April 7, 1993

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Dear Alan:

I am in receipt of your letter [Attachment 1] dated March 25, 1993 which followed our telephone conversations of March 24, 1993. I wanted to make what I consider to be significant corrections to the fact pattern of your letter regarding the incident of March 9, 1993 at Salt Lake City:

Page 1, para 2: change "Mountain **Daylight** Time" to "Mountain **Standard** Time" and then add "**March 9, 1993.**" Notice the attached copy of the Crew Flight Log records the time in Zulu or Coordinated Universal Time.

Page 1, para 3: change paragraph to read...

Your duties as a Second Officer on March 9, 1993 were outlined in the **Federal Express B-727 Flight Manual** (1 January 1993), **Federal Express Flight Operations Manual** (1 March 1993), **and the B727 Flight Engineer IOE Training Folder** (7 January 1992). During the 8 minutes from blocking out of the Federal Express ramp to taking off, you complied with all checklists and procedures as outlined in the previously mentioned manuals and training folder, including but not limited to the "After Start Checklist and Before Takeoff Checklist." As the Second Officer, you are tasked with and must direct your attention to completing a challenge and response "Before Takeoff Checklist."

In accordance with FAA approved procedures, as the aircraft takes the active runway for a "rolling takeoff" the Captain calls for the final items of the "Before Takeoff Checklist" to be completed by announcing "Below the Line." In addition to completing this checklist, you must direct your attention to the flight engineer's panel for a final scan of the panel and the engine instruments, and your seat faces the starboard side of the aircraft during this phase of operations. After the throttles have been advanced and when the aircraft reaches "80 knots," which is verbalized by the pilot not flying, your seat must then be facing forward or at least within one notch to the right of the full forward position, and your attention should be totally devoted to the center portion of the forward instrument panel. Your primary role at this phase of takeoff is to monitor the engine instruments on the center instrument panel and be alert for engine failure or related engine emergencies.

You were not looking out the windshield during any portion of the "Before

Takeoff Checklist," nor do any of the Second Officer's procedures and responsibilities require you to do such. You did notice through peripheral vision that a distracting source of lighting was present as your aircraft took what you assumed was the active runway. You later learned from the Captain and First Officer that the distracting lighting was from two maintenance trucks parked directly adjacent to the approach end or threshold area of runway 34R/32 and were illuminating their headlights."

Page 1, para 4: Delete entirely.

Page 2, para 4: Delete entirely.

Additional comments and attachments:

1. **Crew Flight Log** [Attachment 2]: verifies that I was indeed the Second Officer on flight #527 on March 9, 1993. Notice the "out" and "off" times were only 8 minutes apart. There are also flight releases and weight capability worksheets for both legs of the flight. At Salt Lake City, the weight capability worksheet was completed for runway 34R. The Crew Flight Log, Flight Releases, Weight Capability Worksheets, Weight and Balance, and Weather for flight 527 are retained by the Company for 90 days. I obtained copies from our flight records department. Despite Capt Gillespie's statement to the contrary, I do not recall checking the aircraft performance capability for runway 32 after takeoff.

2. **Jeppesen Airport Diagram for Salt Lake City** [Attachment 3].

Page (10-9): notice the shared threshold area of 32 and 34R.

Page (10-9A): notice under "additional runway information" that "threshold to intersecting runway" lists runway 32 for runway 34R.

Page (10-10 and 10-10A): notice there are no special notes or cautions concerning the potential threat at runway 32/34R. Be advised that Second Officers are not on the Company's Jeppesen distribution list, and do not carry or refer to the diagrams as a procedural matter during or before takeoff. The Captain and First Officer are the only crewmembers in possession of this information. There is no opportunity for Second Officers to learn of any potential conflicts on the airport surface, such as in the 32/34R runway threshold environment.

3. ***Straight In Approach***, April 1993. [Attachment 4]

Page 3 and 4. The Company recently published an article (in hindsight) that mentions our Salt Lake City incident in general terms, but also reprints suggestions by Robert Sumwalt, who writes for NASA's ***DIRECTLINE*** magazine. His suggestions include the following statements:

"...Ensure that all members of the flight deck crew review the airport diagram before beginning the taxi-out";

"Locate the airport chart where it is readily available for reference and is in plain view at all times";

"Reduce distractions. Take your tasks in sequence and don't let a trivial duty interfere with more important matters"; and

"While on taxiways, watch carefully for taxiway/runway hold lines. Do not cross them unless all crewmembers agree that clearance to enter a runway has been received."

This article seems to imply that the entire crew is now responsible for a Captain making a wrong taxi turn since **all** have: reviewed the taxi route, had the airport chart readily available for reference, and de-emphasized individual "trivial" duties (contrary to our F.O.M. policy regarding same). He also would shift the eyes of the Flight engineer to outside the window as he assumes pilot and copilot visual responsibilities.

4. **Federal Express Flight Operations Manual** [Attachment 5].

Page 1-1. AUTHORITY "The information, instructions, policies, and procedures contained in this FOM are binding on all Federal Express flight operations. In some cases, the FedEx policies may be more restrictive than the FAA-issues Federal Express Operations Specifications (Ops Specs). No policy in this manual can be less restrictive than the FARs or the Ops Specs."

Page 2-7. AIRPLANE CONTROL "...At any time, during ground or flight operations, if the First Officer is controlling the airplane and the Captain becomes concerned about the airplane's flight path or ground track, the Captain must take physical control of the airplane and state 'I have the airplane.' The First Officer must then completely relinquish control of the airplane." This passage may have relevancy since the Captain states in his Safety Report that the First Officer "uttered something like 32" in time for the Captain to reject the takeoff.

Page 2-8. FLIGHT DECK ORGANIZATION. "A well-organized flight deck promotes safety by logically assigning to different crew members responsibility for the accomplishment of required tasks. Good organization makes routine of as many flight deck responsibilities as possible. This is the basic philosophy behind the design of all Federal Express Normal, Abnormal, and Emergency procedures as reflected in the respective AFMs. The division of responsibilities is designed to enable the pilot flying to concentrate on aircraft control while the other crew member(s) accomplish required tasks." This section of the F.O.M. defines responsibilities in the cockpit. There is no doubt that I performed my

responsibilities as a Second Officer. If the FAA tries to imply CRM mandates that all crewmembers take responsibility for the Captain's actions, this section defines an entirely different philosophy.

Page 2-9. NOTICE OF FAA VIOLATION OR INCIDENT. "Any communication received from the FAA concerning an alleged or actual flight violation or incident will be immediately forwarded to the Director of Operations or his designated representative." **If or when I get served** notice of this alleged violation, I would like for you to write the following individual and notify him in compliance with this section, and also relay to him that you will be representing me in this matter:

Capt Sonny Thompson
Director of Operations
Federal Express Corporation
2861 Sprankel Rd
Memphis TN 38118-0123

Page 3-5. RUNWAY LENGTH. "Operational runway length requirements will be determined from the appropriate airplane performance manual. However, the approval of the Director of Operations or his designated representative (including the Duty Officer) is required to release a flight if the available runway length is less than the following: B-727 -- 5000 feet." As the attached paper work from the Flight Crew Log illustrates, I fully complied with this section by completing a Weight Capability Worksheet for the assigned runway 34R.

Page 4-4 and 4-5. BRIEFING THE TAKEOFF AND DEPARTURE. "...After receiving both the ATIS and ATC clearance the Captain and First Officer will review the departure routing/SID to include all headings, radials, and altitude restrictions. Both pilots must have a thorough understanding of the clearance and the duties each will perform during the departure...." This section specifically mentions the "Captain and First Officer" and "both pilots" when describing departure procedures, but does not task the Flight Engineer with these responsibilities.

Page 4-5. AIRCRAFT GROUND OPERATIONS. "The Captain has the ultimate responsibility for the safe taxi of the aircraft; ..." Although this section deals with marshaling, this statement does not task the Flight Engineer with any specific responsibility for the safe taxi of the aircraft.

5. **B727 FLIGHT ENGINEER IOE TRAINING FOLDER (7 JANUARY 1992)** [Attachment 6]

Page 10. C. After Start Procedures; D. Before Takeoff Flow; E. Before Takeoff Checklist. It is important to note that the "After Start Procedures" are always accomplished by the Flight Engineer after the ground crew is clear of the aircraft. These procedures are completed immediately prior to taxi, and are

followed by the "Before Takeoff Flow" when the Captain states "cleared to configure." The Captain typically calls for this flow to be performed after the aircraft is clear of the aircraft parking area. In the Salt Lake City incident, Capt Gillespie correctly called for this procedure to be performed during our taxi out to the departure runway.

Page 11. F. Below the Line - 'Checklist items found below the line are read on the Captain's command. The Captain will call "below the line" when he is cleared into position on the runway. The flight crew normally holds the strobes until the aircraft is some distance down the runway on takeoff. In this instance, it is permissible to call "Before Takeoff Checklist Complete, except for the Strobes" as the roll commences. Do not under any circumstances, hold the 'Before Takeoff Checklist -- Complete' call waiting for the PNF to turn on the strobes."

Page 12. TAKEOFF - "The instructor will brief the following:

- The Second Officer seat must be facing forward for all takeoffs and landings and at all times when below 10,000' MSL.
- Your seat must be far enough forward for you to be able to reach the throttles comfortably.
- For night takeoffs, the fuel boost pump low pressure lights on the S/O panel should be full dim.
- Note the takeoff time (hacking the clock is a good technique).
- Watch the engines as power is advanced, then make their panel scan and be back up front prior to the 80 knot call. If a problem is noted on the S/O's panel that might require an abort, immediately announce the abnormal in a normal tone of voice, otherwise keep the small stuff to yourself.
- Once the 80 knot call is made, your total concentration should be on the center forward panel. You should be scanning and cross-checking the EGTs, N1s and EPRs. Additionally, be alert to any light such as thrust reverser operating or oil pressure low. Insure that the N1s all reach their nominal figure whenever Engine TAI is used. Call out any engine parameter that is approaching it's limit in a normal tone of voice *if* you are not implying the need to abort. Obviously, quick movements and loud announcements are not the technique being described here. ..."

The smoking gun here is the statement that the flight engineers should "watch the engines as power is advanced, then make their panel scan and be back up front prior to the 80 knot call." **The Captain has already committed to and rolling down a runway before the flight engineer turns his attention from his flight engineer's panel and totally concentrates on the center forward instrument panel.** In addition to the normal checklist procedures, the flight engineer is instructed to adjust the fuel boost pump low pressure lights on the S/O panel to full dim during night operations, and note the takeoff time.

6. **B-727 FLIGHT MANUAL** [Attachment 7].

Page 0-1: CONTENT RESPONSIBILITY AND AUTHORITY. In the Introduction to the B-727 Flight Manual it states:

> "...Except as provided under Parts 91/121 of the Captain's emergency authority, no crewmember may deviate from the provisions of this manual."

It is difficult to for me to believe that I deviated from the provisions of this manual. All pertinent sections are addressed below.

NORMAL PROCEDURES, CHAPTER 3.

Page 3-i. B-727 NORMAL PROCEDURES CHECKLIST. Attached for your reference during the following discussion on Second Officer checklist duties.

Page 3-60. BEFORE TAKEOFF--S--FLOW PATTERN. This flow was accomplished silently by me as the Captain proceeded Eastbound on taxiway "K1". (The specific actions that are required to be completed by the Flight Engineer during this flow are detailed on page 3-62 and 3-63 and are highlighted with a ➨ symbol).

Page 3-61, 62, and 63. AMPLIFIED BEFORE TAKEOFF CHECKLIST (C&R) This checklist is a challenge and response checklist that is read by the Second Officer/Flight Engineer. It was completed on taxiway K1. Note that the last item is:

Briefing.....COMPLETE/RUNWAY_____ C
COMPLETE/RUNWAY_____ S

The blank space is for confirming the runway clearance and that the appropriate runway performance has been completed/verified. Both Capt Gillespie and myself confirmed "Runway 34R."

Page 3-64. "When taxiing onto the runway, the Captain will call for the remainder of the BEFORE TAKEOFF checklist as "Below the Line". The first four items of this checklist are read with challenges by the Second Officer and responses by the First Officer and Second Officer. The last three items are completed silently by the Second Officer and are noted by ➨ symbols and are highlighted in gray on the plastic abbreviated checklist used in the cockpit (attached as page 3-i). The -100 version of the B-727, which we were flying that night, requires that the Second Officer move the CSD OIL COOLER SWITCH to the GROUND OFF position as the throttles are advanced. This switch is in the lower right hand corner of the Flight Engineer's panel. This "Below the Line" portion of the Before Takeoff checklist was accomplished just as the aircraft was turning on to the shared threshold area of Runways 32 and 34R. It was called complete after

the throttles were advanced, the CSD OIL COOLER SWITCH was in the GROUND OFF position and the exterior lights were turned on.

TRAINING AND EVALUATION, CHAPTER 7

Page 7-13. TAKEOFF PROCEDURES: CAPTAIN FLYING.

"Complete the Before Takeoff checklist while taxiing into position on the runway. Use nose wheel steering for initial alignment, then revert to rudder steering and shift the left hand to the control wheel.

Advance all thrust levers to a vertical position (approximately 1.5 EPR). This permits the engines to accelerate to a point beyond which uniform acceleration to takeoff EPR will occur on all engines. When the engines have stabilized, the Captain will smoothly advance the thrust levers to approximate takeoff power and call "Set MAX/STD Power." The First Officer will follow through and set the planned takeoff EPR setting, making the final adjustment prior to 60 KIAS and call "MAX/STD Power Set." The First Officer will ensure the desired takeoff thrust is properly set. **The Second Officer will position the oil cooler switch to GROUND OFF and/or position the Auto Pack switch to NORMAL when thrust levers are advanced for takeoff. The Second Officer will monitor engine instruments and annunciator panels during the takeoff roll and initial climb** [emphasis added]. The Captain will keep one hand on the thrust levers until the V1 call so that he can respond quickly to a rejected takeoff situation.

TAKEOFF PROCEDURES: FIRST OFFICER FLYING. When cleared for takeoff, the Captain will align the aircraft with the runway centerline and call "You Have the Airplane" while advancing the thrust levers to a vertical position (approximately 1.5 EPR). When all engines have stabilized, the First Officer will call "Set MAX/STD Power Set." The Captain will ensure the desired takeoff thrust is properly set. The Captain will keep his hand on the thrust levers until the V1 call so he can quickly respond to a rejected takeoff situation. The First Officer will keep both hands on the control wheel until after gear retraction. **The duties of the Second Officer are the same as those described under TAKEOFF PROCEDURES: CAPTAIN FLYING when the First Officer is making the takeoff** [emphasis added]. If the takeoff is to be rejected, it is the Captain's responsibility to take control of the aircraft and reject the takeoff.

TAKEOFF ROLL. Static or rolling takeoffs are permitted; however, the rolling procedure is recommended. **The entire crew should monitor ATC and cross-check instruments to ensure compliance with the clearance and standard procedures** [emphasis added]."

This Training and Evaluation section of the B-727 Flight Manual is confusing and ambiguous as it relates to the Second Officer. Under the TAKEOFF PROCEDURES: CAPTAIN FLYING section, is says "**[t]he Second Officer will**

monitor engine instruments and annunciator panels during the takeoff roll and initial climb [emphasis added]." But under TAKEOFF ROLL on the same page, it implies that the Second Officer, as part of the "entire crew," is additionally tasked with cross-checking instruments to ensure compliance with the clearance.

This is probably the most damning statement that can be used against me by the Company or the FAA. It is, however, contrary to every other procedure and policy stated throughout the Flight Operations Manual, the B-727 Flight Manual, and the B727 Flight Engineer IOE Training Folder as they relate to the Second Officer's duties during the Before Takeoff and Takeoff Roll. If I must suffer under the weight of this one passage, then I would have had to ignore all other training documents, operations and flight manuals... in order to notice that the Captain's heading indicator was 20° off of the assigned takeoff runway heading. Furthermore, aircraft performance limitations were computed for Runway 34R...and not for runway 32. Even if I had diverted my attention away from the engine instruments on the center instrument panel, that act would not have occurred until after 80 knots, since I am not required to be forward with the pilots until that time. That puts us thousands of feet down the runway. Then I must decide if the Captain's heading indicator was malfunctioning by comparing it to the heading on the First Officer's heading indicator. More runway is behind us. It is probable that if I had verbalized this problem, the Captain would have needed time to assimilate this new information by making a comparison himself, maybe to include an additional cross-check of the magnetic compass up above the glare shield. These additional seconds would have put us even further down the runway. **It is possible that the Captain could have rejected the takeoff. Since a legitimate V1 speed was never computed for runway 32, sufficient stopping distance was questionable.** There is simply not enough time for the Second Officer to make these kinds of judgments with the aircraft that far down the runway. In our case, the Captain and First Officer saw the red runway-remaining lights quickly approaching and chose to rotate the aircraft.

The Second Officer does not have the authority or the physical capability to accomplish an abort. He also does not have the authority to announce "REJECT!" He can, however, announce the problem (such as an engine malfunction) and bring it to the Captain's attention. Procedures call for an abort if significant problems arise and are recognized prior to V1. After V1, stopping distance is not assured in the remaining runway. By the time I could have verbalized a heading disparity, a rejected takeoff could not have been accomplished on Runway 32 if the Captain were to ascertain he was taking off on the wrong runway. The First Officer did notice the heading disparity and verbalized "32" to the Captain as the throttles were advanced to takeoff power, but his statement occurred prior to me moving my attention forward. If there was going to be a safe aborted takeoff due to misalignment with the wrong runway, it would have to be during this early phase of the takeoff roll. As explained in detail above, any announcement later than that would have been disastrous.

Two important legal questions are "what constitutes a runway incursion?" and "when does it occur?" If the Captain violated the ATC clearance the second he turned on to Runway 32, then it doesn't matter what the Second Officer could have done after that point to prevent him from taking off on the wrong runway. Safety

issues aside, he violated the FARs and committed a deviation prior to my active involvement in the takeoff roll. Should the Second Officer be penalized?

7. **Federal Express Communications** [Attachment 8].

a. Flight Safety E-mail (Letter from Bob Giordano, Tuesday, 6 April 1993): His letter is addressed to us "Guys" when only one pilot submitted a Flight Crew Safety Report, and that was Capt Bill Gillespie.

b. First Officer Miles did tell me last week that he submitted an unsigned statement to the Flight Safety department, but they did not forward his statement to Mr. Lund. He also noted that they did not include or merge any of his statements into Bill Gillespie's narrative.

c. In his April 6, 1993 E-mail, Giordano does admit to "editing" the narrative comments in an attempt to "favor our case."

d. The Gillespie narrative includes a misuse of the pronoun "we" in far too many places:

- "We proceeded from the FEDEX ramp..." should read "I taxied the aircraft from the FEDEX ramp."

- "We noticed there was some work in the vicinity of the Rwy 34L threshold and several vehicles with lights on..." should read "I noticed there was...". In addition to this misuse of "we," I recall that the vehicles were in the vicinity of Rwy 34R's threshold. Either he is confused, or that is a typo. If the vehicles were at 34L, then the headlights from the trucks would not have been a factor in the threshold of 34R/32. (Look at the airport diagram).

- "We turned the a/c on to the Rwy, believing it to be 34R..." should read "I taxied the aircraft on to the Rwy, believing it to be 34R..."

- "We realized, in the cockpit, that we had taken off on Runway 32." should read "I realized, in the cockpit, that I had turned the aircraft on to the wrong runway for takeoff." Furthermore, I did not initially realize why the Captain made an obligatory "expletive deleted" statement as the red runway lights approached, until I looked up and noticed them myself. Even then I still thought we were on Runway 34R and for several minutes into the climb thought we had experienced a performance problem. I thought that at least one of the following had occurred: (1) the aircraft was not in the right configuration (which caused me to visually verify the flap position); (2) the engines were not set at takeoff thrust (which I checked as well); (3) there was unaccounted freight on board, and was not reflected on the weight and balance; or (4) I had screwed up the performance data in some way. Those were the thoughts in my head at the time. It was only immediately apparent to the Captain and First Officer that Runway 32 had been inadvertently used for takeoff.

- "I called back on Tower frequency and made a comment something to the effect

that we had some difficulty with the runways." should read "...something to the effect that I had had some difficulty with the runways." He goes on to say that "the aircraft was very light and, based on our performance computations, Runway 32 was adequate for our takeoff." I do not recall doing any other performance problems or weight capability worksheets other than for Runway 34R.

- "In retrospect, we recalled being distracted and somewhat blinded by the vehicles at the combined thresholds of Runways 32 and 34R." should read "in retrospect, I recall being distracted...". (It is interesting to note that he contradicts himself about where the vehicles were in the very same narrative that was submitted to the FSDO. Mr. Giordano is not doing us any favors by failing to "edit," as he describes his duty, that statement correctly. Earlier in the narrative, Capt Gillespie implies the vehicles were around 34L.)

- "We do not recall consciously recognizing that we were taxiing across the threshold of Runway 32 and had never reached the threshold of Runway 34R." should read "I do not recall..."

- "We recommend that some warning be provided to our flight crews via the Parking Chart to help avoid taking off or landing on the wrong runway." should read "I recommend that some warning be provided...". Not only did I not make any recommendations, I never participated in the drafting of his narrative.

e. ESTABROOK E-MAIL LETTER TO GIORDANO (8 APRIL 93): This is the letter I read to you over the phone on April 8, 1993. As you can see from the E-mail date stamp, your date of April 1, 1993 for that call is incorrect. I forwarded a copy of the following letter to Capt Bill Gillespie and First Officer Bill Miles as a courtesy. Gillespie responded to me with an E-mail of his own. Copies of all three letters are attached for your records.

f. GILLESPIE E-MAIL LETTER TO ESTABROOK (9 APRIL 93): "Mark, your correction is fine with me, and the "we" in the report was not intentional on my part. thanks for the update. fraternally, bill"

g. F.E.C. Inter-Office Memorandum, Voluntary Disclosure Report (VDR) Letter, (September 17, 1992):

Page 1, para 4. "Some of the most difficult incidents to determine a valid comprehensive fix for are those due to human error only. To be acceptable to FAA, the minimum corrective action needs to consist of a letter placed in the individuals personnel file; counseling, additional training and closer supervision."

Obviously, the VDR system gives the power of assessing guilt or innocence to the Company. In what capacity does the Flight Crew Safety Reporting system play a role, if any, in the Voluntary Disclosure Reporting system? Are the two

procedures related in any way? In my case, I suffer from "politically incorrect" union sympathies, which are publicly known. If the FAA finds that I did not deviate from the FARs, I would expect the same professional treatment from the Company. If they find some punitive end for me, is it possible they will be liable for harassing a union organizer? Would they be guilty of harrassing me for union organizing if the FAA found me innocent of the deviation? [Note: this letter was signed by an FAA Liaison officer].

THINGS TO DO:

You asked me to get photographs of the runway/threshold environment at Salt Lake City. I may not be able to comply for reasons of finances. Beyond the financial issue, should we concentrate on the exterior of the aircraft as far as my case goes, when the bulk of our defense is based on what my tasks and responsibilities were inside the cockpit? I mean, if I was never supposed to be looking outside during this time frame, why do we need to concentrate on the runway markings? If the FAA proceeds in this matter, and you think that the runway threshold environment is an issue for the Second Officer/Flight Engineer sitting at his panel, then I will go to Salt Lake City and get blueprint copies of the airport surface. An engineering study must have been completed regarding the moving of the lights, so I will pursue that. Hopefully, there will be more illuminating detail from these materials than what a picture taken at night would reveal. Additionally, there would have to be a justifying statement for the engineering or construction contract before the Airport Authority would approve it. This statement could be very damaging to the FAA's case.

I also intend to collect the names of the individuals driving the vehicles that night and try to feel them out about making statements. I suspect they will be nervous to cooperate if they learn that they may be cited as a contributing factor.

Beyond that, I think it would be in my best interest if you did a Freedom of Information Act request for the files on the other two incidents that occurred on the same runway, but only if the FAA continues with this case. Obviously I want to keep my expenses down, and that must include your legal fees. It seems pointless to spend a lot of time and money on this when they still haven't notified me of any alleged deviation.

Which brings up another important point. You probably want to know what I want you to do now. Nothing. Until they serve me, I can't afford to have you researching answers to the various questions and issues raised in this letter. I merely wanted you to have more of the facts on file, should I get notified. If you think I would be better served by another approach, "I'm all ears!" as Perot would say. It is true that I have Scottish ancestry, so please excuse my tacky reminders to keep your clock from ticking.

Incidentally, if you want me to sign a separate letter of agreement concerning your fees, I'd be glad to. I just didn't want to sign the one you sent me which was combined with the incomplete facts regarding my incident.

Best Regards,

Mark Estabrook