2016 REGIONAL FLIGHT SAFETY CONFERENCE

Watch your speed in approach

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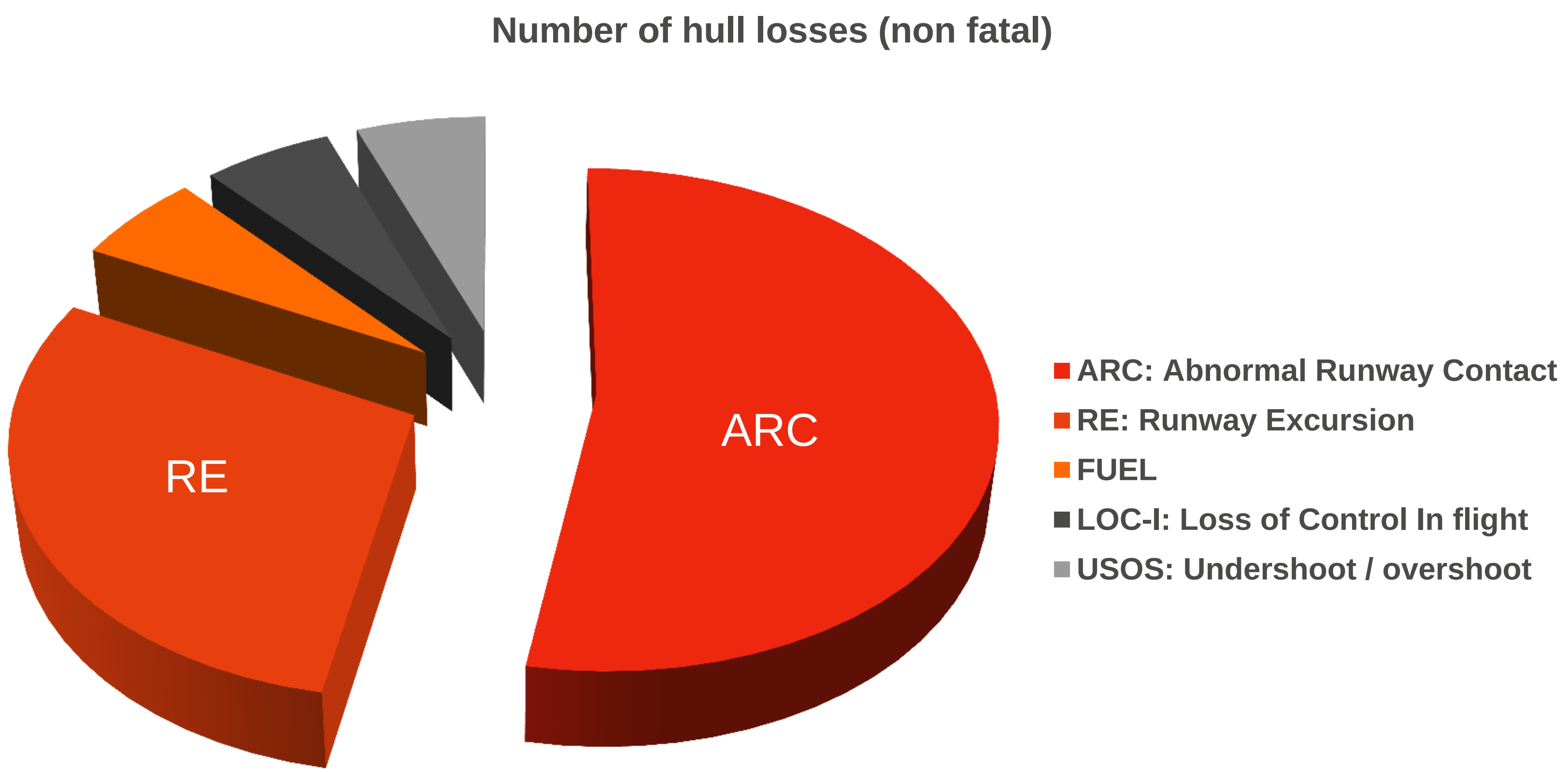
Head of Flight Test

Hervé BARTHE
Head of Training

Léopold SARTORIUS
Flight Safety Director
Flight Operations Analysis

ATR
PROPELLING THE NEXT CONNECTION

In-service feedback



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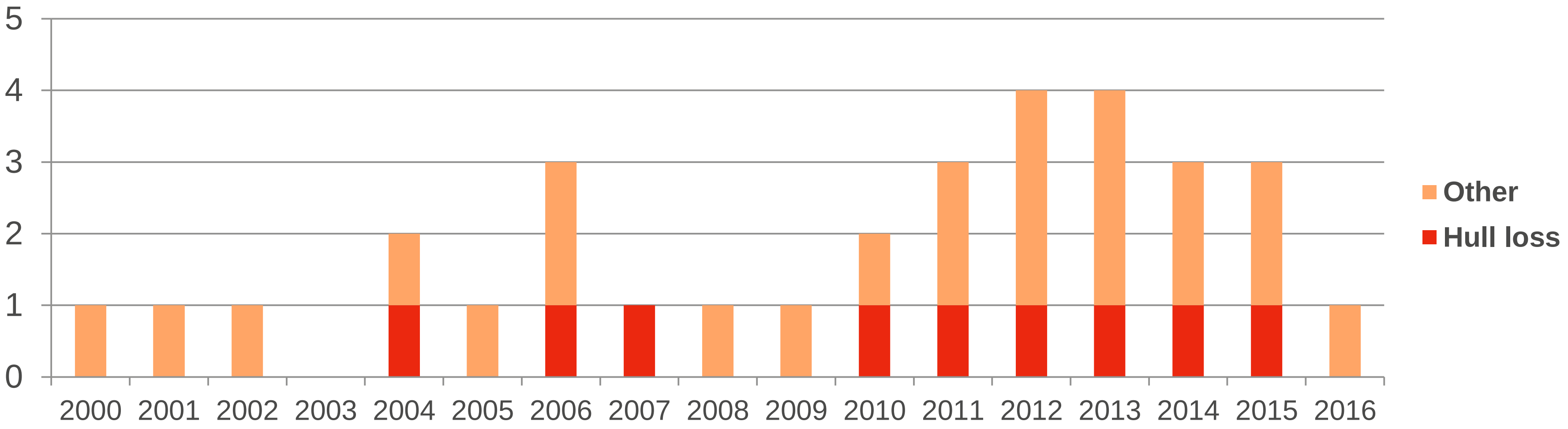
In-service feedback



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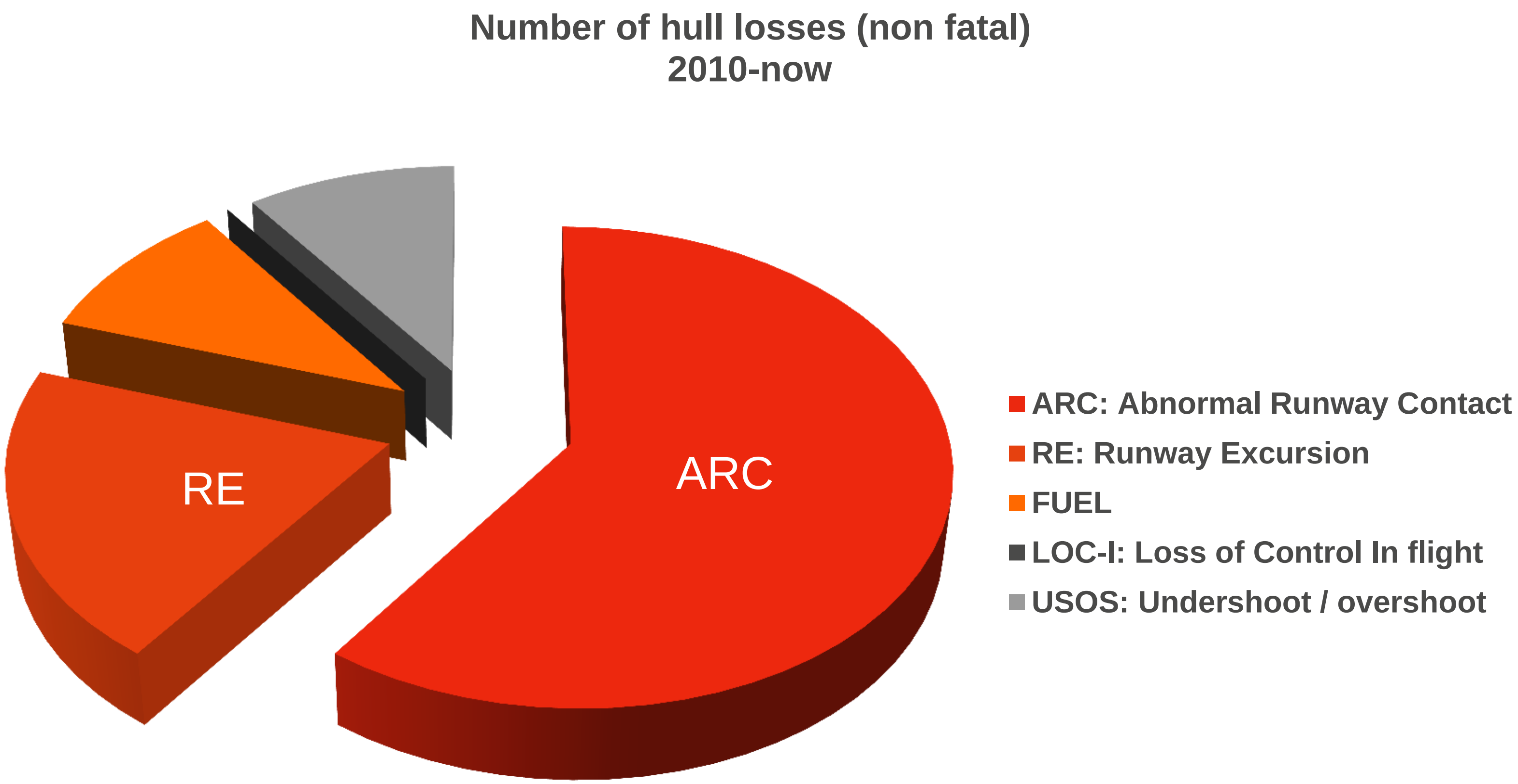
In-service feedback



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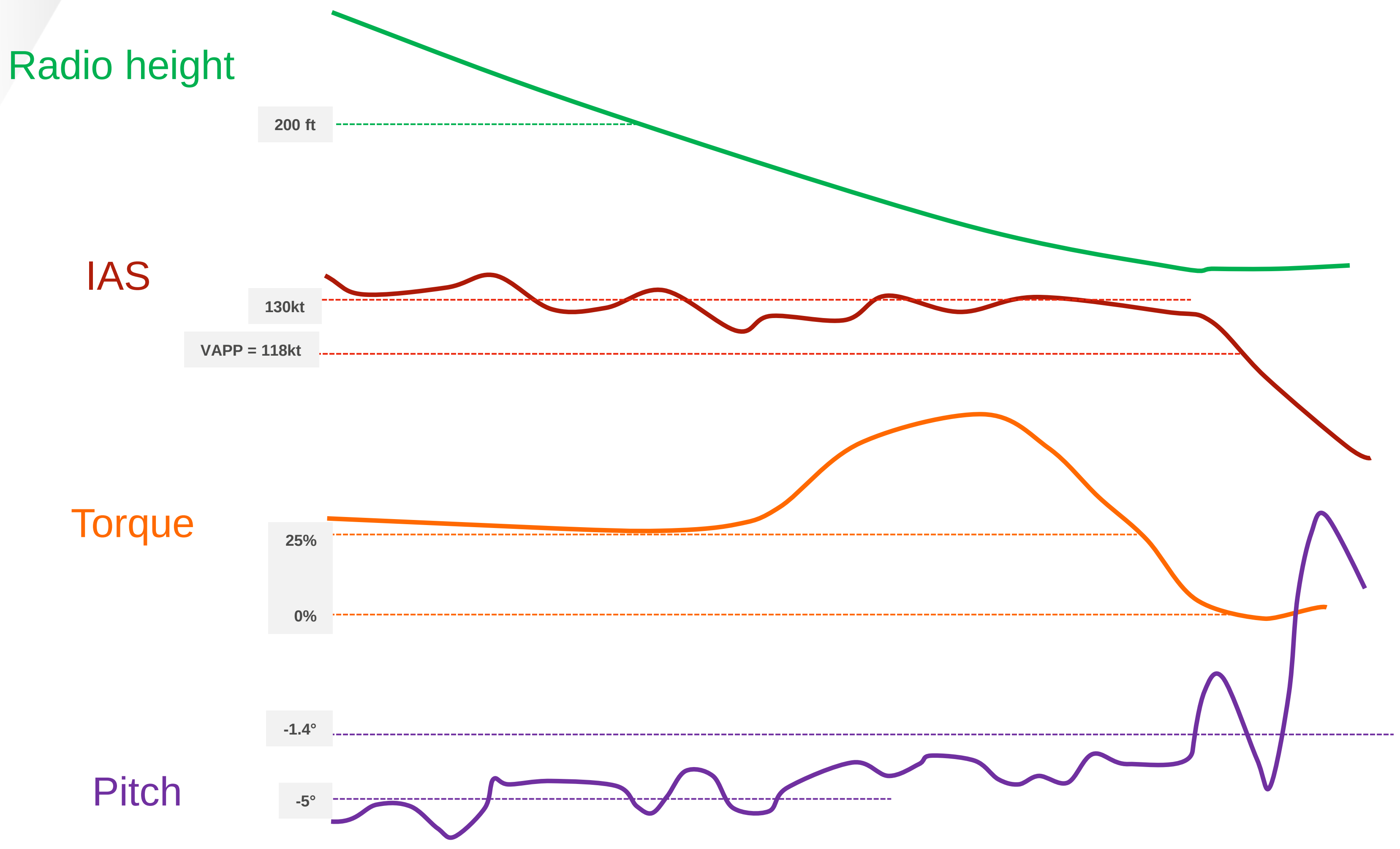
In-service feedback



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Low pitch

Excessive airspeed

Torque increase

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Lessons learned & way forward

- Theoretical knowledge
  - Flight mechanics

- Training
  - stabilization criteria
  - Vapp computation

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Final approach speed

FINAL APPROACH SPEED

$$\boxed{V_{APP} = V_{mHB} + \text{WIND FACTOR}}$$

Wind factor :
The highest of
- 1/3 of the reported head wind velocity

-or-

- the gust in full

with a maximum wind factor of 15 kt.
Wind factor is added to give extra margin against turbulence, risk of windshear etc...

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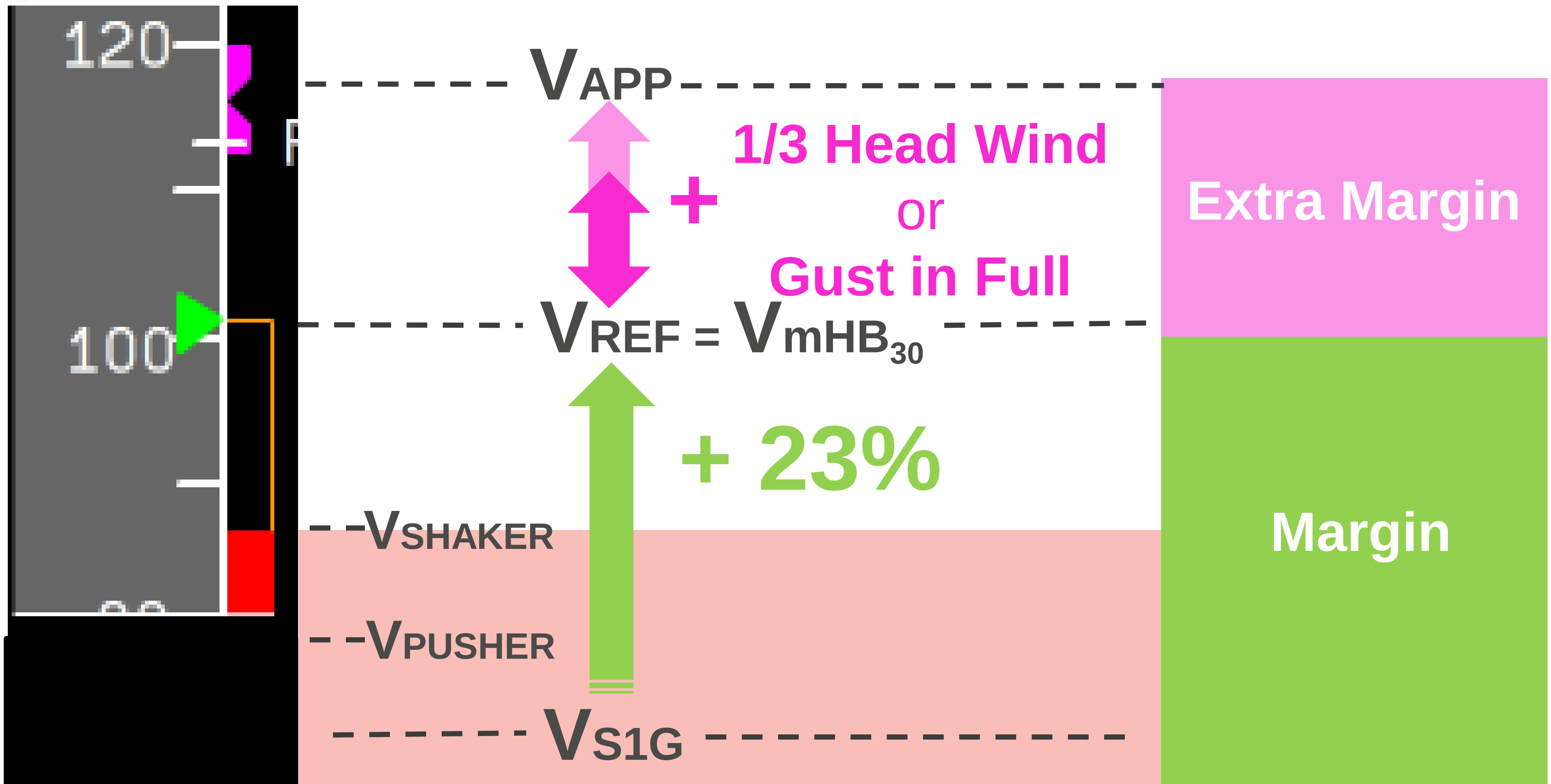

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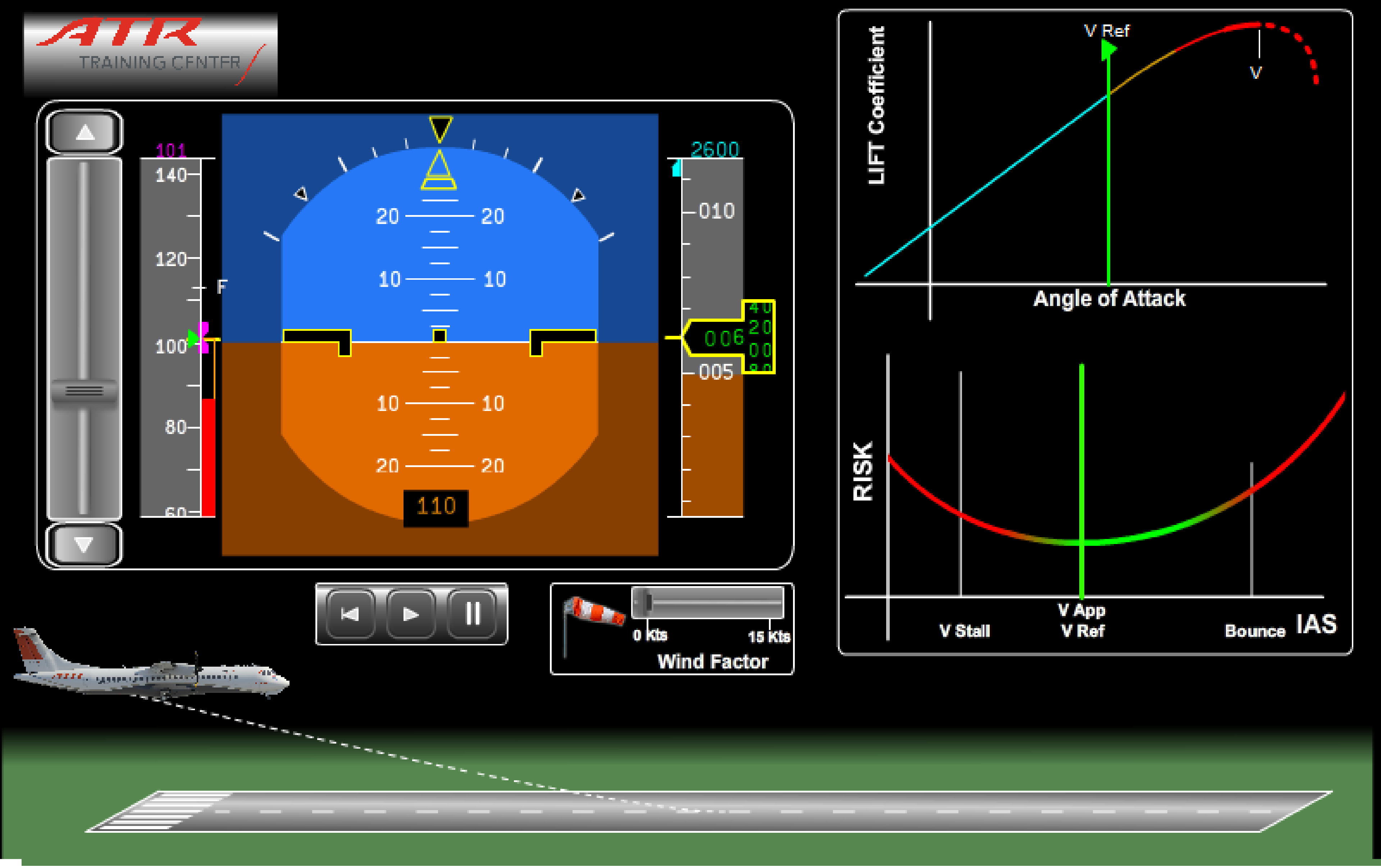

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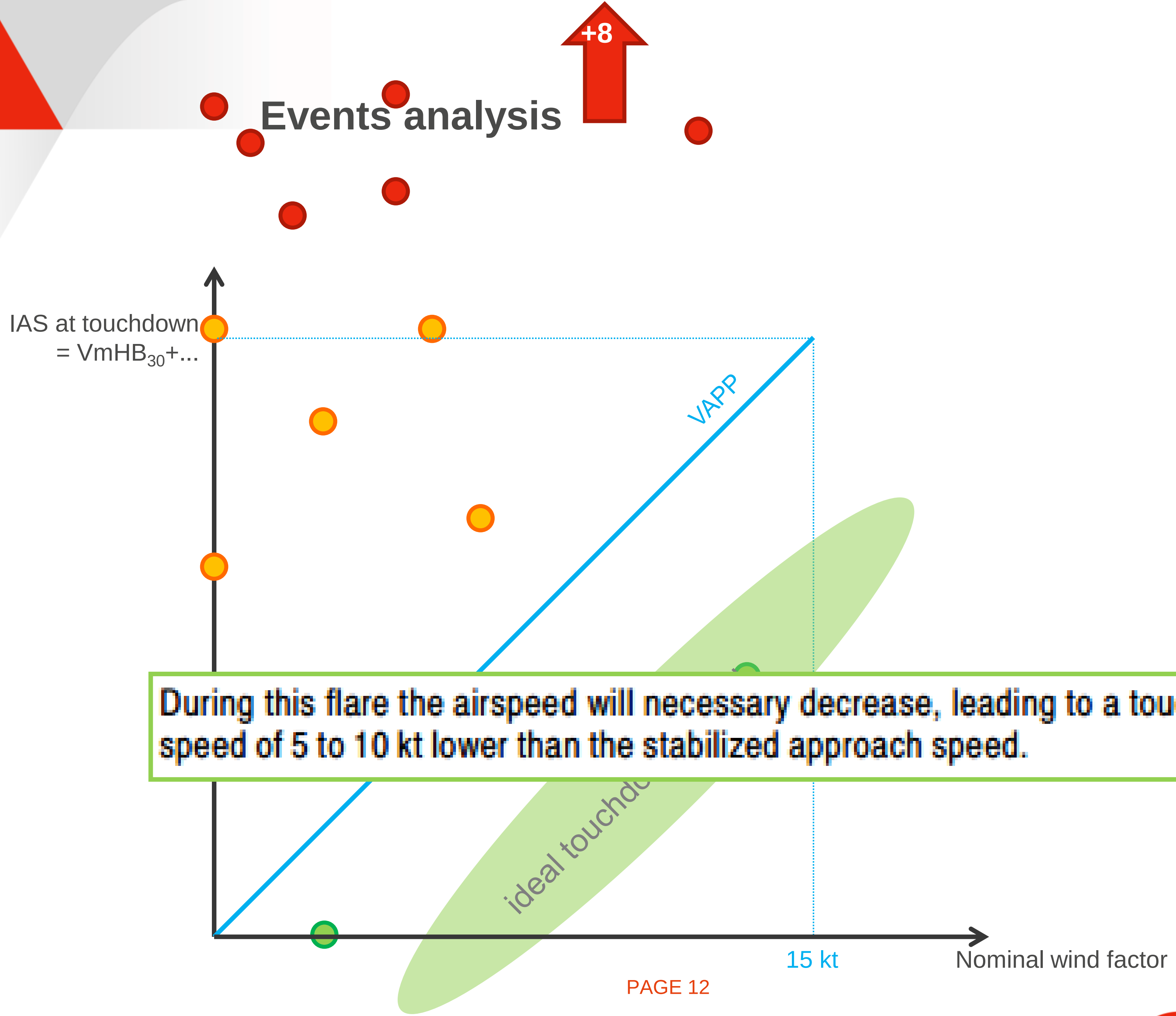
Events analysis



During this flare the airspeed will necessary decrease, leading to a touch down speed of 5 to 10 kt lower than the stabilized approach speed.

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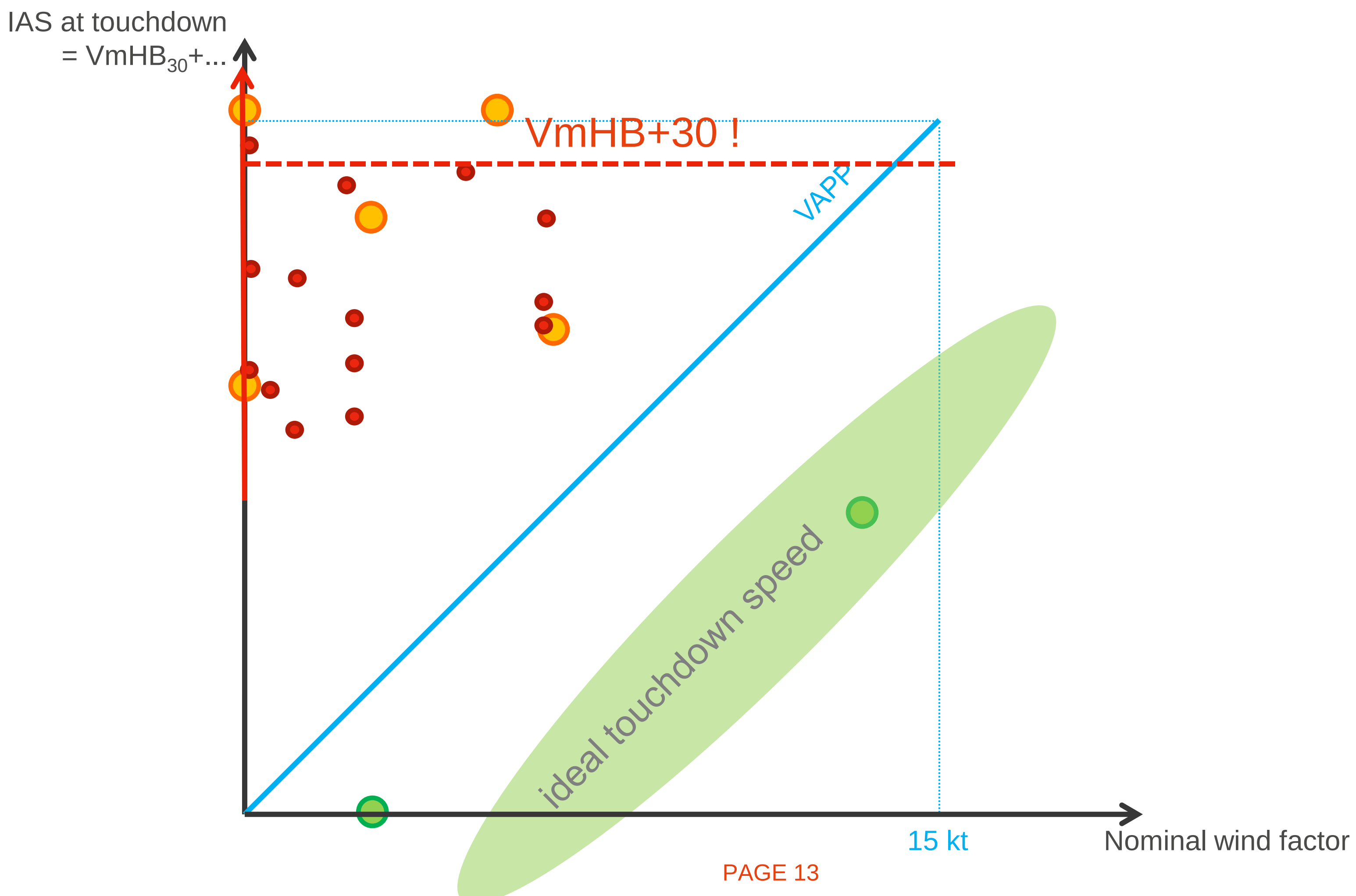
Events analysis



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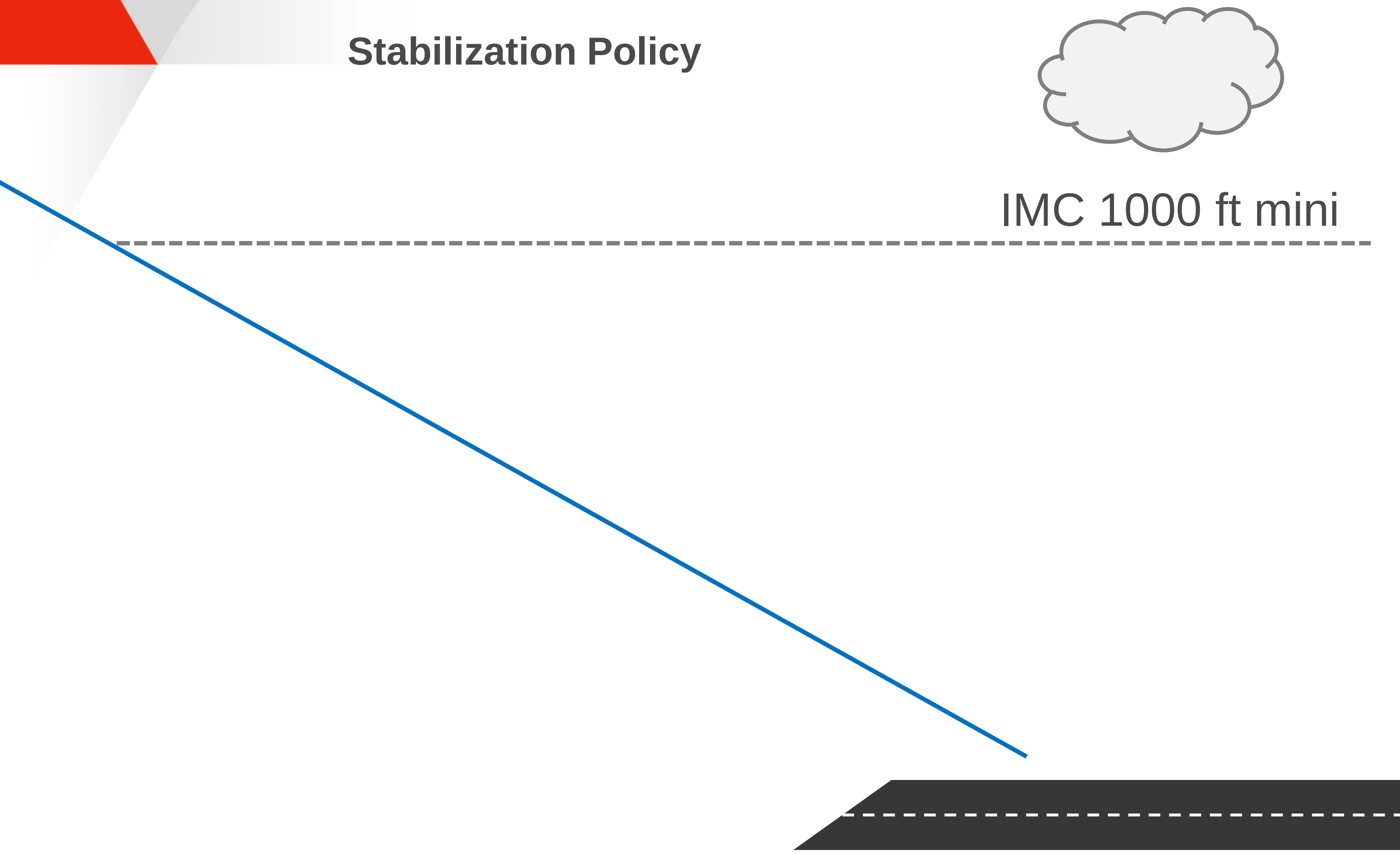
Stabilization Policy



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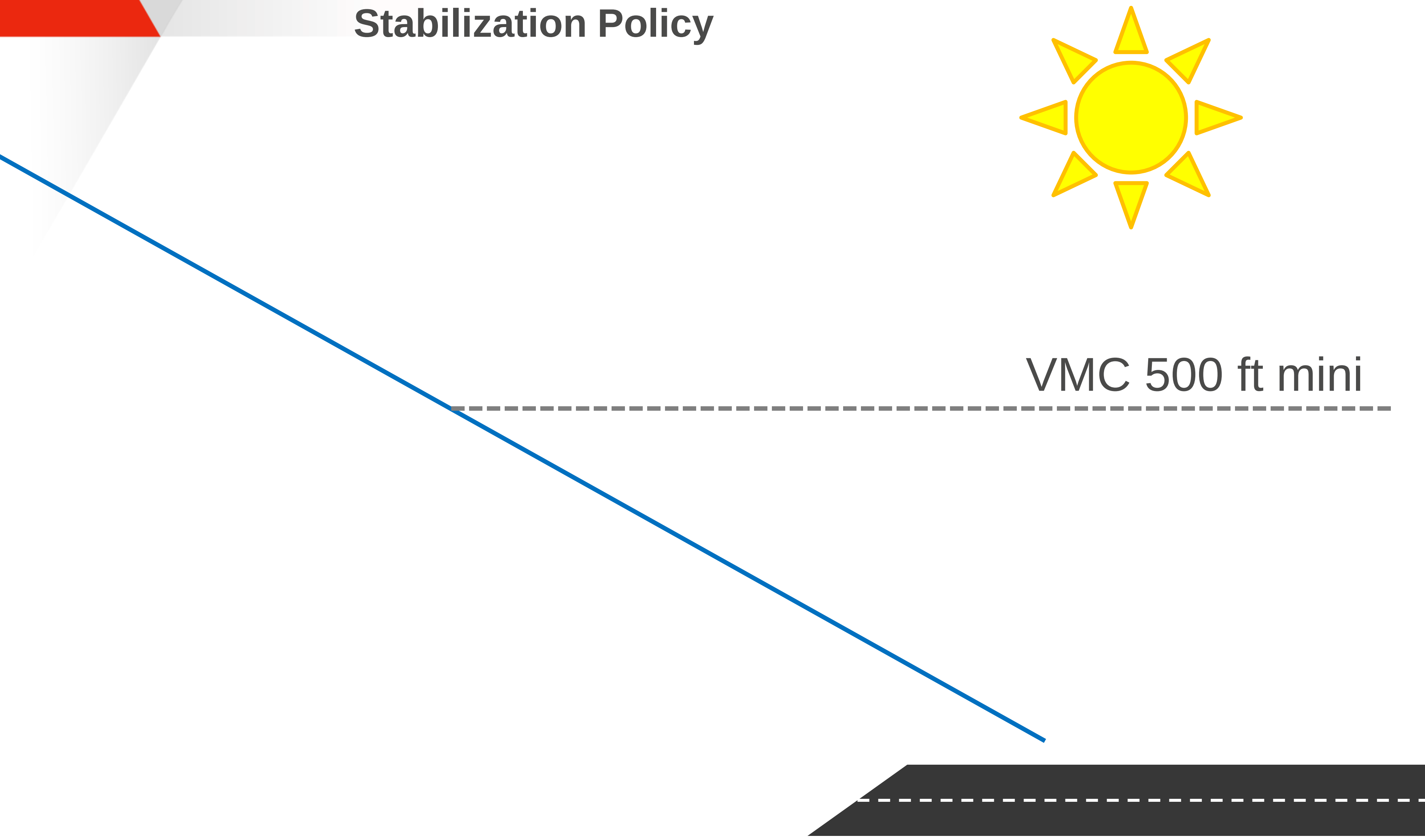
Stabilization Policy



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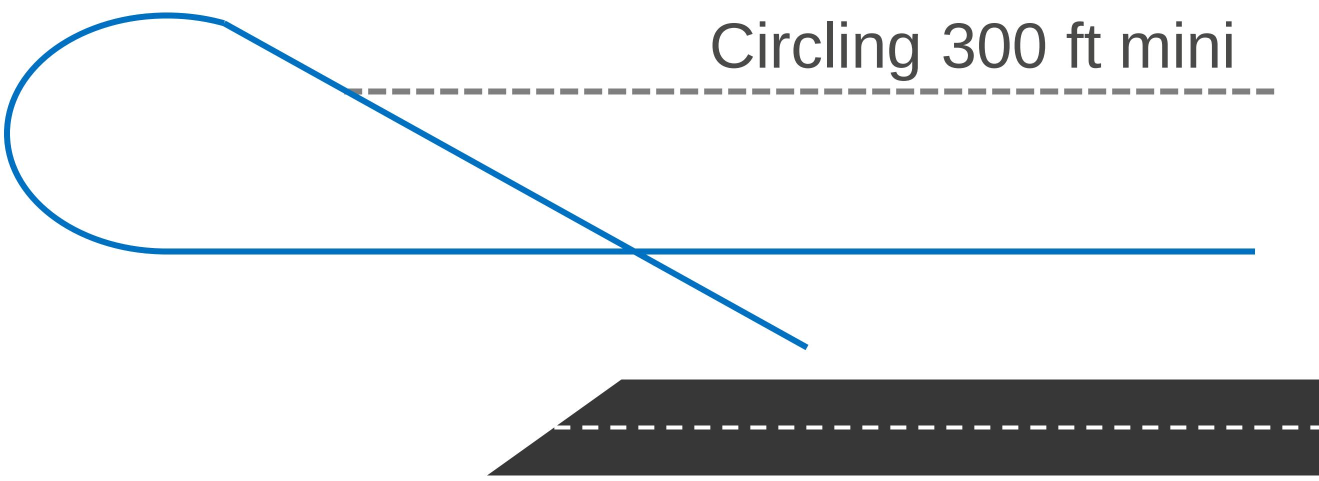

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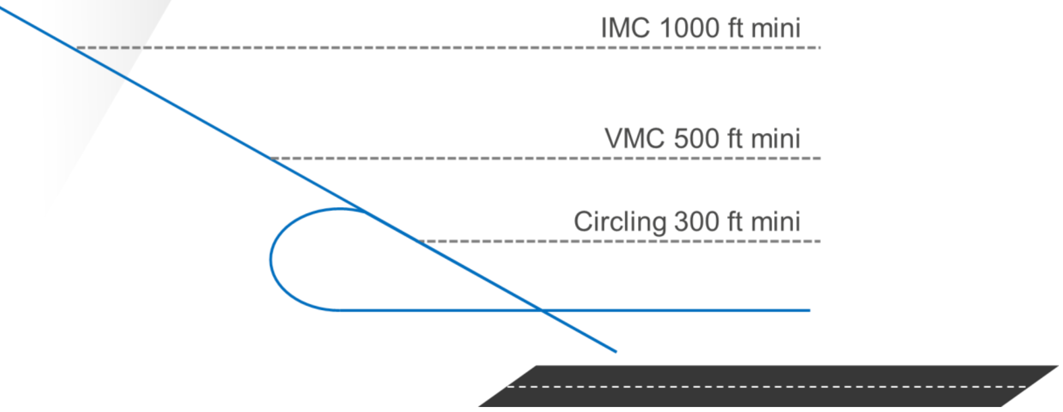

- In all cases stabilization means
  - Landing configuration
  - Briefing & checklists
  - Lateral flight path
  - Energy management → Pitch & Power / Speed / Vertical flight path

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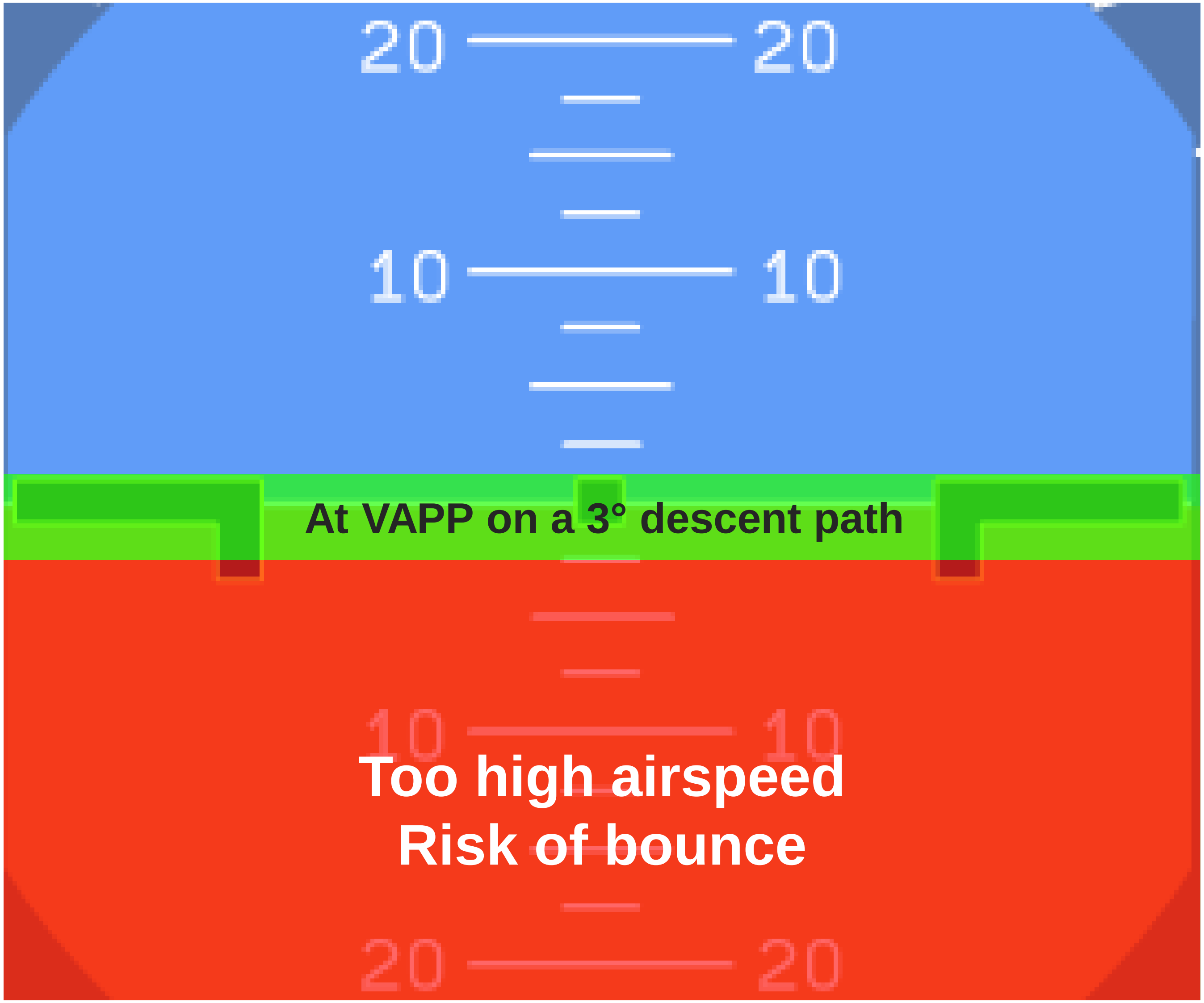
Stabilization Policy



+1°

-2.5°

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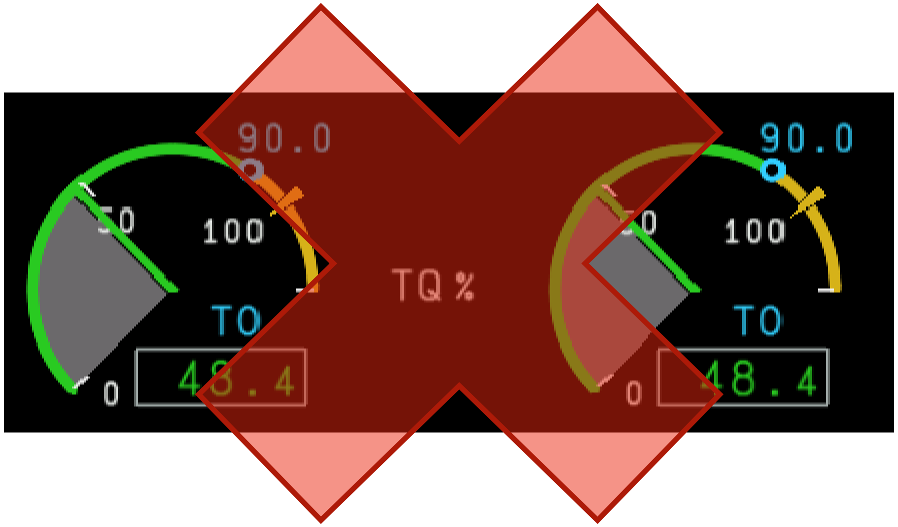
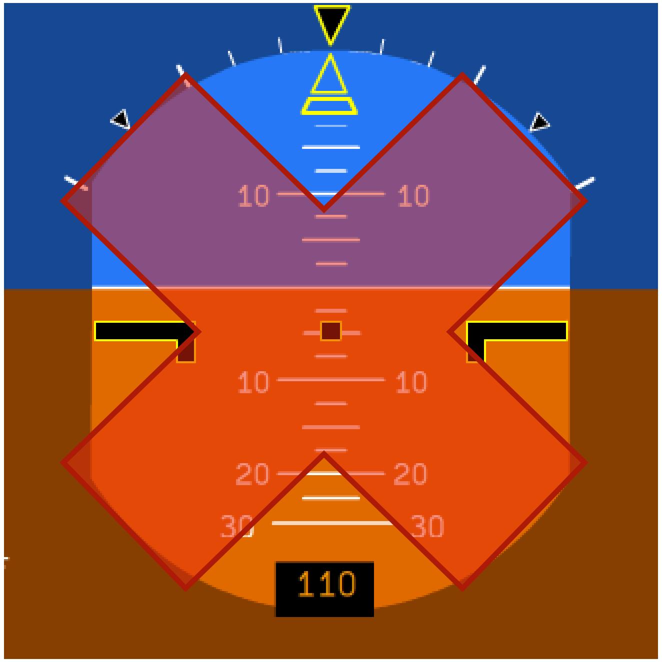
Stabilization Policy

- Situation Awareness / Presets





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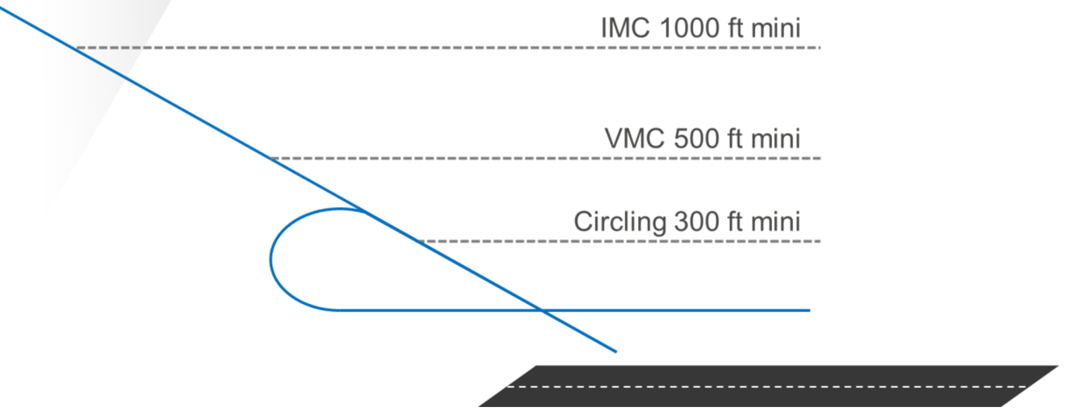
Stabilization Policy



- In all cases stabilization means
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  - Energy management ⇨

Pitch & Power
Speed
Vertical flight path

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VAPP

$V_{APP} = V_{mHB} + $ WIND FACTOR

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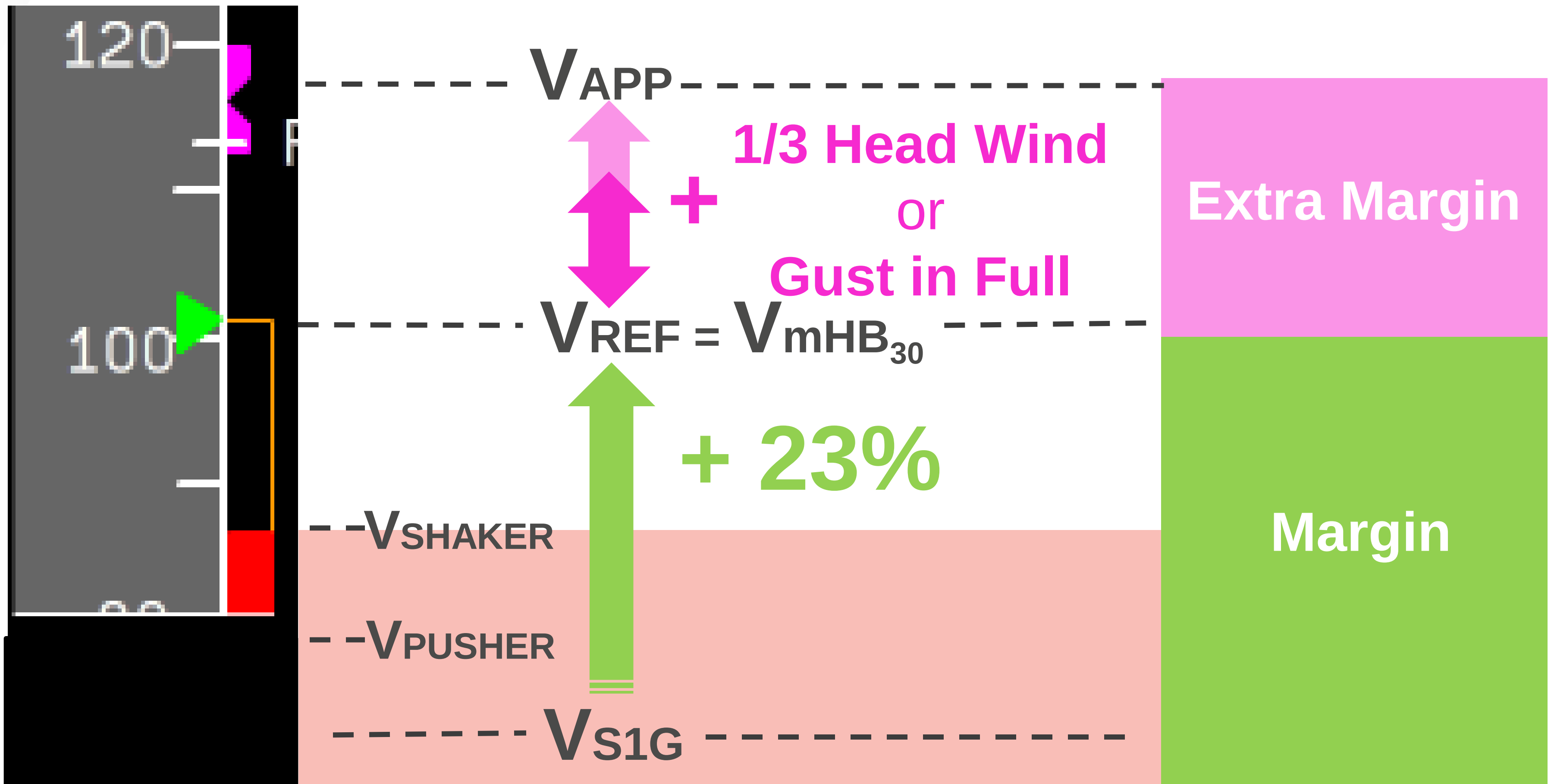

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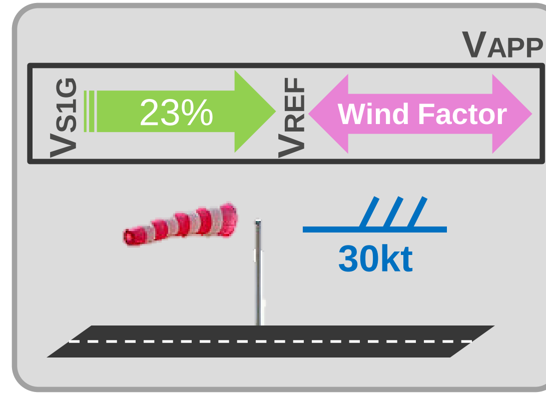
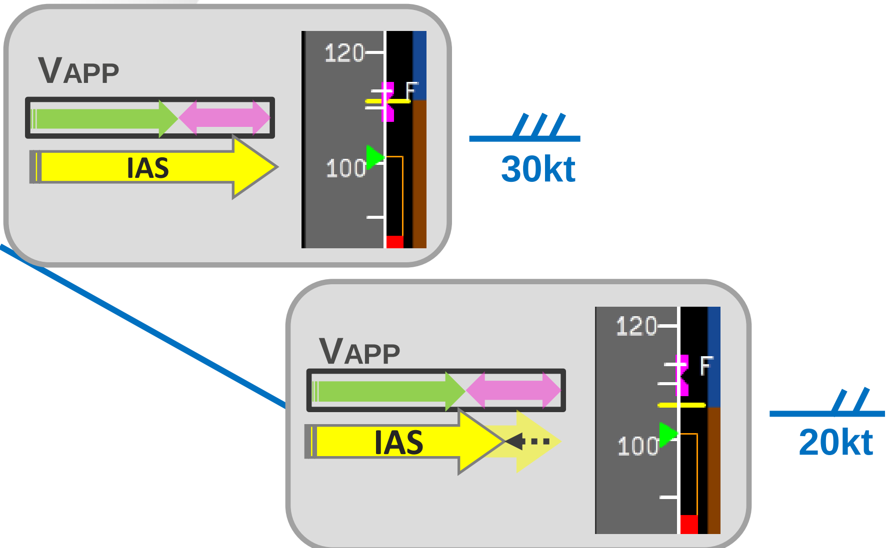
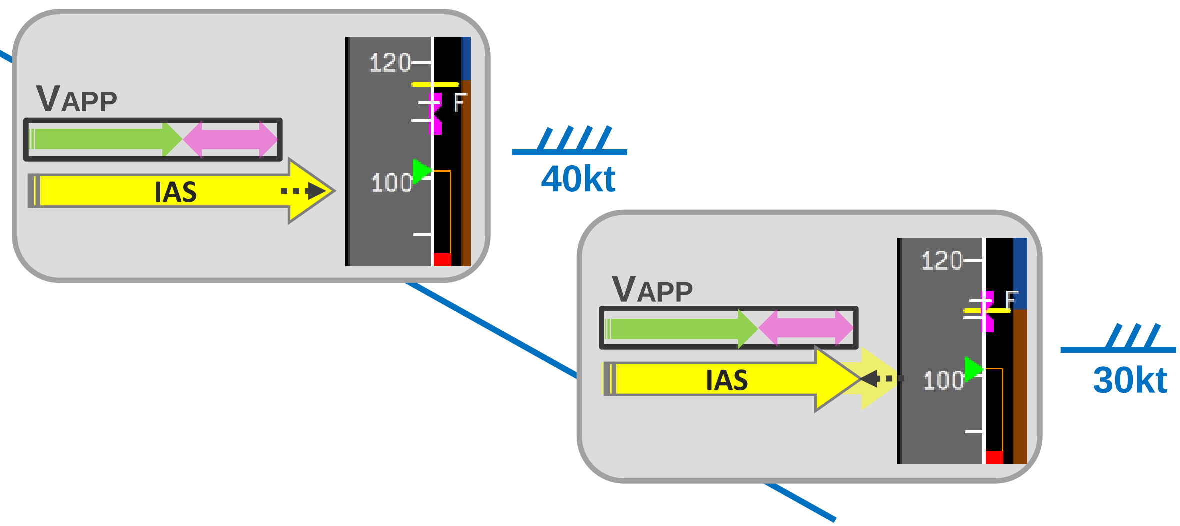
IAS during Final





During Final, Wind Factor Extra Margin allows to absorb temporary IAS variations.
It also allows to smooth Pitch & Power potential corrections, if required.



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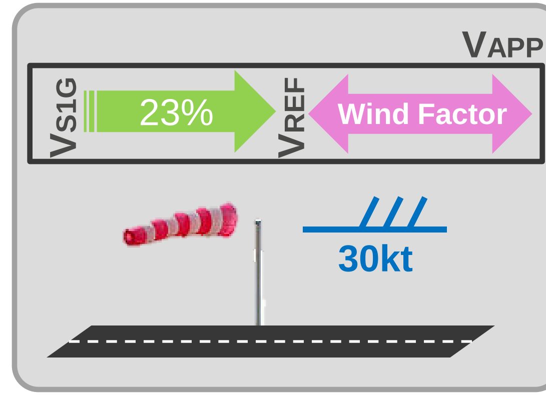
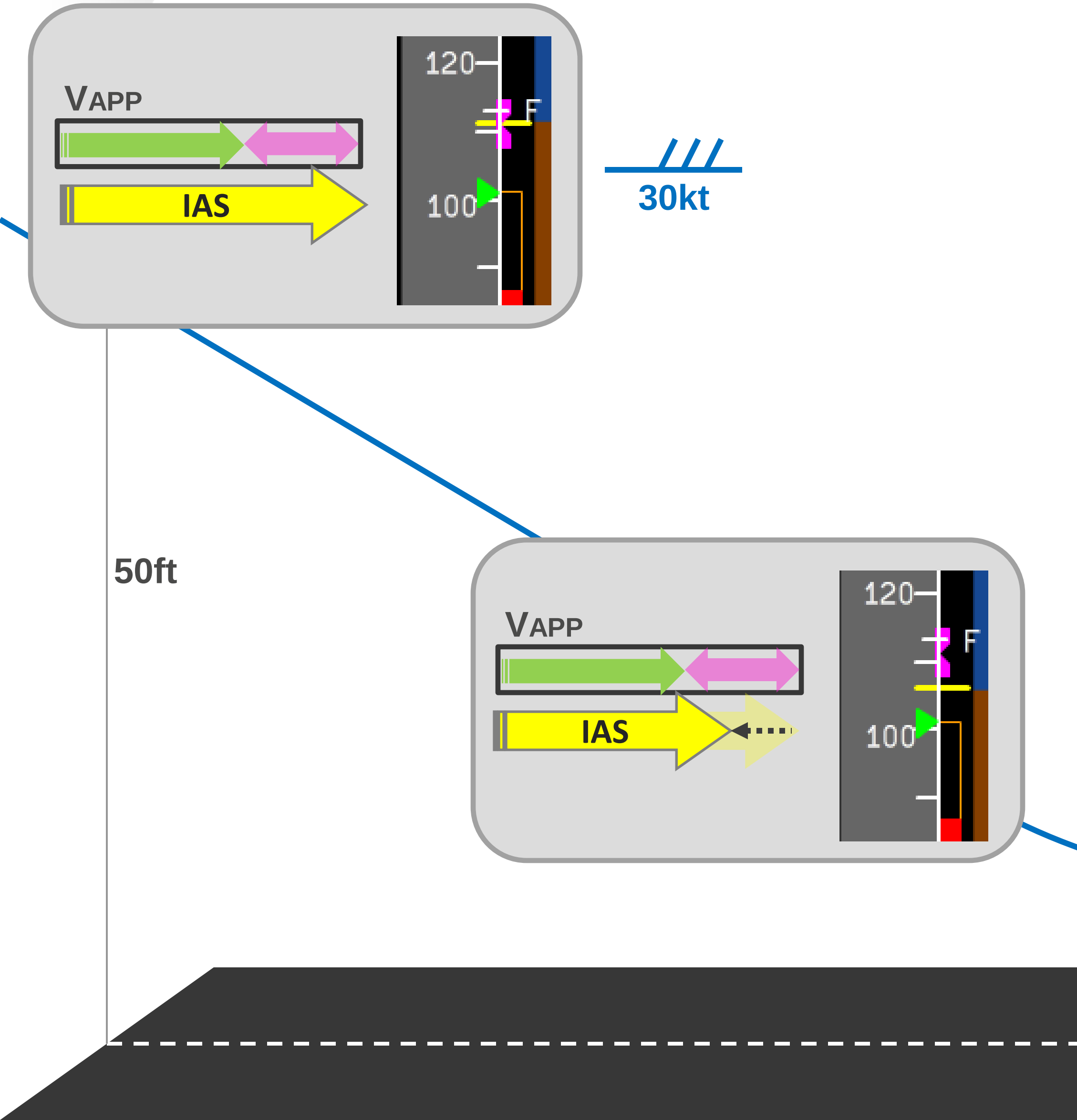
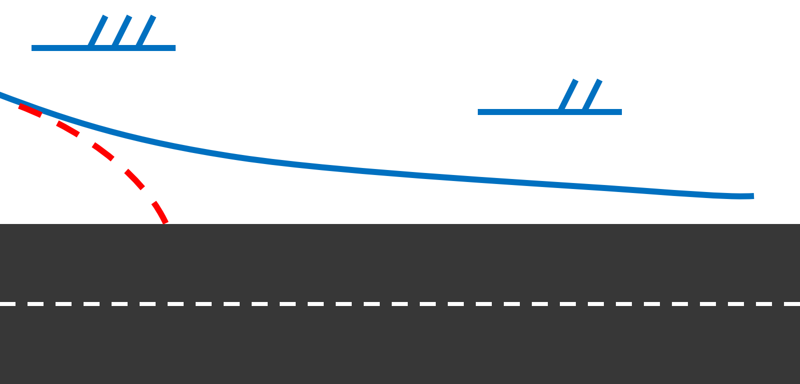
IAS during Flare



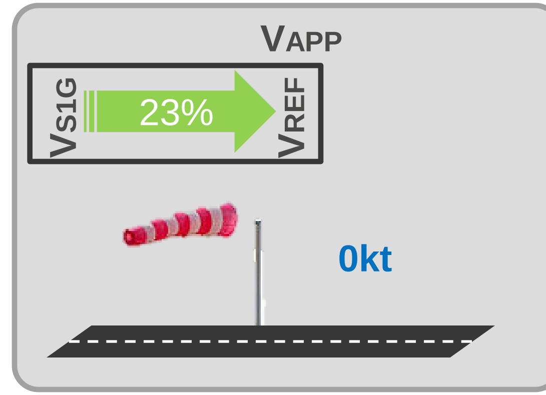


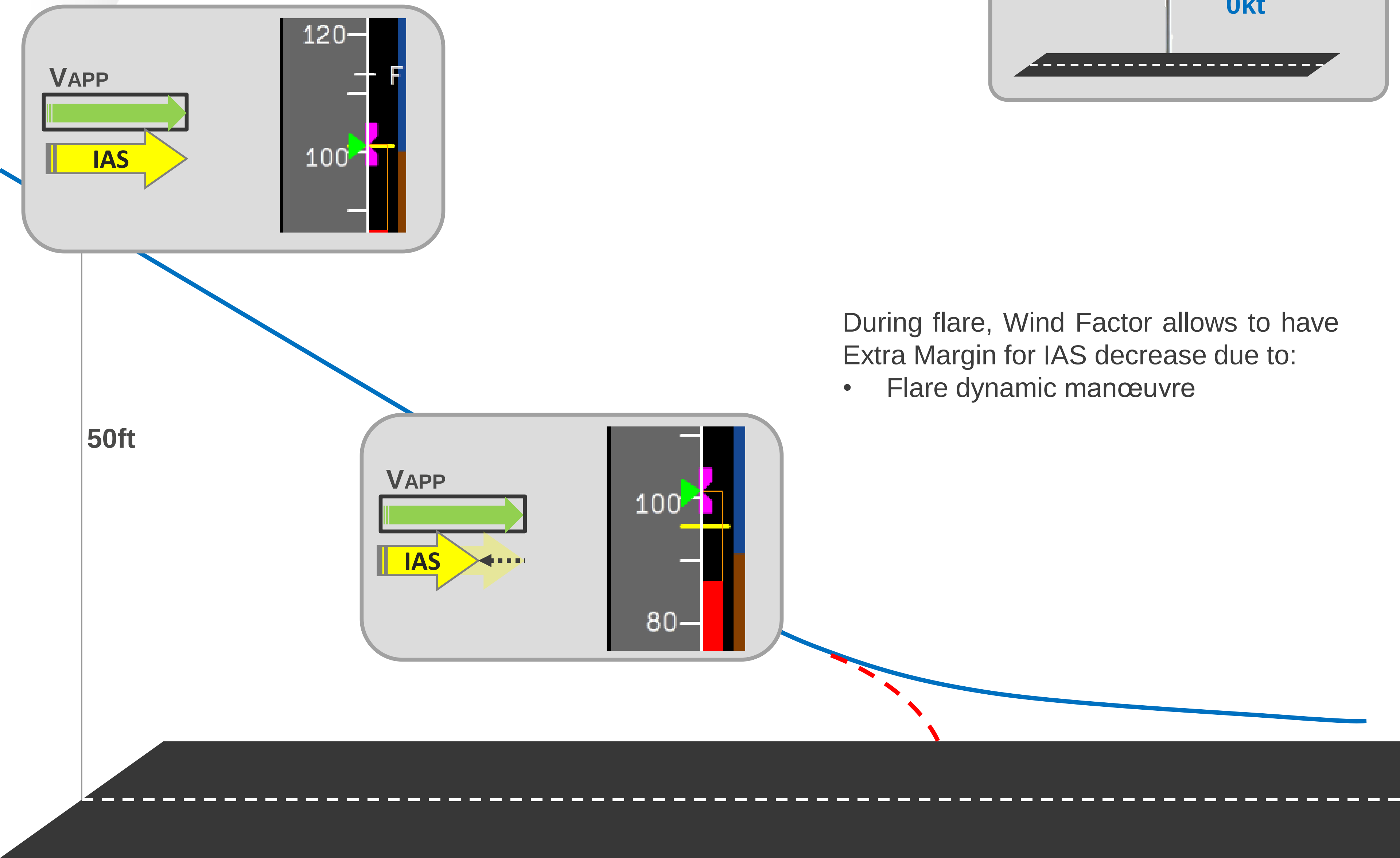
During flare, Wind Factor allows to have Extra Margin for IAS decrease due to:

- Flare dynamic manœuvre
- Wind Gradient



IAS during Flare





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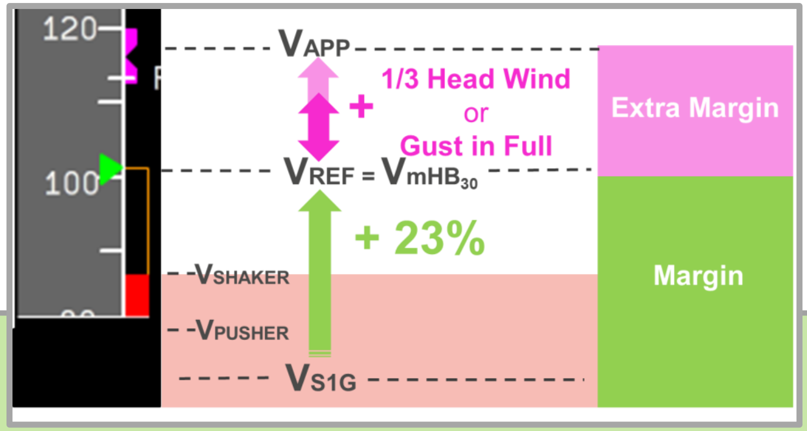

Trust VAPP!

Fly VAPP!

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Kuala Lumpur

13-14 April