



Video Scenarios Commentary

Scenario 1

FOR SELF-STUDY

These notes are for use by those undertaking self-study to accompany the two Level Bust video clips. The aim is to provide notes to stimulate thoughts around the issues that arise whilst playing of each of the clips.

The notes for each scenario start with a short summary of the key events, before a series of questions, and then learning points. Answers are given at the end of each section. You may also wish to download the full transcripts.

The Q&A examples are included to use as an optional discussion guide: the answers given are not necessarily the only ones and that other local rules or SOPs may also apply.

We hope you find these resources useful and welcome your comments. Please send any feedback to: levelbust@eurocontrol.int





Scenario 1 – Business Jet

Part 1: before take-off

Summary

- A business jet is in a hurry to depart
- Captain is requesting the clearance as the first officer (FO) conducts pre-start checks
- Runway is changed which increases crew workload during taxi
- Landing traffic at 4 miles lead to an immediate departure being accepted.

Questions

Q1: The captain said they were running late and he had expedited their departure, but what should he have done during the pre-start procedures?

Q2: Why had the first officer not listened to the departure clearance and was thus unaware of the runway change?

Q3: When should the take-off briefing have been completed?

Q4: What was the most important item of the take off briefing, and its review, which was omitted?

Q5: When should the correct entries into the FMS have been verified?

Q6: When should the Captain have changed the FMS to reflect the correct runway and therefore the correct SID

Q7: When might there have been an opportunity to have broken the chain of events during the pre flight?

Learning Points

- Expediting departure creates an environment where errors can easily occur and important procedures to be missed
- The Captain and First Officer allowed an expeditious departure to become a rushed one
- The First Officer should not allow his monitoring role to be compromised, and should ensure correct completion of the pre-start procedures and checklist by being more assertive if necessary.
- The ATC departure clearance must be listened to, and understood by both crew members.
- Make sure the FMS is correctly loaded before departure
- Do not accept a take- off clearance when you are not fully ready

Part 2: after take-off

Summary

- The captain still had to update the FMS as the SID was wrong
- The departure frequency was very busy
- The FO had a complicated departure to fly manually
- The high performance aircraft climbed rapidly

Questions

Q8: What additional elements led to the high workload after take off?

Q9: Were both departure charts available to each crew member, and how might this have contributed?

Q10: Is hand flying a complicated departure recommended?

Q11: If the FMS is not loaded correctly how can you use the autoflight systems?

Q12: How could the Captain (Pilot not flying), have monitored better?

Learning Points

- Hand flying a complicated departure especially in a high performance aircraft increases the possibility of errors
- BOTH pilots should have the correct charts open and available
- RT congestion should not distract from the basic requirement to fly the procedure accurately
- The first stop height/altitude on any SID is ALWAYS critical – know what it is and ensure you fly it correctly
- Set your altimeter early when cleared to a FL and be conscious of transition altitude which may vary from airfield to airfield

Answers to scenario 1

- A1:** The captain diverted from SOPs at a critical time, both pilots should have completed the procedure normally, and then confirmed with the checklist irrespective of time constraints.
- A2:** He was busy starting the engines as he'd been instructed to do so by the captain, and was talking to the ground crew to do this. The captain should have ensured both pilots listened to the clearance when it was received from ATC – or asked ATC to wait until they could.
- A3:** At the normal point in the pre-flight procedures, or at the very latest before requesting taxi
- A4:** Transition altitude, confirmation that the clearance limit was a FL not altitude, and the low QNH.
- A5:** Before completing the pre start procedures, or at the latest before taxi
- A6:** Prior to taking off, and once the error was noticed they should have cancelled their take off clearance and vacated the runway
- A7:** If the First Officer had been more assertive and challenged the Captain when asked to call for Taxi – he could have said we are not ready
- A8:** High performance climb, RT congestion, and not being able to use the Aircraft automation normally due to incorrect FMS entries.
- A9:** No - The First Officer who was pilot flying, was reliant on the Captain to tell him how to fly the departure because he had not been given enough time to access the correct charts.
- A10:** Full use of the aircraft automation is the best way to ensure correct compliance and to help reduce workload.
- A11:** By adopting more basic modes than LNAV/VNAV for example heading select and FLCH
- A12:** By balancing the need to report to ATC with vigilant monitoring of the aircraft flight path, and by adhering to SOP's during the initial climb out – calling Transition and/or changing altimeter settings early when cleared to a FL