



Learning about unstabilized approaches through animations

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transavia.com



- Full member of Air France-KLM group
- ~1.400 employees
- 35 aircraft
- 6.2 million passengers carried
- Flights to approximately 90 destinations
- Operates mostly within the EU, with the focus on Mediterranean region



FDM at transavia



- Start of FDM in Apr 2005
- Agreement with pilot union in 2007
- 1st Flight Animation in September 2007
- Currently 50-60 Flight Animations/year
- 550 crew members performing 40.000 flights/year

Flight Data



- Greatest strength is also greatest weakness
- Data is just data, no context

| | | | |
|------------------|------|--|--------------|
| 080580h (525696) | Good | B8 85 75 DC 7F 00 DC CF 05 96 B0 01 1D CF FF ... | 00:22:49.000 |
| 080700h (526080) | Good | 47 FA 78 E4 BF 00 DC AF 05 96 F0 FF E1 AE FF ... | 00:22:50.000 |
| 080880h (526464) | Good | B8 AD 72 DC 0F 01 DC CF 08 96 00 00 2D 1F FF ... | 00:22:51.000 |
| 080A00h (526848) | Good | 47 E2 77 E0 CF FE 1C 6F FC 96 00 0C 6D EF 01 ... | 00:22:52.000 |
| 080B80h (527232) | Good | B8 F5 71 F4 1F 00 B2 03 96 00 01 55 3F 00 ... | 00:22:53.000 |
| 080D00h (527616) | Good | 47 71 79 FC 7F 02 DC 4F 0E 96 E0 FF 55 0E FD ... | 00:22:54.000 |
| 080E80h (528000) | Good | B8 C1 79 FC 9F 00 DC 4F 12 96 00 00 69 8E FC ... | 00:22:55.000 |
| 081000h (528384) | Good | 47 12 75 E4 1F 02 D8 8F 0D 96 80 0C 05 EF FD ... | 00:22:56.000 |
| 081180h (528768) | Good | B8 25 76 E0 9F 01 DC 2F 08 96 B0 01 DD DE FE ... | 00:22:57.000 |

- Flight animation is unique opportunity to hear “story behind the flight”

Flight Animation



- Selection process based on triggered events

AIRSPD=151.5, VREF SPEED=128, PANELS: SEL AI...
AIRSPD=251.5, PALT=4521
AIRSPD=143.3, VREF SPEED=129, PANELS: SEL AI...
AIRSPD=151.5, VREF SPEED=125, PANELS: SEL AI...
AIRSPD=146.3, VREF SPEED=125, PANELS: SEL AI...
AIRSPD=173.0, VREF SPEED=125, RALT=1502
AIRSPD=284.8, PALT=9677
AIRSPD=293.0, PALT=8288
PALT=14891, PITCH=U 11.1, AIRSPD=278.3



| | | | | | |
|-----|-----|-----|----|---|---|
| EIN | AGP | 89 | 9 | 6 | 2 |
| BCN | AMS | 80 | 6 | 2 | 3 |
| MAD | RTM | 74 | 6 | 4 | 2 |
| NAP | AMS | 75 | 4 | 2 | 1 |
| AMS | CHQ | 75 | 2 | 1 | 0 |
| AGP | EIN | 76 | 3 | 1 | 0 |
| ACE | TFS | 76 | 4 | 3 | 0 |
| FNC | AMS | 100 | 10 | 4 | 4 |
| KRS | AMS | 77 | 7 | 6 | 1 |



Flight
Animation

- Investigator pilot assesses flight and has final decision
- Most important question: is it useful?

Unstable Approaches



Why does a professional crew continue an unstable approach, against company procedures?

Arguments



**“Safety was not compromised,
landing uneventful”**

- The aircraft touched down, so the approach was safe
- Safety Margins are reduced
- Human ability for multitasking limited

Arguments



**"The weather was nice,
we could see the runway"**

- Goal (runway) clearly visible and appears achievable
- How to recognize situation that will end in an accident if you have never been in such a situation?

Arguments



“We can always go around later”

- After passing 1000ft, grey area
- What is the new stable approach altitude?
- When do we initiate the go-around?

- Sometimes go-around not possible

How to prevent?



- Discuss option of go-around early in approach
- Ensure pilot monitoring actually monitors
- Stable approaches are about maintaining safety margins you hopefully won't ever need, but may save you in the event you do!

Results



Unstable Approach Rate (per 1000 sectors)

