



# Learning about unstabilized approaches through animations

Joris Wenderich – [transavia.com](https://transavia.com)

[transavia.com](https://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
- 1<sup>st</sup> 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 78 E0 CF FE 6F FC 96 00 0C 6D EF 01 ...	00:22:52.000
080B80h (527232)	Good	B8 F5 78 F4 1F 00 DC 2F 03 96 00 01 55 3F 00 ...	00:22:53.000
080D00h (527616)	Good	47 78 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

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

