or
2 not the pilots were going to have access or interface to be able
3 to update that, okay.

4 And the answer was that, yes, the pilots would have the
5 ability to do that and that there would be guidance in the manuals
6 to teach the pilots that that --

7 Q. Okay.

8 A. -- you know, that that was available and that they should be
9 doing that under, as I said before, conditions where the weather's
10 changing rapidly, which in fact Southwest it is in their manuals
11 and their pilots generally do that.

12 In the certification process we had the formal tabletop
13 event, which is essentially the -- a test of Southwest's entire
14 system for this AeroData transition and I can go back for you and
15 I can get the specific scenarios we used in the tabletop but I can
16 tell you with confidence that the scenarios that we used, some of
17 them included poor weather, but I did not design into any of the
18 tabletops a specific scenario that would push the pilots to do an
19 ATIS manual weather entry override of the METAR.

20 Q. Okay.

21 A. That wasn't something that we were that concerned about in
22 the process.

23 Q. Okay.

24 A. And it's certainly not something that's required by the
25 guidance.

1 Q. Okay. And from what your understanding of their procedures
2 are, is there any, is there any time or I'm going to say deadline
3 in the approach where you would make these assessments? So, let's
4 say you got an update on weather at 1,000 feet, do you know if
5 there's any guidance that Southwest has on updating that weather
6 or choosing to go missed approach?

7 A. So the -- one of the concerns that we have had in the CMO
8 based to a large extent by conversations with line pilots is that
9 the AeroData System interface. So if I put myself in the seat and
10 I'm the pilot who's monitoring and I'm responsible for operating
11 the FMC to do this interaction between the jet and AeroData to get
12 my landing performance information, the actual process of my
13 interaction with that flight management computer is more
14 cumbersome than the OPC was.

15 So I could pull that OPC out and the screens were very simple
16 and it was very quick. AeroData just some of the basic, just the
17 basic realities of it, so I'm going from a tablet that is this big
18 to a flight management computer that's down by my left knee in
19 this case with a monochrome screen, okay, and with very few
20 exceptions Southwest doesn't have ACARS printers in their
21 aircraft.

22 So, for example, the takeoff, just to shift gears but just to
23 try and help explain.

24 Q. Sure.

25 A. The takeoff report when I'm getting ready to leave the gate,

1 I might have to go through five, six, seven, I think up to nine,
2 potentially nine screens, pages on that monochrome screen. It's
3 not that involved for landing but it's more involved than just the
4 tablet.

5 It's a little bit more difficult to see and the interaction's
6 a little bit more difficult. So it's a little bit slower than the
7 OPC was and I've heard line pilots complain about that from time
8 to time or especially early on, they've adjusted I think largely
9 to it now.

10 But I do believe that there's -- I believe that the reality
11 of Southwest flying with AeroData versus flying with the OPC and
12 this is from conversations with line crews over the last 18 months
13 to 24 months, I do believe that there is sort of a general feeling
14 or a recognition among most of the line pilots that AeroData is a
15 little bit more cumbersome and difficult to operate than OPC was
16 and that the point at which the pilots are going to decide it's
17 just too hard to update, you know, to do this, this close to the
18 airport, that point is different.

19 Q. Okay.

20 A. So if they were comfortable pulling the OPC out when they're,
21 you know, finishing downwind, getting ready to turn base leg,
22 AeroData might be at the beginning of downwind or just before they
23 get down to that last altitude before it. So there is a little
24 bit of a difference there and I do think it's a little bit more
25 difficult and it requires more communication between the pilots.

1 And so, I mean, there is definitely a little bit of a
2 difference there, I mean, so I don't know if that's answering your
3 question?

4 Q. So from what I'm hearing any changes that the pilots would
5 make on when they decided to abort an approach or continue an
6 approach based on changing weather is really based on their own
7 assessment, there's no guidance specifically provided by Southwest
8 for when?

9 A. The guidance that Southwest provides in their aircraft
10 operating manuals is that the crew will run the landing
11 performance just prior to top of descent.

12 Q. Okay.

13 A. So that's the point of which they have to do it.

14 Q. Right.

15 A. Now that doesn't prevent the crew from running it again or
16 several more times as they get in closer to the airport if the
17 conditions are changing.

18 Q. Okay.

19 A. But in their normal flow on a normal flight the Southwest
20 crew is going to calculate the landing performance prior to top of
21 descent.

22 Q. Okay. And we've used that term the conditions are changing
23 rapidly. Do you have a definition for what that means?

24 A. I would say that -- I mean, you're asking me for a personal
25 definition or a regulatory definition?

1 Q. If there is a regulatory definition, let's start with that
2 and then let's move on to what your expectation would be.

3 A. Okay. So to the best of my knowledge there's not a
4 regulatory definition of rapidly changing conditions; however, air
5 traffic control will and that might be an interesting place to
6 look is what their requirements are for when they have to publish
7 a new weather update because that would kind of -- so, in my
8 experience, I would consider rapidly changing conditions when the
9 ATIS from the airport is changing every 30 minutes or less.

10 Q. Okay.

11 A. That would be pretty rapid changing. Normally, you know, on
12 a normal decent weather day you're going to get a weather update
13 about once an hour and it's going to stay relatively consistent.

14 Q. Right.

15 A. But when you start getting into the weather updates are
16 coming every 30 minutes or every 15 minutes certainly then that's
17 -- you need to be paying attention because those things are
18 changing pretty quick.

19 Q. Okay. So just to put that in another way, would you say that
20 anytime there's a SPECI in between the hour METARs, would that be
21 rapidly changing in your opinion?

22 A. I mean, that's definitely an indicator.

23 Q. Okay.

24 A. I mean, part of it depends on the magnitude too of the
25 changes

1 Q. Okay. Okay. The last thing I wanted to talk about was that,
2 the stopping margin and anything positive for that stopping
3 margin. And this, again, may come down to your professional
4 opinion. Is there an appropriate number that -- to use?

5 Let's say you had 10 feet of a stopping margin is that
6 operationally equivalent to 100 feet, 1,000 feet, does that
7 question make sense?

8 A. I'm thinking.

9 Q. Okay.

10 A. This may not be a very satisfactory answer but it's -- you
11 know, from a pilot's perspective it's extremely situationally
12 dependent. For example, if I have 100 foot stopping margin and it
13 is clear, it's a beautiful day, the winds are light and I've got a
14 10,000 foot runway and I have no mountains around the airfield,
15 that's one scenario.

16 If I'm going into an airport that has mountainous terrain
17 around it and I've got rain and winds that are variable and
18 changing and strong and I have to be concerned about standing
19 water on the runway, then my personal acceptable stopping margin
20 is going to be different.

21 So I might -- quite frankly, I'd be fine with 100 feet or
22 better on a dry runway assuming that I'm confident in my -- the
23 weather information that I have and I'm now talking about some of
24 the thing you get into when you fly international, you go into
25 some of the airports where you have language issues and you may be

1 getting manual weather and all that kind of stuff can make it more
2 difficult.

3 But if I have good information and I am confident in the
4 information and the conditions are favorably, it's good weather, I
5 think I would be comfortable going down to 100 foot stopping
6 margin.

7 If I had weather that was raining enough to have standing
8 water on the runway, I had concerns with winds, potentially wind
9 shear, those types of things, I would be looking for closer to
10 1,000 foot stopping margin under adverse conditions.

11 And then the other thing and this is -- it's a recommendation
12 in the advisory circular and as of now it's not a policy at
13 Southwest but there are pilots at Southwest who do it, but what I
14 was taught in the military was for every landing that we
15 calculated a rejected landing point.

16 So, for example, if we calculate that the required runway to
17 land is 3,800 feet and I'm landing on an 8,000 foot runway then if
18 I'm not -- I mean, if I'm not on the ground, all three wheels on
19 the ground and the autobrakes are activating and I'm going to pull
20 the engines into reverse, by 4,000 feet remaining I need 3,800 to
21 stop so absolutely have to be on the ground by 4,000 feet
22 remaining. So if I'm not on the ground by 4,000 feet remaining
23 I'm executing the missed approach.

24 So we would define that and brief it before we ever went into
25 the airport to land.

1 Q. Okay.

2 A. That is not -- that is a recommendation from the FAA under an
3 advisory circular, it's not a regulatory requirement, but it is
4 another defense that the crew can build in to help avoid an
5 overrun.

6 Q. On that topic of recommendations, is there any kind of
7 recommendation for a stopping margin that's beyond zero feet?

8 A. I mean, there's requirements for flight planning, there's
9 recommendations. The recommendation the FAA provides in advisory
10 circulars or SAFO or both is to honor the 15 percent.

11 Q. Okay.

12 A. So the recommendation is to use that 15 percent buffer.

13 Q. Okay.

14 A. That is not regulatory but it's a recommendation in FAA SAFOs
15 and advisory circulars.

16 DR. SILVA: Okay. I understand. Okay. That's it for me,
17 thank you.

18 MR. REES: You're welcome.

19 MR. FRANTZ: Eric, do you have any questions for us? Please
20 speak up.

21 MR. WEST: I have a loud voice, actually I'll speak loudly.

22 MR. FRANTZ: Oh, yeah.

23 BY MR. WEST:

24 Q. I'm just an old country boy. So I have a couple questions.
25 An advisory circular to the airlines, what does that mean to the

1 airlines, do they look at it as guidance, do they look at it as
2 requirement?

3 A. They definitely don't look at it as a requirement.

4 Q. Okay.

5 A. I believe most carriers look at it as a recommendation;
6 however, if you look at older advisory circulars, advisory
7 circulars that are more than 5 years old, the way that the
8 advisory circular will start out is it will say this is one way
9 but not the only way to comply with this and it might be one or it
10 might be a list of regulations, okay.

11 However, if the operator chooses not to follow this advisory
12 circular they're responsible for demonstrating to the CMO, to the
13 POI in my case, that their alternate means of addressing the topic
14 of the advisory circular is as safe or safer.

15 So what the advisory circular does for the FAA and for the
16 operator is it establishes a benchmark of minimum safety around
17 whatever that topic and regulatory guidance is and if the carrier
18 chooses not to incorporate the advisory circular as if it were
19 regulatory then the carrier's responsible for demonstrating that
20 their alternate means of addressing the issue that the advisory
21 circular's referring to is as safe or safer than if they were to
22 follow the advisory circular guidance.

23 Q. Do you find that Southwest chooses to follow guidance such as
24 advisory circulars in its operations?

25 A. It's inconsistent. Sometimes they'll incorporate the

1 advisory circulars and sometimes they'll utilize other procedures.

2 Q. Does the same go with the Federal Aviation Regulations, is
3 that consistent or inconsistent?

4 A. (No audible response.)

5 Q. So pausing gives me pause to --

6 A. I'm trying to think about the best way to answer that
7 question.

8 Q. Okay.

9 A. This is how I, this is how I would answer that; I'm going to
10 answer that question. In my experience with Southwest once
11 Southwest and the FAA agree on -- get to a point of agreement on
12 what a regulation requires then Southwest will comply with the
13 regulation.

14 There are times when Southwest and CMO don't agree on what a
15 regulation requires and there can be operating periods where
16 that's being discussed and they're -- you know, in the FAA's
17 perspective they're operating non-compliant to that regulation;
18 however, we're still trying to come to a common agreement on what
19 the regulation means.

20 This is where we typically have to get a legal interpretation
21 as the FAA.

22 Q. Okay.

23 A. So it wasn't -- it's not a clean, straight forward answer to
24 your question but in my experience with Southwest once we get to a
25 common agreement on what a regulation means or says then Southwest

1 will come into compliance with it.

2 But there are regulations that we don't agree on what they
3 say and that can lead to operating where we're not in agreement
4 for periods of time.

5 Q. All right. I wanted to talk to you a little bit about the
6 process that you went through on the PWB and how it relates to
7 dispatch. It starts out with the Swift that applies to the
8 dispatch folks, is that correct?

9 A. That's their software system, yes.

10 Q. Okay. That's their system?

11 A. Their software system.

12 Q. Software system?

13 A. Yeah.

14 Q. Okay. So let me get this straight. So the dispatch folks
15 they get this information or in this particular case and we'll
16 stick with Burbank, there was a known weather system in the area
17 the airplane was going to.

18 They left I believe it was Oakland, am I correct?

19 A. I've heard --

20 Q. Okay.

21 A. -- I've heard Vegas too so I'm --

22 Q. I believe it was Oakland, okay. So they were dispatched out
23 of Oakland, they were going to Burbank and that whole area, I
24 believe, was -- there was weather in that whole area, if I'm not
25 mistaken. So dispatch cut loose the airplane and that was it, I

1 think. They had no interaction with that aircraft the rest of the
2 flight to the best of my knowledge.

3 So the next step in the procedure is to go to Otis and that's
4 where the interaction, the gate is concerned. And here's where
5 I'd like to talk a little bit about how they deal with the weight
6 of the aircraft that we talked a little bit about the performance
7 of the aircraft, how to determine the weight of the aircraft.

8 Because I'm looking at this airplane coming in now on the
9 approach and we're talking about it landing long and so forth.
10 Nobody's talked about the weight of the aircraft and the speed of
11 the aircraft and so forth, and I'm watching this thing as it
12 approached Burbank.

13 So how did they determine when they load the aircraft how
14 much weight is on the aircraft, do you have any idea how they load
15 the aircraft?

16 A. So the Southwest procedure is that the -- and it's just now
17 in transition.

18 Q. We can forget about the fuel, by the way.

19 A. Okay.

20 Q. Okay.

21 A. Well, the fuel, okay. So, okay, we'll forget about the fuel.
22 The procedure in effect at the time of the Burbank
23 incident/accident, don't know which it is yet.

24 DR. SILVA: It's an incident.

25 MR. WEST: Right.

1 DR. SILVA: I just got confirmation.

2 MR. WEST: We'll call it an incident or event.

3 MR. REES: So at that time the Southwest procedures in place
4 were that the ramp employees would manually count the bags as
5 they're loading them onto the jet. The cargo on the aircraft, if
6 it's originated in Oakland, then the ramp crew in Oakland is going
7 to enter that weight.

8 If the aircraft is hauling cargo that's been put on at a
9 previous station they're just carrying forward a calculation for
10 what that weight is. I mean, obviously they're not going to pull
11 the cargo off and weight it and put it back on, so they're
12 carrying that number forward.

13 And then, so then the ramp lead of the ramp employees, he's
14 going to talk to the baggage handlers, he's going to fill out a
15 form called a cargo bin loading schedule, CBLS, that's going to
16 show the number of bags and the distribution in the three sections
17 in the forward cargo compartment and the three in the aft cargo
18 compartment and any cargo that either -- as I said, either
19 originated in Oakland or was a carry through, a fly through.

20 Q. Okay.

21 A. Obviously also you have through bags, passengers that have
22 come from -- if they've come on a previous flight and they're
23 going to Burbank, in this case and they came from somewhere else.

24 Q. And I'm not sure what the previous was.

25 A. Right. So if there were passengers who were originated

1 before Oakland they're going to stay on the jet, their bags are
2 going to stay on the jet. So the through bag count, all those
3 numbers, their ramp lead is going to put all that on the cargo bin
4 loading schedule and then send that up to the operations agent.

5 The operations agent is going to manually enter all of those
6 numbers into Otis, also going to manually enter in the fuel
7 onboard, they'll ask the crew for the fuel after they've been
8 fueled. And they enter all that in at Otis and then the scanner
9 collects the passenger boarding scans and that tells them that and
10 the through passengers tells them how many passengers they've got
11 for packs weight.

12 Southwest operates under average passenger weight op specs.

13 Q. Okay.

14 A. They operate under average bag weight op spec and they
15 actually have an op spec for average aircraft fleet weights as
16 well, so their 700s have a fleet weight and their 800s have a
17 fleet weight. So with those three ops specs in place, I mention
18 that because those are all part of the internal software
19 assumptions that Otis and AeroData are going to be using or
20 AeroData is going to be using, it's got those average weights and
21 so forth.

22 So the ops agent is going to manually enter all those points
23 of data, it's going to go to Phoenix to AeroData and the AeroData
24 System takes that, it's going to take the flight plan that comes
25 to it via Swift from the dispatcher. That's all going to come in,

1 it's going to run calculations off of all that and then it's going
2 to provide the output, which will be your release and your weather
3 and your takeoff and landing report and your load -- weight and
4 balance will be your load sheet.

5 So depending on how accurate the cargo bin loading schedule
6 is by the ramp employees that's -- and then depending on how
7 accurately the ops agent manually enters all that data into Otis
8 that is going to result in what your accuracy is of your weight
9 and balance, the distribution, your CG, your nose up trim, your V
10 speeds, your balanced field, runway remaining or not, second stage
11 climb, et cetera.

12 Q. Okay.

13 A. And just on that for a second. Because of how, because of
14 how precisely AeroData is calculating takeoff performance
15 Southwest was no longer able to use the standard single engine
16 departures out of most airports because of terrain, second stage
17 climb and second stage climb train clearance.

18 So with the advent of AeroData the Southwest Flight Crews are
19 provided with -- sometimes they can fly the standard departure and
20 then they've got three separate single engine types of single
21 engine departures that they have to be able to fly depending on
22 the airport and it's all based on terrain clearance, so they've
23 got these three different types of single engine departures that
24 the crew's responsible for briefing and executing if they lose an
25 engine and, again, depending on the terrain that drives how

1 complicated that can be as far as tuning nav aids down low and all
2 those sorts of issues that can be a challenge.

3 So that's another change from OPC to AeroData that
4 potentially loads the crew up, right, because that's going to
5 affect them on an engine failure, on a takeoff, it's also
6 potentially a factor on a missed approach.

7 Q. Was that changeover confusing, did you find from the crews at
8 all, did you find it confusing, especially that time lapse where
9 they were utilizing both systems?

10 A. Well, I'll take it as two different questions. So the crews,
11 I would say that in general the feedback from the crews was that
12 it was a more complicated system to operate certainly than OPC, so
13 it took an adjustment. I think it's reasonable to say that there
14 was some confusion. I don't know if it's -- I don't know how to
15 qualify that but there was some confusion when they switched over
16 to AeroData.

17 I think where the -- one of the significant issues for the
18 flight crew, specifically the captains was, that I mentioned the
19 change in the assumed temperatures. The other thing that
20 Southwest changed with AeroData is they removed the captain's
21 option or authority to affect flap settings, affect assumed
22 temperature settings, to -- under OPC if I'm a captain at
23 Southwest and my first officer runs my takeoff performance for
24 LaGuardia and we've got an assumed temperature of X degrees and I
25 had a 200 foot stopping margin and I wasn't comfortable with that,

1 I could tell the FO, let's use a different assumed temperature or
2 let's use a different flap setting, or let's go bleeds off for the
3 takeoff.

4 That flexibility with this transitioned AeroData at Southwest
5 removed that flexibility from the captains. So with AeroData the
6 crew receives the AeroData solution. If it's a reduced power
7 takeoff the one input that the crew has is the captain can request
8 a max power. He can basically send an override to AeroData,
9 request a max power takeoff. Other than that the captain has no
10 input into the takeoff performance.

11 So if there's -- if AeroData gives me a max power takeoff and
12 the bleeds are on and I have a 19 foot stopping margin at Midway -
13 - this is actually a real scenario I saw a couple months ago -- so
14 I can under OPC, the captain, I can tell the FO, we'll just go
15 bleeds off, and that will give us 200 foot, 250, 300 foot more
16 stopping margin.

17 With AeroData that's no longer an option. And the captain
18 can't call his dispatcher and tell the dispatcher I want you to
19 redo AeroData bleeds off. There's no option for either the
20 captain. So the captain has two choices, he makes that max power
21 bleeds on takeoff with a 19 foot stopping margin or refuses to
22 operate the flight.

23 Q. You mean he can't just turn the bleeds off?

24 A. No. Well, no, because you can't legally take off, the bleeds
25 off using bleeds on performance data because you don't know what

1 you're -- you don't know, you know, you wouldn't know your speeds.

2 You can't -- it's not an option.

3 Q. I see.

4 A. So, you know, there was confusion around that --

5 Q. I see.

6 A. -- when the transition happened because you had the impact of
7 these higher assumed temperatures with the increased flaps for
8 takeoff. All of that was resulting in longer duration takeoffs,
9 so they're on the runway longer because AeroData is giving them a
10 true balanced field if it can.

11 So you have that difference that they're -- it's not --
12 they're not accustomed to, they're on the runway quite a bit
13 longer than if they have to brief that if they lose an engine that
14 they've got these different types of single engine departures,
15 they've got to prepare for that. And then the captain has no
16 longer got the authority to make adjustments to the take off in
17 order to improve the stopping margin, for example, if he's
18 concerned about that, that's probably the best example.

19 So all of those different things together created some
20 confusion during the first few months of the transition, I think
21 maybe a little frustration, all things that I think would be
22 normal you'd expect them. I don't know if that sort of answers
23 your question or not, I mean?

24 Q. No, no, that's fine. That's perfect.

25 UNIDENTIFIED SPEAKER: You're going to hate me, but we've

1 been going on an hour and a half, can we take a short break --

2 MR. WEST: Oh, sure.

3 UNIDENTIFIED SPEAKER: -- for across the hall?

4 MR. WEST: That's fine by me.

5 UNIDENTIFIED SPEAKER: I was just going to suggest that.

6 UNIDENTIFIED SPEAKER: Great idea.

7 (Off the record.)

8 (On the record.)

9 BY MR. WEST:

10 Q. Okay. I'll begin, I guess. Continuing on with, something
11 you mentioned earlier, about this whole system and correct me if
12 I'm wrong but did you mention that the decision to switch was cost
13 -- the decision to make the transition from the OPC to PWB by
14 Southwest was cost driven, is that correct?

15 A. Well, my understanding from our -- from the CMO's side of it
16 was --

17 Q. Right.

18 A. -- that it was driven by a couple of issues. One of them was
19 cost; one of them was growth, international growth.

20 Q. Okay.

21 A. The other was that the OPCs themselves were wearing out, they
22 were old computers and they were wearing out and there wasn't
23 really an easy, an apples to apples change available. So those
24 were the reason that we were given at the start in 2015.

25 After the system went fully live in the fall of '17 and then

1 we recognized the changes that I've been outlining throughout the
2 interview, it became obvious that cost was also a factor because
3 clearly the company is saving money by operating the aircraft in
4 the fashion that they're operating them presently with the
5 differences, right. So there's definitely a financial benefit to
6 it.

7 Q. Right.

8 A. In fuel savings, engine wear savings.

9 Q. You mentioned too that there this was not the only airline
10 that utilized this AeroData System. Do you know if the other
11 airlines by any chance --

12 A. JetBlue uses it for sure.

13 Q. Okay.

14 A. I mean, they were using it before Southwest made the
15 transition. That's the only one I'm sure of.

16 Q. Okay.

17 A. I've also heard that UPS uses it.

18 Q. Okay. So we have some other airlines too --

19 A. There's some other airlines using this.

20 Q. -- utilizing the system too? Okay, great. I wanted to ask
21 you if you were aware by asking some of the other crews, when you
22 talked to them, if you were aware of any -- when they punched in
23 data to the system and we know that they don't have printers, are
24 you aware of a lag in getting a response back from AeroData in
25 Phoenix?

1 A. There is a wait.

2 Q. A wait period?

3 A. There is a wait period.

4 Q. Is there an average time that they usually wait, from what
5 you've heard from the crews?

6 A. I don't -- I can't think of a time. We did have an issue
7 initially with Southwest was experiencing ACARS or liability
8 issues.

9 Q. I see.

10 A. So if the ACARS is inoperative then what the crew, the
11 degradation system, the way that the crew, the company policy is,
12 the iPad that the pilots have has a software -- approved software
13 on it that absolutely mimics the FMC screens and it looks just
14 like the FMC and they, the pilots can use that software on their
15 iPad and it will do exactly what the flight management computer
16 does and it goes through either the internet on the jet, if it's
17 got the --

18 Q. Onboard Wi-Fi?

19 A. -- onboard Wi-Fi.

20 Q. Okay.

21 A. The backup is that the iPads have got a cell, a cellphone
22 line capability built into them, so if the Wi-Fi is unavailable,
23 if there's at maybe an international airport where there's no Wi-
24 Fi available and ACARS isn't working, then the cellphone
25 capability of the iPad is their other way to access and send

1 information back and forth to AeroData.

2 So those are the ways that they can access AeroData. Clearly
3 there was, there was and there remains a difference in the speed
4 with which the information is available in OPC versus AeroData.
5 The process of sending information through ACARS, a request
6 through ACARS to Phoenix and getting a response back certainly
7 takes -- you know, it can take several minutes whereas the OPC is
8 going to do it as fast as you can enter it.

9 So there is a difference and it takes longer to get the
10 information back and I -- I mean, and I have heard at different
11 levels from crews, some complaining about that, that lag --

12 Q. Okay.

13 A. -- because it's an adjustment for them.

14 Q. Are there any training manuals or manuals that you had to
15 approve or accept regarding the AeroData System?

16 A. There are and I can give you a comprehensive list if you give
17 me just one second.

18 Q. And while you're looking for them, I'm just going to ask you
19 if AeroData actually wrote these manuals or if Southwest tailored
20 them to their specific needs?

21 A. As far as I know the manuals were all written by Southwest.
22 I don't believe AeroData did any technical writing for Southwest
23 at all.

24 Q. Okay. That's a good thing to know.

25 A. And as far as the manuals, there's at least six that had to

1 be approved or accepted. And it might be -- maybe it would be
2 better if I provided that to you --

3 Q. Yes.

4 A. -- instead of searching for it. But the aircraft operating
5 manual, the dispatch operating manual, the flight crew training
6 manual, the dispatch training manual, the actual weight and
7 balance manual for the carrier, I guess that's got a lot of
8 information in it that's OPC or AeroData related, all of those
9 manuals and there are others --

10 Q. Okay.

11 A. -- required either an approval or an acceptance depending on
12 what level the manual was at.

13 Q. That's great. When you were talking about this reduced power
14 takeoff, raising temperatures by 10 degrees Celsius, and that
15 whole explanation, the only question that came to my mind was the
16 changes that were made by Southwest, were they done with the FAA's
17 knowledge?

18 A. No, I believe I mentioned that before but, no, we were not
19 aware of the changes until after the system had gone live.

20 Q. And if they weren't done with the FAA's knowledge, was there
21 any action taken by the FAA with regards to consequences or
22 anything like that to fix that situation?

23 A. The only action that I'm aware of that the FAA, that the CMO
24 took was the efforts that we made, it was primarily driven by me,
25 myself and Gary Parks, one of the other APMs, to make changes to

1 the pilot training in order to prepare the pilots for the changes
2 that AeroData represented.

3 Q. I see, to accommodate that difference in performance?

4 A. Correct, yeah, which we did after the fact; however, we had
5 it --

6 Q. Okay.

7 A. -- in place for that next year's CQ Team.

8 Q. Quite disturbing that statement you made about the three
9 systems going down simultaneously. Once again, did AeroData
10 provide any information to Southwest and then Southwest to the FAA
11 regarding what transpired there and what they could do to prevent
12 that from happening again?

13 A. They, well, certainly AeroData and Southwest worked it out.
14 Southwest sent a team out to Phoenix to go through the system with
15 them and I wasn't assigned any investigatory responsibilities in
16 that area as far as that whole piece when those three systems went
17 down but whatever final information Southwest received on what
18 caused it and how it was going to be prevented in the future would
19 have been shared -- was shared between Southwest and the POI but I
20 wasn't privy to it.

21 Q. Would that have affected their safety management system, by
22 any chance?

23 A. Sure, yeah. So if they had -- with that type of a
24 operational control failure --

25 Q. Right.

1 A. -- then they would be required to conduct a safety risk --
2 what I would call a safety risk assessment. Southwest uses the
3 SRM, we call it SRA.

4 Q. Okay.

5 A. It's the same animal. So they would be required to do an
6 evaluation, identify route causes and then identify hazards and
7 then put mitigation strategies in place to mitigate those hazards
8 to an acceptable level.

9 Q. And speaking of which, the FAA gets to see those, is that
10 correct, somehow some report is generated by the carrier?

11 A. Yeah, sure, yeah. So the POI would have received or been
12 briefed on what route causes they identified --

13 Q. Okay.

14 A. -- and then what hazards if any they identified in the
15 process and then what mitigation strategies they were going to put
16 into place the POI would have received all that information from
17 the carrier.

18 Q. Does the POI have to agree with those before they're put in
19 place? I mean, I don't know the process. I know it's under Part
20 5 but --

21 A. Well, so --

22 Q. I'm not sure if he has to agree with them or not or if just
23 Southwest goes ahead and just halfway along the mitigation trail,
24 you know?

25 A. I mean, the POI has to concur that they've got -- that their

1 mitigations are reasonable, that they should work and then we the
2 FAA are responsible for following up as the carrier is to ensure -
3 - you know, they're supposed to go back and look at these
4 mitigations and the hazard on a recurring basis to ensure that
5 those mitigations are still, in fact, mitigating that hazard
6 effectively and that's all under the POI's purview.

7 Q. The other thing that I was concerned about was the steady
8 state crosswind versus the gusts and this is difficult because
9 you're not the POI. I'll just ask you straight out, do you agree
10 with that not having the gust, the gust included in the crosswind
11 component?

12 A. My professional opinion is is that the conservative approach
13 is to account for the gusts in the crosswind so I would prefer to
14 see the carrier --

15 Q. Okay.

16 A. -- including that in their calculations, yes.

17 Q. All right. Okay. Excuse me while I just consult my notes
18 here. Okay. So I'm not sure you got to review the actual
19 approach on the radar?

20 A. Rich Cunningham was assigned as our investigator --

21 Q. Right.

22 A. -- before it was moved to headquarters so I did not review
23 that.

24 Q. You did not, okay. So you mentioned, you mentioned one thing
25 and this will be my -- no, it won't be my last question. But you

1 mentioned once before that the crew should have -- the crew should
2 be -- all crews should be responsible for entering data at the top
3 of the descent, would that be appropriate?

4 A. Just prior to.

5 Q. Just prior to the top of descent?

6 A. Prior to the top of descent, that's one of the --

7 Q. Okay, all right. That's good enough. Also one other
8 question and this will be it for me. The differences training, is
9 there such a thing with the MAX 8 versus --

10 A. Yes.

11 Q. There is in existence (ph.)?

12 A. Yeah, so Southwest has the NG Fleet.

13 Q. Right.

14 A. And then there's -- there was differences training that --
15 because I was also the CPM for the MAX.

16 Q. Okay. CPM is --

17 A. Certification program manager.

18 Q. Certification.

19 A. Actually tech so in the MAX I was the ops rep --

20 Q. Okay.

21 A. -- for the certification of the MAX at Southwest at this
22 level in the field. And they were actually running
23 simultaneously. PWB and the MAX certification were neck in neck,
24 okay. PWB went live August of '17, the MAX started operating,
25 Southwest started operating at revenue service in October of '17.

1 The PWB went live in August. We were flying, did the
2 tabletop and flew the proving runs for the MAX in September and
3 the jet was flying operationally in October. Southwest elected to
4 order the MAX without the OPC charging cradle, which meant that
5 the MAX couldn't fly unless AeroData was operating.

6 Q. The cradle?

7 A. So the OPC, the previous system they had --

8 Q. Right, right.

9 A. -- with this tablet.

10 Q. Right.

11 A. There was a cradle, a cage cradle that sat behind the --

12 Q. Behind the captain, okay.

13 A. -- captain. The FO put it in and it charged and then pulled
14 it out to use it.

15 Q. I see.

16 A. That cradle required a supplementary type certification.
17 When Southwest ordered the MAX they elected not to pay for the STC
18 for OPC on the MAX which meant that the aircraft were delivered
19 with no charging cradle, which meant that the MAXs could not use
20 OPC. So, no AeroData no MAX.

21 MR. WEST: Okay. Marvin.

22 MR. FRANTZ: Thanks, Eric.

23 MR. WEST: Thank you very much.

24 MR. FRANTZ: Okay, Greg.

25 MR. BOWEN: First of all thanks for your patience with us

1 this afternoon and I know it's running just a little bit long.

2 MR. REES: Sure thing.

3 BY MR. BOWEN:

4 Q. I've just got a few questions for you. So you said a few
5 minutes ago you talked about the requirement for crews to use CQT
6 in 2018 as a result of your findings to conduct a Flaps 25 takeoff
7 out of LaGuardia in a simulator.

8 So my question would be did you go back after a period of
9 time and look at the NCAD data for crew performance or evaluate
10 that after they've done that training?

11 A. So I'm not sure I understand the question.

12 Q. The FAA required Southwest to train, as you stated, the crews
13 on a Flaps 25 reduced thrust takeoff out of LaGuardia, right --

14 A. Okay.

15 Q. -- through the CQT?

16 A. We, I don't believe that we ever actually -- I know it sounds
17 like I'm parsing words but I'm trying to be precise here today
18 with everything I'm saying and I'm really trying hard to leave my
19 opinions out of everything.

20 We, what we -- the Flaps 25 decision was made in the
21 following manner, there was never a requirement from the office to
22 do it.

23 Q. Okay.

24 A. What we did was Gary Parks and I took the system chief pilot
25 and the director of operations from Southwest into a sim and we

1 gave them some Flaps 25 V-1 cuts out of midway at maximum gross
2 takeoff weight at 800 and after they flew two or three of them
3 they agreed with us that it was different enough that it warranted
4 training.

5 So then they worked with the director of training and
6 incorporated that training into the 18 CQT. But there was never a
7 memo from POI that went to Southwest and said, you know, you have
8 to do this training, it was a collaborative interaction between
9 the carrier and us and in this sim where we demonstrated, we
10 shared the experience and discussed it with the DO and the system
11 chief pilot, they were in agreement after that simulator that it
12 was different enough that it should be trained to. So the
13 training was put into the 18 CQT.

14 As far as NCAD goes or crew performance goes or those pieces
15 go, I have not reviewed that. Gary Parks is our AQP manager so
16 Gary may very well have -- that would be in his wheelhouse.
17 That's not in my normal lane. I would have to go looking for
18 that.

19 So I'd assume Gary has but I can't answer for him for sure
20 and I personally, it's not in my normal job duties.

21 Q. Fair enough. You've kind of in a segmented way from various
22 questions talked about AeroData and backups to the primary means
23 is via ACARS and you said initially they had some communication
24 issues with ACARS.

25 When you talk about backups with the first backup being the

1 EFB and it has to communicate either via aircraft Wi-Fi or
2 cellular and specifically you talked about on the ground and at
3 the gate. So my question is, is there any issue with that backup
4 system and Wi-Fi connectivity in flight if you're looking for
5 landing data?

6 A. I'm not aware of any. And I don't know how aware you are of
7 this particular piece. There was an issue for about 24 months
8 with ACARS reliability and Southwest actually figured it out and
9 made some changes to some of the boxes and the situation has
10 resolved itself quite well so -- but I am unaware of any issues
11 with -- I mean, if the Wi-Fi's working then the app, the CFDP app,
12 as far as I know it works just fine. That's not something I've
13 ever heard of of a problem with.

14 Q. Okay. So to continue down this march of backup systems, if
15 you don't have Wi-Fi and you don't have ACARS and you're airborne,
16 what is the next backup?

17 A. Call the dispatcher.

18 Q. Okay. All right.

19 A. I mean, I'm assuming that you're not going to get a cell
20 signal. It's very unlikely you're going to get a cell signal
21 airborne so you won't be able to hang onto it. Of all those, the
22 next step is to contact the dispatcher and they'll run the
23 information for you and give you the answers.

24 Q. Okay. So let's talk about that just a moment just for
25 clarification. So the dispatchers obviously have to be trained to

1 operate and be familiar with PWB, is that right?

2 A. Correct.

3 Q. Okay. Do you know if the training that the dispatchers
4 receive was identical to the training that the flight crews
5 received or was it different or how -- and how was it trained?

6 A. I don't -- I did not see the dispatch or training piece from
7 PWB. Bob Fulton, who I believe is going to get interviewed, can
8 answer that question -- should be able to answer that question,
9 but I'm aware of the fact that the dispatchers receive training
10 but as far as the character of that training, I don't have any
11 information.

12 Q. Thank you. I have one last question. So you mentioned
13 earlier that you were involved and looking at AeroData and the
14 certification process with Southwest, is that right?

15 A. Uh-huh.

16 Q. Okay. Did you see any of the other products that AeroData
17 offers in terms of the TLAR, what some of the other airlines use
18 and the information that's available compared to what Southwest
19 was doing and do you have an opinion on that, if you do?

20 A. I did not see any comparisons between any other air carriers
21 and anything that Southwest was doing nor have I since. So I can
22 answer that piece there that way. The takeoff and landing report,
23 the only exposure I have to that is the product that you guys,
24 Southwest has now that you're using, if there's -- and as far --
25 okay.

1 And as far as different potential products that AeroData has
2 available, I haven't been exposed to any of that by Southwest.

3 Q. Let me ask that a little different way if this is
4 permissible. You said you were at JetBlue, correct?

5 A. Correct.

6 Q. Were they using AeroData then?

7 A. No.

8 Q. Okay.

9 A. I was OP -- we were OPS, OPC, when I left there so, no, I
10 didn't have the opportunity. I mean, I'm friends with captains
11 over there and we've talked so, I mean, I have some idea of how
12 they operate it. I mean, it's a little different than Southwest.

13 MR. BOWEN: Thank you. That's all I have.

14 MR. FRANTZ: Okay. Thanks, Greg. Kevin.

15 BY MR. FERGERSON:

16 Q. I really only have one. You were talking about crew's
17 perception that the OPC was less cumbersome. Could you kind of
18 speak to, okay, a scenario where say you're below 10,000 feet and
19 there's a significant weather change, kind of a keystroke, a
20 keystroke, what's your interface going to be to acquire new
21 landing data?

22 A. Are you asking me what the -- sort of what the difference
23 between OPC and AeroData is?

24 Q. Yeah.

25 A. Well, so OPC you pull it out and you've just -- all you have

1 to do is put in the new runways and put in the ATIS and you're
2 done, I mean, up comes the data.

3 Q. You don't have to start over?

4 A. Right.

5 Q. Yeah.

6 A. AeroData is a different animal, right. You've got to --
7 AeroData you've got to put in up to at least -- what, when we were
8 doing the testing and all that it was up to three runways that
9 you're going to -- you have to -- so you got -- you have to kind
10 of go back and start and you have to put in the new runways and
11 you're going to send that off to Phoenix and then it will give you
12 back the landing performance data for those runways.

13 So it's certainly -- I mean, you know, what the crews were
14 sharing with me and I feel like this is pretty -- I mean, the
15 crews are getting -- are now much more proficient with AeroData,
16 they've been using it for several years.

17 But it's clearly a longer process to get landing performance
18 through AeroData than it is through OPC and then the other piece
19 of it is that there is -- I guess, I would characterize it as a
20 disadvantage to not having ACARS printers because what other
21 carriers do is they print that information out and they can hand
22 that piece of paper back and forth if they're discussing the
23 weather or the runway and so forth.

24 Whereas, with Southwest, I mean, the pilots are sharing that
25 FMC monochrome screen and they might have to page through a couple

1 of the screens so that clearly it's just a little -- you know,
2 it's more cumbersome. You know, it's going to require more heads
3 down than OPC and it's a little bit more -- I'm talking the OPC
4 versus AeroData just in the process.

5 And then in the actual presentation of the information not
6 having the ACARS printer available it just makes it a little bit
7 more difficult to get access to see and process that information
8 and discuss it.

9 You know, in a busy air traffic environment at low altitude
10 those are just additional challenges that they have to manage.
11 Did that answer the question?

12 Q. Yeah. Is there like one button that gets you into PWB that
13 you select on the FMC?

14 A. I believe there is, yeah. I mean, it gets you in to the
15 menus and then you've got to go to the landing section.

16 Q. Okay. Is the AeroData product -- I don't know how to ask --
17 do you think it's intended to be a printable output as far as
18 original, you know, human interface design?

19 A. I don't know, I don't know. Versus --

20 Q. Getting it all on a multipage?

21 A. -- the best, yeah. I mean, and the best answer I could give
22 you to that is that it is clearly easier to manage information on
23 a printed piece of paper that you can make annotations on and hand
24 back and forth than it is to look at a green monochrome screen and
25 two people have to look at that and you've got parallax and those

1 things.

2 And, you know, if you're in night and you're in the weather
3 and you're down in mountainous terrain and you're at low altitude
4 that takes additional effort, it takes additional coordination, it
5 adds a hazard that has to be mitigated, and so it's less ideal.

6 I'm not sure how AeroData originally envisioned it, I just
7 know that pilots at other carriers that I've talked to, I mean,
8 they print all that stuff and back and forth it goes and they can
9 make notes on it and so forth. It facilitates the communication.

10 MR. FERGERSON: That's all I have. Thank you.

11 MR. FRANTZ: Thanks Kevin. Anything, Rich?

12 MR. LEE: Yeah, just a couple things.

13 BY MR. LEE:

14 Q. The weather that's used by PWB, is that listed when the
15 pilots get their landing data back is it listed what weather data
16 was used and was there a time associated with it?

17 A. I don't believe so. The default for AeroData is it's going
18 to run off of the METAR, so if a pilot sends a request to AeroData
19 for a landing report for an airport, AeroData is going to
20 incorporate the latest METAR for that airport unless the pilots
21 choose to manually enter ATIS information that they've gotten or
22 any other report they've gotten from the tower. If they've gotten
23 other information and they want to use that they think that that's
24 more current, more appropriate.

25 I don't believe that AeroData provides you with any kind of a

1 timestamp for the METAR Data that it used. I just -- my
2 understanding is it uses the latest available.

3 Q. But it does not show what the winds were used or the
4 temperature or any of that stuff?

5 A. Tell you what it used --

6 Q. Yes.

7 A. -- for the calculations? I mean, there is a screen when you
8 are looking for the airport weather; there is a screen where
9 you're going to get the information for what's going on at the
10 airport, the winds and all that sort of stuff.

11 Q. How would a crew know if it changed is kind of what --

12 A. How would the crew know if the weather changed?

13 Q. Changed from what the system got?

14 A. I would think in all cases that would require some sort of
15 external influence, in other words, they'd become aware of it
16 because the ATIS letter changes or air traffic control notifies
17 them that the conditions have changed.

18 I don't think that there's something in AeroData, you know,
19 that alerts them that the METAR has turned over or that a new
20 METAR is available. I don't believe that there's anything in the
21 AeroData that does that. So the pilots as far as knowing what the
22 weather at the airfield is and how it's changing is going to come
23 through their interaction with air traffic control, I would think.

24 As far as cueing that they might want to go and, you know,
25 pull a new ATIS, I mean, obviously you know this, I mean, air

1 traffic control, they'd let you know when the ATIS changes,
2 usually when you're going into an airport.

3 Q. Yeah.

4 A. So if the ATIS is changing, you know, and the conditions are
5 changing dramatically then the crew could send for another landing
6 report, which would reflect whatever the latest METAR is or SPECI
7 should catch that, but the crew has the option and what I believe
8 -- the impression I have from the aircraft operating manual from
9 Southwest is that if the conditions are changing fairly rapidly
10 they expect the crew to manually enter the ATIS information in
11 order to get accurate landing performance data.

12 I mean, that's the way that it's described in the aircraft
13 operating manual by Southwest.

14 Q. Okay. And what about the wind additive, do the pilots, do
15 they put that into the system or is that something that AeroData
16 comes back and looks at the METAR and says, oh, there's a 15-knot
17 headwind or there's 20-knot headwind, there's going to be a 10-
18 knot additive, not the standard 5. Who puts the wind additive
19 into it?

20 A. I would -- I'm 90 percent sure that it's done automatically.
21 That's all in the software and AeroData will calculate that as
22 part of automatically; however, what I'd like to do is -- if I
23 could -- is research that and then get back to you?

24 Q. Sure, all right.

25 A. To be positive. But I believe that the additives are -- that

1 AeroData is going to account for that and provide that to you, I
2 believe, but I would like to check on that for you if I could?

3 Q. Sure. The other question, the PWB kind of, I think, covered
4 it a little bit but is it, the input of the data, is that as
5 coordinated process per their ops manual between the PM and the PF
6 as far as, you know, if the crew decided to -- if the PM decided
7 to say the METAR Data, I want to put in something new, I want to
8 put in what ATIS is, is that a coordinated process and is there --
9 you know, does the pilot flying look at what data is put in or is
10 it an assumption that just the PM takes care of that?

11 A. As far as the extent of the guidance that Southwest provides
12 us as far as I know, I think this is accurate is that the PM is
13 going to run AeroData. If the conditions are such that ATIS entry
14 needs to be made this is not an area in Southwest Airlines'
15 procedures where there's a line by line process or a flow or, you
16 know, a checklist or anything like that.

17 So I think this would -- this comes under the standard crew
18 resource management function as far as them communicating with
19 each other. As far as the guidance that the carrier provides the
20 pilots for entering in the ATIS information, under the conditions
21 where that's appropriate, having read the AOM I'm not familiar, I
22 don't recall any information where the company specifically states
23 that if the pilot monitoring is entering ATIS information that the
24 pilot flying has any additional requirement to check or verify or
25 discuss any differences in the performance or anything like that,

1 when that other information is used.

2 I think, you know, they're going to -- whether the ATIS
3 information is entered manually or whether METAR Data is being
4 used by AeroData, either way they're going to get a landing
5 report, they're going to get a couple of pages of information for
6 landing with the different runways that they've put in that
7 they're potentially going to land on and that information comes up
8 and they're -- obviously they're both going to discuss and review
9 that information together as they're making -- you know,
10 discussing flaps setting and things like that.

11 But there's no -- in the manuals there's no like decision
12 tree where if the crew is going to use manual ATIS information
13 that there's any change to the way that they're going to handle
14 that result, that product that comes in from AeroData.

15 Q. All right.

16 A. Did that answer the question?

17 Q. Yeah, yeah, that's good. I think the doctor covered about
18 the margin and I believe, you correct me if I'm wrong, but I think
19 you said there wasn't anything in the flight ops guidance that if
20 the margin is a certain, you know, level they needed to have a
21 discussion about the risk of, you know, it being 100 feet or 200
22 feet and then comparing that to the wind additive, if there's a
23 tailwind change or something like that, is there any discussion in
24 their ops manual or in the process of getting PWB certified that
25 wind changes, wind additives and then that margin being so small,

1 is there an extra discussion point to cover that higher risk?

2 A. In the PWB certification process, no. I don't, I don't
3 believe. I'm not aware of anything in Southwest's Manual that
4 specifically drives the pilots to what you're talking, what you're
5 describing. So, I mean, they have guidance for -- you know, they
6 use the term or they use the program of risk and resource
7 management and use it very effectively and that requires them to
8 be communicating and be on the same page and so their -- none of
9 that changes.

10 As far as the guidance for landing goes, the only guidance
11 that Southwest has that is -- it's not applicable necessarily in
12 Burbank but in this -- these types of scenarios, is that they're
13 directed not to attempt a landing or an approach in known low
14 level wind shear.

15 I don't believe and I'll be glad to check and I'll let you
16 know if I find something, I'll be glad to check it. But I don't
17 believe there's any discussion about that's driven by the, you
18 know, the available, the stopping margin.

19 Q. All right.

20 A. And so I don't believe that there is any trigger if the
21 stopping margin is less than 200 feet you need to do a risk
22 assessment. I'm not aware of anything like that in their manuals.

23 Q. All right. One last thing is about have anyone in the FAA
24 have done like flight observations, has there been anything
25 written up by an FAA person doing a flight observation about the

1 PWB and the interface and any issues with that since it's been
2 released for the past 2 or 3 years?

3 A. There have been a few, a few issues that have come up. There
4 was an inspector come and I'd have to go back, again, and research
5 this for you. There was an inspector from another office who was
6 in the cockpit when a Southwest crew did an intersection takeoff
7 and had concerns about whether they had used the full length
8 runway or the intersection performance for the takeoff.

9 I mean, I remember the issue being brought up. I didn't --
10 wasn't assigned to investigate it so I don't know how that turned
11 out.

12 Q. But that doesn't seem specifically a PWB issue, I mean.

13 A. Well, it was PWB from the standpoint of whether the crew --

14 Q. Okay.

15 A. -- had run PWB correctly --

16 Q. Okay.

17 A. -- in order to have the full length and the intersection
18 information available to them or not.

19 Q. Sure.

20 A. The majority of the FAA reporting that has come in over the
21 last few years that has sort of a tentacle to PWB is more along
22 the lines of the weight and balance and CG problems that have been
23 going on for a couple of years that are having an effect on
24 takeoff and landing performance.

25 MR. LEE: Sure, yeah. All right, thanks. That's all I have.

1 MR. REES: All right.

2 MR. FRANTZ: Okay. Bear with me just a minute here, Jeff,
3 while I review and see if I have any quick follow-ups.

4 BY MR. FRANTZ:

5 Q. Yeah. You said -- you talked about the PWB system when it's
6 producing this landing solution that the pilots request and then
7 it goes to Phoenix and comes back to the airplane. The system
8 assumes -- did you say it assumes -- for Southwest it assumes a
9 touchdown at the 1,000 foot point?

10 A. 1,500.

11 Q. 1,500?

12 A. For visual?

13 Q. Right.

14 A. Down to CAT II.

15 Q. Yes, okay.

16 A. If they -- if the pilot's requesting information for a CAT
17 IIIA --

18 Q. Then it's another?

19 A. -- it's going to go another 1,000 feet.

20 Q. Okay, all right.

21 A. So it's going to assume a 2.5, 2,500.

22 Q. So what did I hear you say about some systems or some places
23 they will assume 1,000 foot touchdown point, was that for, I think
24 you said Southwest did that and therefore they could get a 500
25 foot extra margin, what was that --

1 A. Most, yeah. Most carriers, that I'm familiar with, use 1,000
2 foot as the intended point of landing. Some just use the
3 touchdown zone, the first third of the runway, all right, but most
4 use 1,000 foot, which is what the runway marker is.

5 So Southwest by them choosing 1,500 feet theoretically
6 there's up to a 500 foot buffer built in there but that's only
7 going to be the case if they're landing at the 1,000 foot so --

8 Q. Okay. So the PWB system considers when it spits out the
9 final number of here's your -- how many feet you should stop
10 before the end of the runway, your stopping margin, it considers
11 your touchdown at no later than the 1500 foot point, is that
12 correct?

13 A. Well, it's going to calculate it as if you touched down at
14 1,500 feet.

15 Q. At 1,500, right, okay. Okay. Overall, do you consider the
16 PWB system adequate for the mission it's been given?

17 A. Yes, I do.

18 Q. From what you know of Southwest training do you consider
19 Southwest training on PWB adequate?

20 A. It's getting there. I think maybe in the beginning -- it's
21 going to be hard to quantify this. Let me try answering it with
22 an anecdotal observation and see if this works. In 2018,
23 typically I'm at the carrier observing the simulator 3 days a
24 week, whether it's observing a check airman or signing off a new
25 check airman, signing off a new APD, whatever.

1 In 2018 it was more common than not for the first officer to
2 be comfortable and competent with AeroData and the captain to be
3 struggling and marginally competent.

4 This year in 2019 what I'm observing is that the first
5 officers and the captains are competent and comfortable.
6 Obviously some of that has to be just associated with the fact
7 that it takes time to learn a new system and this is the first
8 time Southwest had made this kind of a change in decades.

9 I give Southwest credit for the fact that they've set the
10 standard that their crews need to -- both crew members need to
11 know how to operate this system fluently and that focus is
12 beginning to pay off. Did that answer the question?

13 Q. Yeah. So it brings up another interesting line of
14 questioning but I'll try to be quick. You just mentioned that you
15 typically did in the past spend a majority -- not majority, a good
16 portion of time in the sim observing, designating new check
17 airmen, designating APDs.

18 So in your observations in the sim did you ever -- do you
19 ever recall seeing any scenario introduced to a crew in, I guess
20 it would be in an LOE, where they would have to update or run new
21 PWB, put in new PWB Data because now all of a sudden there's new
22 conditions at an airport they're beginning to land at, is that a
23 scenario that ever -- you ever come across, you recall?

24 A. It's not an option yet. The ACARS AeroData functionality in
25 the simulators doesn't work yet, so to date, so the -- so what the

1 crews are doing is they're using the iPad app to calculate their
2 performance but a lot -- in a lot of the simulator events the --
3 well, so all the ATIS has to be handed to them, right, paper
4 handed to them.

5 But it all -- right now it's all done on the CFDP app, the
6 app of the iPad. The ACARS functionality is not there so they're
7 doing it on the iPad. I don't believe -- again, I'll double --
8 I'll go back and check on this to let you know, but I don't
9 believe that there has been a scenario in the '18 or '19 training
10 where the crew has to make like a last minute runway change or
11 rerun a landing performance because of a rapidly degrading weather
12 situation, that type of a scenario.

13 Q. Okay.

14 A. However, I cannot think of a time in the sim in the last 2
15 years where I've seen a crew where they were -- it was a
16 significant problem in the outcome of the event for them to run
17 the app on the iPad to get their landing performance when those
18 are the types of things in those types of training events.

19 Q. Okay. Okay. My last, I think my last question, the weather
20 that, the METAR that the PWB, AeroData System in Phoenix pulls
21 when a request comes in for landing data for Airport X is
22 supposedly the latest for that airport, whether it's a special or
23 a routine, is that correct, did you understand it?

24 A. That's my understanding.

25 Q. They would also capture special?

1 A. That's my understanding.

2 MR. FRANTZ: Okay. Okay, good. Thank you. We'll go one
3 more quick time around; see if anybody has any follow-ups for
4 anything. Sathya.

5 BY DR. SILVA:

6 Q. Just following up on Marvin's previous questions here. In
7 your opinion are there improvements to training in terms of PWB
8 that you think would be beneficial?

9 A. Well, the scenario that just kind of came up, so a scenario
10 where there's -- I mean, the answer is, yes. There's always
11 options to improve training. I really do believe that where the
12 Southwest crews were at 24 months ago and where they're at today
13 is pretty significantly different when we're talking the PWB
14 piece.

15 Some training, you know, that exposed them and the simulator
16 to rapidly changing weather, those types of situations; I think
17 would be -- certainly would be helpful but I want to be clear that
18 where I stand right now is -- on this specific issue is that the
19 performance I've seen of the crews and the simulators has steadily
20 improved and has been -- and this year in '19 has really been
21 quite solid.

22 Q. What about if you could -- say you're king for the day and
23 you could change the PWB system, would there be any improvements
24 that you would make?

25 A. That's an interesting question. If it were up to me I would

1 have, I would have PWB more closely mirror OPC. I would give the
2 captains back more input into managing their performance and let
3 me answer it this way. So there's a level of risk that Southwest
4 Airlines has decided that they're comfortable allowing their crews
5 to exercise through their system of rules and regulations, their
6 manuals and the restrictions they put on PWB.

7 And when they went -- Southwest went to AeroData they removed
8 quite a bit of the crew's input into performance calculations and
9 that's the company's decision. They certainly have the right to
10 do that, so putting me in this king for a day question, personally
11 I would prefer if the crews were given back more flexibility to
12 make changes to bleeds off, flaps, things like that in order to
13 basically capture or to gain bigger stopping margins, which is
14 what they normally would have done or they did do under OPC that
15 they're unable to do now. But the company's made that decision so
16 that's the way it is.

17 Q. Okay. Now you've mentioned a couple of issues that came up
18 throughout the process of certification but, in general, as you
19 were going through certification really up through the day of the
20 incident, so we're talking the end of last year, how has the
21 relationship been between, let's start with you and the airline?

22 A. I would answer that by saying that it depends on what
23 department and what part of the airline I'm interacting with. I
24 have better relationships with some parts of Southwest than I do
25 with others.

1 Q. Can you elaborate on what challenges you've had?

2 A. Well, so as a safety inspector I don't have the
3 responsibility of shareholder profit and all these people that I
4 have to deal with to make sure that they have a livelihood and all
5 the things that management at Southwest has to deal with, all
6 right.

7 I get to operate in this environment as I'm an inspector, I
8 know what their -- basically what their regs say, I know what the
9 guidance says, I have a pretty good idea of what most of the
10 industry is doing, and then I know what this carrier is doing. So
11 I would say that the biggest challenge that I've had with the
12 carrier in my time in the office has been influencing the carrier
13 to make changes that improve the overall safety of the airline
14 when there isn't a black and white regulation behind it.

15 Q. Okay.

16 A. So if there's clear regulatory guidance then the carrier is
17 going to respond. If you're talking about advisory circulars,
18 recommendations, things like that, in some cases the carrier has
19 been very responsive and in some cases they've been very
20 unresponsive about making changes.

21 Q. Do you recall any examples of where they were unresponsive?

22 A. Sure. Probably the most substantial case of unresponsive
23 would be February of 18 when we recognized the fact we had
24 received -- Southwest employees were filing complaints with the
25 administrator over the weight and balance of the aircraft, the

1 baggage handling, baggage loading cargo and the accuracy of all
2 that.

3 We started to investigate and according to the carriers self-
4 auditing, about 67 percent of their daily departures, the weight
5 and balance was inaccurate. So, on 3,800 to 4,000 departures a
6 day that's a lot of flights.

7 The carrier initially implemented structural, procedural
8 changes so closing a door 10 minutes prior to departure, the
9 things that are relatively quick and easy to respond to and drove
10 that non-compliance rate down to about 30 percent, 25 to 30
11 percent depending on the day on their auditing.

12 And it's remained at about that place for about 20 months.
13 So the carrier started to deploy scanners, hand scanners for the
14 ramp employees to use about 4 or 5 months ago, and initially the
15 results were -- actually the compliance became worse initially.
16 And I attribute that primarily to the rampers having to learn how
17 to use the scanners and probably some concerns that they had about
18 the technology and so forth.

19 The most recent data has shown that there is an improvement
20 but we're almost 2 years after the fact and there is still a
21 significant number of aircraft leaving the gate every day where
22 they're weight and balance and CG is questionable or unknown.
23 And, I mean, you're talking 800 to 1,000 flights a day.

24 Now, 98 percent of that is so small it's insignificant,
25 you're talking a few hundred pounds, a few bags, but there are 3-

1 and 5- and 7,000 pound errors that the company was self-disclosing
2 as recently as a couple months ago that were happening every
3 month. So there are significant errors that were happening and I
4 would say in that particular subject area the carrier has been, in
5 my opinion, has been slow to respond.

6 Q. For that example, is that more on the regulation side or the
7 recommendation side?

8 A. It's regulatory. There's a regulation. The issue is that
9 when the attorneys start to look at the regulation and give you a
10 finding on it, they're not all lock step on it.

11 Q. The FAA attorneys?

12 A. Yeah.

13 Q. Okay.

14 A. So it makes it challenging.

15 Q. So how is your relationship within the CMO, do you get
16 support on cases like this where you think that action should be
17 taken faster or faster or it should be taken at all?

18 MR. TOMICICH: You know, we do have to be a little bit
19 careful because obviously your questions do implicate some
20 management things, you know. You know, I mean, I would suggest,
21 have some discretion on kind of how you --

22 BY DR. SILVA:

23 Q. Yeah, that's fine; it is up to you --

24 A. There's some -- you're asking some tough questions so --

25 Q. -- whether you're comfortable or not. Again, it's up to you

1 whether you want to answer or not.

2 A. Well, the answer is is that it depends on the issue.

3 Q. Okay.

4 A. Quite frankly, if we inspectors find an area that we see a
5 safety issue or a regulatory, non-compliance in, in my experience
6 and especially in the last 4 or 5 years, if it's something that
7 the carrier really doesn't want to address we're going to get very
8 little support from management.

9 Q. Okay.

10 A. If it's something that the carrier is not overly upset with
11 or the carrier shares our opinion of, if it's something that's
12 relatively straight forward and management's not getting a lot of
13 pushback from the carrier, then we tend to get better support from
14 management.

15 Q. Okay.

16 A. So it's --

17 UNIDENTIFIED SPEAKER: So, I mean, just for clarification,
18 you had a change in managers, you may want to address that a
19 little bit because --

20 MR. REES: Well, we had a change in some managers.

21 UNIDENTIFIED SPEAKER: Yeah.

22 MR. REES: But the -- you know, the issue, everything that I
23 just said is still true --

24 DR. SILVA: Okay.

25 MR. REES: -- because it involves managers that weren't

1 changed.

2 UNIDENTIFIED SPEAKER: Okay.

3 DR. SILVA: I understand. Okay. I'll stop with the hard
4 questions.

5 MR. REES: I don't mind, it's just -- they're just, you know,
6 it's a hard question to answer.

7 DR. SILVA: Right. I understand and we do appreciate your
8 honesty and openness here. I'll hand it back over to Marvin.

9 MR. FRANTZ: Okay. Thanks, Sathya.

10 Eric, do you have any follow-ups?

11 MR. WEST: I have no further questions.

12 MR. FRANTZ: No. Greg?

13 MR. BOWEN: Nothing further for me. Thank you.

14 MR. FRANTZ: Kevin?

15 MR. FERGERSON: I'm done.

16 MR. FRANTZ: Okay. Rich?

17 MR. LEE: Nothing.

18 MR. FRANTZ: Okay. I think I'm done as well. So thank you,
19 Jeff. Is there anything that we didn't ask you about that you
20 think we should have or would be helpful to us in this particular
21 investigation?

22 MR. REES: Aeronautical decision making.

23 MR. FRANTZ: What would you like to say about that?

24 MR. REES: I only have access to Southwest Airlines, right,
25 so I don't know if this is an industry wide issue or if it's a

1 Southwest Airlines issue and I want to be very clear about that
2 before I start. However, Burbank is one example in the last 24
3 months of a crew making decisions that were high risk and not
4 consistent with the company's policies or guidance, because the
5 company makes it real clear that they want the pilots to operate
6 safely, real clear.

7 And the company doesn't give the pilots grief if they go
8 missed approach, the company doesn't give the pilots grief if they
9 go to an alternate airfield, the company doesn't give the pilots
10 grief if they're late getting off the gate because they needed to
11 work through something.

12 So the company is pretty clear with the pilots about the
13 level of risk that they want the pilots to assume. What I've
14 noticed in the last couple of years is flight crews that are
15 operating contrary to -- they're taking on a great deal of risk
16 that the company doesn't intend for them to take on for the
17 decisions that they're making.

18 So Burbank is an example, Bradley and Philly are examples
19 where we had two Southwest Aircrews that operated multiple
20 approaches and low level wind shear with multiple reactive wind
21 shear escape maneuvers. Minneapolis-St. Paul is another example
22 where a crew rejected a takeoff for an unsafe overwing exit and
23 before it was over with the FO was standing on a wing on Type 4
24 deicing fluid, outside the airplane on an active taxiway with both
25 engines turning and -25 degree Fahrenheit weather.

1 There have been these incidents that have happened. The
2 Bradley and Philly examples where the crews operating multiple
3 approaches in low level wind shear are very concerning because in
4 one case the captain dragged both wing tips on the runway on the
5 first approach and then conducted two more approaches at the same
6 airport before he diverted.

7 In another case the captain landed through a reactive wind
8 shear alert at the airport because he didn't have an alternate and
9 didn't have the gas to go anywhere else. So at the crew level
10 there are aeronautical decision making decisions being made that
11 are -- they're accepting hazards that they shouldn't be accepting
12 or that's the best way to put it, I guess.

13 At the company level they have challenges with operational
14 control and where that is best illustrated is to go back to the
15 Philly and the Bradley incident and that was on 25 February of
16 this past year. So Southwest had somewhere between three and
17 five, at least, jets that were dispatched into the northeast from
18 the southeast where there was a polar vortex up over the northeast
19 and the winds were in the 40 to 60 mile an hour range and they
20 dispatched these jets up into that, those conditions without any
21 alternate airfield, without any extra -- well, they had a little
22 bit of extra gas but no alternate airfields and no plan for the
23 crew if they got there and they couldn't get in. That's an
24 operational control issue.

25 And that's what led to the Bradley wing tip scrape and the

1 landing at Philly through the wind shear. So there are --
2 although the carrier has made the transition to SMS on paper, the
3 actual -- the way the carrier is operating I'm not seeing that
4 they've really embraced and incorporated what essentially turns
5 into self-regulation.

6 I mean, essentially SMS is the carriers now regulate
7 themselves and all the FAA does is audit. That's where we're at.
8 I mean, that's the new world and that's not me saying that, that's
9 what I'm told by my managers. So if the carrier's going to self-
10 regulate and we're going to audit, then the carrier has to
11 regulate it, right. They have to do the SMS process, they have to
12 look --

13 In the case of Bradley, the jet dragged both wing tips, did
14 substantial damage to the airplane. It was substantial, okay. It
15 did -- there was a lot of damage to that jet. Southwest conducted
16 a safety risk assessment of that incident and they came back and
17 told us that there were no hazards identified, no need to change
18 any policy or procedures, that the reason that the airplane hit
19 the runway was because a rogue downdraft hit the airplane and
20 pushed it into the runway, it wasn't caused by the fact that the
21 captain was operating multiple approaches in severe turbulence and
22 low level wind shear.

23 So it seems a little disingenuous to me for the company to
24 tell us that there's no hazards identified and no need to change
25 any policy or procedures when they had a jet drag two wing tips at

1 Bradley when it was landing at low level wind shear. There's
2 probably some room for improvement in there, at least in the way
3 that their operational control and their dispatch is going.

4 So those concerns didn't really come up today but
5 aeronautical decision making in my opinion is a factor in the
6 Burbank overrun and operational control may very well be a factor
7 as well so, I guess, that would be just the one area that didn't
8 come up prior, previously.

9 DR. SILVA: Can you elaborate on Burbank specifically
10 aeronautical decision making?

11 MR. REES: Well, so I have not seen all the data that's
12 available but initially when the incident first happened Rich
13 Cunningham in our office was assigned to investigate it and the
14 first couple of weeks that he was investigating it before
15 headquarters took the investigation, I was working, I was helping
16 Rich. So, from what I know, but what I believe is true from the
17 information that I have, the crew was unresponsive to pretty clear
18 cueing by air traffic control that the conditions at the field
19 were bad and were deteriorating rapidly.

20 And it seemed to me like air traffic control was doing
21 everything short of telling them the field was closed to try and
22 encourage the crew not to try to land and the crew tried to land
23 anyway. The last information I have, the last -- the crew ran PWB
24 prior to the top of descent and did not rerun it when they, you
25 know, certainly should have been aware that the conditions were

1 changing and were getting worse.

2 So and then the decision to execute an approach when the two
3 aircraft that are ahead of you and the pattern have -- well, the
4 King Air landed but that type of airplane is so different it's not
5 very helpful. The corporate jet that was ahead of him went missed
6 at the decision height because of visibility.

7 So if I'm behind that guy and that happens it's going to make
8 me think twice about shooting the approach or trying to land. I
9 would have gone off and held and waited for the weather to
10 improve. So that's where I think aeronautical decision making
11 fits in at Burbank.

12 DR. SILVA: Okay. Thank you.

13 MR. FRANTZ: Okay. Thank you. Anything else you want to
14 add? No?

15 MR. REES: No.

16 MR. FRANTZ: Okay. Thank you, Jeff, for your time today.
17 And, as I said at the beginning, if there's things you want to add
18 that you think are relevant later down the line, you're open to
19 contact Eric or myself or Sathya if you want to change or add
20 anything else to what we talked about today.

21 MR. REES: Okay.

22 MR. FRANTZ: But, if not, I think we're complete and we
23 appreciate your helping us with this.

24 MR. REES: You bet. I wrote down a couple of takeaways so
25 I'll get them. If I get them to you guys then you'll get them to

1 whoever I owed them too, right?

2 DR. SILVA: Yeah.

3 UNIDENTIFIED SPEAKER: That's correct.

4 MR. REES: Okay, great.

5 DR. SILVA: Great. Well, thank you.

6 (Whereupon, the interview was concluded.)

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CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

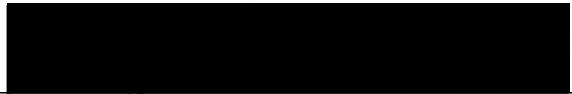
IN THE MATTER OF: SOUTHWEST AIRLINES OVERRUN -
 BURBANK
 Interview of Jeffrey Rees

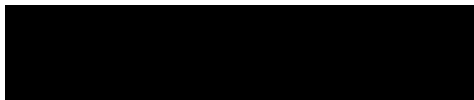
ACCIDENT NO.: DCA19IA036

PLACE: Dallas, Texas

DATE: October 8, 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.


Cheryl Farner Donovan
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: ROBERT FULTON

Aviation Safety Inspector

Southwest Airlines FAA Certificate
Management Office
Dallas, TexasThursday,
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

MARK TOMICICH, General Counsel
Federal Aviation Administration
(On behalf of Mr. Fulton)

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I N T E R V I E W

(7:58 a.m.)

DR. SILVA: On the record at 7:58. Well, thank you for speaking with us today. As I mentioned, I'm Sathya Silva with the NTSB. I am a human performance investigator. So what we'll do is go around the table. I'll run through kind of just a brief background of what we'll be doing.

MR. FULTON: Okay.

DR. SILVA: See if you have any questions before we start. So let's start with introductions and I'll let Marvin --

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

MR. LEE: Rich Lee, Boeing safety pilot.

MR. FERGERSON: Kevin Ferguson, Southwest flight operations.

MR. BOWEN: Greg Bowen, Southwest Airlines and SWAPA training and standards chair.

MR. WEST: I'm Eric West. I'm accident investigator with AVP-100 and headquarters.

MR. TOMICICH: And I'm Mark Tomicich, Office of Chief Counsel. I represent the witness.

MR. FULTON: So I'm Bob Fulton, the aviation safety inspector with the Southwest CMO and I'm specifically the dispatch inspector.

DR. SILVA: Great. Have you worked with us at all on -- have you ever been interviewed by the NTSB?

1 MR. FULTON: I have worked with the NTSB. Part of my sordid
2 past was with US Airways for 22 years and I was union president
3 for the dispatchers union.

4 DR. SILVA: Okay.

5 MR. FULTON: And there was an incident in Charlotte that I
6 participated with the NTSB helping to represent one of our
7 dispatchers that was involved with that. So --

8 DR. SILVA: Okay. I see.

9 MR. FULTON: -- very brief experience.

10 DR. SILVA: Right. Wonderful. So you see that we have a
11 number of people here and this is a result of our party system.
12 While we're experts in investigating, we rely on the industry and
13 the FAA to provide expertise in every other part of this. So
14 that's what you're seeing here.

15 We're here for safety. We're not here to assign blame,
16 liability, anything of that sort. What we'll do with this
17 recording is we'll send it out for transcription and a copy of
18 that transcript, not the recording, will go into our public
19 docket. Usually, when -- our factual information comes out
20 anywhere between 6 months to 18 months from now, as you know.

21 So you're the expert here. We're here to learn from you. If
22 there's anything that you don't understand, feel free to ask us.
23 There's no right or wrong answers. If there's something you can't
24 recall, feel free to say that.

25 MR. FULTON: Okay.

1 DR. SILVA: Let's see here. You are entitled to a
2 representative of your choice. Would you like to have a
3 representative here with you?

4 MR. FULTON: No, I'm fine. Thank you.

5 MR. TOMICICH: That's me. You have to --

6 DR. SILVA: You do have to --

7 MR. FULTON: I have to acknowledge? Okay. Yes.

8 DR. SILVA: Okay.

9 MR. FULTON: My FAA representative is Mark Tomicich.

10 DR. SILVA: Okay. Okay. Sounds good. So what we'll do in
11 terms of questions is I'll start with a handful of questions and
12 then we'll go around the room, usually twice, to make sure that
13 everything's covered here and then we'll hand it over to you at
14 the end and see if there's anything else you wanted to add. Any
15 questions before we start?

16 MR. FULTON: No.

17 DR. SILVA: Okay.

18 INTERVIEW OF ROBERT FULTON

19 BY DR. SILVA:

20 Q. Can you state and spell your first name -- your full name for
21 the record?

22 A. Yeah, it's Robert H. or Robert Howard Fulton, III.

23 Q. And can you run through a brief Cliff Notes version of your
24 background, aviation background, and essentially how you got to
25 this position here?

1 A. Well, I grew up in Oklahoma. That's the reason my grammar's
2 not perfect. The school system there left me wanting. Was
3 drafted in 1971. Went into the U.S. Army as a demolitions and
4 reconnaissance diver. Got out of the service and was going to
5 graduate school in Norfolk, Virginia. Like most graduate students
6 I was short on money so Piedmont Airlines was hiring people to
7 work on a ramp so that's where I started here.

8 Money fell out of the oceanography program so I ended up
9 going to work for an airline. Some friends talked me into taking
10 the dispatcher's certification test and I became a dispatcher for
11 Piedmont Airlines, the old Piedmont Airlines in Winston/Salem,
12 North Carolina back in 1983. Spent 10 years, approximately 10
13 years with Piedmont in Winston/Salem and then there was a merger,
14 or a takeover as we sometimes call it in the industry.

15 Moved to Pittsburgh where I worked with US Air to become US
16 Airways for approximately 22 years. At that time -- and I worked
17 every position from assistant dispatcher, dispatcher, coordinator,
18 international dispatcher, training instructor, airline operations
19 manager and a short stint for one year where I took over
20 management of the US Airways pilot ground schools.

21 We were bringing on Airbus so I was hiring training
22 instructors and the pilot's union and the company were at a
23 disagreement so they removed the pilot from overseeing that
24 program. I was unlucky enough to be picked for that position.
25 Spent a year there. Company resolved their issues and I went back

1 to dispatching. Finished up in 2012.

2 As I said earlier, I have hearing aids. I've lost 70, 80
3 percent of the hearing in both ears due to bad water and
4 explosions while I was in the military so I just couldn't hear. I
5 was then working as airline operations manager, tactical manager
6 of the airline in the operations control center. On a bad day
7 you've got two phones, an intercom and 10 people trying to talk to
8 you at once. If two of you speak at the same time I hear neither
9 conversation. It just all blends. So even with the aid of
10 hearing aids it was getting more difficult. I decided to retire.

11 Q. Okay.

12 A. Was contacted by the FAA and made an offer. Accepted the
13 offer to go to work in Indianapolis and then the first sequester
14 came about and they regrettably recalled that opportunity. Six
15 months later I got an opportunity to come here. I went to work in
16 the AMR/CMO across the street and as I was filling out all my
17 confidentiality information I said, you know, this may not work.
18 I just came from a carrier that's going to merge with American and
19 they went, oh, that's never going to happen.

20 Well they did move me over to Envoy so I moved from the
21 American CMO over to Envoy as a dispatch inspector and I got to
22 stay there for almost 2 years when the FAA decided that there was
23 still a conflict of interest. So I was either going to Hawaii,
24 Alaska or Utah, and my wife said, well, you better get a good
25 lawyer.

1 So the opportunity came up for me across the hall here to go
2 to work for Southwest. So since late summer of 2014 I've been the
3 dispatch inspector here at the Southwest Airlines CMO.

4 Q. Okay. Have you held any other positions within the CMO?

5 A. No. Just dispatch inspector.

6 Q. Okay.

7 A. Which is a little ubiquitous. I'm the utility hitter, a
8 little of everything.

9 Q. Well, that actually winds us up perfectly for the next
10 question. So can you run through what your duties and
11 responsibilities are in your position?

12 A. Well, in the CMO we work for two managers, really. I work
13 for a frontline manager who, administratively, assigns my work and
14 then I work for the principal operations inspector who, of course,
15 worked for the office manager. But the POI will give me tactical
16 things to work on and then I just coordinate that through the
17 frontline manager.

18 In that respect, I was brought over for my dispatch expertise
19 so overseeing dispatch and the network operations control which
20 includes a lot of different facets. Within NOC there's
21 maintenance control so I interact with them. There's crew
22 scheduling, both cabin and flight crew member. There's a lot of
23 ground operations interfaces and customer service interfaces all
24 within the network operations control and they are very integrated
25 in the way they manage the tactical operation. So that's probably

1 20 to 25 percent of my work. I wish it was more like 75.

2 But on top of that operational control of the airline is a
3 very big issue and dispatchers are partially responsible for it.
4 They have joint responsibility for operation control with the
5 pilot in command and the way that's structured from an FAA
6 perspective is that there is operational control, that the
7 certificate holder is responsible for that is delegated primarily
8 through -- from my perspective, primarily through the director of
9 operations which at every airline can have a different title. I
10 think here it's the senior director of compliance. I'd have to
11 look at his title. It changes from time to time.

12 But the DO, director of operations, is responsible to the FAA
13 for operational control of the airline and he delegates his work
14 through the chief pilots to the pilot in command for each specific
15 flight. On the other side it's delegated through the chief
16 dispatchers to the dispatcher for each individual flight. The
17 dispatcher and pilot share joint responsibility for the planning
18 and execution of the flight within regulations.

19 So that part of operational control has a lot of tendrils.
20 It reaches out to maintenance. It reaches out to ground
21 operations. It reaches out even to cabin safety. So overseeing
22 that, I have worked closely with the air crew program managers. I
23 work closely with other inspectors who focus more on ground
24 operations. I work with the maintenance, the airworthiness
25 inspectors for the maintenance interface and work with the cabin

1 safety inspectors because of the interface with the flight
2 attendants. That is basically wrapped up into the dispatching NOC
3 oversight.

4 Q. Okay.

5 A. In addition to that, I am the FAA representative on the
6 dispatch ASAP program, the aviation safety action program. That
7 takes up probably a quarter of my time and, again, it's
8 interrelated to all the other duties because it's dispatch-
9 centric.

10 On top of that I work ETOPS. I work -- have been involved in
11 some of the changes over from the old weight and balance system to
12 the performance weight and balance system. Of course, with the
13 onset of the Max I've worked with all the inspector group on our
14 team to get that certification up and running.

15 That, all put together, is maybe 50, 55 percent of my work.
16 The other 45 to 50 percent is Part 117 flight duty and the rest of
17 program. I am the inspector assigned to receive the reports from
18 the carrier, review and ensure compliance, and it takes up quite a
19 bit of my time.

20 I don't like that smile.

21 (Laughter.)

22 It is what it is. I got assigned. I wasn't volunteering.
23 So that is pretty much what I do. There are -- there's workload
24 that's internal to the oversight of Southwest Airlines to ensure
25 compliance and then there's work that comes in from the outside.

1 I may be assigned special duties to work a complaint or an
2 investigation from other departments within the FAA or as sent
3 down from Washington is the best way to say it.

4 Q. Okay. Do you have anyone in particular or a group of people
5 in particular you work with directly at Southwest?
6 (Indiscernible) group?

7 A. Yes.

8 A. I work directly with the manager of dispatch ASAP. I work
9 directly with a -- several employees within the compliance
10 department. There is one that's specifically assigned to the
11 dispatching NOC area and he's actually had a second employee hired
12 to help with the 117 work. So those two people I work with very
13 closely.

14 I associate with the compliance ground ops person because my
15 purview is looking at everything that touches dispatch so there's
16 a lot of ground operations work that I have to do. It's been
17 probably 1 to 2 days a month in the cockpit and at the stations
18 doing inspections, just seeing how they interact with dispatch,
19 how the communication flows, back and forth.

20 I work with Captain Hamlett, who is the director of
21 operations, and that's usually through and with POI that Captain
22 Hunt is the 119 person in charge of safety and security. I work
23 with him on a number of things that are anywhere from the outside
24 assignments to ASAP-related areas and some of that is involved
25 with SMS and audits, our safety management system and audits.

1 The senior director of compliance in NOC, I work with him
2 because he has oversight of a number of the employee groups and is
3 responsible for coordination and then under him, his senior
4 manager for compliance works with dispatch-centric areas and with
5 ASAP areas to coordinate that and then the director of dispatch
6 and manager of dispatch. Those are all people that I work closely
7 with in addition to the manager of dispatch training. And that's
8 something that I failed to mention earlier.

9 Dispatch training is another particular area. We do have a
10 second dispatch inspector at Southwest Airlines. When I first
11 came over and especially with the 117 load, I had to impress on my
12 management and they agreed and petitioned to get a second dispatch
13 inspector here. At the time that happened, I'd say it was late
14 2016, United -- the United Airlines CMO was the only other CMO to
15 have more than one dispatch inspector. They had three at that
16 time. We petitioned, got a second one and then American followed
17 suit to get a second one and so has Delta, just to deal with the
18 broad spectrum of areas that we have.

19 So our second dispatch inspector, he's assigned the primary
20 role of dispatch training but it is something else that I do. We
21 sit through each of their training sessions. We'll review their
22 distance training or computer-based training programs and are
23 responsible for the oversight of that in addition to their
24 enhanced weather information system, which is another large area.
25 I probably had that all written down.

1 Q. Wonderful.

2 A. But I think that pretty much covers it.

3 Q. All right. Actually, before we switch topics here, do you
4 have any flight time?

5 A. No.

6 Q. Okay. Now you mentioned you were involved with the
7 transition from their weight and balance system to, you said, a
8 performance-based system. Is that ORC?

9 A. OBC.

10 Q. OBC to a PWB system?

11 A. The PWB, yes, ma'am.

12 Q. Okay. Can you run through what that project entailed from
13 your perspective?

14 A. It was a little awkward at first. I was not assigned to the
15 transition team because of my 117 duties and trying to get a
16 number of other issues. Southwest Airlines was trying to open up
17 their EWINS program, their enhanced weather program, and adding a
18 meteorology group. So there were a number of issues.

19 I wasn't on the team but an issue came up with -- the
20 airworthiness inspectors were not ready to sign off because they
21 didn't feel like the manual system was adequate at the time that
22 it was presented to them. It was brought to me. The principal
23 operations inspector at the time asked me to consult with him and
24 look at it. We found some issues and so I sort of got pulled in
25 midstream to the certification process.

1 After that I consulted with the project lead on our
2 operations side and with the project lead on the airworthiness
3 side. So I was involved in a number of the aspects of that and
4 started sitting in on meetings and getting myself briefed up. We
5 managed to work through some gaps that we, collectively, found and
6 I think there was somewhat of an overrun of the time period but
7 basically we had the PWB system acceptable by the time the Max
8 came on board because it was necessary to transition from the OBC,
9 the onboard computer, to the PWB in order to utilize the Max
10 aircraft.

11 Q. Uh-huh. Do you recall when you were brought into the
12 project?

13 A. I'd have to go back and do some research.

14 Q. That's fine. You mentioned some issues with the manual. Can
15 you elaborate on the nature of those things?

16 A. From my perspective the weight and balance manual existed and
17 the weight and balance manual was going to have to be rewritten to
18 involve the performance weight and balance system. So Southwest
19 had developed a system and I'm not sure if it -- as I understood
20 it, it wasn't presented as a manual. It was going to be a policy
21 and procedures but it wasn't submitted as a change or a revision
22 or a new manual and that's where the airworthiness --

23 Airworthiness and operations within FAA are -- the yin and
24 the yang. They're two very different perspectives of the way they
25 go about things. And in the airworthiness side it's a very

1 sequenced order of events and they needed to see the manual in
2 front of them as submitted as part of the formal plan.

3 Q. Yeah.

4 A. And they didn't have that.

5 Q. Okay.

6 A. So in that the POI is the signatory over that, even though
7 it's in airworthiness, the principal operations inspector signs
8 off on the program. They brought me in and the -- for their
9 operations inspector -- and said this doesn't look right. We need
10 you to look at it.

11 As we went through that there was a manual developed and
12 submitted and it went through the five-step process to accept or
13 to approve that manual and there were a couple other things that
14 were missing from the Boeing Airline operations manual. There were
15 some ozone issues that weren't carried over and we had to correct
16 it and then we were able to proceed.

17 Q. Okay. You mentioned the five-step process. Can you run
18 through what that means?

19 A. I would have to step back. I have not been a project manager
20 so I'm aware that in certification there's a number of steps in
21 the formal submission, the responses back and forth and you have
22 to clear certain processes and gates in order to move from one
23 step to the next step which involves a lot of back and forth
24 between the FAA and the carrier up until the point where the
25 acceptance or approval is issued by the FAA.

1 Q. What is that transition between the two systems? How does
2 that look from the dispatch side?

3 A. I guess there's a couple ways. Form the dispatch side to a
4 dispatcher they were losing this old tool because all they had to
5 do -- the dispatcher had a means to go in and mirror what was
6 going on with the OBC computer, the laptop computer in the
7 cockpit. And the pilots -- I would not experience that until I
8 came here -- pilots could open it up and it was standby. You
9 typed in certain parameters and it just goes to the tables and
10 computes your weights that you need for operations. So it was
11 always there. It was always available.

12 For a dispatcher they could mirror that if they got
13 questioned so it was a little -- didn't have all the bells and
14 whistles but it was very close so they could go in and they were
15 trained to keep up with it and duplicate it. In case there was an
16 error or a problem or a question, they could assist the flight
17 crew in deriving their performance weight and balance numbers.

18 When you switch over the AeroData, you're basically turning
19 all of that over to a vendor so you're getting rid of your
20 security blanket in the cockpit and you're relying on information
21 to be transmitted. There's several issues to that. It's going to
22 be transmitted into ACARS and Southwest was a little more recent
23 in the transition over to using ACARS and it wasn't as much of a
24 primary tool previous to that as now it was becoming a real
25 necessary tool.

1 All of the workings of how the transmissions go back and
2 forth and how the verifications go back and forth, it's a smooth,
3 workable process now. Working that out and getting comfortable
4 with it I think was a little difficult for the dispatchers. So
5 you had a primary program and if there happened to be a server
6 fault at the carrier or at the vendor, what happens? What are the
7 backups?

8 So there was a backup at the vendor that could go into place.
9 With the pilots they had a backup in their electronic flight bag,
10 their iPad, they had a backup that they could go into the app and
11 do the same things that they used to be able to do in the OBC. It
12 was a different process. It was in a learning curve. The
13 dispatchers had an application on their computer, their desktop,
14 that they could go back in and do the same thing. So it was a
15 learning curve to get rid of an old friend and trust and verify a
16 new one. Fairly simple.

17 Some of the processes with how it worked in coordinating with
18 the stations and getting the right inputs and getting the inputs
19 in the correct sequence, those were a little problematic. They've
20 worked out most of those. There are still some last minute
21 changes that make problems. The company's done some mitigating
22 strategies to restrict that. You don't accept late passengers up
23 at a certain point. You don't accept late bags. You say this is
24 it. Closed. We're going to move forward. And that's a business
25 decision that you have to do to be able to work.

1 So overall, I think the first 6 months were probably a little
2 rough. That's not unusual for any new system. Now, I'd say the
3 system is working pretty well. There are still a few problematic
4 areas that the company and the FAA are working to make sure that
5 we mitigate any error potential.

6 Q. Okay. Can you elaborate on those that you're working on now?

7 A. I am not.

8 Q. Okay.

9 A. I know they're in place. The company has moved from manual
10 bag counts to -- they're transitioning to a total scanner bag
11 count which is -- a number of the majors use scanners. They have
12 their own problems and backups and redundancies. So I know that
13 there are efforts in place and changes that have been made to
14 procedures to make sure that we have acceptable policy and
15 procedures and compliance.

16 There is a group of inspectors now that are going out to
17 verify that that's working acceptably. Like I said, we've got a
18 second dispatch inspector because that's a ground ops kind of
19 thing and we didn't really have a ground ops inspector, so our
20 second dispatch inspector has been put in charge of that.

21 Q. Okay.

22 A. I know a little of what's going on but that's not my area of
23 expertise and part of why I recommended he get hired is that he
24 came in with some background in engineering and development of
25 weight and balance systems.

1 Q. Okay. Okay. I'm going to gather myself here and how are you
2 doing? Do you need a break?

3 A. No, I just -- I can't sit back. I've got to sit --

4 Q. Okay. I understand.

5 A. These chairs kill me, so --

6 DR. SILVA: So I will hand it over to Marvin.

7 BY MR. FRANTZ:

8 Q. Sorry, do you go by Robert or Bob?

9 A. I go by Bob but our principal POI is Bobby so he calls me
10 Robert and I'll answer to either.

11 Q. What would you like us to call you?

12 A. Bob is fine.

13 Q. Okay. Okay. Thanks for coming in this morning, Bob. Sathya
14 did a lot of good background stuff and I want to focus -- I have
15 some specific questions on PWB, day-to-day use in operations and
16 what Southwest does and what they're supposed to do in using that
17 system. So most of my stuff I'd say, initially, will be focused
18 on that. And these will be more targeted questions.

19 So I guess the first thing I want to ask is when a flight
20 crew conducts or requests -- I believe Southwest calls it a
21 landing solution or what is the term for when you request --

22 UNIDENTIFIED SPEAKER: Landing data is how it's labeled in
23 the --

24 BY MR. FRANTZ:

25 Q. Landing data. Okay. Landing data. When they request --

1 when a crew requests landing data as they're approaching their
2 destination, is there any policy or procedure at Southwest that
3 you're aware of that is intended to make sure that the latest
4 weather for that destination goes into making or calculating that
5 landing data for the crew?

6 A. As I remember the procedure being written, the policy is that
7 they will use the most current and we've had some discussions
8 about that. I assume you all are aware of the TALPA project, the
9 takeoff and landing performance, and that is predicated on a field
10 condition NOTAMs provided by the airport authority. And most
11 people in the operational environment think that's an area of some
12 concern is that it is timely and that it is updated.

13 If a pilot's coming in and a station has made a field
14 condition report, so a station agent has gotten information from
15 the tower and put it in as a field condition report which is one
16 thing the pilot can request or he has an ATIS report, he has to
17 look -- now he's got two choices. And he's got a FICON and so he
18 has to look and see what is the most current. And we've come to
19 an agreement that we should use the most current. And that was --
20 I was responsible for asking a lot of questions about, well, isn't
21 the FICON, as a NOTAM, isn't that controlling? And that's a
22 philosophical question and what it comes down to, operationally,
23 and we resolved that through headquarters, is that we really want
24 them using the most current and that's the policy.

25 So the request by the pilot, it's input into their ACARS unit

1 in the landing assessment pages and captures -- they are to
2 utilize the most current. So I'm hoping that that's answered your
3 question.

4 Q. When you say they are to utilize the most current, who is
5 they?

6 A. Well, that the pilot is using the most current because the
7 pilot's the user at that point. This system is very automated and
8 that's on purpose. It's to try and remove error. Now, if you're
9 asking me does that automation select the most current, I'd have
10 to go back and research that.

11 Q. Okay.

12 A. I'm really not sure what that's selecting. I know the
13 process and the procedure is that it is to utilize the most
14 current data.

15 Q. Does the pilot, when he's getting ready to request his
16 landing data, does he input weather conditions at the field,
17 typically. Is that the procedure at Southwest?

18 A. Now, you're asking the dispatch inspector and I'm not meaning
19 to be coy but they kept us in the dark all like mushrooms.

20 Q. Okay.

21 A. The pilot's input is not my expertise.

22 Q. Okay.

23 A. I could go out and pull up the FOM and read you that but
24 that's what I'd have to do because I -- my limited brainpower
25 doesn't keep the pilot's procedures and inputs.

1 Q. Sure. All right. So let's go to dispatch. Is there any
2 procedure or policy at Southwest for a flight's dispatcher to be
3 in on or aware of or mirror a flight crew's actions in gathering
4 landing data? Does the dispatcher also see the same landing data
5 that the pilot got when he requested it?

6 A. You said any, so by saying that I will qualify my answer. If
7 requested by the crew the dispatcher will go in and do a landing
8 assessment.

9 Q. Okay.

10 A. It is not a normal procedure. It's not a required procedure.

11 Q. Okay.

12 A. You know, all of us come from another place, another time,
13 another experience. It was my experience previously that that was
14 done on every flight so when I came here I questioned that but
15 it's not a requirement here. If the pilot sees the need or feels
16 it's beneficial to request dispatch to confirm landing assessment
17 data, he can do so and the dispatcher is trained and it's a very
18 simple procedure to pop it up in their SWIFT flight planning
19 system, Southwest Airlines flight planning.

20 Q. Right.

21 A. Pull that up and (knocks on table several times) he's got
22 knocks.

23 Q. Okay. So a dispatcher routinely does not have awareness of
24 what weather that the crew is working off of to get their landing
25 data.

1 A. No. No. Dispatchers, you will find some that are more
2 proactive and will be -- if they know of a potential weight
3 problem or potential weather problem they may be stepping out
4 ahead and they can go in and do that assessment and just say,
5 okay, it looks like he's going to be fine. Looks like the
6 weight's right or they know he's gotten a shortcut. On a long
7 route he gets a shortcut and a dispatcher may jump in and say,
8 okay, how are we going to be on landing weight? Because then he
9 will relay that and say, captain, looks like that shortcut may
10 cause a landing weight issue. You may want to dirty up the
11 airplane. You may want to, you know, watch your landing weight.
12 That would be the only time a dispatcher might do it that's why
13 you said any in that case a dispatcher can step up and he's going
14 to be pulling up the latest METAR is what he's looking at,
15 typically.

16 Q. Is there any policy or procedure for Southwest dispatchers to
17 routinely monitor weather as crews approach an airport and to
18 watch for, you know, changes, rapid changes or anything out of the
19 ordinary or whenever you call it --

20 A. There's nothing that says as they approach. Now, a
21 dispatcher under regulation is to constantly monitor and advise
22 the crew of any change in the weather that may affect the safety
23 of flight and all of those words are very careful. Typically,
24 dispatchers are scanning and going around but if you've seen the
25 Southwest operation -- and I have to commend them. They went from

1 -- I'm going to use fictitious numbers here -- they went from
2 having 35 flights they're watching at one time and they said this
3 is too much. We need our dispatchers to be able to focus on
4 individual flights and they brought it down to more like 25
5 flights and then you give them time. They may be operating --
6 some of them are getting ready to take off, some of them are
7 getting ready to land, most of them in some phase of flight so
8 that they can focus better.

9 So Southwest has taken great strides to reduce their -- and I
10 use the word in quotes "workload" -- so that they can monitor and
11 be aware you've got flights approaching this station, you got a
12 flight approaching that station, another one someplace else and
13 you're constantly scanning not unlike the flow in a cockpit.
14 You're constantly just looking to see, oh, wait a minute. These
15 guys are getting close and there were some thunderstorms close by.
16 Where are they? So they're updating. So that is required.

17 There is no specific 5 minutes before arrival, check the
18 weather. And I don't know of any carrier that writes their
19 procedures that closely.

20 Q. Okay. Yeah. Sure. Are you familiar with the output with
21 the flight crews you see in the airplane when they request landing
22 data the format or the information that comes back to them?

23 A. I've seen it in reviewing the training that came across and
24 in flight ops and riding in the cockpit. That's one of the things
25 that I do try and make sure that I've got access to see it when it

1 pops up and watch their flow and watch their checks.

2 Q. So are you familiar with that -- the data that's called
3 stopping margin when they have -- they request it for runways and
4 when the information comes back there'll be a stopping margin or,
5 I don't know if that's the exact wording, but for each runway
6 there'll be a number that is how much margin they will have left
7 on that runway.

8 A. Right. I'm aware of that.

9 Q. Do you know if dispatchers at Southwest have any insight or
10 knowledge of or even awareness of the stopping margin and how --
11 what the flight crew or what they, as dispatchers, are supposed to
12 do with that stopping margin data?

13 A. I would have to say, and it's almost anecdotally, I'd have to
14 say that it's not a focus of theirs. They're aware. It does come
15 up in the training that they go through in, you know, each block,
16 this is what this means. But after that it's sort of what we call
17 pilot information. To the dispatcher he's legal or he's not
18 legal. The margins, how close you are to any margin, if it's --
19 to the dispatcher maybe the ceiling and visibility, how close you
20 are there, is important to them because as you get closer, then
21 any change he's got to start feeding more information to the
22 pilots. As far as the stopping margin, no, that's more pilot-
23 oriented.

24 A. Dispatchers --

25 Q. Okay.

1 A. -- should know it's there but if you ask 9 out of 10 they'd
2 give you the same answer I did. They're aware of it. They'd have
3 to go in and dig it out to show you where it is.

4 Q. So kind of back to ATIS, latest weather. A dispatcher is not
5 required. They have an overall responsibility under their job
6 description, responsibility for the flight and notify the flight
7 crew of any pertinent safety information including weather.

8 So is it routine for a dispatcher to periodically look at
9 destination weather as a flight proceeds and look for any
10 significant changes that they might need to alert the flight crew
11 to?

12 A. Yes. I mean, that is typical. I was over at the carrier
13 last night and watched some flights coming into southern Florida
14 and a dispatcher has three different National Weather Service
15 plots up and he's watching the runways and the cells and where
16 they're migrating and where they're not migrating and he's pulling
17 METAR. He's pulling ATIS. He's looking at ITWS/CIWS and he's
18 just constantly -- and then he's looking over at the flight he's
19 got out on the west coast and he's back over to Florida.

20 But it's a constant and he's sending messages to the flight
21 crew and the flight crew's saying, hey, are they holding or are
22 they taking approaches? And it's -- it is exceptional that, at
23 least at your legacy carriers, the amount of information they have
24 and the tools they have and these young kids they're I mean, they
25 are great at scrolling through and watching the information. But

1 they are constantly, especially when there is weather at the
2 destination, weather impact whether it be winds, thunderstorms, a
3 frontal system moving up, they're very good at their scans and
4 rechecking and formatting and sending messages because they've
5 usually got --

6 This young gentleman yesterday had six planes headed for Fort
7 Lauderdale. He had three going to Tampa and one or two going to
8 Orlando. So similar messages that he's feeding to those back and
9 forth but they're really very efficient at it.

10 Q. Did you say the dispatchers can mirror? With the PWB system
11 can they go in and calculate the same landing performance data
12 that the flight crew does if they wanted to?

13 A. Yes.

14 Q. From their position is it done --

15 A. (Indiscernible.)

16 Q. -- via the app that the crew could use on their iPad or how
17 does a dispatcher do it if they wanted to -- if there's no other
18 landing data?

19 A. The app that the dispatcher has is exactly the same as the
20 app that the pilot has in his EFB. The dispatchers have an EFB.

21 Q. Okay.

22 A. And they've also got it in their desktop computer --

23 Q. Okay.

24 A. -- which is called DFDP, the desktop FDP.

25 Q. And dispatchers are trained on that.

1 A. Yes.

2 Q. Would you say the dispatcher training in regard to the PWB
3 system, overall use of that system at Southwest, is adequate?

4 A. Is accurate?

5 Q. The training. Adequate.

6 A. Yes. Yes. I'd say it is. It's -- dispatchers are
7 responsible to make sure that the weight and balance information
8 is accurate and available. They don't do a lot of the work. A
9 lot of that is assigned by Southwest Airlines through their ground
10 operations manual to gate agents who are interfacing with ramp
11 agents and inputting information. The outputs of that is what
12 comes through AeroData and the dispatchers can pull that up and
13 look at it.

14 They correlate and correspond with the pilots if there
15 happens to be an error. If there's -- the pilot's being told one
16 thing and the dispatcher's being told something else by ground, or
17 ground will come up and say, oh, we missed this bag or we missed
18 this count and then the correction process has to involve all
19 three of those entities together with the dispatcher being the
20 controlling one to make sure that the pilot always has the
21 accurate information.

22 So their training is pretty comprehensive. We've approved
23 some computer-based training so that they get more of that
24 hands-on time. I don't like computer-based training. I like
25 instructor-led because you're seeing, one on one. But in an

1 instructor-led class with 420 dispatchers, you don't get much
2 hands-on time. So CBT and the method of using CBT for PWB
3 training, sorry for all the acronyms, is effective and I think
4 it's more than adequate.

5 Q. Does Southwest have a -- in the dispatching in the NOC do
6 they have a formal or informal procedure for a dispatcher to
7 offload some work if he finds himself getting swamped with --

8 A. Yes.

9 Q. -- three or four, you know, problem flights that he has to
10 spend extra time on? How does that work?

11 A. They have both an informal system -- and this is all lined
12 out -- and it's formal in that it's in procedure. Informally, if
13 I'm sitting here and I'm getting swamped, I'm on the phone and I
14 see something happen, I can say, hey, Mark, can you grab this
15 phone for me? Or this flight's coming up. Can you send him that
16 PIREP that just came out? And then I'm on with maintenance trying
17 to work a deal. That's informal. It's called sharing with your
18 pod mates.

19 Or if I'm sitting here working and Mark's got two phones
20 ringing and he's typing away and I can step up and say, hey Mark,
21 how about if I grab that for you? They are good about that.
22 They're good about helping each other.

23 Now, that's a personality thing, too. If she's been dissing
24 me all week long, I'm maybe not going to help her unless I have
25 to. But they are good about doing that informally.

1 Formally, in their structure there's dispatchers, then
2 there's superintendents on duty who are not supervisors. They're
3 superintendents. They're more involved with the orchestration of
4 plane mixing and matching and -- than a chief dispatcher, who
5 oversees the SODs, who are doing all that planning and the
6 dispatchers and if he sees an area that's getting into trouble
7 with weather or air traffic delays and congestion or a dispatcher
8 that just is having bad day, he can reach out and say, I'm going
9 to take these flights off of you or reach out to the person next
10 to you and say can you -- so that's the more formal side of it.

11 In most dispatch shops you've also got managers and people
12 like dispatch specialists in different areas that are dispatch
13 trained and qualified, they're current and qualified and in a
14 heartbeat you can grab one of those people. They'll pull up a
15 chair at an empty desk, take a load and go to work and they can
16 usually do that. Now that's short duration, 30 minutes to an
17 hour, a couple hours, till you can call someone in.

18 But Southwest has a very good program all the way from
19 informal to calling in extra help and the ASAP groups keeps
20 pushing them on when you foresee this coming, you know there's a
21 bad system coming up, get some extra help in for tonight. And
22 they are. They're pretty reactive to that.

23 Q. Okay. Do dispatchers have -- this is I guess it's a process
24 or technical question -- when they're sitting at their positions
25 and they're doing 25 flights, is one of the things that's

1 displayed to them weather for coming up destination airports? Is
2 that displayed or do they have to go in and request, oh, I see
3 this flight's approaching this airport so I'm just going to double
4 check the weather or can he just look up and see, oh, there's the
5 last METAR. I see it's good or it's bad or does he have to
6 request it if he wants to see it?

7 A. A dispatcher has -- I'm trying to remember it seems like they
8 have four fairly large 24-inch, 28-inch monitors. One monitor,
9 computer monitor, has a program called Monitor on it and it's all
10 their aircraft, flight number, origin, destination, time out, time
11 in, fuel and that's all there. It's usually one dedicated
12 monitor.

13 You got another dedicated monitor that is Fusion and it is a
14 -- it's now owned by HP but it's called Weather Safety, Inc., WSI.
15 It's weather. It's a graphic display from ATC feeds so they can
16 see a map, whether it's the United States or Florida, blown up,
17 all their airplanes. So they see weather. They see airplanes
18 coming and you'll -- my mouth skills are not great. But these
19 guys will flick and an airplane identifier will come up and you'll
20 see their eye's go to Monitor and back to flick, number, they're
21 just doing this.

22 So they got weather and airplane graphic display and they're
23 going right back and that's how they keep up with that. It is a
24 -- it's a skill to keep those going and now you've got other
25 things. I was talking about ITWS programs, CIWS programs,

1 programs, to look at wind gusts and microbursts and gust fronts
2 moving along. So they'll have several weather programs going.
3 They'll have the Fusion going. They've got their Monitor going
4 and then they've got a flight planning screen or they'll replace
5 it with pulling up a manual to research something.

6 So they can have 7 to 15 applications going at once. But
7 they do have two dedicated monitors and it's either up here and
8 here or here and here for Monitor, which is all of their flying,
9 and the graphic display of weather and aircraft situation.

10 Q. So if a special in ETOC came out other than non, you know,
11 the top of the hour, other than standard if something came out at
12 30 minutes past or 35 because something drastically changed at an
13 airport and one of my flights, as a dispatcher, was going to that
14 airport, would I have any awareness of that special METAR if I
15 didn't go in an type in that airport and see I better check the
16 latest weather> If I didn't do that is there any way I'd know
17 that suddenly these conditions at this airport have drastically
18 changed?

19 A. If you didn't have that alert you wouldn't be working at
20 Southwest Airlines. Within Fusion, to set up Fusion could take
21 you an hour if you had to do it every day. It's an automated
22 system. They do rely on a lot of automation and they've got
23 alerts set up for changes, specific changes in ceilings, specific
24 changes in visibility. It's an amazing tool.

25 But when you get a change as you just described he's going to

1 get an alert, a popup there and they are trained to this. They'll
2 get an alert in Monitor that tells them an MEL has just been added
3 and you'll see his eyes flick over there to that little red alert
4 and all of a sudden you've got a box that pops up, it's an alert,
5 you just got a METAR change. You just got a reroute from ATC. So
6 automatically he's starting to do these flows. But, yes, it's
7 there and it's very efficient.

8 Q. Is that a customizable feature?

9 A. Yes.

10 Q. The dispatcher can say I want to be notified if the ceiling
11 changes by X or if it goes below X I want an alert so he can --
12 and does each dispatcher have his own numbers they --

13 A. Yeah. You got your -- you save that configuration and you
14 can save multiple configurations so it goes back to a question you
15 asked earlier do they have a way of relieving workload. You may
16 have a configuration for a clear -- what we call a bluebird day,
17 the old Piedmont Speedbird. Bluebird day, ceiling visibility
18 unrestricted, you've got every alert turned on because there
19 aren't going to be any.

20 Now all of a sudden, you're in a (indiscernible) storm that's
21 coming across, and it's going to affect the Chicago metros, the
22 Washington metros and coming up on New York. Well, if you're
23 working in any of those areas, your day just went to pot.

24 You're going to turn off half of those alerts and you're
25 going to be asking for some help because you can't work all the

1 flights with all that going on but it's just like in a high
2 performance aircraft. When everything starts popping off there
3 are some things you're going to shut down so you can focus on the
4 critical things.

5 A dispatcher can do the same thing. He can switch from one
6 configuration to another so he's not worried about a 3,000-foot
7 ceiling change. He's worried about the minimal changes. So don't
8 give me those alerts because I'm too busy to worry. I'm going to
9 be on top of everything that I've got because I've shed some
10 workload. So it is configurable.

11 Q. Okay. Did you know the dispatcher for this accident or
12 incident?

13 A. No. I don't even know who it is.

14 Q. William Lamb (ph.).

15 A. I handled it in ASAP. Dispatch, we don't identify the name
16 so --

17 MR. FRANTZ: Okay. Okay. That's all I have for now, thanks.
18 Thank you.

19 DR. SILVA: Eric, did you have anything?

20 MR. WEST: Yeah. Okay.

21 BY MR. WEST:

22 Q. Can you give me a number, approximate number of dispatchers
23 that Southwest has currently?

24 A. Currently?

25 Q. Yeah.

1 A. Working dispatchers it's between 400, 420. I stopped
2 counting, to tell you the truth. And they are getting ready to
3 hire again.

4 Q. You don't know how many they're -- you just know they're
5 going to hire.

6 A. I'm -- and, again, it was anecdotal but I was told they're
7 getting ready to hire another 100. I'm assuming that since this
8 is an NTSB hearing I can say some things that I wouldn't say out
9 on the street.

10 Q. Sure. That's no problem. Okay. All right. So what I'd
11 like to ask you know is --

12 MR. TOMICICH: Actually, before you go there I do want to
13 caution you. This will be made public, so it will go out on the
14 street.

15 MR. FULTON: Okay. Thank you.

16 MR. TOMICICH: So if there's proprietary or --

17 MR. FULTON: Yeah. I'd want to be careful about that
18 because, like I said, I cover a lot of training issues. I cover a
19 lot of issues on the floor and the ASAP issues about workload,
20 those are always there. And so sometimes I'm saying, okay, what
21 have we got in the pipeline? Somebody said, well, I heard this.
22 It's nothing formal that I've been notified of. It's just --

23 MR. WEST: Okay.

24 MR. TOMICICH: Well, let me -- before you do that, I want to
25 warn you anything that's proprietary to the airline or something

1 like that, you shouldn't put that in the record because, again,
2 this will go in the public docket. So, you know, if there's
3 something special, we can talk about that, but don't talk about
4 proprietary stuff.

5 MR. FULTON: Okay.

6 BY MR. WEST:

7 Q. But is that something -- let me ask you it this way, then.
8 Is that something, as an FAA dispatch manager, that Southwest is
9 required to let you know about is coming?

10 A. No.

11 Q. No. Okay.

12 A. I mean -- no, there's no requirement there.

13 Q. To let you know what the workforce --

14 A. I might be questioning and say, you know, have you got any
15 new training coming or are you going to have a new hire class
16 because I always want to sit in on them.

17 Q. You want to sit on in a new class.

18 A. Typically, they'll let me know that but it's just sort of a
19 professional courtesy.

20 Q. Fair enough. So you haven't -- at this point in time you
21 have not or have you been notified of an upcoming training class?

22 A. No.

23 Q. No. Okay. Fair enough. How are the dispatchers set up to
24 coordinate flights, overall? In other words, are they set in
25 groups and I think you mentioned something about 25 or --

1 A. Yeah. At Southwest Airlines they have a very active
2 scheduling committee and it's management and union combined to
3 look at making the scheduling for a dispatch desk as efficient as
4 possible. Because if you got one desk that's covering, you know,
5 the four corners of the Earth, it's difficult to keep focused when
6 you have problems.

7 So for example, the desk I was watching last night was,
8 typically, flights coming from the Northeast and Chicago corridors
9 down to Florida. So it's landing Florida and there were
10 thunderstorms down there so it was real easy to see that that was
11 his main focus but he's looking back and he's watching some
12 takeoff performance issues. He's watching routing issues because
13 out of the Northeast there were a few storms so planes were
14 getting routed around and he's having to watch that and keep
15 coming back and looking. So that was one desk.

16 Another desk that I went over to he was working things from
17 Dallas and the Chicago area and the Midwest going into Florida
18 because when I walked in I always check in with the chief
19 dispatcher out of courtesy and say, I'm here; I've notified the
20 director that I was going to be here. He said, yeah, we were
21 looking for you. I said, okay, where's the weather? Well, the
22 only weather we've got is in Florida. I said, okay, pick a
23 dispatch desk and let me see it, because I don't want to pick on
24 an individual. I'm just there for a general observation. That's
25 one of our safety assurance system planned observations that I go

1 over. So I said, just sit me with a desk that has that weather.

2 So those two desks they were sort of in that corridor and he
3 did ask me, do you want long haul or short haul? I said, really
4 doesn't matter. So some long haul desks will be things that are
5 going transcon from the East Coast to the West Coast. So they're
6 watching two separate areas of weather but most of their flights
7 are going to be en route.

8 Now, we've got a lot of reroutes which is a lot of workload.
9 But they're very careful about taking a desk that has, let's say,
10 25 flights and keeping them in a certain corridor. But if this
11 dispatcher tells us through ASAP or through an irregular report or
12 just talking to the committee and says, I'm getting killed; I've
13 got too many flights here, well, they'll take a look at it and try
14 and balance it. They may have to take a few off or they may take
15 let's say, okay, we have three Des Moines and two Omaha flights
16 here that just make it -- so we'll shift those over to another
17 desk. We'll do this to try and keep them but it's to keep some
18 semblance of similarity on the desk so that you're not working
19 Bangor to Boston and Puerto Plata to Fort Lauderdale and working
20 Oakland to Hawaii all on the same desk.

21 Q. Okay. I understand. So how many shifts do they operate?
22 They're around the clock, I take it.

23 A. There's basically three time periods. There's the mornings
24 that start at 4:00, 5:00, 6:00 or 7:00, 8-hour shifts. So that's
25 a morning shift. You can either work a 4:00 start, a 5:00, a 6:00

1 or a 7:00. And they need to do that to cover their continental
2 flight and again 8 hours later you'd start with a noon, 1:00,
3 2:00, 3:00 starts for the afternoons.

4 Q. Okay.

5 A. At night you have people that start coming in, I believe, at
6 9:00, 10:00 and 11:00 for the midnight shift. So as you finish,
7 you know, you start at 4:00 in the morning, at noon you're going
8 to turn over to another dispatcher. That other dispatcher has an
9 overlap of 30 minutes. He comes in 30 minutes before to get up to
10 speed on NOTAMS, weather and get a turnover from you and it's a
11 very formalized turnover with this airplane has this. This
12 station has this NOTAM. We've got a VIP movement over here. That
13 ATC -- so it's very coordinated and very effective, but there are
14 a number of different shifts.

15 Q. Okay. How many desks?

16 A. Well, I know I was at desk 109 last night. So to say that
17 there's 109 of them is -- it would not be right. But they've
18 probably got at least 80 desks. It is a large, large --

19 Q. Okay. Approximate is good enough.

20 A. And then you've got an area that's just international,
21 Caribbean flying, and you've got three ETOPs desks that are
22 separated a little bit from the main floor, and then you've just
23 rows of -- all their desks are in a row and I'm seeing 12 to 14
24 desks and they sit back to back so I'm sitting at this row and
25 then there's a row back there and that's where I've got people on

1 either side of me. There's a sort of a six-person pod that can
2 help each other pick up workload or pick up phone calls.

3 Q. It's almost like the command center in air traffic control.

4 A. It's bigger than the command center.

5 Q. It is. Okay.

6 A. It makes the command center look weak. If you want to see --

7 Q. I've never been there.

8 A. -- this is the best in the industry. There are other people
9 that say we've got a newer one. We've got a better one. I've
10 been at American. I've been at United, Delta. This is the best
11 there is. They've spent the money and they've got the resources.
12 It's complex. They're outgrowing their space and it is
13 phenomenal. If you get a chance to go over there you should see
14 it.

15 Q. Were you involved in any way with the ETOPS approval?

16 A. Yes. Again, I was dragged in. The other dispatch inspector
17 was assigned that as he was finishing up his training in Oklahoma
18 City, so he was in and out so I got pulled in and put on. But I
19 was involved pretty much from the start and through the finish of
20 the ETOPS.

21 Q. Okay. You mentioned the -- you mentioned manual bag count
22 very quickly and the way that they are now beginning to do the --

23 A. Scans.

24 Q. Scanners and so forth. So when they did a manual bag count,
25 there must have been a way of calculating weight. Do you remember

1 how that was accomplished?

2 A. Yeah, that's all lined out in the ground ops manual. There's
3 a standard weight for --

4 Q. A standard weight.

5 A. -- that and that goes along with -- the program's changed
6 over the last 4 to 5 years a little bit but each carrier has to
7 establish, now, their baggage weight system and then that is
8 submitted and approved by FAA and Southwest keeps that system in
9 their ground ops manual.

10 So they have standard weights for bags and they have heavy
11 weights for bags and then there's cargo and COMAT that is on a
12 weight basis. There are weights for passengers and those change
13 by season. There's summer weight and a winter weight.

14 Q. Right.

15 A. But all that is standardized for the airline and accepted by
16 the FAA.

17 Q. Okay. And you mentioned, also, that the -- something is
18 going to happen soon. There were going to be some inspectors
19 going out to do --

20 A. Yes. They are in the process of -- they attempted several
21 years ago to implement scanners and for whatever reason that got
22 sidelined. With the advent of the PWB system and AeroData the
23 company elected to go ahead and implement the use of scanners.

24 They started at a few stations testing and training and
25 that's been spread out. I believe all stations, at this point,

1 have initiated the training but you'll have some employees that
2 are trained and some employees that aren't yet trained and all
3 stations are migrating towards training all the people where
4 essentially they will go to total scanner type operations.

5 There are provisions to fall back to manual. Of course, if
6 for some reason the scanners failed or the system failed they have
7 the backup of manual counts of bags. But I think they're pretty
8 close to having everything where they're transitioning the
9 stations over to a full scanner.

10 Q. Does manual match up the bag with the passengers or is that
11 not required domestically?

12 A. I would have to look and see if there's any way to do that.
13 Now what I -- the manual counting system is just at plane side you
14 get a cart of bags that comes up. So someone, the lead or the
15 person that's loading the forward bin or the aft bin of the
16 airplane, is responsible to count those bags as they go on,
17 annotate it and then at some point usually the lead will take the
18 bags loaded forward, the bags loaded aft. He'll put that all
19 together and carry it up to the ops agent at the gate and that's
20 where it's input to the system. So that's the manual system. The
21 same with bags coming off.

22 Matching them up with a passenger? No. You would have to do
23 that by taking the bag tag and going through the passenger
24 manifest and then you've got to pull up each passenger.

25 Q. I see.

1 A. That is a very arduous system.

2 Q. Yeah, I see. I'm not sure that's required domestically. But
3 one question I wanted to ask you is does the dispatcher have
4 access to landing weight data?

5 A. Yes.

6 Q. Okay.

7 A. As we've said before, it's -- there's a basic system.
8 There's a backup system and then there's the flight bag standalone
9 app.

10 Q. Okay. So when an aircraft is about to land at the airport
11 they actually have that data.

12 A. They have the capability --

13 Q. The capability.

14 A. -- and what the dispatcher has to have is he has to have the
15 weight of the airplane. Well, now that's, you know, that's a
16 dynamic number. But with the NG type airplanes, the dispatcher
17 has a means to use what they call How Goes It. He just pulls --
18 selects an aircraft and most of them have a key program so the
19 aircraft key, ping goes up to the airplane and the aircraft will
20 respond to that ping with a stack of about 14 parameters of
21 longitude, latitude, weight, speed, fuel on board, it's automated.

22 Q. Automated.

23 A. So he's pinging that airplane.

24 Q. Right.

25 A. That technology first came out with the NG airplanes and so a

1 dispatcher if he has a point that let's say that crew calls and
2 says I want you to run a landing data assessment. Here's what
3 we're getting. See if you get the same thing. That's not
4 unusual. The dispatcher has one of two things. He can say give
5 me your fuel on board. Give me your weight or he'll go, okay,
6 I'll get it for you in a moment.

7 He's got all the data. It can go either way. He can
8 retrieve it from the crew or he can ping the airplane and get the
9 How Goes It and it tells him exactly all the current parameters
10 from that airplane and then he'll input that and do a landing
11 assessment.

12 Q. Speaking of which, so when the dispatcher does contact the
13 aircraft through ACARS, how does the crew know that it's the
14 dispatcher and contacting --

15 A. It's transient. The crew doesn't know it's happening.

16 Q. Okay. So -- well, I mean not the automatic thing but just so
17 is it -- does it come up differently on ACARS as opposed to
18 AeroData? Does the type -- is the type different?

19 A. That's not my expertise but I know they get a message --

20 Q. Right.

21 A. -- and they can just pull up the message and --

22 Q. It's okay if you don't know.

23 A. No, ACARS messages have to be formatted but --

24 Q. Yeah.

25 A. -- it's a different format and dispatchers are instructed to

1 always sign their messages with a date/time/group and their
2 initials --

3 Q. Okay.

4 A. -- that the crew should be familiar with so it's a different
5 formatted message.

6 Q. So I think, Mark, when you touched on this one, this -- so
7 did the FARs require a dispatcher to flight follow the aircraft?

8 A. Yes.

9 Q. They do.

10 A. It's called flight monitoring.

11 Q. Flight monitoring so it's not flight following it's flight
12 monitoring.

13 A. Flight following is a different thing and a different FAR.

14 Q. Okay. Dispatchers have a certificate. Is that correct?

15 A. Do they what?

16 Q. They have a certificate.

17 A. Yes. A dispatch certificate is called a Aircraft Dispatcher
18 Certificate and it is a -- there is no medical associated with it.

19 Q. It's an Airmen's Certificate. Is that correct?

20 A. Yes. It is an Airmen's Certificate. In fact, the test has
21 been massaged a little bit here over the last few years but it is
22 the -- it's this -- used to be when I took it, it was the same ATP
23 test for a pilot. It is exactly the same questions.

24 Q. Really?

25 A. So it's -- that's -- that was derived from the requirement

1 for operational control to be jointly held between the pilot in
2 command and the dispatcher. We have to have the same
3 qualifications. So some carriers will require dispatchers to even
4 go in and do simulator training to make sure they carry that to
5 that same level. Nowadays you can't get near a sim session. So
6 it's sort of going away. Some carriers used first officers as
7 dispatchers back and forth but the qualification, at least for the
8 written qualification, is the same. Then the dispatcher gets his
9 written, he goes in and takes an FAA oral or proficiency check in
10 order to get his license.

11 Q. Can an ATP, automatically go get a dispatcher certificate?

12 A. He is qualified to apply and there's qualifications that you
13 have to have to apply to do the written. To say automatically,
14 no. It's not an open door. You have to show that you've got the
15 training. So the ATP, you show that you've got a certain amount
16 of aviation experience and training, you meet that hurdle then you
17 can submit, take the test, so you're submitting yourself to the
18 test again but all you're going to do is pass. And then you would
19 have to sit down and take a FAA or an FAA-authorized, because we
20 use designated examiners, proficiency.

21 Q. Okay.

22 A. So -- and then you'd get a ticket.

23 Q. So describe to me just -- and this'll be my last question --
24 how anybody would qualify and then subsequently get their
25 dispatcher certificate, real quick.

1 A. You can -- nowadays what you have to do, and it's evolved.

2 Q. Okay.

3 A. I didn't do this just yesterday.

4 Q. Right.

5 A. But you would go to a school. So you could come in and you
6 don't have to have any experience to pay money and go to school.
7 But through that school is where you get the experience
8 requirements. You're going through classes in meteorology,
9 classes in physics, classes in maintenance and avionics and
10 whatever. Once you've done all that then you've gained your
11 experience.

12 At the end of that if you have qualified through that
13 program, and it has to be an approved program, and aircraft
14 dispatch inspectors go out and oversee these schools so they
15 have to remain qualified and current. So it's not unlike
16 Southwest Schoolhouse. We go over and we check that and it's
17 approved. It's approved by the FAA. These schools, Sheffield,
18 for example, or Embry Riddle, those schools are checked.

19 Q. Is that under 147 or is something to that nature?

20 A. I think it's 142.

21 Q. 142.

22 A. But they get checked and so you could go to a school, you
23 take the written test and that is monitored by a DADE, it has to
24 be given by a designated aircraft dispatch examiner and they
25 monitor and proctor the test to make sure that there's no

1 shenanigans and once you pass that written then you can apply to
2 take the -- and I'm saying oral. There's a different term for it.

3 They have to have FAA written proficiency test and you sit
4 down, 2 hours, 4 hours, 6 hours, whatever it takes for the
5 dispatch inspector or a DADE and it's an oral. He grills you on
6 FARs, on weather, on the aircraft specific and it's an aircraft-
7 specific test. You study for one specific aircraft. And then you
8 do flight planning. He'll give you scenarios with MELs, with
9 weather problems with this and that. It's a pretty grueling
10 experience but once you pass it you've got a aircraft dispatcher
11 certificate that is -- it is what it is.

12 MR. WEST: Okay. I think that's all I have, Bob.

13 DR. SILVA: How are you doing? Do you need a break?

14 MR. FULTON: I'm fine.

15 DR. SILVA: Okay. Greg?

16 BY MR. BOWEN:

17 Q. Good morning.

18 A. Good morning.

19 Q. First of all, long live the Speedbird. I've just got a few
20 questions. Is there a standard or a timeframe of this established
21 and, in general, how long ahead of time prior to a flight
22 operating is the release prepared for that flight and the initial
23 look at the weather?

24 A. There's not a -- well, I have to take that back. Seems like
25 I remember the dispatch operations manual is an accepted manual

1 and it is written in conduction with the flight operations manual
2 which is the approved manual. So that's the basis that we operate
3 on, on the ops side.

4 So the dispatch manual is a subset of that. They have to
5 have essentially the same information and then there's the
6 dispatch-specific procedures and how the dispatcher would
7 accomplish this. So as far as the flight planning, a release is
8 to be prepared an hour to 2 hours prior to flight. I'm
9 remembering that. What we don't want is we don't want a flight
10 prepared 4 hours in advance. What basis did you use? What
11 weather? What --

12 Q. Is there guidance that restricts that?

13 A. Guidance that restricts it, no. There is not. Now, the
14 process, and I believe it says one to 2 hours, there are
15 provisions for what the station can do if they don't have a
16 release, let's say 90 minutes in advance. There may be a reason
17 the dispatcher, you know, he's waiting for a NOTAM to clear. He's
18 waiting to see if there was damage to the tower in that last gust
19 wind that went through. So he can withhold it.

20 So there's a standard that you would put out. You try and
21 keep the release out there and hour to 90 minutes in advance so
22 that the station can do their planning -- weight and balance, the
23 freight house, the fueler, because those are the things that slow
24 down the operation. So you try and keep it out there and the
25 station's always pressing, we need it. But a dispatcher can

1 withhold it. He says, I'm not doing this release till I talk to
2 the captain. Or, the captain's inbound on another flight; he'll
3 be here 30 minutes before; we can't get the fueler out. That's
4 the dispatcher's prerogative.

5 So it's not a requirement but it's here's the standard.
6 Here's what we want to do on a normal day to keep the flow of the
7 operation going.

8 Q. Do you know if the dispatcher uses a predetermined wind value
9 when they build the initial release for planning purposes or do
10 they look at actual winds?

11 A. I should know that. I know where it is in the manual. There
12 are different provisions for different things that are going on.
13 As far as -- are you talking about headwind, tailwind?

14 Q. Right. You know, when the (indiscernible) --

15 A. I think it's plan zero wind but, again, I'd have to open it
16 up and look to see what that specific is for this but there is a
17 standard. When they pull up the release, and this is where the
18 automation hurts us, you rely on the automation to pull it up and
19 this is what it's going to do. My memory of what the value is, I
20 believe it's zero but I'd have to go back and look so that's what
21 a dispatcher's going to do every time.

22 Now, if he's preparing that and he sees and issue, he sees a
23 problem with weight, fuel, whatever and he says, ah, now he can go
24 in and change it out. It is -- but anything you're going to
25 change from standard, now you're going to start communicating with

1 your captain. So the potential is there but, as I remember, the
2 standard is zero winds that they're planning on.

3 Q. You mentioned in your previous conversation here this morning
4 that there are a bunch of alert parameters that they can set into
5 the system to alert the dispatcher. Is there a parameter specific
6 to wind component that you would expect to be there all the time
7 or just when they feel like it or how does that kind of work?

8 A. I would have to say that I expect it's there. One of the
9 problems with our qualification is that when I go over -- when I
10 first came on this job I went over with the dispatch initial
11 training. I had to wait 6 months till they had a dispatch initial
12 and when I go through it they've got 20 seats and they've got 21
13 people in class. Now, one of them is from another department
14 that's sitting in to observe, like I'm sitting in to observe.

15 So I've got an observer's seat in the back of the class. I
16 don't have hands on. I know that they have a Fusion program and
17 I've read enough about it that I know that it has a number of
18 different parameters. I can't tell you exactly that there is a
19 wind gust parameter in there but I'd have to believe that it is.
20 I didn't get to sit down and do it. I haven't been able to put my
21 hands on and do flight planning. I haven't been able to sit down
22 and manipulate the Fusion because, like I said, it could take up
23 to an hour to program that.

24 So I've watched over the shoulder. I've seen people do stuff
25 but to see someone set one up it's very methodical, step by step.

1 You sit down and watch somebody that's using it, you can't keep up
2 with what they did. So unfortunately, I don't have the exact
3 answer to that but I'd have to believe that's there.

4 Q. Thank you. This one's clear as mud. So you mentioned
5 earlier about in terms of the crews updating their landing
6 performance information and the position, I think you said but
7 correct me if I'm wrong, and the FAA is expecting to using this
8 current weather.

9 A. Yeah, I'm --

10 Q. -- the most current weather available.

11 A. Uh-huh.

12 Q. So what would you think the expectation would be, for
13 example, with PWB there's a time lapse between requesting new
14 information and receiving new information? What would you think
15 the expectation would be, for example, if a flight were crossing
16 the outer marker inbound on an approach and at that time you hear
17 the tower say new ATIS alpha current at the field and you're 90
18 seconds, literally, from touch down. What would the expectation
19 be for the flight crew in that particular situation?

20 A. Well, I'll do two things. I'll try and answer your question
21 but I'll preface it with I wouldn't want to make an expectation
22 there. Again, you're asking me to do something that's not my
23 expertise.

24 Q. Okay.

25 A. But in trying to answer your question it's all timing. It's

1 all relative. Dispatchers are problem solvers. So I hear what
2 you're saying and my brain's already engaged trying to solve that
3 but you're asking me to sit in somebody's seat that I don't have
4 the experience or qualification for so I would say from the time
5 you're at the outer marker changes are going to be hard to
6 process.

7 We've gotten into that place where it's very difficult and
8 this is where, from a dispatcher's perspective -- and we were just
9 talking about this last night -- a dispatcher was saying, okay,
10 I've got this cell. I'm going to tell the crew this. They're
11 holding here. I'm going to tell him this. I'm going to tell him
12 this. And I'm saying, you know, I like that you're setting them
13 up in advance. They're 45 minutes out but you're telling them
14 what the situation is so that they're getting their framework
15 ready but they know there's a potential for change. But you're
16 getting them ready for that. Here at what point does a dispatcher
17 quit feeding that information? When they get to the outer marker
18 --

19 Q. Hands off.

20 A. -- you don't want your first officer reaching up and grabbing
21 the yoke when you're on final because it's yours now. His inputs,
22 he may want to speak up, but it's your inputs that have to be at
23 some point -- at some point you pick that time where you said at
24 that approach fix. Where does the dispatcher pull out? My
25 assumption of what you would do, I'm not qualified to give that.

1 Q. Fair enough. You mentioned earlier that you -- when you were
2 talking about dispatch familiarity with PWB and you made that
3 comment and generally you said not normally required is what I
4 captured in the notes.

5 A. Landing assessment.

6 Q. For landing assessment, right.

7 A. Yeah.

8 Q. So in the FOM at Southwest it's got a prescribed procedure
9 that addresses failure modes of PWB. The ACARS system goes down,
10 second backup is the CFDP app and the EFB through the aircraft
11 WIFI or cellular you have to be on the ground for a takeoff
12 solution. Then it specifically says a third backup is contact
13 with dispatch for performance data.

14 So with that in mind, do you know if the training for PWB is
15 the same material, same objectives and the same curriculum outline
16 that our pilots receive in training PWB?

17 A. When I sat down and looked at that, I went over and I said,
18 okay, this is coming. I need to come see it. And they said,
19 well, we don't have it ready. I said, you're wanting this
20 approved next week; I need to come see it. And they said, well,
21 we just got the pilot's done. Okay, let me come over and see it.

22 So I'm talking to dispatch training. I walk over and I sat
23 and went through the pilot CBT with the instructor as he's making
24 notes and saying okay, well, this is pilotry. We need to translate
25 this to dispatch, this, this. So I saw your training; I saw what

1 they were doing. So they were taking slide for slide, and there
2 are some things about, okay, the L1 ACAR -- dispatcher doesn't
3 need to know that. He needs to know that you make inputs so I saw
4 what was being done and, as I understand it, most programs, this
5 is the way dispatch and flight operations training work.

6 Flight operations training is the driver. They derive the
7 product. They give it to dispatch training and these people talk
8 and communicate very well. And they will take it, they don't add
9 in. They will delete non-pertinent information that is just
10 pilotry. Excuse that expression. And so it is based on the same
11 thing. Like with the FOM and the DOM, it's the same kind of
12 process and it makes complete sense to me.

13 So it was there. It may not be a mirror but it's a very
14 close facsimile of the same training that the pilot's got and the
15 reason for that is the dispatcher has to know what you have and if
16 you've skipped over something he thought you had he needs to know
17 why or else we get into this, well, why do you need that kind of
18 thing.

19 So if he knows what you've got and then you explain and say
20 well, this went down. Okay. He can check that off. This went
21 down. Now he knows we're talking on the radio when I've got to
22 go, you know, what was down for you through ACARS because that's
23 your conduit, isn't down for him because he's using a straight
24 server link. He can use his automation and his DFDP and the
25 desktop and go straight to AeroData. So there's no input errors.

1 It's exactly what you would do and he can give you that.

2 If that happens to be down, if there's a server failure, then
3 he's going to come back and use his handheld and his EFB or we're
4 going to revert back to spider graphs. So I hope that answered
5 the question.

6 MR. BOWEN: Yes. Thank you very much. That's all I have.

7 DR. SILVA: Okay. Let's take a 5-minute break here and we'll
8 convene at 9:30. We're off the record at 9:25.

9 (Off the record.)

10 (On the record.)

11 DR. SILVA: We're back on the record at 9:34. Kevin?

12 MR. FERGERSON: Okay.

13 BY MR. FERGERSON:

14 Q. Bob, when you talk about the workload of a dispatcher going
15 35 down to 25 flights --

16 A. In 8 hours, that's rough numbers but, yeah.

17 Q. Relatively speaking, do you think that's a manageable
18 workload?

19 A. On a normal day, yes, and that's the problem. Industry-wide
20 what's normal? What's -- you know, you can have 40 dispatchers
21 sitting there and 39 of them are just bored and one guy is getting
22 killed. He's getting killed because he's got mechanicals. He's
23 got one station where he had four flights coming in and they've
24 got a series of thunderstorms just coming through.

25 So that's the reason Marvin's question is very much to the

1 point of how do you offload? How do you manage this? Now, CRM,
2 cockpit resource management, DRM was derived from that and it is
3 exactly the same thing. It's not just working with the crew and
4 maintenance. It's working with your co-dispatchers. If I'm
5 sitting here and I see Mark struggling I can grin about it or I
6 can jump in and help him and that's what it's about.

7 So I've been to places where they have twice that workload
8 and it was bad. I've had, in my experience, union management,
9 worker bee, you've got a different perspective from every place.
10 Everybody'd like to have less work so they can do more quality.
11 It's all a business plan tradeoff.

12 Q. Does Southwest workload, is that typical in the industry, a
13 little less, a little more?

14 A. I'd say right now it's in the middle or a little better than
15 some others.

16 Q. All right.

17 A. There were some initiatives and some of your managers paid
18 the price for pushing to get there, but they're in a good place, I
19 think.

20 Q. Okay. Are dispatchers required to jump seat, do formal jump
21 seat observations on --

22 A. Not enough. Yes. They are. There is a -- it's the
23 qualification. People confuse that with training but there's a
24 qualification that once per year you have to spend 5 hours in the
25 cockpit. There are special provisions for medical or other

1 reasons where you can do a sim ride once in a while but it has to
2 be a full motion simulator and you can't reduce the hours.
3 Unfortunately, they gave a reduction. A dispatcher can reduce it
4 from 5 hours to -- down to 2½, depending on the number of landings
5 that they accomplish.

6 Q. Is there any formal structure to those observations, like, do
7 they have a checklist like, hey, I observed the --

8 A. No.

9 Q. -- PWB --

10 A. It's is a minimal regulatory requirement. And that's why I
11 said not enough.

12 Q. Yeah.

13 A. It's -- I learn something every day and I fly as much as I
14 can to get that interface but it's critical.

15 Q. Are -- would you say is a typical dispatcher awareness of
16 aircraft limitations, in other words, this arrival's going to be
17 close on tailwind limits, crosswind limits, whatever, on the
18 aircraft?

19 A. Yes. They are trained and dispatchers go through a
20 significant amount of initial training and then they have
21 recurrent training every year. It used to be done in one, 3-day
22 block and we've coordinated with the carrier where it's been
23 broken up into two segments, a fall and a spring segment and some
24 of it is CBT, as we talked about, but limitations is something
25 that's covered all the time.

1 Carried into that is in their flight planning. There's a lot
2 of direction just as in the FOM, it carries over to the DOM. In
3 flight planning these considerations have to be looked at for
4 takeoff, these considerations for landing and then in the weather
5 sections that they have to go -- they get into quite a bit of
6 that. So a dispatcher has to be aware because they really are a
7 support person but they have the same responsibility as you. If
8 there's something that is popped up we need to make you aware of
9 it. It's part and parcel of what they're doing every day.

10 Q. Is heavy rain regarded as a threat like heavy snow, you know.
11 Heavy snow is kind of unique in deicing situations and it's a
12 pretty narrow word to operate. Does heavy rain trigger any
13 heightened level of awareness or is there any training specific to
14 heavy rain situations as far as threats?

15 A. I would say in required training it's minimal. There are a
16 number of SAFOs that I know you're aware of and the more recent
17 ones to try and bring that attention forward. Heavy snow sort of
18 jumps out there but it's no different than heavy rain. Depending
19 on the runway, and we used to derive everything out of the airport
20 facilities directories.

21 With Southwest Airlines you all have moved that information
22 into your SAFI pages. So a dispatcher is aware and has ready
23 access to look at the type of pavement we're looking at. If
24 you're landing at Key West with rain you know you have a problem.
25 You may be landing at Tampa with heavy rain and you think well,

1 maybe those grooved runways will take care of it.

2 So they're aware of it. Their training is sufficient to make
3 them aware of the potentials but as an industry I'm not sure that
4 we've done enough to understand the impacts of moderate or heavy
5 rain.

6 Q. Okay. Field condition reports, is there a standard for where
7 those come from as far as who does the observation or --

8 A. I think I'd have to be real careful how I answer that. We've
9 had discussions over the last 5 years, and my name's become well
10 known with that, about how are we doing field conditions? Let's
11 make sure we're consistent. And I think, not just at Southwest
12 but everywhere, it's -- exactly that question comes up. How do we
13 get them? What is the standard? Are we consistent?

14 I started out with an airline that we had an ops agent to go
15 out and go, nah, it's not raining. There's no wind. It's just
16 what it was. We come to find to find out that aircraft
17 performance, the takeoff and landing is much more critical and
18 we've got to be more careful.

19 The procedure for the airport authority to provide the
20 information, because the airport authority is the -- they're the
21 resource. To provide the information and how that information
22 gets out is where we've been transitioning since 2016 to, do we
23 use FICONS? Do we use field condition reports? Because the
24 airport authority may or may not have given you a current report.
25 The most current was the last one they gave you but is it current?

1 You know, the airport authority in Pittsburgh, during a major
2 winter storm, they have trouble keeping up. It's understandable
3 that it may lag a little bit. In Omaha, when there's nothing
4 going on and they had a few sprinkles, well, how recent was that?

5 So the most current weather is what we were talking about
6 using and that standard of where does it come from and how is it
7 put out, I think Southwest has made some particular effort to make
8 sure that this standard is there, that the ops agent in charge of
9 putting out the field condition and updating it is there. And now
10 you've got a pilot that's putting in a field condition report and
11 that automatically updates what the station agent has put in and
12 now we've gotten into questions of subjectivity.

13 So is there a standard? Most recent.

14 Q. So if you had a field condition report that was, say, 2 hours
15 old and you have an ATIS that's 1 hour old and it has RCC value
16 within it, will the dispatcher and pilot expectation be to use the
17 ATIS?

18 A. I think it would be to use the ATIS. There's a but. But
19 where are you? Are you on final or are you 30 minutes out?
20 Thirty minutes out you better ask the station to get an update
21 because 2 hours ago and it's there's a major difference, well then
22 did that major difference -- and you said that was an hour old,
23 that would have given the airport authority time to update and if
24 it hasn't updated, why? Has it changed again?

25 So yes, if you've got the time that's what the dispatcher is

1 always going to do and we see it happening, they're pinging the
2 station to get a hold of the tower and they say, tower, well the
3 tower isn't always the airport authority.

4 Q. Uh-huh.

5 A. Hopefully, they're working in concert but you've got to try
6 and get an update. Without that then do you proceed with what you
7 perceive is the most recent, even though it's an hour old, or do
8 you hold off to get a update. Those are the questions that we
9 have to ask.

10 Q. If you have a report within an ATIS -- you have an ATIS
11 that's fairly recent, let's say less than an hour but there's a
12 timestamp associated with the RCC reported. Is there a standard
13 for that being reported, like, let's say it's 3 hours old. Does
14 that mean it has a -- it's that or better or is it just that that
15 observation was 3 hours ago and if you have a field condition
16 report that was 2 hours ago --

17 A. Yeah, I don't have the expertise to tell you about the ATIS.
18 We -- from a dispatch perspective we look at it but it's just one
19 more piece of the puzzle. It's not something that we have a lot
20 of expertise about. You know, as a pilot you look at ATIS --
21 you're looking at the ATIS. You're not too worried about the
22 METAR unless the dispatcher brings it up to you because what
23 you've got is ATIS and there are so many constraints in updating
24 METARs, there has to be a measured change to get a special put out
25 on a METAR. Well, ATIS is just -- is a reading, whether it was

1 prompted by something or not, it's an instantaneous reading so I
2 agree that that should be the most current but if it's got a
3 timestamp an hour old, is it improving or is it deteriorating?

4 MR. TOMICICH: Let me ask one quick question. We are
5 recording. This is important. You're using the phrase ATIS. Are
6 you talking about AWOS or ATIS?

7 MR. FULTON: ATIS. Yeah, ATIS.

8 MR. TOMICICH: Okay. And ATIS is not instantaneous.

9 MR. FULTON: Well, excuse me. It's put out at a specific
10 time. I misspoke.

11 MR. TOMICICH: Okay. Yeah. Just wanted to make sure we're
12 clear.

13 MR. FULTON: It's at the time it's issued is what I meant.

14 MR. TOMICICH: Yeah.

15 MR. FULTON: Thank you.

16 BY MR. FERGERSON:

17 Q. Just one more question, is PWB training part of dispatcher
18 recurrent?

19 A. Yes.

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

21 A. Yes. It always was but, yes, it's a particular -- and, like
22 I said, the dispatcher is responsible, by FAR, to convey accurate
23 information. He's not responsible for the mechanics of it so
24 there's a tradeoff and some people want to say, well, then
25 dispatchers don't need to be involved. Now, they're required to

1 be involved.

2 MR. FERGERSON: Thank you.

3 DR. SILVA: Okay. Rich?

4 MR. LEE: Just a couple things.

5 BY MR. LEE:

6 Q. You mentioned that you try to get into the cockpit one or two
7 times a month. What about observations of the dispatch floor?
8 How often do you do that?

9 A. I try and get over there every week. The way our scheduling
10 is and we just aren't able to get over there every week. But I
11 would say during a month I'm there at least four or five times.

12 Now, when I walk in it's not unlike an inspector sitting in a
13 cockpit. It doesn't make anybody comfortable. Everybody's
14 friendly. Everybody's congenial. But it doesn't make anybody
15 comfortable. If I go in and sit with dispatchers, it doesn't make
16 them comfortable.

17 We try and make it normal. We try and make it where it's sit
18 down and talk about things, just want to see this. I ask a few
19 questions and everybody knows where I'm coming from and what I'm
20 doing. But it still doesn't make them comfortable to have a guy
21 with a badge sitting there looking because the first thing I do is
22 may I see your ticket? And I look at his certificate, I write it
23 down because I'm going to go down and I tell them, I'm going to go
24 down and check your training records because it's part of our
25 oversight responsibility. So --

1 Q. All right. And you mentioned that, like, last night you went
2 and talked to the floor manager and asked --

3 Now, do you typically ask them to put you on a desk or have
4 you gone in just picked a desk yourself?

5 A. I've done both but it's rare when I pick a desk. Some of
6 it's perception but, you know, it depends on what I'm there for.
7 We get assigned certain data collection tools through the safety
8 assurance system so, like, there's through the management group
9 they say we've got a risk here. We want to look at it so we'll
10 assign this inspector to go look at that.

11 So I walk in, 40 questions that I'm supposed to cover. There
12 are days where I go over and I'm just -- I'm going to do an
13 observation. You know, it's just about turnover time between one
14 of those morning shifts and the evening shifts. I want to see
15 that the guy that did the work in the morning effectively turns
16 over because you walk in, you got three planes getting ready to
17 take off, you got seven planes getting ready to land, you got four
18 en route that are being rerouted and you walk in cold. How good
19 was the brief? How good was the turnover?

20 So I'm looking at that and those are the places where I just
21 walk in and say, show me where the turnovers happen, and then I
22 pick a desk. So --

23 Q. All right. So the difference between PWB and the older
24 system, I understand PWB is more automated. Do you agree with
25 that?

1 A. Yes.

2 Q. Do you feel like the automation has alleviated some of the
3 responsibility of the dispatcher to monitor weather and would they
4 --

5 A. No.

6 Q. -- use that as a crutch?

7 A. No. I think there's no change at all because, really, the
8 young lady here asked, you know, about the transition. For the
9 first 6 months it's a little rough but it's just rough because
10 you're saying I accept that there's very little change. We had a
11 system that was working out here. Now I have a system. My
12 input's OBC. Dispatcher didn't do it. He did have a backup to go
13 in but he rarely ever did anything. He may be a little more
14 involved with PWB but it's very straightforward entries. So once
15 they got used to that it was no change.

16 So they're doing exactly what they were before but it hasn't
17 -- I wouldn't say it had no impact on their monitoring or looking
18 at the weather.

19 Q. Okay. So for the dispatch for arrival, and you mentioned
20 that they just care that it's legal. Now, when they run that
21 data, does the data go through the PWB system, inputting it
22 through SWIFT or how does that --

23 A. Yeah. Their input is into SWIFT.

24 Q. Okay.

25 A. And then SWIFT, conduit I think it's HERMES that goes out to

1 the AeroData servers and there's -- it goes to a server and
2 there's a backup. I think they've even put another backup into
3 that. So they're running a parallel where if one goes down it
4 just automatically switches over. So it goes out through that
5 automation contact to the server and then comes back and when it
6 comes back it comes to the dispatcher and the pilot. They both
7 see the same thing.

8 Q. Okay. I mean, that's -- I'm talking about pre-flight when
9 they're -- before it's released that it's legal --

10 A. Oh, pre-flight. No, it's just in SWIFT.

11 Q. Okay.

12 A. In pre-flight --

13 Q. Just in SWIFT, so --

14 A. -- all he's doing is he's seeing pre-flight, takeoff and
15 landing weight.

16 Q. Yeah. And several different runways so when doesn't matter,
17 doesn't necessarily care because there's -- the expectation is
18 that the airport's going to change the runway to the wind
19 direction --

20 A. Right. It's going to give him the most restricted but he'll
21 give him all of the options and they can go in and select that but
22 that's -- now they've got to go into computing what do I think
23 it's going to be --

24 Q. Yeah. Yeah.

25 A. -- at this time and what's --

1 Q. You just meet the requirement is that it's legal to dispatch
2 --

3 A. Yeah. There are a few inputs that dispatchers do. Let's
4 say, Q and A. Just is it going to increase or decrease? Is the
5 temperature going to rise or lower? So you planning Phoenix in
6 the summer, well, you're going to bump it up a bit because you
7 know it's going to rise. If you're going to Richmond in mid-fall,
8 it's going to stay right where it was so they have input
9 capability and typically they'll let it go auto unless they know
10 there's a reason for him to drive it up. So --

11 Q. You mentioned last night that the young kid, sharp, is all
12 over all the automation and back and forth --

13 A. And he's got the iPad --

14 Q. Yeah have you, you know, people that's been in dispatch for
15 several years like yourself, have you observed someone to having
16 trouble with the automation that's possibly a more experienced
17 dispatcher but having trouble with the managing the weather, the,
18 you know, the popup and they're a special, I guess, flavor of, I
19 guess the different formats that they can have, the different
20 popups and have you seen trouble with dispatchers having issues
21 with that?

22 A. I'd say that human factor is there. The different
23 configurations, there's some people that want all the bells and
24 whistles turned on and there's some that want as few as possible
25 and there's tradeoffs there. If you don't want the automation to

1 do it then you've got to.

2 Fortunately, I told you there's 400-plus dispatchers.

3 There's 80 senior dispatchers that have moved off a dispatch desk
4 that are doing other functions because they said I can't keep up
5 with all this automation. I want to go into a specialty. I want
6 to do ASAP. I want to be a dispatch specialist that works with
7 the MEO group or the NOTAM group or this or that. So that is the
8 normal transition. You get more senior people, maybe more
9 experienced but maybe they're a little less compatible with some
10 of the new technology. So it's there.

11 Q. All right. So that there is an -- you've seen issues with
12 people having trouble with all the automation and the way that it
13 is is that they kind of go to -- move onto a different thing.

14 A. I'd say I've seen differences.

15 Q. Okay.

16 A. It's only an issue if they don't manage it and workload is
17 one thing. Workload management is our real issue. That is
18 covered in CRM training and every recurrent and every initial and
19 almost everything we address is workload management which is
20 somewhat what you're talking about. It's not the tools you have.
21 It's how you use the tools you have. So it's not a problem. It
22 is something that's there and people have to accommodate --

23 Q. Okay.

24 A. -- or they find that they can't do the job.

25 Q. So kind of along those lines is in the cockpit with CRM and

1 you talk about a gradient between, you know, the captain with so
2 much experience and an FO that's brand new. Is that taken into
3 account with the placement of dispatchers? Is there, you know,
4 someone that has 25 years' experience sitting next to a young
5 person that he might not feel comfortable giving offload to
6 someone that's just started, you know, 2 years ago. Is there any
7 thought for placement for placement on the dispatchers?

8 A. There is no policy or procedure. It's what I would call
9 natural selection. I don't bid into a midnight shift where I'm
10 working with a whole bunch of newbies because I'm going to be
11 overloaded. That's just natural. There is nothing -- there's no
12 requirement for dispatch experience. It is an ongoing issue that
13 management looks at, the scheduling committees look at,
14 individuals look at when they bid.

15 Sometimes you bid to work next to somebody that you really
16 like. Sometimes you bid to work next to somebody that's really
17 sharp because you see that that's a benefit to you but there is no
18 policy or procedure that prevents two or three relatively
19 inexperienced people working together.

20 Now, I will say that there is a lot -- a lot of OJT that goes
21 on at Southwest Airlines. More than I've seen in other carriers
22 so that you get your dispatch ticket before you get hired at US
23 Air -- at Southwest Airlines. Then you go to initial training.
24 Then you come out on the floor and you do weeks and weeks of OJT
25 training with an experienced, training qualified dispatcher and

1 that's where they do a better job than I'd say most airlines at
2 getting some experience, some added value from working with
3 experienced people.

4 Q. Well, my last question is during your observations have you
5 ever seen a dispatcher call up a crew and divert the airplane
6 because of weather that they observed? I actually have another
7 question I'm trying to remember but go ahead.

8 A. I have seen diversions. Now --

9 Q. A dispatcher's driven a diversion because of weather they've
10 seen?

11 A. Yes. Yes. And it's not just that the dispatcher did it.
12 The dispatcher starts a communication with the pilots and usually
13 there's a holding situation, the airport's either not open or
14 there's pending weather and you can see that with traffic in front
15 of you --

16 So they start that conversation back and forth and, yeah,
17 they come to an agreement and divert an airplane. I've seen that.

18 MR. LEE: Okay. I think I'm done.

19 DR. SILVA: You sure?

20 MR. FULTON: I thought you had --

21 MR. LEE: No, I thought I did but I've lost it.

22 DR. SILVA: Okay.

23 MR. LEE: Maybe I'll remember it.

24 DR. SILVA: All right. I have a few follow-ups. Home
25 stretch.

1 MR. FULTON: Okay.

2 BY DR. SILVA:

3 Q. So are you aware as to whether dispatchers have any
4 information on the results of the landing data request from the
5 pilot -- so the pilots request the landing data --

6 A. No.

7 Q. So they don't have any information?

8 A. I have -- I don't think that comes back to the dispatcher.

9 Q. Okay. So in a scenario, let's say -- because you mentioned
10 it's really -- it's legal or it's not legal. What I'm trying to
11 gather is if you're approaching not legal, do the dispatchers have
12 any information regarding that?

13 A. The only time the dispatcher would become involved there is
14 if a crew member says, okay, we may have an issue or we want you
15 to check.

16 Q. Okay.

17 A. And usually when you get that request we want you to check
18 the numbers. There's, you know, there's a reason. That's not
19 normal. It's not an everyday occurrence so why would you be doing
20 that and at another carrier that I worked with it surprised me
21 when we first did it but with the advent of the Airbus aircraft,
22 nobody was comfortable so we had a Boeing airplane that you just
23 did a normal weight and balance and it landed. You did an Airbus,
24 the dispatcher was required to a landing distance assessment
25 before he could land and he had to communicate that with the crew.

1 Q. Uh-huh.

2 A. It was two different philosophies. That philosophy or the
3 landing distance assessment at Southwest Airlines is that it's
4 done by the crew and the dispatcher will only hear if there's an
5 issue or a question.

6 Q. Okay.

7 A. Now, a question is one thing but the question's usually there
8 because there's an issue behind it so they're going to start
9 digging and saying why.

10 Q. Uh-huh. Okay. Do you know if dispatchers have access to --
11 with the ASOS or AWOS data, like that minute-to-minute, versus the
12 METAR?

13 A. Yes.

14 Q. They do have access to that. Is that textual --

15 A. Yes.

16 Q. -- information? Okay. Would you say that that's typically
17 referenced or --

18 A. What -- I would say, yes. If it's available it's going to
19 come up in their query.

20 Q. Okay.

21 A. The way it's set up they can select METAR, which is going to
22 include ASOS and AWOS, or they're doing a TAF. Then otherwise
23 they're going to go in, and the way their Fusion system is set up,
24 they have a full range of information they can draw. A lot of the
25 dispatchers will have the National Weather Center app up and

1 they're going to looking at icing, they're looking at turbulence,
2 they're looking at projecting -- excuse me -- projecting out for
3 landing to see if they're going to have a problem there or they
4 use it for en route planning especially in the case of icing.

5 Q. Right. So the METARs themselves are usually released once an
6 hour. Are -- but again, just want to clarify, do dispatchers have
7 access to the information that's essentially instantaneous from
8 the sensors?

9 A. They can set it up in their Fusion.

10 Q. Okay.

11 A. And they set the alert boxes for what they want to pop up,
12 otherwise they're going in and pulling the data.

13 Q. I see. Okay. We talked about dispatcher workload part of
14 it. How's your workload?

15 A. The government's getting their money out of me. They're
16 getting the work for the money they pay me. It's -- I work 40
17 hours a week.

18 Q. Okay.

19 A. But it's a full 40 hours.

20 Q. How would you manage workload, let's say, that you can't
21 necessarily get to?

22 A. Not well.

23 Q. Okay.

24 A. I'm frustrated by that. I'd say there's not anybody at this
25 table that isn't a Type A. You wouldn't be here if you weren't.

1 So there are things that you can't get accomplished and, for me,
2 they're frustrating. I talked to my managers about frustrations
3 like that yesterday and I'll probably have one of those
4 discussions again today.

5 But you prioritize and we are a risk-based, data-driven
6 organization so if I can prove the risk and acquire the data to
7 make that proof to my manager then he'll probably tell me to drop
8 something else and take that up. There's the issue.

9 So there's always more work and there's things that I wish we
10 could follow through on more but we manage it. Sometimes well.
11 Sometimes, not so well.

12 Q. So what kinds of things get prioritized versus, let's say,
13 not the way to --

14 A. Sometimes there's things, like NOTAMs were a particular
15 problem, and we started to spend some time on NOTAMs and then all
16 of a sudden FICONS popped up and that became a little more
17 important than NOTAMs.

18 So we shared some information and we agreed to keep looking
19 at it but it sort of got taken -- and then we moved on and started
20 work on FICONS. And we started finding out that, yes, there are
21 FAA problems with FICONS, there's airport authority problems with
22 FICONS, there's problems with the carrier saying, well, you know,
23 the airport authority isn't updating so how can we help?

24 So you've got all those things going on and they're still
25 going on and then all of a sudden behind those are 117 duties.

1 Why haven't you written this enforcement? Well, because we're
2 still talking with the company. We've got to reprioritize.

3 Q. Okay. You mentioned this a little but how does management
4 work with you to manage these --

5 A. My management or --

6 Q. Your management.

7 A. Well, there's always an open door. We can sit down and talk
8 about things and it comes down to we have to have -- reconcile how
9 much time resource we have and whether it's appropriate for that
10 to be done by me, if it's something that I think needs to be
11 looked at or if it's better to reallocate that to someone else and
12 we do a fair amount of that.

13 Q. Okay.

14 A. There are things that I get involved in because I'm reaching
15 in a lot of departments. But it's not my expertise. So it's
16 better to let somebody that is familiar with those people do it or
17 it may be more efficient for them to do it. So it's workable.

18 Q. Do you feel like you are supported by your supervisor?

19 A. Yes.

20 Q. Okay. And you mentioned that you've worked with quite a few
21 people within the airline. How is that relationship?

22 A. It's good. Sometimes we question each other's motive.

23 Q. Okay.

24 A. I come in and I want to know something they want to know why.
25 Okay. That's fair. Sometimes I ask for something and they say,

1 well, we can't share that with you and I want to know why. And
2 they're usually good reasons. A lot of it is FOIA-able material.
3 A lot of it is, well, you know, that's proprietary and unless
4 there's a regulatory requirement or you can show us that there's a
5 safety need, we choose not to do that.

6 So it's a good relationship. We -- the biggest problems come
7 from somebody telling somebody that I was doing something or me
8 hearing that somebody said somebody was doing something. Once I
9 get with that person, it gets cleared up pretty fast and we
10 resolve everything. But those are the only issues that we have.
11 Outside of that, it's a good working relationship.

12 Q. Okay. How's the working relationship within the CMO?

13 A. It can be confused at times because of the structure and
14 sometimes I feel like an independent contractor. I'm assigned my
15 work and I'm supposed to go do it. It's not part of a team and
16 I'm -- unfortunately, I'm a team captain from sports to military.
17 In the Army, the worst thing I could do if I couldn't reach out
18 and touch my dive partner, he was dead or I was dead. I carry
19 that forward. It's -- I work in teams. I think you learn more.

20 So here sometimes we get into this independent thing of we're
21 doing this and we don't communicate well. We've got a new
22 management team and we're spending a lot of time communicating.
23 We've sort of gone from one side of the spectrum to the other. A
24 lot of times death by meeting is what we're experiencing. So
25 we've got to get in that middle area where there's give and take.

1 Q. Okay.

2 A. So we're progressing but it's -- and I think we're learning
3 to work together better. I know the other ops inspectors are
4 learning to use dispatch inspectors or to call on us more and
5 that's -- to me, that's beneficial.

6 Q. Okay. Now, regarding your experience with the PWB system,
7 are there any improvements that you would suggest both on, let's
8 say, the design of the system or Southwest guidance in terms of
9 usage of the system?

10 A. I think what we're doing right now is the right track. There
11 is more communication between work groups.

12 Q. Okay.

13 A. A lot of organizations, the FAA included, tend to get stove-
14 piped and you've heard me talk about airworthiness and operations.
15 That's an old thing is, you know, they were the black and we were
16 the white. They were the bad and we were the good, back and
17 forth. Stove-piping breaks down communications. Don't know what
18 each other's doing.

19 There was some of that within Southwest Airlines in that
20 ground operations, this is our program. We're going to fix it.
21 Let us do it. Well, we were having fallout. We're -- dispatchers
22 are saying, wait a minute, I got numbers that are wrong. The
23 pilots were saying, wait a minute, I got this weight and that
24 weight. And the open paths to communicate and effectively
25 mitigate those errors weren't as open as they needed to be.

1 I think we're getting closer to that. There's a lot of work
2 going on and I think the most recent changes are getting us there
3 to where, now, we just have to go, like I said, we're going out to
4 validate that the changes and the processes in place are working
5 to get us where we all want to be.

6 Q. Okay.

7 A. Does that answer your question?

8 DR. SILVA: It does. Yes. Thank you. We'll go around one
9 more time, around the table one more time and then we're done. Go
10 ahead, Marvin.

11 MR. FRANTZ: Okay. Thanks. Just a couple. Bear with me and
12 I wrote it down.

13 BY MR. FRANTZ:

14 Q. Are you -- do you know at Southwest at the end of a flight
15 after landing and the aircraft arrives at the gate, is there any
16 sort of record of that flight that goes into some master file
17 someplace about, you know, the fuel burn, the route, any weather
18 issues or diversion, whatever. Is there some summary of that
19 flight that gets stored someplace that in 6 months or even a month
20 later somebody could go back and say, well, what happened on this
21 flight on this day and they can pull that record out and see that?
22 Do you if anything like that exists at Southwest?

23 A. There are required records, what I call the dispatch
24 documents, flight plan, weather packet, load sheet that are
25 required to be maintained. Those are maintained in the

1 communication log. Communication log is required, by regulation,
2 for 30 days. Now, it may exist but it's not required to be
3 maintained past that. The others are required for 90 days and
4 they may be retained but they're not required to be maintained.

5 As far as other information, any major airline that tells you
6 they don't keep records or analyze outcomes, I don't think would
7 be telling you the exact truth but -- so there are records, I'm
8 sure, but there are required records that I know are there.

9 As far as a synopsis of what happened after the flight, if
10 there were an irregularity there are required reports. Now,
11 they're required by company policy. Company policy is required
12 because of different things and now with safety management
13 systems, SMS Part V, a lot of that is driven to be -- to exist.
14 So irregularity reports do exist when they're made. They identify
15 something that happened and there are procedural follow-ups and
16 reports on how those are handled.

17 Q. Okay. Do you know if a go-around is a report that would be
18 included in irregularity reports, that the crew on a flight --

19 A. I'm reaching here but I believe a go-around is a required
20 pilot report.

21 Q. Okay.

22 A. It's not a required dispatch report.

23 Q. Okay. Do you know if Southwest has a policy about landing
24 with low-level wind shear?

25 A. I would have to look that up. My brain tells me, yes, and

1 you don't proceed -- a dispatcher would not recommend proceeding
2 in low-level wind shear or a microburst or adverse conditions that
3 would, you know, prevent safety of flying. He would notify the
4 crew when he gets that alert. To tell you exactly what it says,
5 I'd have to pull up the verbiage out of the FOM or DOM.

6 Q. Okay. Do dispatchers at Southwest get CRM training? As part
7 of their training at Southwest do they -- is there any CRM
8 classes?

9 A. They get DRM. And the way that evolved, CRM was supposed to
10 be inclusive but it wasn't required. And different carriers went
11 about it different ways. Southwest was one of the first to jump
12 in and develop a DRM because I -- when I was at US Airways as a
13 training instructor, I contacted the young lady that I work with
14 now in ASAP to see what they were doing and Southwest had a
15 dispatch resource management program that was coordinated with
16 their CRM.

17 I think the industry is struggling now and there's a push to
18 have joint training. It's an expensive proposition because you've
19 got to get pilot training classes and dispatch training classes
20 together somehow. So everybody deals with it in a little
21 different way but dispatchers do get dispatch resource management
22 which is the regulatory requirement. They don't get cockpit
23 resource management. Very similar concepts and content but they
24 are two different programs.

25 Q. Do you know if the training that a dispatcher gets at

1 Southwest, the DRM, does that emphasize his -- to what degree does
2 it emphasize his inclusion as I'm part of the crew even though
3 they're up there and I'm here. I'm part of that circle and that
4 decision making and I am also equally responsible for the flight.
5 Is that one of the emphasis of DRM or is --

6 A. Yes.

7 Q. -- DRM more I'm a dispatcher and I have all these resources
8 here I can --

9 A. No.

10 Q. -- use?

11 A. No, it has to include the prior because you are, by
12 regulation, equally responsible with what's happening with that
13 airplane. You and the captain, if the captain and dispatcher make
14 a plan and it's put out in the dispatch release and at some point
15 you can't go to the destination or you can't follow that route or
16 you have to go to a different alternate, you have to communicate
17 to change that plan or the captain has to exercise his emergency
18 authority to break that plan. Otherwise, you're locked into that
19 plan.

20 Likewise, the dispatcher can't say, well, I want you to do
21 something else. He's got to communicate and coordinate why and
22 what is going to happen.

23 So that's, I think, one of the big parts of what dispatch
24 does, and they take it into several different avenues, is
25 communication. They have a very active flight operations,

1 dispatch communication team that works on how do we communicate?
2 What do we communicate well? What do we communicate bad? What
3 are the biggest gripes from flight? What are the biggest gripes
4 from dispatcher? So they try and work that out and then get that
5 rolled back into the training to say, here's a more effective way
6 to communicate.

7 But I'd have to say with the dispatcher, he's got one best
8 friend and it's sitting in that cockpit. His management, his
9 coworkers, they sort of come second. They have to remember that
10 but, no, they're tied very closely to communicating with the crew.
11 Q. So from my previous understanding of CRM, one of the issues
12 that it dealt with and that was the genesis of the whole idea of
13 CRM, was addressing power differentials, you know, between the
14 captain and a first officer and the fact that first officers, in
15 the past, would often tend to be very deferential to one degree or
16 another to the captain and not speak up. And now, you know,
17 perhaps also in that is you have to think about the dispatcher and
18 the power differential between a crew or a captain and the
19 dispatcher.

20 So at Southwest, what is your assessment of that situation
21 and as an example, if a dispatcher becomes aware of something
22 that, wow, this is going to be a serious hazard to this flight or
23 it's going to -- if they continue they are probably going to end
24 up doing something illegal or definitely unsafe. And, yet, I'm
25 watching the flight and I'm looking at communications and

1 nothing's coming from the crew and the flight's continuing as if
2 everything was normal. How likely is it that the dispatcher's
3 going to be the first one to raise his hand and say, captain, you
4 know that the weather just went below minimums at this airport?
5 Do you intend to, you know, what are your intentions versus is he
6 just going to wait and say, well, I know that captain is -- Of
7 course, he's going to turn around or he's going to call me or
8 something's going to happen. So I'm just going to wait. Or is he
9 going to be the first one, the dispatcher? How likely is he going
10 to be the first one to raise his hand and say, wait, there's
11 something amiss here; you need to do something? Or, captain, you
12 better make sure you're aware of this?

13 Because of that power differential, are they going to do
14 that, especially the dispatcher who's on the job a year or two,
15 you know, at Southwest, so he's young, inexperienced and now he's
16 talking to these captains that he knows, oh, these guys know
17 everything, they've been aware of this (indiscernible) --

18 A. Okay. Given that there's always one office, dispatchers
19 aren't shy. You can't be. I'd say 99 times out of 100, if they
20 see something they're going to speak up.

21 Now, 75 percent of the time they do it in a professional
22 manner. That's why we have ASAP. They're -- sometimes they're
23 not as professional as they need to be about it. They're just a
24 little too blunt. That's okay. That, you know, I -- that happens
25 on both sides. But almost without a fault they're going to speak

1 up.

2 If they see a -- and one of the things that crops up is when
3 you're flying over water, you can fly up to 162 nautical miles off
4 land without certain emergency equipment but you can't step over
5 that or you're not in regulatory compliance. So you've got a
6 flight that's heading down the East Coast from Boston to Fort
7 Lauderdale and ATC gives him a direct or gives him a point and
8 there's one little nib that sticks out and he's going to exceed
9 that 162 and dispatchers are always watching it and they'll jump
10 on and say, hey, you can't take that direction because he had an
11 alert that told him flight's changed. So they will jump up and
12 they'll do that. Any other condition, especially if it's a safety
13 of flight, they're not going to hesitate to jump in there.

14 I've had one experience since I've been here where a
15 dispatcher was passive about watching something happen but what he
16 watched happening was the plane wasn't proceeding to an airport
17 that was effectively closed for fog. It turned and started
18 heading to an alternate and the dispatcher didn't react. Luckily,
19 the dispatcher got an ASAP because he was passive and I was going
20 after him. You don't just passively watch something happen. You
21 have to communicate. But that's once since I've been here in
22 November -- September of 2014. It only happened once. Most of
23 them are pretty proactive and they're not shy (indiscernible).

24 MR. FRANTZ: Okay. Thank you. That's all I have.

25 DR. SILVA: Eric?

1 BY MR. WEST:

2 Q. The second dispatcher is currently working here now.

3 A. Excuse me?

4 Q. The second dispatcher, FAA dispatcher?

5 A. Dispatch inspector?

6 Q. Yes. Who does he work for? Who is he under?

7 A. He reports to the frontline manager, Jim Hargrove, and then,
8 by default, the supervisory POI.

9 Q. But he doesn't report to you?

10 A. Oh, no, sir.

11 Q. Okay.

12 A. I would like to say we're equals.

13 Q. You are.

14 A. He's smarter than I am. Better looking, too.

15 Q. So his duties -- I mean, how does he -- does he assist you in
16 any way? Do you guys share duties and can you give me his --
17 describe his duties?

18 A. Informally. There is no program. There's no lead or
19 manager. That's another dissertation that you don't want me to
20 get into. We're both operations aviation safety inspectors with a
21 designation that's dispatch inspector.

22 Q. Right.

23 A. We get treated like any other ops inspector. We can be
24 assigned anything in here. Now there's certain areas where
25 they're not going to assign me to go over and watch a sim

1 qualification because that's not my qualification. But almost
2 anything else, I go out and do cockpit inspections, I do cabin
3 inspections, I do ramp inspections, whatever. But the division of
4 duty, it's as assigned and the frontline manager's always trying
5 to equalize workload, trying to make sure that one or the other of
6 us isn't overburdened. Does that answer your question?

7 Q. Okay. Well, sure. These records that you mentioned, I think
8 Marvin touched on, the records maintained at the dispatch office.
9 I'm interested in knowing do they maintain records for an extended
10 amount of time after an incident or an accident, do you know?

11 A. They are required to keep them for a certain amount of time
12 and that's it. It doesn't have any qualification to it. When an
13 accident or incident comes to our attention, we can make a formal
14 request for further information and once we've done that it is a
15 formal request and it works through regulatory compliance and then
16 they provide that to us.

17 Q. Okay.

18 A. After that, if the carrier had something that would be
19 outside of what's required by regulation.

20 MR. WEST: Do you know -- I think I'll save that. Okay. I'm
21 done. Thank you.

22 DR. SILVA: Okay. Greg?

23 BY MR. BOWEN:

24 Q. Just got one question. You got your DRM and I assume that
25 means dispatch resource management. Is that the acronym?

1 A. Uh-huh.

2 Q. Flight operations at Southwest, the pilots are now in flight
3 and from what I understand starting to be with ground ops, use
4 risk and resource management which is based off of the long model
5 of it.

6 A. Right.

7 Q. Is that the same? What I'm concerned -- what I'm asking
8 really is there specific language that communicates your state of
9 mind that are -- it's in our area such as the red/green/yellow
10 model. Is that synchronous with dispatch resource management or
11 is that program different?

12 A. RRM is incorporated into dispatch resource management
13 training. So RRM is this -- Southwest Airlines, as I understood
14 it, flight operations mindset. This is what we're doing and so
15 dispatch resource management is a regulatory requirement that they
16 have to have a program and they have to be trained in it. The way
17 their training is done is that there is a curriculum segment in
18 initial training. After that you don't have, in recurrent, a DRM
19 segment but it is infused into every aspect of dispatch recurrent.
20 So when you're talking about weather, it's this is why you do this
21 and this is why you share this. So it's incorporated. It is the
22 same information but it is a specific program itself as DRM.

23 Q. Yes, but the language used in that program, is that
24 consistent with the language --

25 A. Yes.

1 Q. -- used in (indiscernible)?

2 A. And the same concepts -- and the purpose for that is so that
3 they're talking apples to apples.

4 MR. BOWEN: That is my concern. Thank you.

5 DR. SILVA: Okay. Kevin?

6 MR. FERGERSON: Just one question.

7 BY MR. FERGERSON:

8 Q. When we were back talking about dispatch release and the
9 standard for headwind/tailwind component for takeoff and landing,
10 the standard being zero.

11 A. Uh-huh.

12 Q. If something other than zero is used, say for landing it was
13 a wind that gave you that 5-knot headwind. Is there a requirement
14 or is there an expectation that the dispatcher would communicate
15 to the flight crew that, hey, we're planning on you getting in --

16 A. No.

17 Q. -- based on this calculation?

18 A. I don't know that there's a requirement. I don't remember
19 the specific, but the intent is that -- and let's say that the
20 headwind's not the problem, it's the tailwind.

21 Q. Uh-huh.

22 A. You're coming up and you're going to land at Hartford and you
23 know that your best-case scenario you're going to have a final
24 knot tailwind and it looks like, you know, where you're being
25 funneled into you better jump in and plan that and the intent then

1 is to communicate it to the crew is this looks like best case
2 scenario. I want to let you know that this looks like what we're
3 locked into. Do you want to proceed or not?

4 Q. Uh-huh.

5 A. So that's the intent. There's not a requirement, that I
6 remember, but the intent is that you do jump and you start making
7 that plan and you have the capability in the automation to do it
8 but then you convey what that may lead to. Because the main thing
9 is if we don't give you a heads up of what we think's going to
10 happen, you can't say, oh, no, what you don't know is they're
11 going to take us around here and we're going -- oh, okay. So long
12 as we got that together and you've got an option that we didn't
13 see.

14 Q. Uh-huh. Is changing in from zero, is that automated in any
15 way or is that something that a dispatcher would have to
16 deliberately --

17 A. I think that takes an input.

18 Q. Okay. That's all.

19 A. They always try and use a default and it pops and then in the
20 training they're real clear about you must do this or, if desired,
21 you must do this. The default is.

22 MR. FERGERSON: Okay. Great. Thanks.

23 DR. SILVA: Okay.

24 BY MR. LEE:

25 Q. I can remember my question now so you talked about how the

1 assign-age going from 35 to 25 and generalities but I'm just
2 wondering is that kind of peanut butter spread or do they look at
3 areas that, for example, in Southern California the weather's
4 always nice, right. So I'm going to give the person over that
5 area more flights because in history nothing's really going on
6 that might cause issues here so that person monitoring that area
7 has more responsibilities.

8 A. Yes. And again, that's why I said, you know, I'm sort of
9 giving you a range. In exactly that scenario on a fair weather
10 day and if your desk is just up and down the West Coast and even
11 Seattle's good and San Francisco doesn't have a ground delay
12 program, which is rare, you can handle 40 flights because you're
13 just watching weather that's no changing and you're -- (knocking
14 on table).

15 Q. But my question was do -- would -- do they assign the desk?
16 Like, that person that's over that area would they typically have
17 more on --

18 A. Yes. They would have more flights because of less intensity.
19 There's a factoring system. If you're working a long-haul desk
20 you might be working 14 long hauls and if you're working Southern
21 Cal and just in and out quick turns, you're working 40. If you're
22 working a mixture of the Chicago, New York to Florida, you're
23 working 27. It's all different and it is a complex method of
24 saying, well, a long haul isn't just less work because it's just
25 one flight. No, you've got a lot more potential. If you're

1 flying through Chicago center you have a lot more potential during
2 the spring and fall for reroutes so it doubles your work, it
3 triples your work. Or you've got mountain wave activity when
4 you're crossing -- it's more work.

5 So all of that's factored in and it will change from season
6 to season. Desks will fluctuate from month to month, even. But
7 it's -- there isn't just one template that fits everything.

8 MR. LEE: That's all I have.

9 DR. SILVA: Okay. All right. Do you have anything to add
10 that we didn't ask you but we should have?

11 MR. FULTON: I don't think so. I expounded on some of those
12 and gave you some of my opinions. I can't think of anything.

13 DR. SILVA: Okay. Well, if you do feel free to reach out
14 either through Eric or you have our cards, directly. Thank you
15 for your time. We really appreciate it.

16 MR. FULTON: All right, then.

17 (Whereupon, the interview was concluded.)
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CERTIFICATE

This is to certify that the attached proceeding before the

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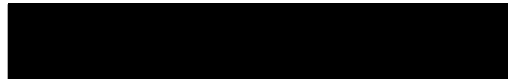
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 Interview of Robert Fulton

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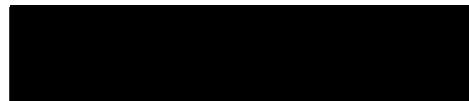
PLACE: Dallas, Texas

DATE: October 9, 2019

was held according to the record, and that this is the original,
complete, true and accurate transcript which has been transcribed
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Beverly A. Lano
Transcriber



Autumn Weslow
Corrections made 6/17/2020