Content

1. Data Provider
2. Data Package content
3. Example 1: Malfunctions process
4. Example 2: Stall buffet model
5. Synthesis
Who is delivering the Airbus data?

Airbus GO5
is the Airbus focal point for training operators and simulators manufacturers

Missions:

- Allow development and qualification of Flight Simulation Training Devices (FSTD)
- No “Negative Training”: Ensure training of quality
- Propose innovations to address training needs
Airbus Data Package content

GO5 deliverables

- Cockpit material
  - Cockpit Parts
  - Vendors’ Equipment

- Engineering data
  - Data Package
  - Simulation Software Package
Airbus Data Package content

Follow international guidance and rules such as IATA, ARINC, ICAO, EASA, FAA
GO5 deliveries: Aircraft or training specifics?

Data package is based on our Aircraft know-how

But there are some specific training needs…
Malfunctions
Malfunctions definition process

- Flight Training Policy
- Safety
- Design Office
- Model

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Feedbacks from customers

- Some proposals are added:

<table>
<thead>
<tr>
<th>ATA 70 – ENGINE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MALFUNCTION</strong>: BIRD INGESTION</td>
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<tr>
<td><strong>AIRCRAFT</strong>: A350</td>
</tr>
<tr>
<td><strong>CAUSE</strong>: Bird ingestion</td>
</tr>
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<td><strong>CONSEQUENCES:</strong></td>
</tr>
</tbody>
</table>

- During take-off all engine parameters move erratically lower and upper than in normal operation,
- EGT fluctuates without exceeding over limit,
- N1 vibration level reaches advisory,
- Motion effects take place (FFS Only),
- Sound effects take place (FFS Only),
- Single Chime sounds,
- MASTER CAUT lights illuminate,
- WD displays message: ENG 1(2) STALL
  ENG 1(2) N1 HIGH VIBRATIONS
- Dispatch page display messages
  ENG 1(2) STALL
  ENG 1(2) N1 HIGH VIBRATIONS
  ENG 1(2) N1 HIGH VIBRATIONS

Then after 30 seconds:
- Stall effects disappear,
- N1 vibrations and EGT return to nominal operation.

- Canceling the malfunction restores normal engine performance.

- And some are not:
  
**No training added value** (e.g. gear collapse) up to risks of **negative training**
Stall Buffet Model
Stall buffet model description – A320, A330, A380

“Technical Note Buffeting Model for Flight Training Simulator” document

- Tables and equations of CZ0, CZ1, CZ2
Stall buffet model integration – A320, A330, A380

But…
- Up to the stall
- Difficult to release updates
- Difficult to support subjective pilot assessment
Stall buffet model description – A350

- Model embedded within Simulation Software Package (SSP)

Inside aero model

- Start: >0.015g
- Onset: >0.1g
- Deterrent: >0.5g
Stall buffet model integration – A350

- Alpha envelope limited
- Updated with feedbacks from flight test pilots
- Proof of match:
  - Internally validated vs F/T. Check out tests.
  - $2c8=3g5$ → Objective point of view for FFS tuning
The Data Package provides maximum aircraft know-how as possible

For specific training needs, GO5 could bring you additional information

Data keeps evolving: Be part of it!