BEFORE THE UNITED STATES OF AMERICA NATIONAL TRANSPORTATION SAFETY BOARD

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In re:

ALASKAN AIRLINES

Hanger 6 Oakland Airport Oakland, California

Friday, March 25, 2000

INTERVIEW OF KEVIN AFMAN

The above-entitled matter convened pursuant to notice at 1:17 o'clock p.m.

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APPEARANCES:

On behalf of National Transportation Safety Board:

FRANK MC GILL, National Transportation Safety Board Office of Aviation Safety Aviation Engineering Division 490 L'Enfant Plaza East, S.W. Washington, DC 20594

On behalf of the Federal Bureau of Investigation:

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On behalf of Airline Pilots Association:

Captain David B. Crawley, M.D. Pilot

On behalf of Boeing:

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On behalf of the Federal Aviation Administration:

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On behalf of the Witness:

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FRIDAY, MARCH 25, 2000 <u>1:17 O'CLOCK P.M.</u> 1 PROCEEDINGS 2 3 MR. MC GILL: Kevin, I'm Frank McGill with the 4 National Transportation Safety Board. I'd like to thank you 5 very much for coming today, and we'll start our questioning. How long have you been an A&P mechanic? 6 7 MR. AFMAN: Since 1985. 8 MR. MC GILL: How long have you worked at Alaska 9 Airlines? 10 MR. AFMAN: It will be 11 years in May? Yeah. 11 MR. MC GILL: So you've spent most of your time at Alaska, then? 12 13 MR. AFMAN: Yeah. MR. MC GILL: Have you worked for any other 14 15 carrier? MR. AFMAN: Yeah, I worked for a company called 16 Ports O'Call. They're -- yeah, Ports O'Call. 1718 MR. MC GILL: Okay. 19 MR. AFMAN: It was a private company. 20MR. MC GILL: Okay. Can you tell me about the 21training that you have received on the MD-80 airplane? 22 MR. AFMAN: Training? I guess I don't understand 23 the question. 24 MR. MC GILL: What type of training, maintenance 25 training, have you had on the MD-80?

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MR. AFMAN: Well, I've gone through the MD-80 2 maintenance course, and then I've worked on the MD-80 here in the hangar, doing C-checks and the 15Ks and 30Ks. 3 MR. MC GILL: Is this training that's supplied by 5 Alaska Airlines? MR. AFMAN: Yes, it is. 6 7 MR. MC GILL: Okay. So you've had ground school-8 type training or it's strictly all OJT? 9 MR. AFMAN: No, ground school and classroom 10training, yes. 11 MR. MC GILL: Okay. This particular lubrication was performed in September, signed 2499. 12 13 MR. AFMAN: Okay. MR. MC GILL: Do you remember that lubrication on 14 15 963? MR. AFMAN: No, I don't remember the specific 16 17 airplanes that I lubricate. I mean, you know, like on the 18day-to-day basis we do different airplanes. So trying to recollect 924, as far as doing a lubrication, that's like 19 20did I turn the corner last week down the street, you know? 21 MR. MC GILL: Would you just take us through a --22 how the task is performed or how you would perform it? Okay. First I would look over the 23 MR. AFMAN: 24 card, and then I would get the materials that I would need 25to go out to do the job. And then I would go out and

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lubricate the left-hand elevator, using the graphics and steps in which it tells you each item and the number of fittings that you would be lubricating. So I'd do the left elevator, and then the left elevator and tabs, and then I would do the horizontal stabilizer lubrication, opening the accesses to do so and then closing them up when I got done.

7 MR. MC GILL: How many of these lubrications have 8 you done on the MD-80?

9 MR. AFMAN: Gosh. Probably, I'd say, a dozen, 10maybe. I can't -- I can't recollect. You know, you do them 11 in the hangar. I did them in the hangar for five years, you know, and you do -- sometimes you do it in the hangar, you 12 know. You do a portion of it, like the left elevator. You 13 know, you get one card and you do like a left elevator lube, 14 15 and then you do another job. And so, I mean I could -- I can't say for sure exactly how many. 16

MR. MC GILL: Well, right now you're in SanFrancisco. Is there a hangar over there?

MR. AFMAN: No.

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20 MR. MC GILL: So you're doing this lubrication 21 outside? 22 MR. AFMAN: Right.

MR. MC GILL: And what means of lift do you use?
MR. AFMAN: It's a lift, snorkle lift. It's like
a basket truck.

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MR. MC GILL: One person?

2 MR. AFMAN: No, you can put two people in there, 3 three people. I don't know the actual capacity of it, but 4 usually it's just one person in there. 5 MR. MC GILL: Could you -- I tried to check on

6 this one airplane on this date. You cannot remember this 7 particular airplane, to know whether it was day time, night 8 time?

9 MR. AFMAN: Oh, it was night, because I work 10 graveyard.

MR. MC GILL: So it was night time?

MR. AFMAN: Yes.

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13 MR. MC GILL: Okay. Do you ever perform these14 lubes when it's raining?

MR. AFMAN: Oh, yes. Yes.

16 MR. MC GILL: Does that cause any kind of a 17 problem, other than uncomfortableness?

18 MR. AFMAN: No, not really. Yeah, it just is19 uncomfortable, yeah, when you're doing it, but.

20 MR. MC GILL: What type of grease is used on this 21 check, do you know?

22 MR. AFMAN: We have -- in the past have used a 23 mobile 28, which is a red grease. And then we transitioned 24 over to a green grease.

In thinking about it, it wasn't too long ago that we just transitioned over to the green grease. So I may have used the red grease, you know, instead of the green grease.

5 MR. MC GILL: How much grease does it take to do 6 this card? Can -- one filling, one grease?

7 MR. AFMAN: Oh, yeah, grease -- yeah, grease gun, 8 yeah.

9 MR. MC GILL: So you do the elevators, the tabs, 10 and the stabilizer with one applicant -- one grease gun?

MR. AFMAN: Yes. I may take two out with me, if -- usually we have fittings that you can put a high pressure fitting in, or -- and a regular greaser fitting in, where you can just plug them in, and then unplug them and put another -- the other fitting in. So it just depends on if the grease guns that are there, if you can take them off the shelf and if they're -- sometimes they're not useable, so.

18 MR. MC GILL: Have you ever performed a C-check19 visual inspection of the Acme screw and nut stabilizer?

20MR. AFMAN: I was an inspector for a little while.21I can't recollect if I ever did a visual check of one.

22 MR. MC GILL: Have you ever noticed any metal 23 shavings on the Acme screw assembly?

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MR. AFMAN: No, not that I can recollect.

MR. MC GILL: Around the assembly, like the bottom 2 of the -- any of those? 3 MR. AFMAN: No, uh-uh. MR. MC GILL: Do you know how often this aircraft Δ is lubricated? 5 It's to my understanding that it's 6 MR. AFMAN: 7 2,000 hours or 2,500 hours. That's something I didn't know 8 before. That was something that somebody had told me after 9 the accident had happened. 10 MR. MC GILL: As a mechanic, do you ever know on a lot of these tasks what the intervals are? 11 MR. AFMAN: No. 12 13 MR. MC GILL: Have you ever made any suggestions to management about improving task card procedures? 14 15 MR. AFMAN: Yes. MR. MC GILL: And what happened? 16 They were very receptive to it. 17 MR. AFMAN: MR. MC GILL: Have you ever been issued a torque 18 wrench at the Oakland -- at any of the facilities that was 19 out of calibration? 2021 MR. AFMAN: No. 22 MR. MC GILL: Have you ever replaced a jack screw 23 assembly? 24 MR. AFMAN: No.

MR. MC GILL: If you do the lubrication at night,
 what kind of lighting do you use?

3 MR. AFMAN: I usually have a head lamp, a4 battery-operated head lamp.

5 MR. MC GILL: Is that better than, say, a three-6 cell flashlight?

MR. AFMAN: Well, yeah, because you can -- you can use both your hands, then, rather than having to hold a flashlight and then try to -- because you can't -- you really can't, you know, hold a flashlight and try to grease something.

MR. MC GILL: Oh, let's talk about the greasing now. Say we remove the inspection plates for the jack screw assembly. Do you know how many Zerk fittings are inside there?

MR. AFMAN: No. I'm pretty sure it's like four. MR. MC GILL: Yeah. It's three, but -- does that -- do you ever find it's difficult to put one on the nut, and then you have one on each gimble? Is that any problem when you do that?

21MR. AFMAN: What, put one? I don't understand.22MR. MC GILL: Well, put the grease gun fitting to23the --

24 MR. AFMAN: No, I don't think I've ever had --25 we've got bendable grease, that the end of it, you can

actually bend it to make it go wherever you need to. It's 1 2 not a -- the metal part of it, you can bend, and then it's 3 got a hose that you can reach around and do whatever you Δ need to do. 5 MR. MC GILL: How do you know that the grease is entered properly into the --6 MR. AFMAN: Well, you can pretty much feel it when 7 8 you put it on, and you pump it. You can feel it going in. 9 MR. MC GILL: Is there any visual checks to that? 10 MR. AFMAN: Well, a lot of times, like on a 11bearing or something, you'll look --12 MR. MC GILL: Let's just take that jack screw. 13 The Acme nut itself. Right. 14 MR. AFMAN: 15 MR. MC GILL: When you put the grease in, how could you determine that it was done properly? 16 It actually went in and was not stopped up or --1718 MR. AFMAN: I don't. 19 MR. MC GILL: If it were stopped up, would you 20know it? 21 MR. AFMAN: Yeah, I think so, because you'd feel 22 it in the gun as you try to put it in. If it wasn't going in, you could feel it. 23 24 MR. MC GILL: So it's a lot of feeling --

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MR. AFMAN: Right.

2 MR. MC GILL: -- yourself, the pressure --MR. AFMAN: Right. 3 MR. MC GILL: -- that determines? Δ 5 MR. AFMAN: Right. MR. MC GILL: Do you put any grease on the jack 6 7 screw itself? 8 MR. AFMAN: Yes. MR. MC GILL: How is that done? 9 10 MR. AFMAN: With a brush. Just you basically take 11 out a little bit of grease with you, or you pump it out of 12 the grease gun onto a paint brush and just paint a real 13 light coat on there. MR. MC GILL: Do you think lubricating the 14 15 stabilizer would change the end play measurements? MR. AFMAN: I have no idea. 16 MR. MC GILL: What contact do you have with the 17 18company safety program? MR. AFMAN: I quess it would be by phone. We do 19 20have a safety representative over at our office, so if I --21I guess if there was something that I needed to report for 22 safety, I'd talk to him about it. And he could --MR. MC GILL: Who is that person? 23 24 MR. AFMAN: It used to be Kion Zonegar (phonetic), 25 and I don't know if that's --

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MR. MC GILL: He's a mechanic? 1 2 MR. AFMAN: Yeah. MR. MC GILL: What about the Director of Safety? 3 MR. AFMAN: I don't know who that is. Δ MR. MC GILL: What about contact with FAA? 5 MR. AFMAN: I know there's a local, but I don't 6 7 know who they are and I don't know how I would actually go 8 about --9 MR. MC GILL: Well, I'm not necessarily meaning 10you, but do you see a lot of FAA oversight? 11 MR. AFMAN: No, no, not on the graveyard. MR. MC GILL: Yeah, that's right. I forgot the 12 13 graveyard. MR. AFMAN: Yeah, not too many people around. 14 15 MR. MC GILL: Yeah. Is there a way for employees to bring up a safety-related issue? 16 17 MR. AFMAN: Yeah, if there was something safety-18related, I think we'd probably -- we'd take it to our 19 supervisor or our manager. 20MR. MC GILL: Is there anything like a hot line or 21anything to -- that you know of? MR. AFMAN: There may be, but I've never had the 22 chance to use one or never looked for one. 23 24 MR. MC GILL: Is there anything right now you can 25 tell us about that might help us understand the lubrication

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1 or the jack screw? Eleven years, anything about that you
2 see that's significant that can help us determine why we had
3 that accident?

MR. AFMAN: No, I -- in my mind, it seems like something failed. But as far as -- you know, the cause, you know, I don't know.

7 MR. MC GILL: Could it even ever be a possibility 8 because that check is -- the lubrication check is a three-9 part check involving the elevators, tabs, and stabilizer --10 could there ever be a possibility that one could do two of 11 the three and miss it or forget about it? Or is it always 12 done on one lift up?

MR. AFMAN: Yeah. I mean unless you had to go
down to get equipment or something like that, I wouldn't
think you -- yeah, it'd be one -- one deal, yeah.

16 MR. MC GILL: And you can't remember any problems 17 on any lubrication, whether it's this airplane or another 18 one, recently that you had any --

MR. AFMAN: No.

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20 MR. MC GILL: Is that considered a pretty basic-21 type of task?

MR. AFMAN: Yeah, yeah.

23 MR. MC GILL: Is it assigned to any particular 24 people, more or less experienced?

No. It's basically -- we have a lot MR. AFMAN: 2 of different work that we do every night, so just depending 3 on who's available to do the work. It's not really assigned Δ to a specific person. It's -- you know, whoever can get to 5 it at the time will go up and do it. MR. MC GILL: How long does it take to do it? 6 7 MR. AFMAN: I'd say roughly -- probably an hour. 8 MR. MC GILL: Who fills the grease guns? 9 MR. AFMAN: We do, the mechanics do. 10 MR. MC GILL: Do you have -- we were talking 11 earlier about the different types of greases. Can you mix the two? 12 13 I know that they're compatible. MR. AFMAN: Ι can't see why you would want to mix them, but -- I mean I 14 15 wouldn't take one thing of grease and try to put in it --MR. MC GILL: At your facility, do you have both 16 greases available of the Aero Shell 33? 17 18 MR. AFMAN: You know, we don't have them any more. Unless -- we have a locker -- I mean a room down further, 19 20that we might have some in it. But I'm pretty sure we got 21 rid of all of it after we got the Aero Shell 33. I mean we had a canister of it on hand, and we 22 were using it until we got rid of that one. And then as the 23 Aero Shell 33 was coming in, we were using that. 24

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MR. MC GILL: When you made that transition --2 let's just say the first airplane that you saw that had the Mobile 28 in it, and you lubricated it with Aero Shell 33. 3 Δ How was this performed? MR. AFMAN: I guess I don't understand the question. 6 7 MR. MC GILL: Would you have just done it 8 normally, like you would have done, to say that the nut itself would then -- had been last lubricated with Mobile 9 1028. You're now coming in with another lube --11 MR. AFMAN: Oh, I see what you're saying. MR. MC GILL: -- would you have tried to pump this 12 13 out or just pump it like you would normally --MR. AFMAN: Yes, right. 14 15 MR. MC GILL: Normal? MR. AFMAN: Right. 16 MR. MC GILL: Do you see a film forming on the top 17 18after -- like you say, this feel that you get, would you be 19 able to see grease come out at the top of the nut? 20MR. AFMAN: You know, I can't remember looking to 21see if there was. I -- you know, when -- usually when I lubricate, I put it on there, and I -- open the end, and 22 then, you know, if it's --23 24 MR. MC GILL: How do you know when to quit 25 pumping?

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MR. AFMAN: I don't.

MR. MC GILL: Well, could you not look in there 2 3 and see it coming out at the top or bottom or wherever? Δ MR. AFMAN: Yeah, yeah. 5 MR. MC GILL: Have you spoken with anybody concerning how to answer questions in this interview? 6 MR. AFMAN: No. Well, I have talked with my 7 8 lawyer, just because I've been a little bit nervous about --9 I've never sat before a board like this before, and I didn't 10know, you know, how to go about it. And, you know, it just 11 made me real nervous. I just asked him what we were going 12 to be going through, and the company lawyer's also talked to 13 me. MR. MC GILL: Is that -- was that yesterday? 14 15 MR. AFMAN: Yesterday and Monday. MR. MC GILL: Did they say anything how to answer 16 these questions? 17 18 MR. AFMAN: Oh, no. Basically they just told me what you might be asking me for questions and what to expect 19 20for questions and who might be here. 21 MS. VON KLEINSMID: I have a question. First of 22 all, I just want to get it clear. You were -- you started as an A&P? 23 24 MR. AFMAN: Yes.

MS. VON KLEINSMID: And then you started with 2 Alaska about 11 years in May? MR. AFMAN: Right. 3 MS. VON KLEINSMID: And then you went to an 5 inspector for a while? MR. AFMAN: Well, I've been --MS. VON KLEINSMID: Normally, once you go from a 7 8 mechanic to an inspector, you sort of stay, right? 9 MR. AFMAN: Right. Well, yeah, I was a mechanic 10first. 11 MS. VON KLEINSMID: Okay. MR. AFMAN: And then I was in OJT, instructor. I 12 13 did some instructing out on the floor. When we -- in the first couple of years we were here. 14 15 MS. VON KLEINSMID: Instructing other mechanics? MR. AFMAN: Right. 16 MS. VON KLEINSMID: 17 Okay. 18 MR. AFMAN: And then I went into inspection, and 19 it just -- I'm more of a hands-on person. 20MS. VON KLEINSMID: Okay. 21 MR. AFMAN: So I guess, more or less, I got a 22 little bored with it. MS. VON KLEINSMID: Lots of paper and more hands-23 24 on?

MR. AFMAN: Yeah.

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MS. VON KLEINSMID: Okay. Okay.

And then what's the -- on the lubing, the top part, what priority is that? I mean aren't all the jobs categorized by like a priority level, or is that just on non-routine? Is there a priority level on lubbing? Would it be like a priority one, priority two, priority three?

8 MR. AFMAN: I think it would probably be a lower 9 priority. I guess the way it works is we have like a 10 service check, we have the lubrications, and then we have 11 like MELs and then other write-ups, like pilot write-ups or 12 what not --

MS. VON KLEINSMID: Okay.

MR. AFMAN: -- that we have to take care of.

And I guess you could say, yes, that's a priority because it's scheduled.

MS. VON KLEINSMID: Right.

18 MR. AFMAN: An unscheduled thing would not 19 necessarily be priority until, you know, it might be 20 something that we'd want to put an MEL on or whatever. 21 MS. VON KLEINSMID: Do you ever MEL the actual 22 lubrication if you can't get to it? 23 MR. AFMAN: No, no.

MS. VON KLEINSMID: Okay. And when you're doing a lubrication on a C-check, where does it usually happen in

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the C-check? You've done about 12 of these, right?

MR. AFMAN: Where is it done?

3 MS. VON KLEINSMID: I mean does it vary? Is it 4 like in the first five days, is it like the day before the 5 plane leaves? Is it --

6 MR. AFMAN: It's later on. It's like a week or --7 depending on how long the airplane is here. I think it may 8 be like a week or so before it goes out.

9 I think it all depends on how much work is being 10 done in that area, whether they determine whether there's 11 other work that needs to be done in that area before they 12 can close it up.

MS. VON KLEINSMID: Is it always done after the end play check is done or is it done before the end play check is done?

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MR. AFMAN: I don't know.

MS. VON KLEINSMID: Okay. So you have no idea of knowing if an end play check is done? Do you have the area open in order to lube, or does it matter?

20 MR. AFMAN: Oh, yeah, it has to be open for the 21 lube. So the -- I guess I don't understand.

MS. VON KLEINSMID: Well, I just -- I just don't know. I mean, do you always open up the area? I mean is that part of your thing?

MR. AFMAN: No, not always.

MS. VON KLEINSMID: Okay.

3 MR. AFMAN: It can be anybody that opens it up. 4 And then if there's work to be done in there, then the work 5 gets done. As inspections go, I'm not sure how they 6 schedule the inspection inside there. As far as if there's 7 an end play check to do, what they -- what they would -- how 8 they would schedule it.

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MS. VON KLEINSMID: Okay.

MR. AFMAN: In the C-check. It would be done before it was closed up, but as far as if it was done before the lubrication or after, I have no idea.

MR. MC GILL: Kevin, is it considered betterworking conditions at San Francisco rather than Oakland?

MR. AFMAN: You mean hangar maintenance versus line maintenance?

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MR. MC GILL: Yes.

MR. AFMAN: I don't know about better working conditions, because you're outdoors. So, you know, the rain is -- it's -- sometimes it's nicer to be over here, because you're not in the rain. Sometimes it's nicer to be over there, because you don't have so many other people that you're having to deal with. You know, you kind of get to do stuff with just a tight-knit group of people.

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MR. MC GILL: How large is the work force over 2 there? How many mechanics? I'm trying to think how many of us 3 MR. AFMAN: 4 there is over there. On --5 MR. MC GILL: On a shift? MR. AFMAN: Well, there's four -- usually four 6 7 mechanics, depending on people being off or on vacation or 8 sick. And then there's two -- one or two avionics guys. And then a lead mechanic. 9 10 MR. HAMILTON: That's on graveyard? MR. AFMAN: Yes. 11 12 MR. MC GILL: Is there ever any cross-over between the maintenance and line people? Two people went on 13 vacation in San Francisco, would they bring somebody out 14 15 from over here to --No. No, usually they'd get somebody 16 MR. AFMAN: in on overtime. If it was -- if the schedule needed to have 17 18somebody else come in. 19 MR. MC GILL: So you really don't have much 20contact with the Oakland facility? 21 No, not really, uh-uh. MR. AFMAN: I mean as far 22 as -- we get parts from over here every once in a while. But that has to be because we don't have all the parts that 23 we need over there. So we'll have them shipped over there, 24 25 but that's about it.

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MR. HAMILTON: You used to work in the hangar 2 here, correct? 3 MR. AFMAN: Yes. MR. HAMILTON: When did you move over to Frisco? Δ MR. AFMAN: I believe it was '95. 5 MR. HAMILTON: Okay. 6 DR. CROWLEY: Kevin, I assume you have lubed lots 7 8 of parts in the airplane --9 MR. AFMAN: Yes, yes. 10 DR. CROWLEY: -- besides the -- do you get -- any 11 time since you were hired with Alaska, have you gotten any training in lubrication? Pumping a grease gun? 12 13 MR. AFMAN: No. DR. CROWLEY: How about before Alaska? 14 15 MR. AFMAN: Not that I can recollect, no. DR. CROWLEY: Any general A&P training somewhere? 16 MR. AFMAN: No. 17 18 DR. CROWLEY: Is it -- why is that, that no one 19 would give you any training? 20MR. AFMAN: I don't know, I've never thought about 21it, I guess. DR. CROWLEY: It seems like it's a rather 22 23 important part of maintenance. 24 MR. AFMAN: Yeah.

DR. CROWLEY: And Mr. McGill asked you how you 2 know when it's properly greased. MR. AFMAN: Right. 3 DR. CROWLEY: And you said, "I don't." So maybe Δ 5 some training needs to be done there. MR. AFMAN: I don't think there is any training, 6 7 per se, courses on -- from the Alaska Airlines training 8 department, that I know of, that there is any lubrication 9 courses. 10MS. VON KLEINSMID: So you're saying you don't have to have a cert to do lubrication? It's not a cert, you 11 12 don't have to hold a certain card that you're able to go lube -- anyone can go up -- any A&P can go and do 13 lubrication, or do you have to have a cert to go 14 15 lubrication? MR. AFMAN: A cert? 16 MS. VON KLEINSMID: Oh, like if we had -- everyone 17 18was trained in different things. Crane operators -- I mean 19 you had certain --20MR. AFMAN: No, as far as I know, anybody with an 21A&P license can do a lube. MS. VON KLEINSMID: Okay. 22 DR. CROWLEY: Do you think when you're hired with 23 24 an airline they assume that that's so basic, maybe, that 25 everybody knows how to do that and you don't need any

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training on it?

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2 MR. AFMAN: I don't know. I honestly couldn't 3 answer that. I would guess yeah.

DR. CROWLEY: Do you think maybe some training 5 needs to be done?

6 MR. AFMAN: Yeah, maybe. I mean, for me, being 7 mechanically inclined, I work on my car and stuff, and I 8 grease my car and stuff, so.

9 DR. CROWLEY: So how do you know when you've 10 pumped enough on your car?

MR. AFMAN: Well, usually you can tell when itcomes out the bearing.

13 MR. MC GILL: You told me a while ago that you 14 don't really look at the nut itself, so how can you see it 15 when it comes out from the top of the nut onto the jack 16 screw unless you touch it or look at it, or --

MR. AFMAN: Yeah.

18 MR. HAMILTON: Maybe another way of putting that 19 is if you don't look for any grease coming out the top, how 20 many times do you pump it? How do -- is it -- that's what 21 we're not understanding. It's how do you know how much 22 you're putting in there?

23 MR. AFMAN: I guess I wouldn't, for sure.
24 Usually, you know, you put a couple of pumps in, and -- like
25 on bearings and stuff -- small bearings and stuff, you can

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see the grease coming out of them. On that big gimble, I can't -- maybe -- I'm not thinking that I'm seeing it, but it may be coming out of the top, you know, when I'm actually pumping it in. I don't know, am I wording that right?

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MR. LASLEY: Do you do the pump greasing before you do the brush greasing or is there any particular order? MR. AFMAN: No, no.

8 MR. MC GILL: When you lube the elevators and the 9 tabs, do you see that grease fill the hinge bolt?

10 MR. AFMAN: You mean like a bearing, is that what 11 you're saying?

MR. MC GILL: Not the bearing, but on the same card -- test card, when you elevate the elevator, how do you determine how all of those hinge fittings would be full of grease? Do you see those?

MR. AFMAN: On the smaller bearings, you can see 16 when you pump it. You can see the grease coming out of 17 18them. And on the jack screw itself, you know, I'm sure -- I -- for some reason, I'm not seeing -- when you grease it, 19 20I'm not seeing it coming out of the top. Because I've 21 greased other things, like on the landing gear, where I pump grease in and sometimes you can't see it coming out. Maybe 22 it's coming out of the back of an area. And you just can't 23 24 see it coming out.

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MR. MC GILL: Could it be a possibility not maybe you, but someone else could insert the grease gun onto a fitting and not get it properly on the fitting, that when they lubricate it grease did not actually go where it's supposed to go? MR. AFMAN: Yeah, that's probably -- yeah, that's probable, I would think.

MS. VON KLEINSMID: And then going back to the
line, so how would you know that? I mean, would you -- if
you're not looking at it, so you really can't see? I mean,
is that a hard area to try to look into? Is it hard to see?
MR. AFMAN: Well, it's a small area. I mean,
you're looking through an access like this, and, you know,
trying to get around to pump it in, so.

MS. VON KLEINSMID: Okay. And then, again, on the threads -- I mean that grease is really sticky and thick, right? Is it --

18 MR. AFMAN: Yeah. I mean it's not a real thick19 grease.

20 MS. VON KLEINSMID: Okay. So it's easy to get it 21 on the brush and it's easy to get it from the brush to the 22 threads?

MR. AFMAN: Right.

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24 MS. VON KLEINSMID: And what do you do to ensure 25 that you've hit every thread?

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MR. AFMAN: Well, you actually operate the jack
 screw through full travel.

MS. VON KLEINSMID: Okay. So you basically -- you get it in one area and then you operate the jack screw and then you know that all the rest of the threads got grease on it from the area that you applied it with the brush? Or do you actually try to go and take the brush --

MR. AFMAN: Yeah.

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9 MS. VON KLEINSMID: -- and go all the way up and 10 down?

MR. AFMAN: Well, yeah, I try to -- you know, brush it -- just do a real light coat all the way up and down.

MS. VON KLEINSMID: Okay.

MR. AFMAN: I may not get all the way around thewhole thing, but I -- and then I operate it through.

MS. VON KLEINSMID: Okay.

MR. SEYER: You were saying when you were lubing the Acme nut here and you said you didn't see any grease coming out the top. Would it be possible that the grease was coming out of the bottom side, like you said a lot of times you can't see a bearing, and some may come out of the back side --

MR. AFMAN: Yeah, right.

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MR. SEYER: -- and not the front side. So it is 2 possible that if you were putting grease in there, that the grease could have been coming out the bottom side? 3 MR. AFMAN: Yes. 5 MR. SEYER: And you wouldn't have seen that. MR. AFMAN: Right. I mean, yes. 6 7 MR. LASLEY: Where's the stabilizer, generally, 8 the setting when you start lubricating? 9 MR. AFMAN: It will be at a full nose up, because 10you have to have it up high enough to get the panels off to 11get in there. 12 MR. LASLEY: Full airplane nose up or stabilizer 13 leading edge? Stabilizer leading edge up. 14 MR. AFMAN: 15 MR. LASLEY: Okay. So full aircraft nose down trim, then? 16 17 MR. AFMAN: Right. I think that's what you have 18to do to get the panel off to get in there. 19 MR. LASLEY: Okay. Which access cover do you 20access the Acme nut lube fitting through? 21 It's through the -- there's just a MR. AFMAN: square access on the side, where you go through. 22 MR. LASLEY: On the side of what? 23 MR. AFMAN: Of the vertical stabilizer. 24

MR. LASLEY: Okay. Is that --

2 MR. MC GILL: Is that the left side or the right 3 side?

MR. AFMAN: Well, depending on where you're -- you may do the left or the right. There's one on each side. Depending on where you're going, from left to right, or maybe where the airplane might be positioned, would determine where you're doing that at.

9 MR. MC GILL: So when you first start this 10 lubrication, you pick up the elevator itself and the tabs 11 and work your way around?

MR. AFMAN: Yeah, yeah, right.

13 MR. MC GILL: And then you do the other elevator14 tabs, and then you go to the stabilizer?

MR. AFMAN: Right.

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16 MR. MC GILL: Or do you do the other stabilizer 17 first?

18 MR. AFMAN: Yeah, you could have -- you know, it 19 just depends on how -- usually I do the elevators first, and 20 then I'll do the jack screw.

21 DR. CROWLEY: Kevin, can you grease the whole 22 actuator in there from either side, you don't have to open 23 both sides to get all the fittings?

MR. AFMAN: Yeah, you can do it from either side.

31 DR. CROWLEY: You can do it from either side? 2 MR. AFMAN: Right. The access is the same on each 3 side. Δ DR. CROWLEY: Have you ever -- you mentioned that 5 you could tell if the grease wasn't going in there because you could feel it in the grease gun. 6 7 MR. AFMAN: Right. DR. CROWLEY: It wouldn't pump. Have -- so you've 8 9 had that happen at some point, to know that you had a 10plugged Zerk fitting? 11 MR. AFMAN: Yes. 12 DR. CROWLEY: So when you have a plugged Zerk fitting, I mean anywhere on the aircraft, so what's the 13 answer to that? What do you do? 14 MR. AFMAN: Well, you try to work, to try to get 15 the grease going. I mean sometimes you get that feeling in 16 the handle when it doesn't feel like it's going in, and then 17 18 you squeeze a little harder and then it will go. At that point if you couldn't get the grease to go 19 20in, then you'd have to do more investigation and you'd 21 probably take the grease Zerk out and put a new one in. 22 DR. CROWLEY: How often do you do that? You've 23 probably done that in your career a few times? 24 MR. AFMAN: Yeah, probably two or three times, 25 probably, where I actually didn't think the grease was going

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1 in. 2 DR. CROWLEY: But you've always felt like you 3 could always tell that? Δ MR. AFMAN: Oh, yeah. Right. 5 DR. CROWLEY: There's a problem there and you had to do something different --6 MR. AFMAN: Right, right. 7 8 DR. CROWLEY: -- to get that Zerk to work or to 9 put a new one in or whatever it took? 10 MR. AFMAN: Right, right. 11 DR. CROWLEY: Okay. MR. HAMILTON: When you have the trim all the way 12 -- the stabilizer, leading edge up, and you grease -- brush 13 grease on the screw above the Acme nut, than you go around 14 15 the stabilizer all the way, leading edge down, correct, to distribute the grease? 16 MR. AFMAN: Yeah, you --17 18 MR. HAMILTON: In other words, the screw goes down 19 through the nut? 20MR. AFMAN: Right, right. 21 MR. HAMILTON: And that lubed area will go down 22 through the nut. Do you ever lube the screw that's sticking out of 23 the bottom nut after that before you run the screw back up 24 25 through the nut?

MR. AFMAN: No, I -- no.

2 MS. VON KLEINSMID: Going back to the Zerk fitting 3 that might be plugged, you say you give a harder squeeze and 4 usually it goes --

MR. AFMAN: Yeah.

6 MS. VON KLEINSMID: -- but sometimes it doesn't, 7 and then you know it's plugged up and you have to change out 8 the fitting.

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MR. AFMAN: Right, right.

MS. VON KLEINSMID: How do you know that if you give a hard squeeze, that it's going through the Zerk fitting and not going elsewhere? I mean, do you actually have a good feeling? I mean, how do you know it's going through and not up and down? Is it possible to go anywhere but through?

16MR. AFMAN: Well, I mean, it would push out17through the front of the head of the grease gun.

MS. VON KLEINSMID: Okay. If it wasn't going in?
MR. AFMAN: Through the -- yeah.
MS. VON KLEINSMID: Okay. And you'd see that?

MS. VON REFISMED. Okay. And you a see that

MR. AFMAN: Oh, yeah. Right.

MS. VON KLEINSMID: Okay.

MR. HAMILTON: You said an hour to do the job. Isthat including access?

MR. AFMAN: No, that would probably take a little 2 -- well, you've got probably a dozen screws to take out of the one panel. So that's -- I wouldn't think any more than 3 Δ an hour. 5 MR. HAMILTON: Including access? MR. AFMAN: Yeah. 6 7 MR. HAMILTON: And that's just for the stab or is 8 that for the whole card, where you're doing the elevators, 9 also? 10 MR. AFMAN: For the whole thing. MR. HAMILTON: For all three? 11 MR. AFMAN: Yeah. 12 13 MR. BRENNER: How far is it to get access? MR. AFMAN: Probably one of the simpler of the 14 15 tasks. MR. BRENNER: Why is that? 16 MR. AFMAN: Well, because of the amount of access 17 18you have to open to do it. MR. BRENNER: So it's less than other ones? 19 20MR. AFMAN: Yes. 21 MR. BRENNER: How hard is it to see inside, 22 compared to other jobs? 23 MR. AFMAN: Probably not any -- not any different 24 than any -- you know, because we do leading edge slats, and 25 they're a much smaller panel that you have to go through to

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look through to do the grease job, so.

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2 MR. LASLEY: Are you lubricating -- do you take the -- well, you have fairings that fair between the 3 horizontal and the vertical stabilier that are in that area. Δ 5 MR. AFMAN: Right. MR. LASLEY: Are those fairings off or are you 6 7 lubricating through the small hinged door in the fairing? MR. AFMAN: Well, no. There's a small hinged 8 9 fairing through the door. 10 MR. LASLEY: Through the -- yeah. MR. AFMAN: Yeah. That's for the hinge -- the 11 12 stabilizer hinge access. 13 MR. LASLEY: That's near the back of the --MR. AFMAN: Right, right. 14 15 MR. LASLEY: Okay. Now, the gimble ring fittings and the Acme nut fitting, where do you access those through? 16 17 Through the larger opening on the MR. AFMAN: 18side. MR. LASLEY: On the side of the fairing? 19 20MR. AFMAN: No, on the side of the vertical 21stabilizer. MR. LASLEY: Okay. Aren't those fittings on the 22 top of the gimble ring? You've got two fittings, one on 23 each of the pins that attach the gimble rings -- two of the 24 25 pins that attach the gimble ring. And then you've got one

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in the Acme nut itself?

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MR. AFMAN: Right.

3 MR. LASLEY: And am I remembering correctly that those are on the top surface of that, that gimble ring is 4 5 attached to the top of the vertical stabilizer through some structure there, and you can't really see through it, say 6 7 from the top side to the bottom or from the bottom side to 8 the top. Access to the bottom is through that square panel 9 that's sort of tipped up on edge like a diamond. 10MR. AFMAN: Oh, okay. 11 MR. LASLEY: And then access to the top is either through the fairing or the door in the fairing? 12 13 MR. AFMAN: Okay, yeah. I think it's through the door, yeah, because we don't have the bolt fairings off. 14 15 MR. LASLEY: Not just for a simple lube? MR. AFMAN: No. It's through those little square 16 17-- yeah. 18 MR. LASLEY: Okay. A C-check might be a different 19 matter? 20MR. AFMAN: Right, right. 21 MR. HAMILTON: Do you have to pull the top of the 22 fin off for this lube? 23 MR. AFMAN: Top of the -- yes. 24 The top of the stab to get access to MR. SEYER: 25 the gear box, the motor --

MR. AFMAN: Right, right.

MR. HAMILTON: Okay. If the stab is in full 2 3 leading edge up position, can you get that panel off? MR. AFMAN: No. 5 MR. HAMILTON: So you -- I'll say something and 6 tell me if I'm right. What you do then is you put the stab 7 like leading edge up, pull off the side panel, do the grease 8 there, and then move the stab back down, and then do the 9 top, where the motors are? 10MR. AFMAN: Right, right. MR. MC GILL: Kevin, you've got -- I hear you've 11 12 got an inspector that -- B. Lewis? 13 MR. AFMAN: Right. MR. MC GILL: How does the inspector work with the 14 15 mechanic on this particular task? MR. AFMAN: Well, he's actually stamping that off, 16 saying that the paperwork is complete, I believe. I think 1718that's -- I don't think -- he's not there to oversee my 19 work. 20MR. MC GILL: And there's -- you just don't 21remember on this particular airplane, on 9/24 -- September 24th of '99 -- anything about this --22 MR. AFMAN: No. 23 24 MR. MC GILL: -- lubrication?

MR. AFMAN: No.

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2 MS. VON KLEINSMID: When's the graveyard shift? 3 What are the hours, just for my knowledge?

MR. AFMAN: From 9:30 until 7:30 in the morning.

5 MS. VON KLEINSMID: Okay. And then on the grease 6 gun, when you had two different greases, did you clean out 7 the gun before -- like how do you know that the gun you used 8 before was Aero Shell 33 or the Mobile? I mean what do you 9 have to do -- is there anything you have to clean out or do 10 you just fill it up with -- or does it matter?

MR. AFMAN: No. I mean --

MS. VON KLEINSMID: Do you empty it out after you're done? What are the procedures on that in terms of --

MR. AFMAN: No, we don't empty it out, no.

MS. VON KLEINSMID: So do you throw them away? Do you -- I mean do you recycle?

18 MR. AFMAN: No. We'll -- the Aero Shell 33 is in19 a tube that we have.

20 MS. VON KLEINSMID: Okay. Oh, so it just goes 21 into the gun and you throw out the tube?

MR. AFMAN: Right, yeah.

MS. VON KLEINSMID: Okay. So that anything
through the tip, though, you don't have to clean anything?
Is there any requirement between the two?

MR. AFMAN: No.

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MS. VON KLEINSMID: Okay. So it's just --

3 DR. CROWLEY: Do you know which grease you were 4 using back then in September of '99? Was it September of 5 '99?

MR. AFMAN: No, I don't remember.

DR. CROWLEY: Whether you had switched over? MR. AFMAN: No.

9 MR. MC GILL: Would you use the grease that's 10 designated on the job card?

MR. AFMAN: Well, we were in the transition point of going between the red and the green, and just knowing that they were compatible, I may have picked up a red grease gun instead of green.

MR. LASLEY: What is it that dictates at Alaska that those greases are compatible?

MR. AFMAN: The GMM specifies the different mill spec numbers. Well, actually, it shows which greases are compatible with each other and which ones can be used together.

MS. VON KLEINSMID: You had said that you -- when
Frank asked whether or not the upper management was open to
suggestions regarding improving task cards --

MR. AFMAN: Right.

MS. VON KLEINSMID: -- that they were?

MR. AFMAN: Yes.

3 MS. VON KLEINSMID: Do you have a specific example 4 of that?

MR. AFMAN: Well, I was an OJT instructor over 5 here for quite some time and I did a lot of changing of 6 7 cards -- or putting in the paperwork to have them changed, 8 put it that way. And it all had to go through our 9 engineering and whoever to have them change, because some of 10the procedures didn't seem to be working the way that they 11 should be, so. Or maybe it would make the job simpler, or 12 whatever.

MS. VON KLEINSMID: So is that more because your role of a OJT that -- I mean, now, if you -- as a mechanic, tried to put in changes, is there a person that's working -an OJT, that's sort of similar to what you were doing before that would -- that you would bring that change to?

18 MR. AFMAN: Yes, there is. Yes, there is another19 person here that does that.

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MS. VON KLEINSMID: Okay.

21 MR. AFMAN: And then we have a gentleman on the 22 line that's also an OJT instructor for the line maintenance. 23 MS. VON KLEINSMID: Do you ever feel pressure from 24 upper management to get jobs done fast and, you know, 25 because the plane needs to get out the door and you've got

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another plane coming in, and you've got schedules to meet? 1 2 I mean, is there pressure -- I mean, you're sort of a different thing. You're not doing so many heavy checks, 3 Δ right? Because you're on the line maintenance. 5 But do you still feel that in San Francisco, in terms of so many things to get done at night and you can't 6 7 and --8 MR. AFMAN: No. 9 MS. VON KLEINSMID: Okay. If there's something 10that we can't get done, usually we'll try to get it 11rescheduled. 12 MS. VON KLEINSMID: Okay. But what about when you were at Oakland, back in -- before '95? 13 14 MR. AFMAN: No, no. 15 MS. VON KLEINSMID: You didn't feel pressure back then? 16 There's no pressure in the hangar. 17 MR. AFMAN: MS. VON KLEINSMID: Okay. 18 MR. BRENNER: Is there ever a conflict between the 19 work cards and the maintenance manual? 2021 MR. AFMAN: Not that I can think of. 22 MR. SEYER: It was just brought to my attention today here, the elevator stab lube card specifies Aero Shell 23 24 33 grease. And I got a copy of the maintenance manual 25 today, and the maintenance manual specifies MIL-G-81322,

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which I believe is the Mobile 28 red grease.

MR. AFMAN: Right.

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3 MR. SEYER: So when they issue you a lube card, 4 per se, is there graphics attached to it or do you go to the 5 maintenance manual and pull up your own graphics?

MR. AFMAN: No, there are graphics attached with it, yes.

8 MS. VON KLEINSMID: I just have one more question. 9 When you were asked at the beginning how many times you had 10 approximately done a lube -- and I know it's hard, because 11 it's been a number of years and stuff -- but you said 12. 12 But then you added that at times you might do a portion of 13 the lube. And then later on you said that it would not make 14 much sense to break it up, because you're --

MR. AFMAN: Well, no, that's --

MS. VON KLEINSMID: So what portion of the lube --MR. AFMAN: What I was trying to say is in the hangar, you do portions, because they have different cards for each different task. I think -- I can't remember for sure --

MS. VON KLEINSMID: Like different lube cards.

22 MR. AFMAN: Right. They have like one lube card 23 for an elevator, another one for -- one for the left 24 elevator, one for the right elevator.

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MS. VON KLEINSMID: Okay.

2 MR. AFMAN: And maybe one for the jack screw. MS. VON KLEINSMID: But that's not how it is on 3 the line in San Francisco? 4 5 MR. AFMAN: Right. MS. VON KLEINSMID: It's all like one? 6 7 MR. AFMAN: Yeah. 8 MS. VON KLEINSMID: It's all one task? 9 MR. AFMAN: Right. 10 MS. VON KLEINSMID: Okay. So one task card, then? 11 MR. AFMAN: Yes. MS. VON KLEINSMID: So you have a task card for a 12 13 line maintenance that's got the three combined, and then in the hangar you have separate task cards? 14 15 MR. AFMAN: You know, I --MS. VON KLEINSMID: Okay. 16 MR. AFMAN: -- that's the way it was back then. I 17 18don't know if it's changed since then. I think that's the 19 way it was. I guess you really can't quote me on that. 20MR. SEYER: I'd like to add in May of '96, all the 21individual lube cards were combined into one lube card that we currently have issued today, 28312000. In May of '96, 22 all of those individual cards were combined into one. 23 So that's why you have elevator, tabs and stab all on one card 24 25 now.

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MR. AFMAN: Okay.

2 MS. VON KLEINSMID: And that's why in '95 when you were in the hangar, you probably had a lot of different 3 Δ ones? 5 MR. AFMAN: Right. MR. SEYER: The individual cards were in effect at 6 7 that time. 8 MR. AFMAN: Right, right. 9 MS. VON KLEINSMID: Are there certain people that 10get asked to do lubes? I mean, do you have like your lube 11 guys, that they always go do the lube? MR. AFMAN: No, no. 12 13 MS. VON KLEINSMID: Are you always a luber on the line out in the San Francisco? 14 15 MR. AFMAN: No, no. Everybody --MS. VON KLEINSMID: Okay. 16 MR. AFMAN: -- gets involved in it. 17 18 MR. MC GILL: Any more questions? MS. VON KLEINSMID: That's all I have. 19 20MR. MC GILL: Well, Kevin, thank you very, very 21We appreciate your time to come here and share with much. 22 us. MR. AFMAN: All right. 23 24 MR. MC GILL: And thank you very much.

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