



# Why even experienced pilots get it wrong sometimes

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# Pitfalls or Traps pilots unconsciously fall into from time to time

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- ❖ Data gained from just over **400 Human Factor Sessions** over a 12 year period.
- ❖ Intention of Human Factor session to provide **guidance, coaching or development** mainly of the resilient competencies.
- ❖ Aircraft flown: A310, A320, A330, A340, A350, A380, B747, B777 and B787.
- ❖ HF Session recommended by **Flight Ops Management** or **Flight Ops Training Management**.
- ❖ HF session would last on **average 2 hours**, with some requiring additional sessions.
- ❖ **No specific demographics** or experience level – from 400hrs to 22 000 hrs.

# “Its just another Flight”

## Line Flying

Mostly done through **automation**.

Restricted **manoeuvre envelope** – 1.1 G

**Cannot practise abnormal events** – no unnecessary shutting down of systems with passengers on board.

## Simulator Checks

**First Check – then training.**

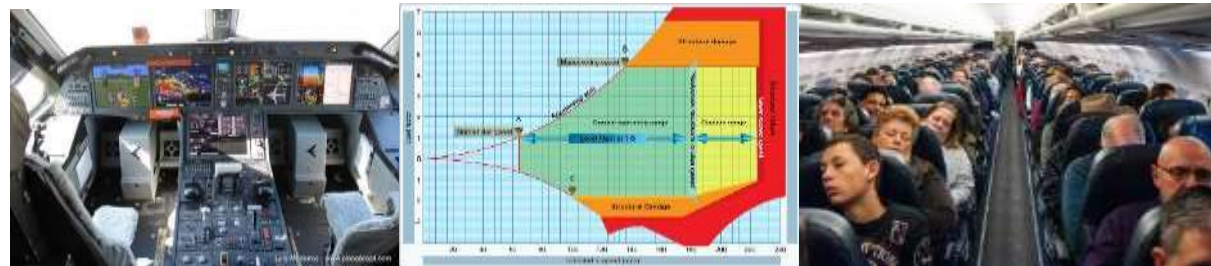
Conducted **anytime** of the day.

Experience **more emergencies** than you might ever experience on the line.

One abnormal/emergency **after the other**.

Must cover **all regulatory requirements** and so there is a **time limit**.

If unsuccessful, **removed from the line** and additional training.



**Preparation is key. Good Knowledge, Positive Attitude and motivated to enhancing Skills.**

# “Not understanding the Rules of Engagement”

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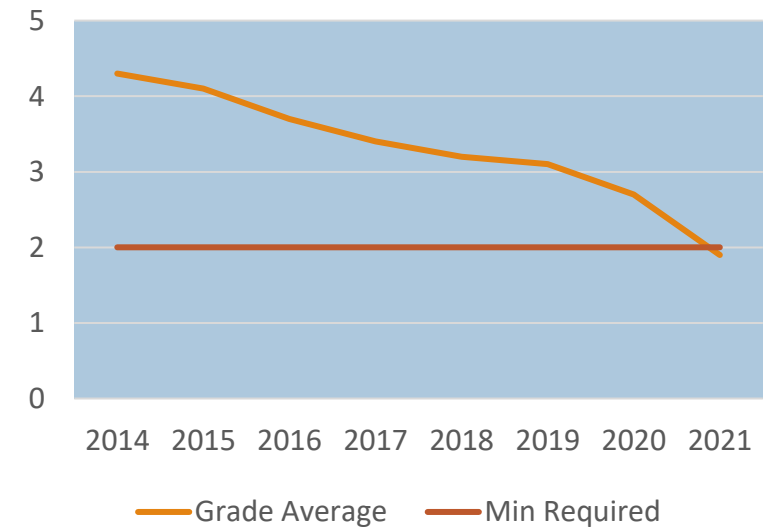
- ❖ Every setting has its own **rules of engagement**, i.e. hospital, church, restaurant, soccer, rugby, relationships, etc.
- ❖ In the Airline, the **behavioural markers** set out for each competency, are the rules of engagement.
- ❖ In other words, being **aware of the required behaviour and performance** to do well in each competency.
- ❖ Successful average to excellent pilots, when asked, **could not repeat the behavioural markers**, but their behaviour (their natural behaviour) was the data used to create the behavioural markers.
- ❖ Struggling pilots, with sub standard behaviour, **did not know the rules of engagement** (competencies and behavioural markers) at all.

**“Ignorance of the law is no excuse”.**

# “Past Performance as a Predictor of Preparation”

- ❖ **Pushing the limits** to test rules and regulations.
- ❖ Unsuccessful pilots admitted they **used previous performance** to allocate amount of preparation.
- ❖ **Did not review** their historic performance.
- ❖ The continuing downwards trend would **inevitably result in a fail**.
- ❖ Top performing athletes – the **amount of effort** to get to the top is almost half of that to stay on top.

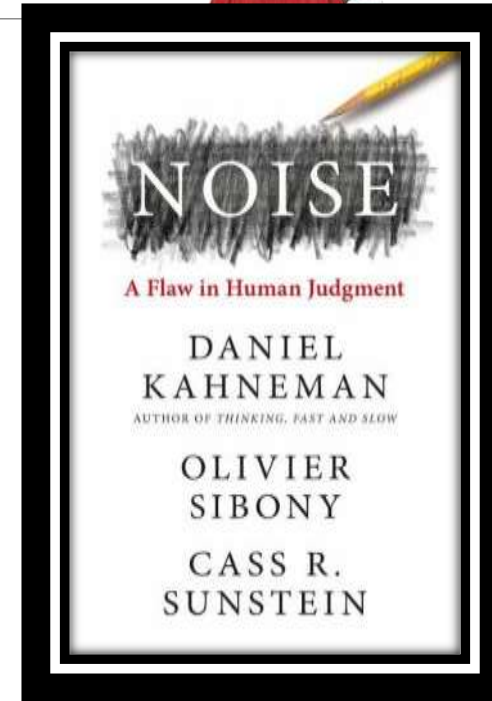
**Review your results and aim to do better each on each successive attempt.**



# “Reputation of the Instructor”



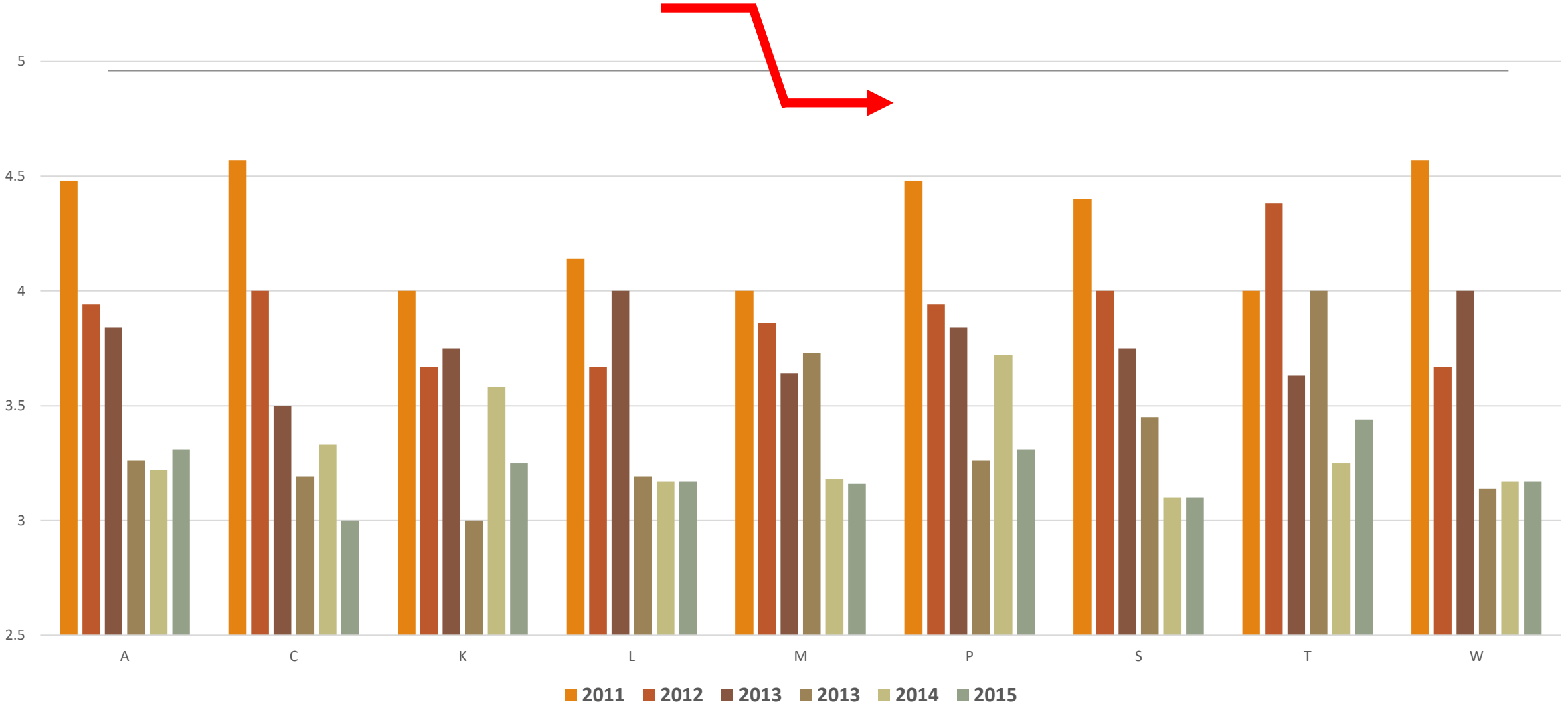
- ❖ Instructors are graded by pilots as “Hackers”, “Fair” and “Father Xmas”.
- ❖ Instructors are human and therefore there will always be a level of subjectivity.
- ❖ Unsuccessful pilots would **review their roster and adjust their preparation** in accordance with the reputation of the instructor.
- ❖ Some pilots even review the **reputation of the Captain or the First Officer** and adjust accordingly.
- ❖ The aircraft **shows no compassion or emotion** when an abnormal or emergency occurs. Only the correct procedure or correct flight handling will resolve the issue.



**Prepare for the worst and expect the best.**



# “Passed over for Upgrade to Command”



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- ❖ In fast growing airlines, FO's expect to become Captains within **3 to 4 years**.
- ❖ Legacy airlines normally **7 to 9 years**.
- ❖ When they see their colleagues being promoted and they are not, their grades start declining – **lose motivation**.
- ❖ However, they were **doing well initially** – so they have the ability.
- ❖ **Understanding** that there are only so many **slots**, that the top performers will get selected first, and that the selection is dependent on **fleet requirements**, will reduce the stress and anxiety of being passed over.

**Don't lose hope, work harder to be considered in the next round**



# “Domestic, financial & personal problems”

- ❖ When initially asked – **none** – protecting privacy.
- ❖ Later when trust is gained, **start admitting** they have issues.
- ❖ Examples:
  - ❖ Divorce and children removed
  - ❖ Arranged Marriage
  - ❖ Preparing for Command
  - ❖ Family not adjusting
  - ❖ Pilot found out father had passed away 3 hours before sim
- ❖ Question: **Can you do anything about the issue** while you are in the simulator or on the line?
- ❖ If you can – **ask to be rerostered**

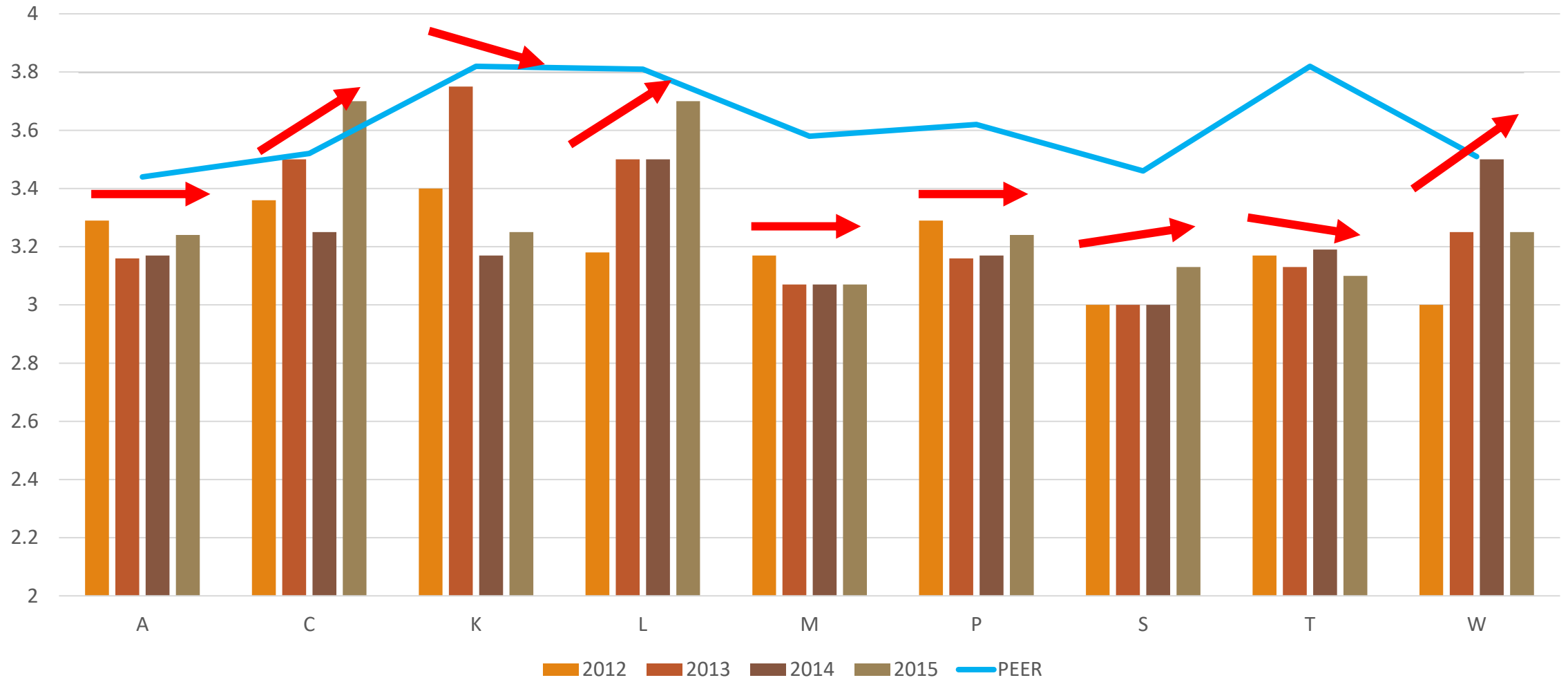


# “Direct entry captains”

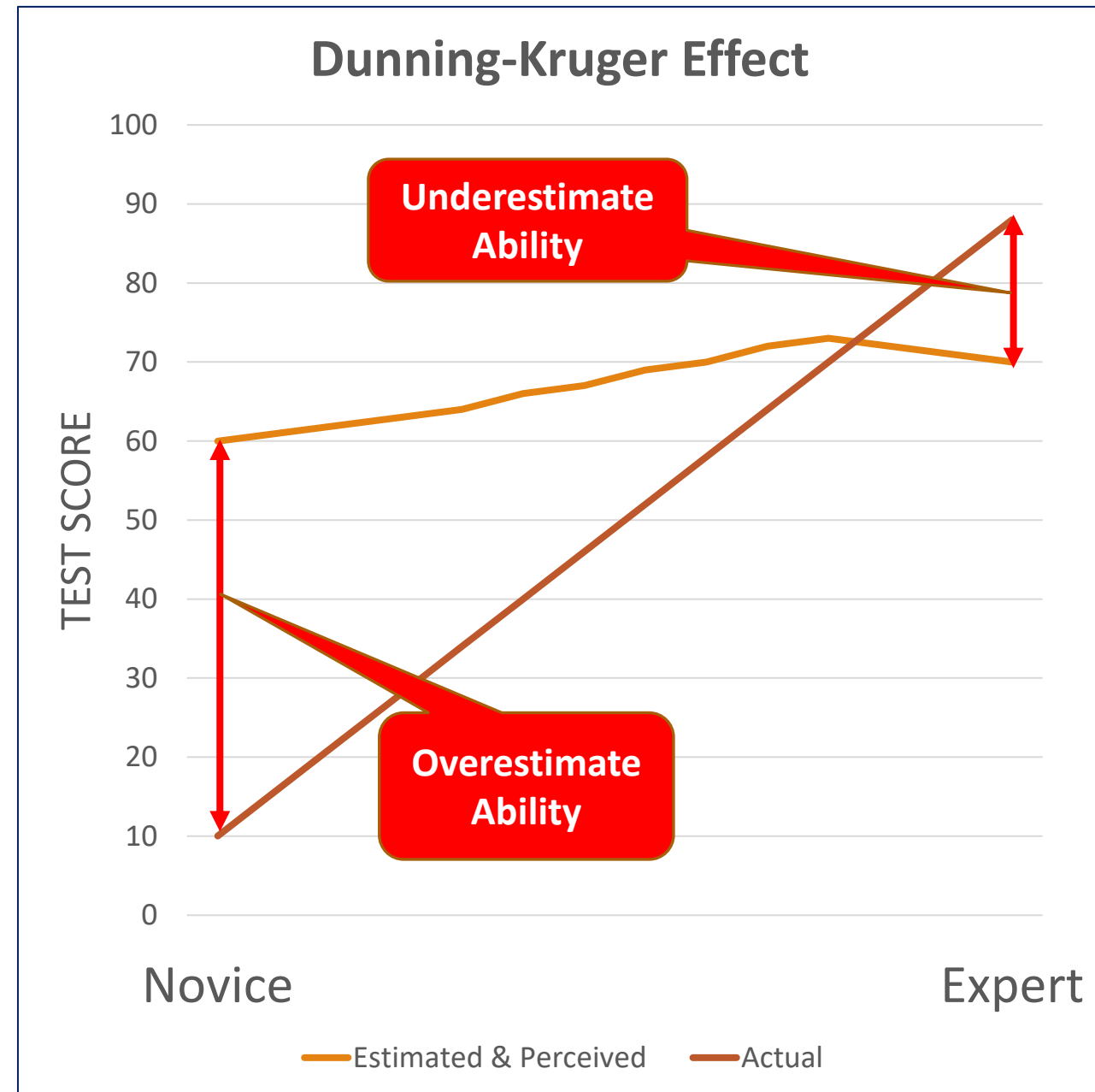


- ❖ **Only do the Operational Conversion** course and then released to line.
- ❖ They then resort to their **own comfort zone** (the previous airline).
- ❖ Very **confusing for the FO's** since the DEC is not doing it the company way.
- ❖ DEC's chance of **failing** the first PPC after conversion is **almost double** that of FO's.
- ❖ Might be better if airlines first put the captain in the right hand seat for three to four months to **adjust to the airline culture**.
- ❖ While not all airlines follow the concept of DEC's, the **recovery from Covid-19** will certainly have to follow this procedure.

# “Dunning-Kruger Effect”



- ❖ The pairing of this combination most probably **overlooked** in a lot of aircraft accidents/incidents.
- ❖ Very **difficult to convince** a novice that underperforms, that they are actually underperforming.
- ❖ **Best to show results and compare to peers. Provide the evidence.**



# “False Competence”

- ❖ They **do what they know** with flare and professionalism
- ❖ Use their **known procedures** to fix something that requires an alternate procedure
- ❖ The **correct procedure** will fix the problem immediately, but they don't know it
- ❖ They **do what they know**, instead of what they should be doing

**Fly with a full toolbox and know when and how to use each tool.**



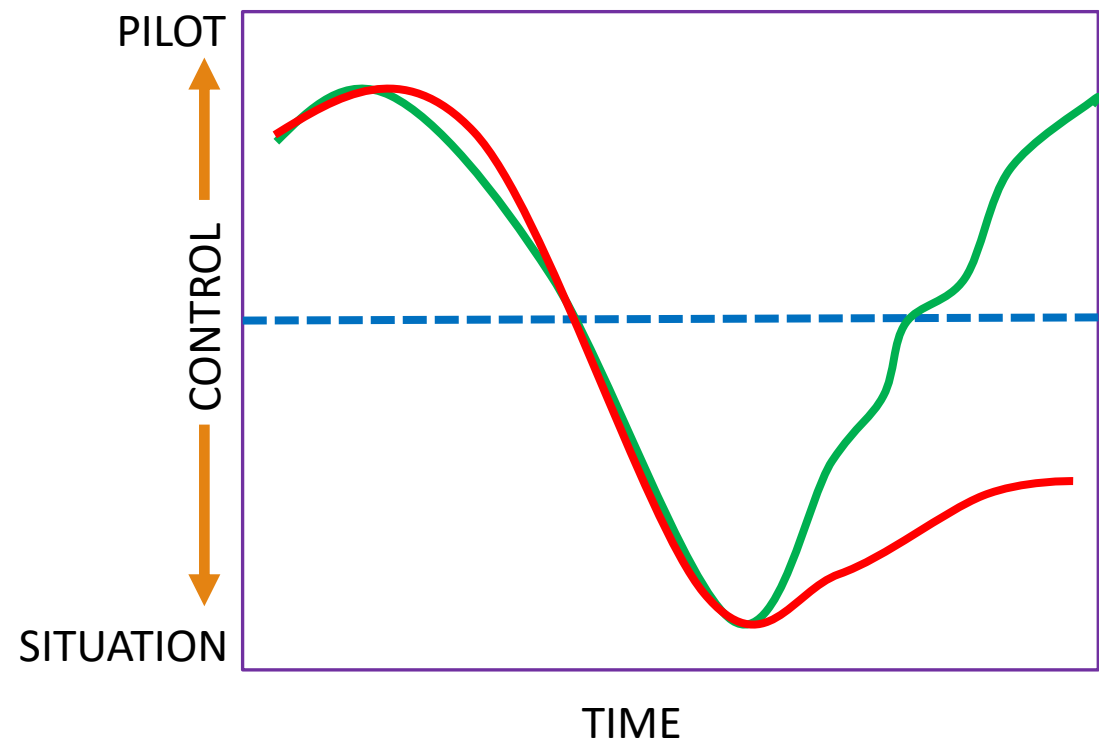
# “Lack of Resilience”

RESILIENCE



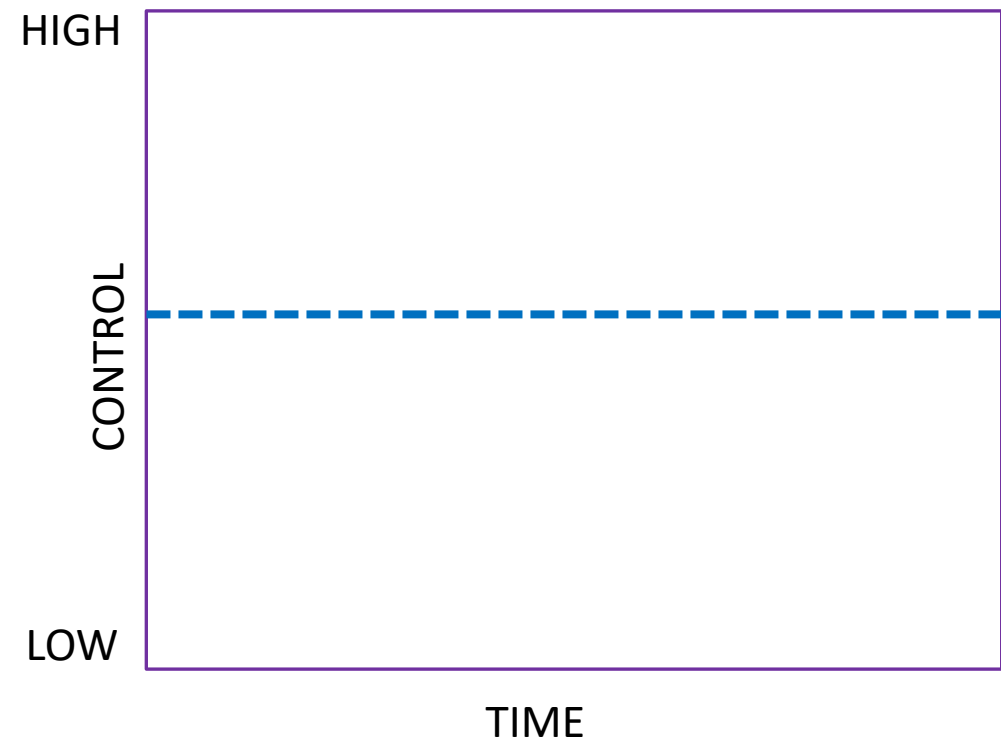
- ❖ Elements of **Resilience**:
  - ❖ Self Control, Adaptability, Optimism, Self-Sufficiency & Persistence
- ❖ Increase in **Stress Levels**
- ❖ Pre Frontal Cortex **Blocked**.
  - ❖ Short term memory, concentration, rational thought, inhibition, intellectual/social interaction
- ❖ Need to **clear mind** and reset.

**Regain control in steps – each successful step increases the perception of control**

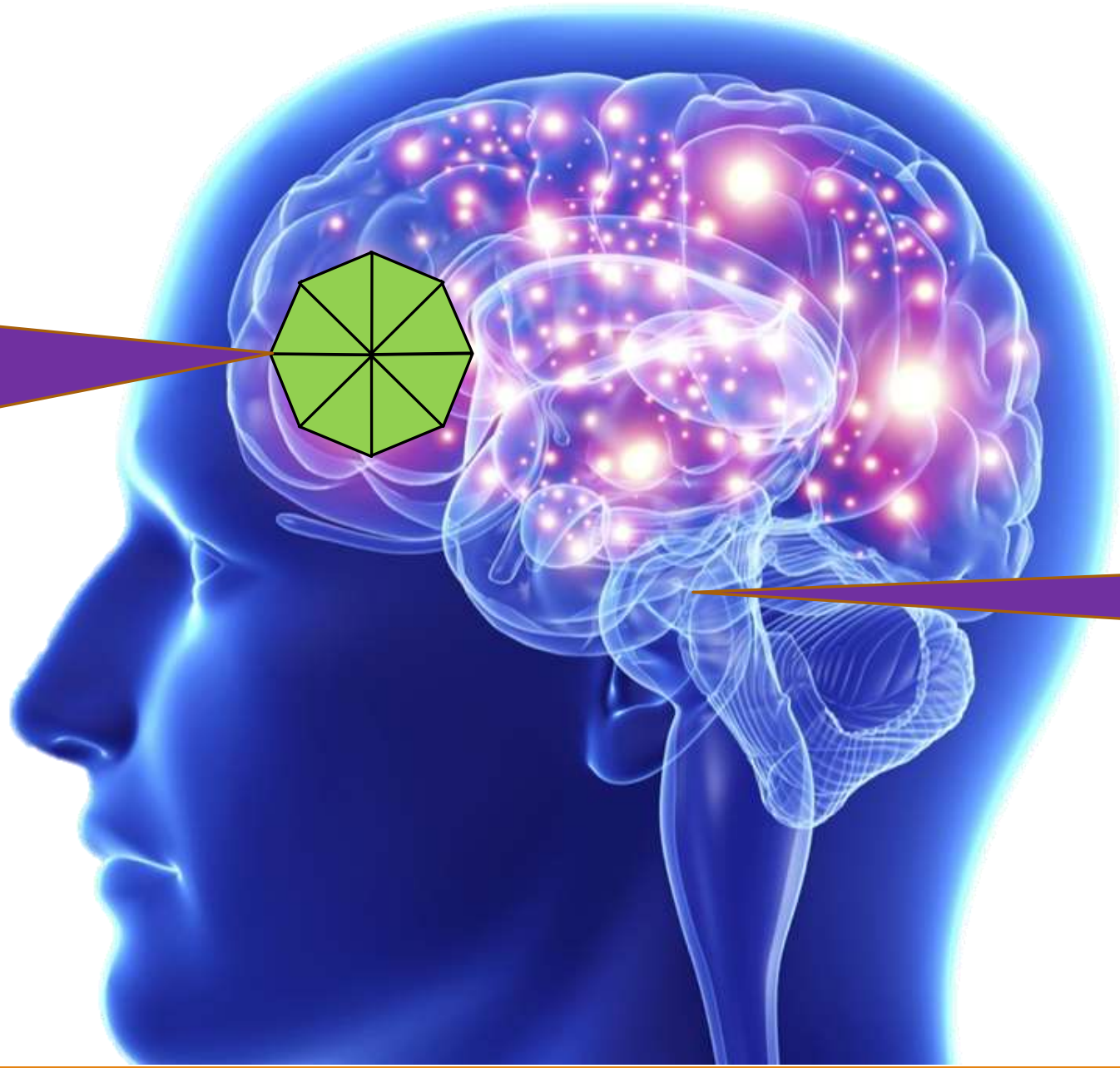


# “Progressive Startle Effect”

- ❖ **Startle effect** – sudden and unexpected event.
- ❖ Amygdala **shuts down** pre frontal cortex.
- ❖ Pre Frontal cortex required for **complex and challenging tasks**.
- ❖ **Stress** – Perception of **losing control** & inability to predict **short term future**.



**Pre Frontal Cortex**  
Required for complex, rational and challenging thought



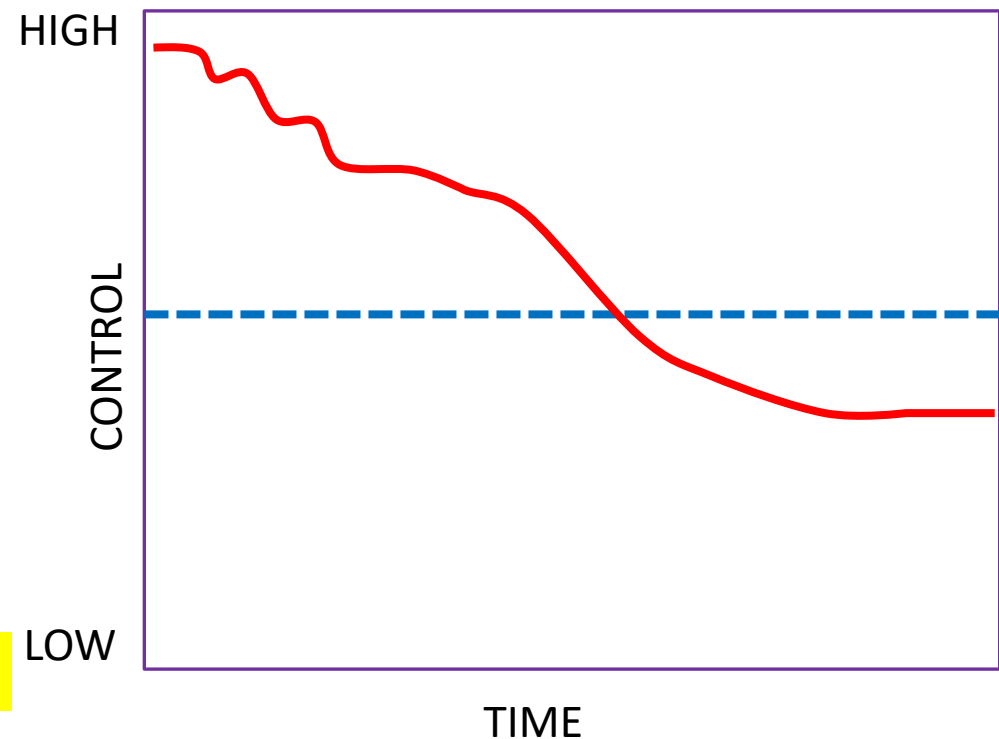
**Stress increases as perception of loss of control and inability to predict short term future, increases.**

**Amygdala**  
Fight, Freeze or Flight

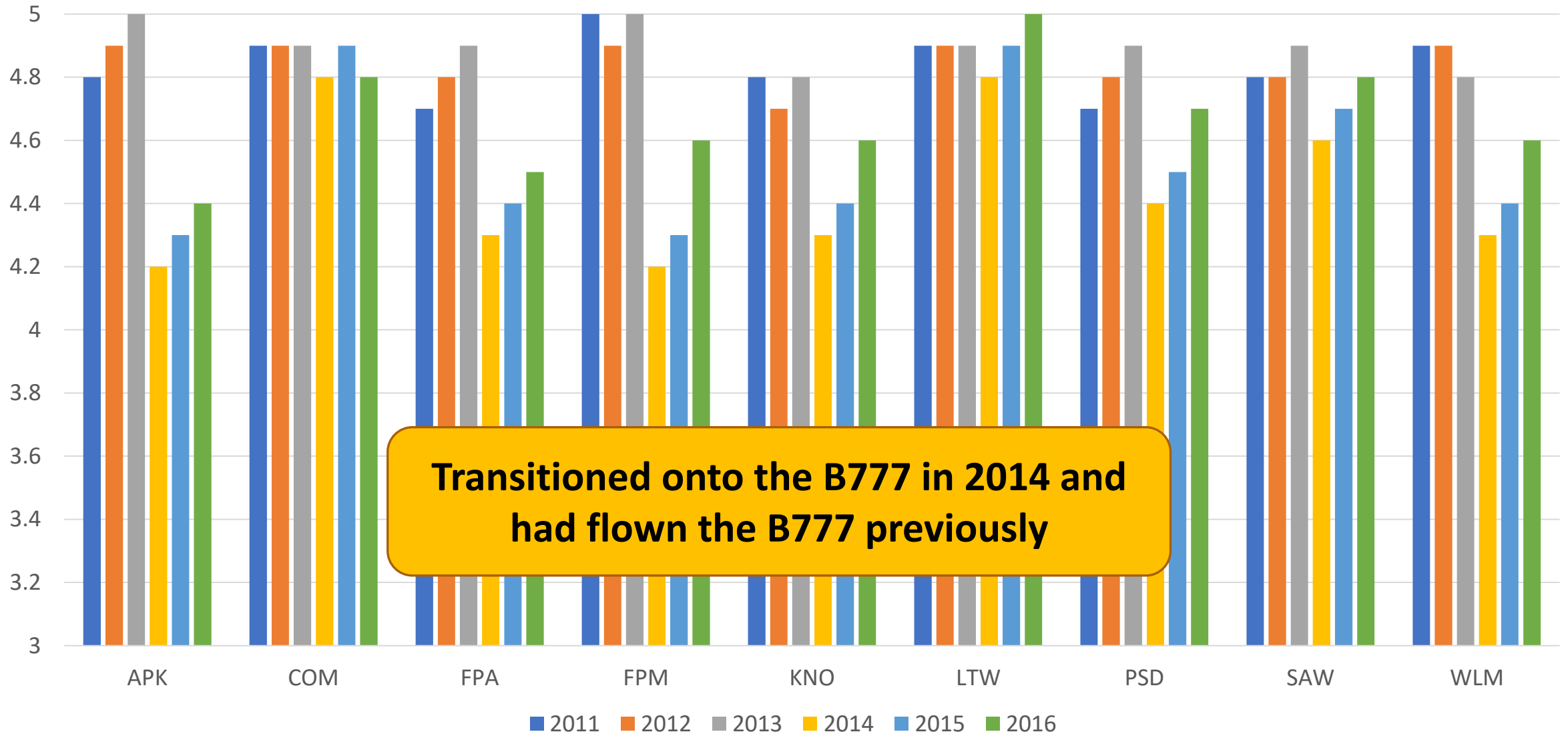


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- ❖ **Stress** – Perception of **losing control** & inability to predict **short term future**.
- ❖ **Initially does well**, but as sim session progresses does worse and worse till total loss of control.
- ❖ Needs to **clear mind** of previous event and tackle each subsequent event with clear mind.



# TRE on A380





# “Twin engine vs Four engine aircraft”



- ❖ A twin engine with one engine out is closer to **breaching safety margins** than a four engine aircraft with one engine out
- ❖ Pilots on four engine aircraft are exposed to a **double engine failure** in their operational conversion course and maybe once every three years
- ❖ Some pilots stated that they had **only been demonstrated** a double engine out
- ❖ Since the grading of competencies is based on how close a pilot breaches the safety margins, the chances of doing so on a twin engine is more likely due to **greater exposure**
- ❖ Pilots who were **below-, to average**, on a four engine aircraft, struggled initially when converting to a twin engine aircraft and required **additional training**

# The Twelve most common pitfalls or traps

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**“Its Just another Flight”**

**Rules of Engagement**

**Past Performance**

**Reputation of Instructor**

**Passed over for promotion to Captain**

**Domestic, Financial & Personal problems**

**Direct Entry Captains**

**Dunning Kruger Effect**

**False Competence**

**Lack of Resilience**

**Progressive Startle Effect**

**Twin Engine vs Four Engines**

# In Summary

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- ❖ The 12 traps or pitfalls do not cover all eventualities - they were found to be the most common.
- ❖ Pilots do not willingly or consciously try to be unsuccessful.
- ❖ However, in the words of a Flight Ops Training Manager and TRE:
  - ❖ “The overall knowledge, skills and attitude of the pilot is indicative from the first step. Those who come adequately prepared, with the required knowledge, a positive attitude and an interest in honing their skills, seeking alternatives and using all tools available to them, do well most of the time, even those with mediocre handling skills”
- ❖ An awareness of these pitfalls will aid both pilots and instructors in understanding why even experienced pilots get it wrong sometimes.

**Thank You for your Time**