ATTACHMENT N
Excerpts from the FedEx B-727 Instructor Briefing Guide

(8 pages)

while in the simulator.

4. Non Tower Operations (Arrival and Departure)

❖ Arrival (Using Casper as the example)

➢ Approaching the vicinity of the airport:

- Obtain weather from ATIS or Center.
- Center will clear you for an approach (a visual approach if you've reported the field in sight and you ask for it).
- Center will terminate radar service and switch you to CTAF or Unicom. An example of your check-in" transmission follows:
  - "Casper traffic, FedEx 1200, Boeing 727, 10 miles southeast landing straight in runway 3, Casper."
- If the airport has pilot controlled lighting, now is a good time to click your mic button the necessary times to activate the lighting.
- Remember that the preferred traffic pattern for non-tower operations is:
  - Rectangular, left hand turns unless otherwise noted.
  - Aircraft in the rectangular pattern have priority over traffic on a straight-in.
  - Turbojet pattern altitude is field elevation plus 1500 feet rounded up to the next 100 feet.
- At 5 miles, it's time for another radio call. The call is: "Casper traffic, FedEx 1200, Boeing 727, 5 miles south, straight-in, runway 3, Casper."
  - Note: During non tower operations, always start and end your radio transmissions with the airport name.
- Make the same radio call again at 3 miles, and then at 1 mile from the runway.
- After landing and clear of the runway, broadcast, "Casper traffic, FedEx 1200, Boeing 727 clear of runway 3 to FedEx ramp on taxiway Alpha, Casper."
- Also after landing, if you are able to make radio contact with center, request that they close out your flight plan.
  - If you cannot reach them on radio, go to a phone ASAP and call them for close out.
  - Remember flight "close out" occurs automatically at fields with operating towers.

➢ If a go around becomes necessary on a visual approach:

- Parallel the runway offset slightly to the right and climb to pattern altitude minus 300 feet.

- At or near midfield turn left and cross the field.
  - Make the following broadcast: "Casper traffic, FedEx 1200, Boeing 727, turning crosswind midfield, Casper."
- Reenter the rectangular traffic pattern.
- After the turn, climb back to pattern altitude and continue downwind for another visual to the runway.
- Continue to make pattern position reports.

➢ If you must shoot an instrument approach to Casper due to weather:

- Center will clear you for the approach.
  - You can shoot any instrument approach if not cleared for a specific approach. Again, make all applicable position calls.

➢ Note: Remember that at non tower fields, aircraft are not required to have radios! It's quite possible to be in the pattern with an aircraft that you are not in communication with.

- Keeping your head on a swivel and maintaining extreme vigilance is crucial.

❖ <u>Outbound</u> (Using Casper as the example.)

➢ When departing the vicinity of the airport:

- Obtain ATIS info.
- When ready to taxi broadcast, "Casper traffic, FedEx 1200, Boeing727, taxiing south on Alpha to runway 3, Casper."
- While continuing to monitor CTAF, use the other radio to call center and request a clearance.
  - With your clearance you will receive a void time that will expire in a short period of time.
    - As a technique, don't call for clearance until you're within 5 - 10 minutes of takeoff to avoid expiration of the clearance. Once voided, you'll have to get a new clearance.
- If necessary, click your mic button the necessary number of times to activate the runway lighting.
- Yes, even in clear VMC weather, if there is a Departure Procedure (DP) listed on the 10-9 or 11-1 page, it is <u>mandatory</u> FedEx policy that you comply with it unless you are on a published SID or receiving radar vectors.
  - Do not be fooled by the words "radar contact," which mean only that a radar controller has you identified on his scope as a blip or target.
    - <u>The pilot is responsible for terrain</u>

- ➢ The PF should plan on rotating at V_R even if the PNF forgets to call "rotate."

- ❖ Stress that with 2° per second rotation rate should take 5 seconds to achieve the initial pitch attitude of 10°. This is much slower than most people think.
  - ➢ **Do not exceed 10° of pitch until "positive rate" is called in order to avoid a tail strike.** This means there will be a momentary pause at 10° nose up. Once "positive rate" is called, the PF will call for "gear up" then continue to increase the nose pitch up to achieve V2 +10 (Max of 20° nose up regardless of airspeed).

- ❖ Insist on proper rotation rates for <u>all takeoffs</u>. Build correct habits.

5. Profile B Climb

- ❖ It is important that both students know the Profile "B" climb procedures "like the back of their hand," so that they do not have to think about it, but rather, can concentrate on flying it.
  - ➢ After reviewing the procedures in the CFM, discuss the necessary pitch attitude to fly during the maneuver:
    - A very effective and simple technique is to have the student <u>set and hold 10°</u> nose up pitch any time aircraft acceleration is desired. For example, set and hold 10° nose up:
      - At 1000' AFE for flap retraction while accelerating to top bug +10.
      - At 3000' AFE while accelerating to 250 knots.
  - ➢ After the desired airspeed is reached, adjust pitch attitude as necessary to maintain the particular airspeed (e.g., V2 + 10, top bug + 10, or 250 knots).
  - ➢ Simply, the pitch attitudes for Profile B are either:
    - Maintaining 10° nose up for acceleration , or
    - Adjusting pitch as necessary to maintain airspeed.

6. Target Pitch / FF (Clean to Dirty)

- ❖ Have the student fly the following profile:
  - ➢ Begin by emphasizing the importance of the aircraft's clean and level 250 knot pitch/power combination. Stress 4° nose up and 2600/3000 PPH as the reference. Allow them to fly this briefly.
  - ➢ While slowly configuring, have students stabilize at each flap MMS to observe and mentally note

the pitch attitude. The overall nose trend is more important than the individual pitch attitudes.
  - Spend a little extra time at flaps 15 to reinforce the high pitch attitude and sight picture.

➢ With respect to power, have the student get a feel for the proper amount of throttle movement necessary as each flap position is selected, in order to maintain altitude and subsequent flap MMS.
  - Have students note the large power addition required to maintain altitude when the gear is lowered. With gear down and Flaps 30, point out that at target bug speed, the nose attitude has returned to approximately 4° up (exactly where it started from when clean).

➢ Next, have students set 3000 to 3500 (-100) or 3500 to 4000 (-200) and put the nose approximately 1° up and set up a 700 FPM descent while maintaining target bug speed. Allow them to fly this through a 2 to 3 thousand foot altitude block in order to emphasize pitch/power settings while on a glideslope.
  - These approximate fuel flow ranges while fully configured, on glideslope, should be committed to memory. These settings will serve as a good starting point on approaches.

❖ Review the following approximate values for straight and level flight:

Flaps	Pitch	FF –100	FF –200
0	4	2600	3000
2	7	2800	3200
5	8	3100	3500
15	9	3400	3800
25-Gear Down	6	4000	5000
30-Gear Down	4	4500	5500

➢ Do not have the student memorize all these pitch and power settings.
  - The only two memorized settings are:
    - Clean, straight and level, 4° nose up and 2600 (-100) to 3000 (-200)
    - Fully configured and on a 3° glide path – 3000 to 3500 PPH (-100) or 3500 to 4000 (-200).

➢ Ensure the student understands how pitch and fuel flow change as the aircraft configures for landing.
  - Point out that the pitch will increase with each flap selection until Flaps 15 is reached. Stress

that Flaps 15 is where the aircraft reaches its highest nose up attitude (approximately 9° nose up in level flight).
    - Mention that nearly all takeoffs, go-arounds, and Hydraulic Leak or Loss approaches are flown at Flaps 15 where 9° nose up is level flight only.
  - When Flaps are selected to 25 and 30, the pitch attitude decreases and returns to its original 4° nose up clean 250 KIAS position.
- Point out that power must be "bumped up" a little bit with each new flap position as they are extended to maintain level flight; but when the gear is extended, a substantial power increase is required to maintain level flight. Once again, big picture understanding is far more important than any specific power setting and pitch attitude.
    - Discuss the relationship between each unit of nose pitch and each degree of glideslope. There is a one degree for one degree relationship. For example, with a fully configured level flight pitch attitude of 4° up, to fly down a 3° glideslope the aircraft will reduce the nose pitch by the same number of degrees (i.e., 3°). This will put the nose pitch at 1° up while on the glideslope. Likewise, for a 3.5° glideslope, the required pitch attitude will be approximately .5° nose up.
- Again, stress that these are very close but approximate values. The student should begin with these targets and make minor adjustments as necessary.

7. Visual Landings (Flaps 15 and 30)

- Setup: position aircraft on a CAT III, autopilot flown approach. This exercise is to develop the proper sight picture for a visual landing.
  - Do not do any checklists.
  - Do not brief any approach.
  - Have students observe the runway position in the windscreen throughout the approach.
  - During this approach, take a snapshot just above 1000' AFE. (This should ensure GPWS altitude callouts on subsequent snapshot visual approaches and landings.)

- The sole purpose of this approach is to show the students what a perfectly flown 3° glideslope visual picture looks like out the cockpit window.
  - Ensure the student is seated properly in the aircraft. If the seat height is not correct, the

exercise will be a waste of time.

- ❖ Visual approach and landing – stress that the aircraft touchdown point (in the middle of the touchdown zone) is the most important objective.
  - ➢ If students are smooth but do not land in the touchdown zone, they flunk! Smoothness will come in time. Landing in the touchdown zone is required!

- ❖ The landing discussion will assume no gusts. Refer to the CFM, Chapter 7 for minute variances to the following if wind gusts are present.
  - ➢ The approach should be flown at target bug speed (orange bug) unless V_{Ref} + ½ steady state wind and all gust is higher. As the aircraft approaches the runway threshold, airspeed should still be at target bug.
    - Assuming the aircraft is being flown on airspeed and on a proper 3° glide path, the nose attitude will only need to change 2° - 3° in order to achieve the proper landing attitude.
    - The nose should be smoothly rotated up 2° – 3° (from approach pitch attitude) in order to arrest the rate of descent and set proper landing attitude.
      - If the student flares early, the tendency is to just keep the nose coming up until the aircraft touches down. This must be avoided, as it will cause the aircraft to float and place the nose excessively high.
      - Try to hold the proper landing attitude and finesse the touchdown with power.
    - Touchdown should occur at V_{Ref} (bottom white bug) minus 3 knots. This means that at least 13 knots will have to be lost in the flare if the aircraft is going to touch down at the proper speed. This 13 knots of airspeed that needs to be lost plus ground effect explain why floating down the runway is a common occurrence.
  - ➢ If flaps are at 15 for landing, ensure students know that the aircraft is already in the landing attitude and all that is required prior to touchdown is to break the rate of descent. This is accomplished by adding approximately 1° additional nose up attitude. Again, the same 13 knots will have to be lost in the flare.

8. CAT II/III Monitored Approach

- ❖ Monitored approaches are mandatory for CAT II/III and specially noted CAT I. Monitored approaches are

Landing is identical to a normal Approach and Landing.

19. ILS Flight Director (F/D) Approach

- The keys to the ILS F/D Approach are including raw data in the scan and anticipating corrections and counter-corrections. If both raw data and FD commands are viewed simultaneously, the pilot can better anticipate command bar movement. This will help to not over-control and is especially true as you get closer to the runway.
  - Intense concentration on command bar movement is required. Making small, instantaneous corrections is the key.
  - Have the student continuously look for any space between the command bars and the aircraft symbol. If so much as a sliver of space exists, the student is not following the command bars precisely.

- Teach the student to make whatever control inputs are necessary to fly the ILS. Do not avoid large control inputs for the sake of smoothness.
  - A colorful analogy once offered is: "Flying the 727 is like driving a 1957 Chevy without power steering; it is not a high performance race car." There are times when large control inputs are required, just as they would be in that old Chevy. How long the correction is held in before inputting a counter correction is far more important than the size of the correction.

20. One Engine Inop Go Around

- Recall the points made in the normal go around/missed approach and engine failure after V_1 discussions. The student should concentrate on "orange bug, orange bug," to 1000' AFE.
  - Stress the importance of rotating immediately to every bit of 10° nose up pitch to ensure the aircraft is climbing. This is required to achieve a positive rate of climb. (Remember at Flaps 15, 9° nose up is level flight and 10° is only a slight rate of climb.)

- Heading and airspeed control are critical just as in the engine failure after V_1 procedure.

21. Stabilized Approach Corridor

- The stabilized approach corridor begins at 500' AFE on a visual approach and 1000' AFE on an instrument approach.

❖ A technique that helps students keep the airspeed within the ±5 knots required is to keep the airspeed needle and orange target bug touching each other throughout the approach. If the airspeed pointer and orange target bug are always touching, the airspeed will be stable within ±5 knots. Actually the pointer can separate slightly from the orange bug without the airspeed being "unstable;" but again, the aim should be to keep the two touching. ❖ While specific airspeed targets are given in defining the stabilized approach corridor, the only guidance provided on rate of descent is that sink rate must be "appropriate." Rate of descent is therefore somewhat subjective. If ever in doubt about sink rate, the pilot will never be wrong in executing a go around rather than continuing the approach, unless some overriding emergency exists. ➢ A number of students have failed their checkrides because they did not comply with the stabilized approach requirements. No one has ever failed for executing a missed approach when the stabilized approach criteria were exceeded. When in doubt, the pilot should always keep "safety first." **22. Section 1 of Pilot Workbook (FOM/Jeppesen)** **23. Landing Data Card**	