



# Bird strike from the cockpit view

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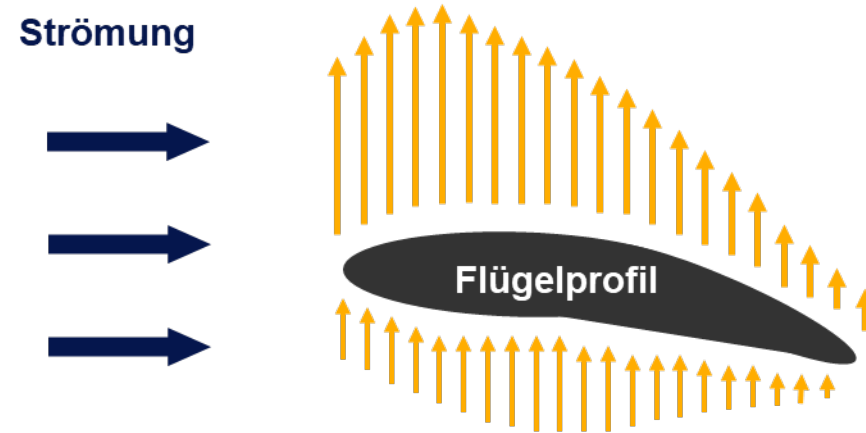
13. 6. 2023



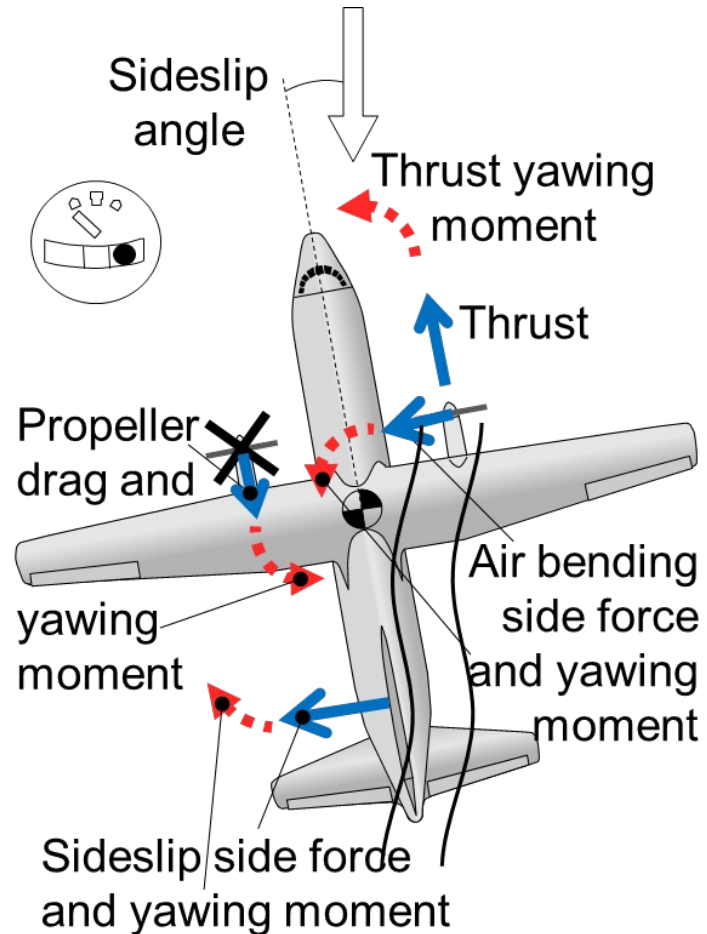
## Structure of the presentation:

- Engine Failure - Effect on the aircraft
- Work steps
- Further Risks

# Forces on the Airplane



# The engine failure - Forces on the aircraft

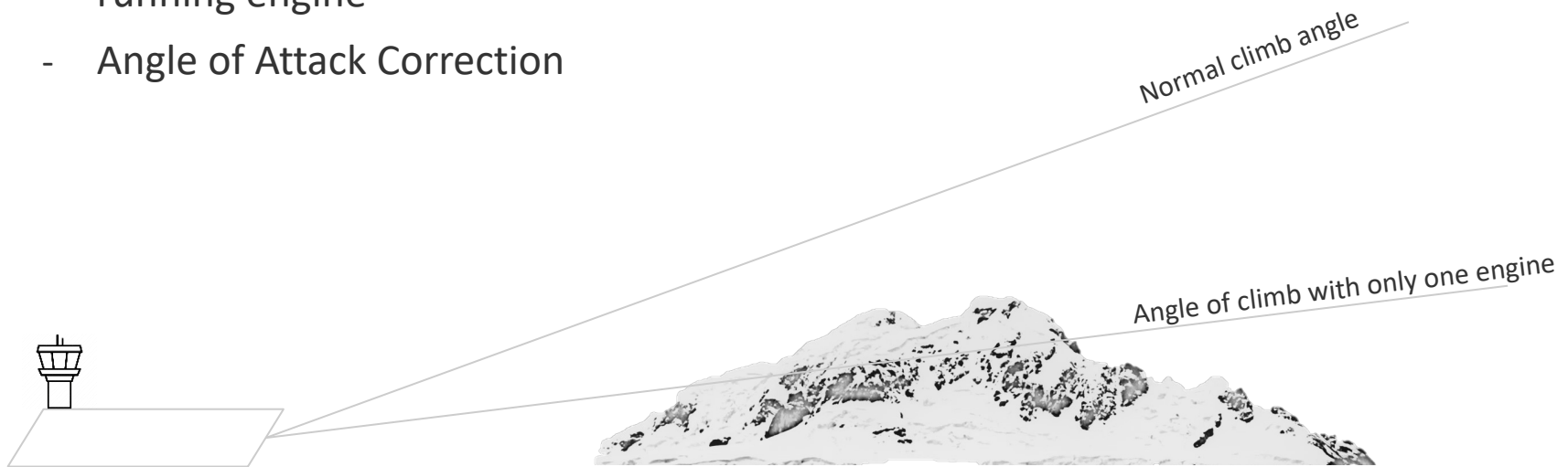


Actions in the Cockpit:  
Use of the rudder  
Angle of Attack Correction

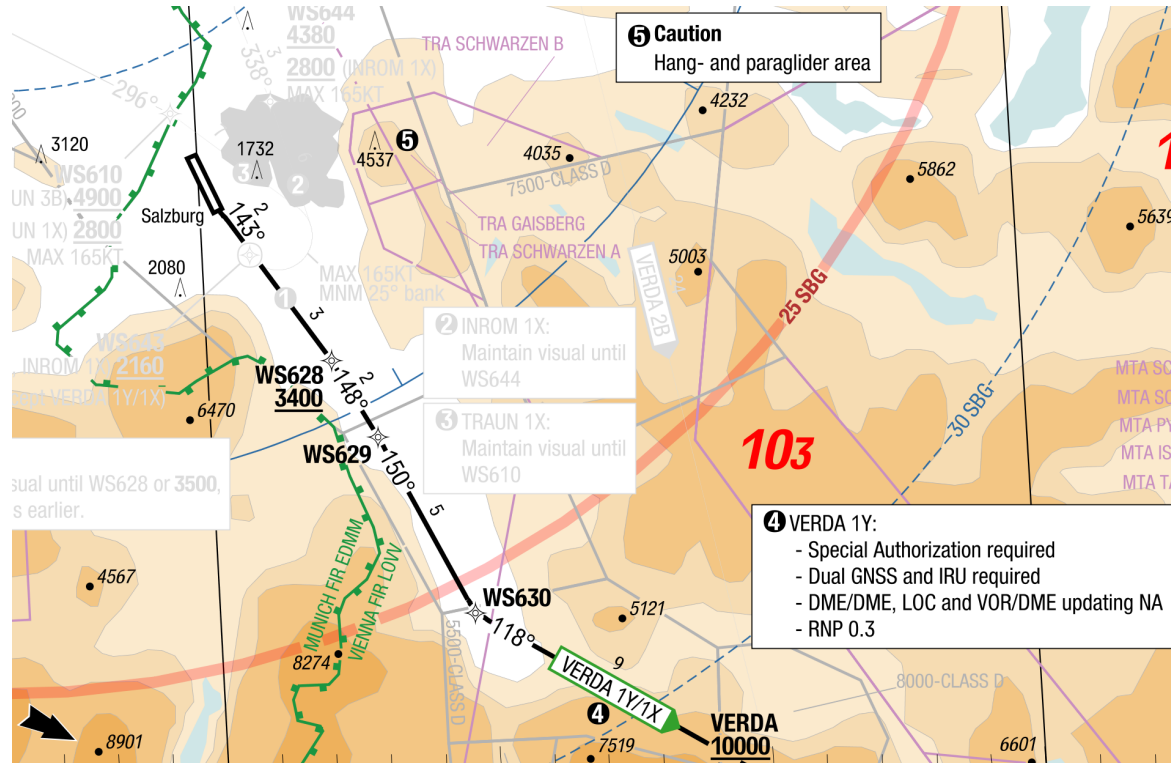
# Safer flight path with a lower climb angle

## Actions in the cockpit:

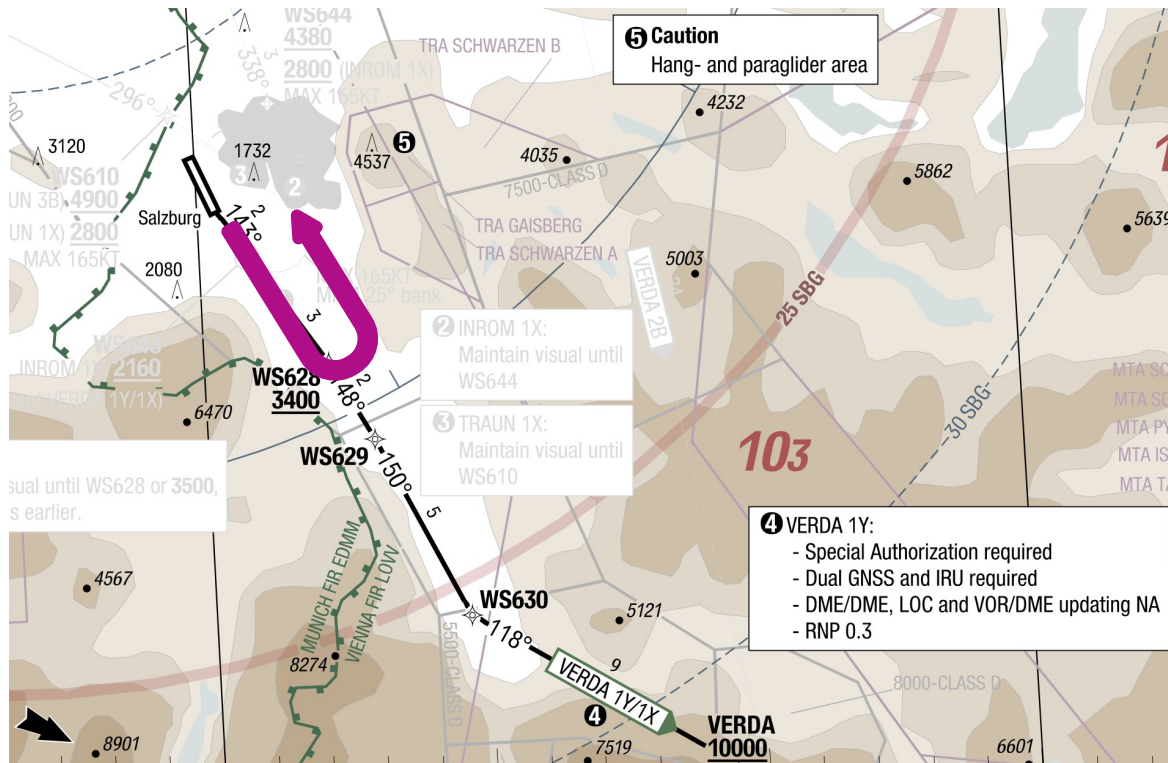
- Increase engine thrust on the running engine
- Angle of Attack Correction



# Engine Out Departure



# Calculated lateral guidance in the event of an engine failure



## Actions in the cockpit:

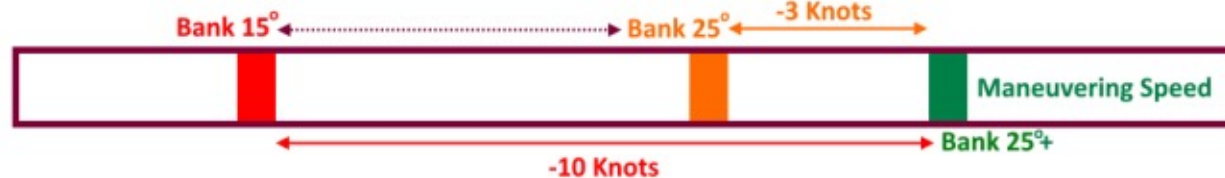
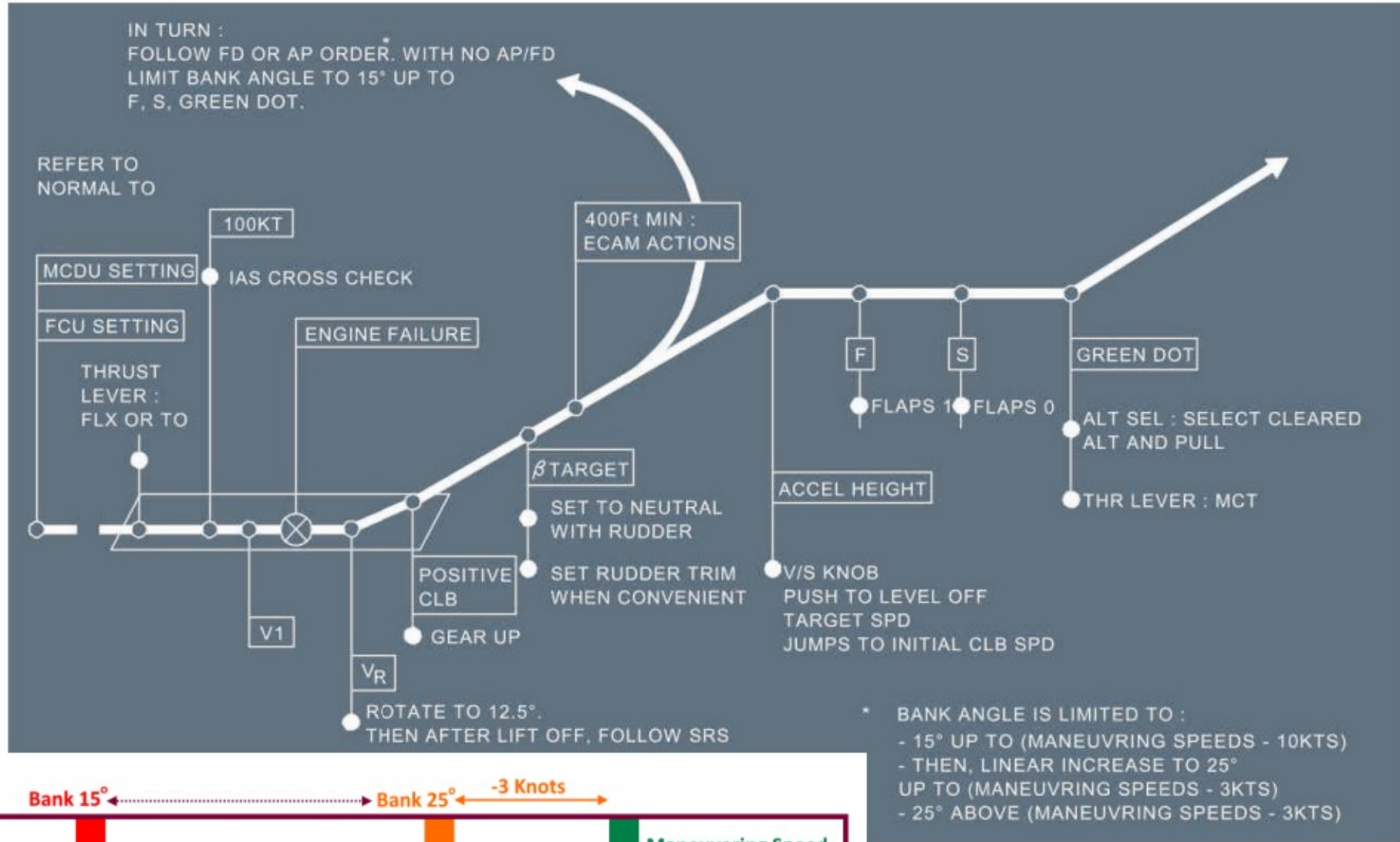
- Increase engine thrust on the running engine
- Adjust angle of attack
- Adaptation of the "Engine Failure Flight Path"

# Initial immediate Actions

- Verification of damage after bird strike
- Depending on the aircraft altitude, start of the immediate measures
- Compensate for one-sided engine thrust with rudders
- Adjust angle of attack
- retract landing gear
- Increase thrust if necessary
- Checking the lateral course of the take-off route
- notify air traffic control



# Initial immediate Actions



# ECAM Actions

ENG MODE SEL Ignition

THR LEVER (affected Engine) Idle

ENG MASTER OFF

ENG FIRE P/B Push

Agent 1 Disch

Shutdown



## Further Risks



# Further Risks

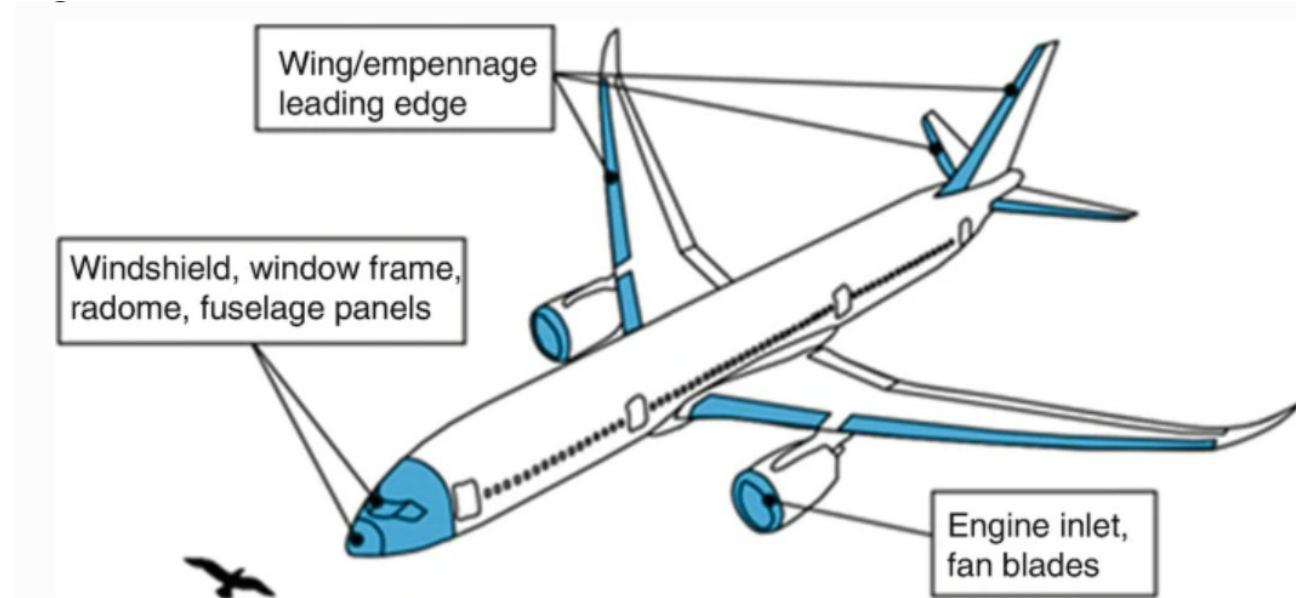
Vision restrictions

Window breakage

Failure of sensors and instruments

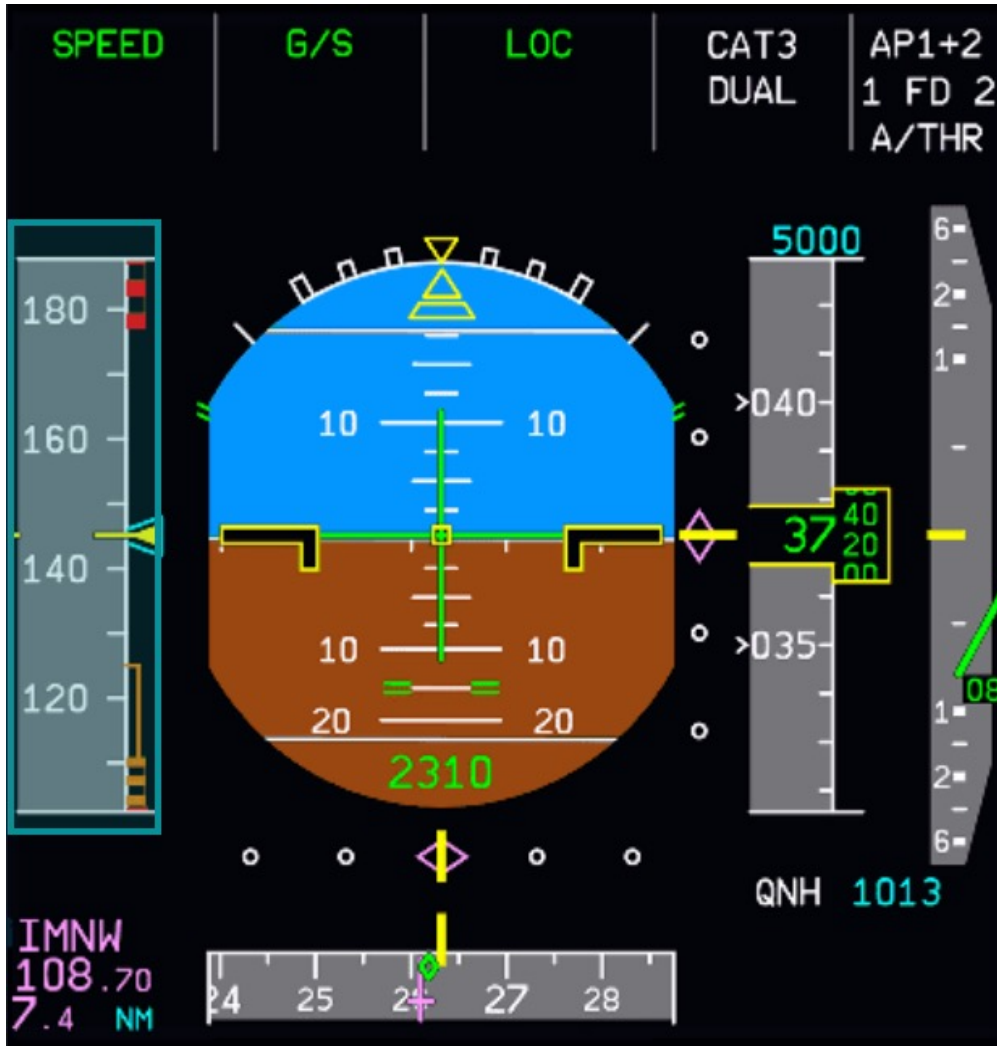


# Further Risks



Risky regions for bird strikes (Heimbs [2012](#))

# Further Risks Instrument Failure



## ● To level off:

- AP.....OFF
- A/THR.....OFF
- FD.....OFF
- SPEEDBRAKES..... CHECK RETRACTED
- PITCH/THRUST TABLE.....APPLY

PITCH / THRUST FOR LEVEL OFF				
		70 t	60 t	50 t
<b>SLATS / FLAPS EXTENDED</b>				
CONF	PITCH	THRUST % N1 (Resultant speed)		
3	7°	64% (155 kt)	60% (140 kt)	54% (130 kt)
2	5.5°	62% (170 kt)	58% (160 kt)	52% (145 kt)
1+F	5°	62% (190 kt)	56% (175 kt)	52% (160 kt)
1	6.5°	62% (205 kt)	56% (190 kt)	52% (175 kt)
<b>CLEAN</b>				
PITCH	FL	THRUST % N1 (Resultant speed)		
4° at or below FL250	100	62% (245 kt)	60% (225 kt)	54% (205 kt)
	200	70% (245 kt)	66% (225 kt)	62% (205 kt)
3° above FL250	300	80% (265 kt)	76% (245 kt)	72% (225 kt)
	350	84% (255 kt)	80% (240 kt)	76% (220 kt)
	400	/	86% (235 kt)	80% (220 kt)