



SUNCLASS AIRLINES – FLIGHT OPERATION AND TRAINING

# Recurrent training and checking in aviation – SIMTRANS sep23

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1927 – FIRST FLIGHT SIMULATOR

Recurrent training and checking – development in aviation

# Development through the last 50 years – HOW?

Aviation Safety: Fatalities per trillion RPK



# Development of simulator training



- 1930'es onwards
- Basic procedure
- Improve pilots basic procedure and knowledge
- **Improve reliability**
- **Procedure focused training**

- 1980'es more realistic simulators
- Digital possibilities to introduce failures and weather
- Focus on likely failures from the past 20 years – reliability of engines
- **Task focused checking and training**

- 2000
- Introduction of team training in simulators - multipilot
- Importance on non technical skills
- CRM
- **Task focused checking and team focused training**

- 2010 ongoing
- Knowledge skills and attitude becomes standard
- Threat and error management
- **Improve Resilience**
- **Competency based training and checking**

Crew Ressource Management

Human Error???

# Overview of aviation training requirements

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## Initial training, airline

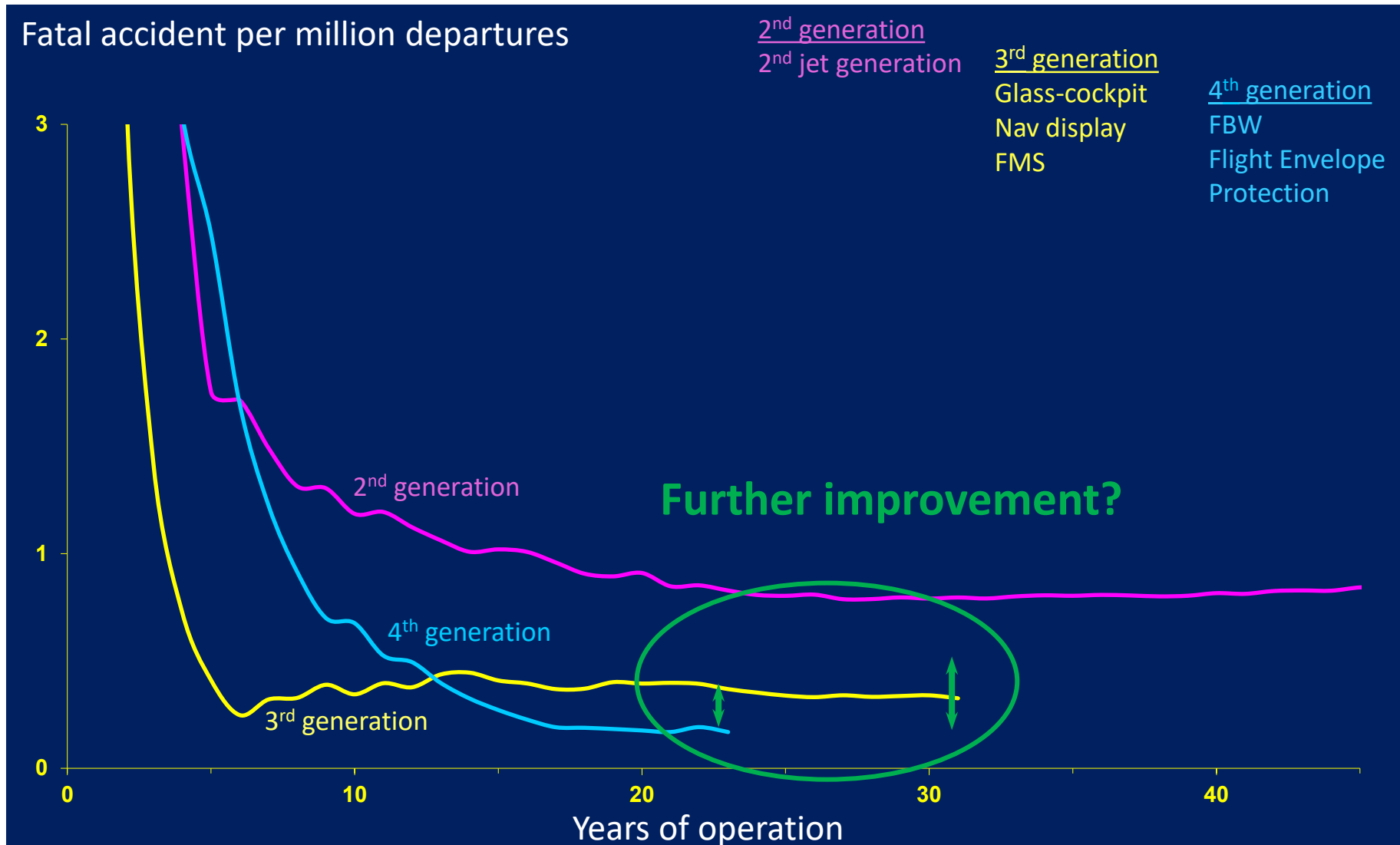
- > Typetraining
- > Operators conversion course
- > 1 month technical training
- > 1 months simulator training
- > 3 months line flying under supervision

## Regulations, minimum yearly training/checking

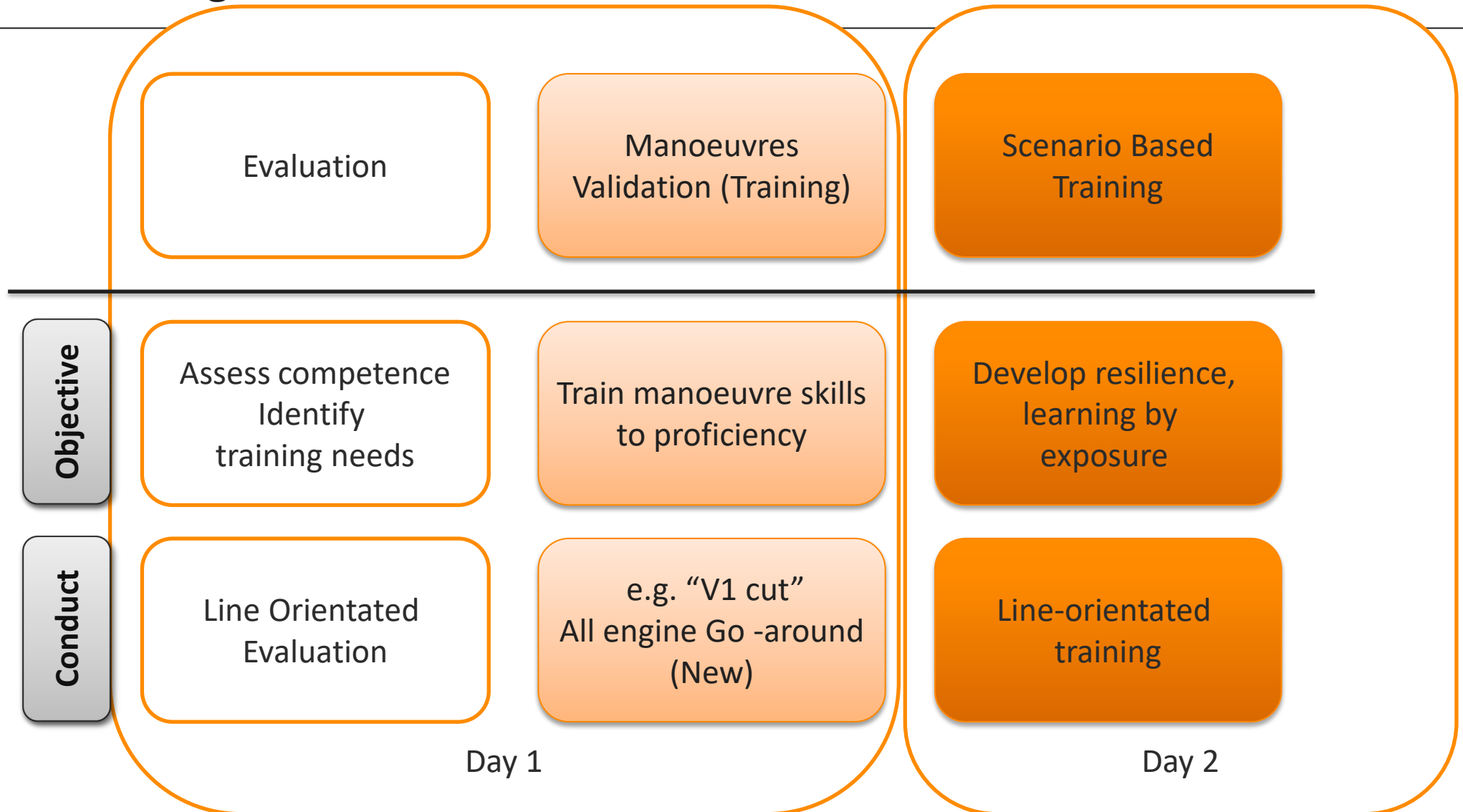
- > 2 Proficiency Check
- > 1 linecheck
- > 1 day Human Factors training
- > 1 day Safety and emergency
- > Winter briefing

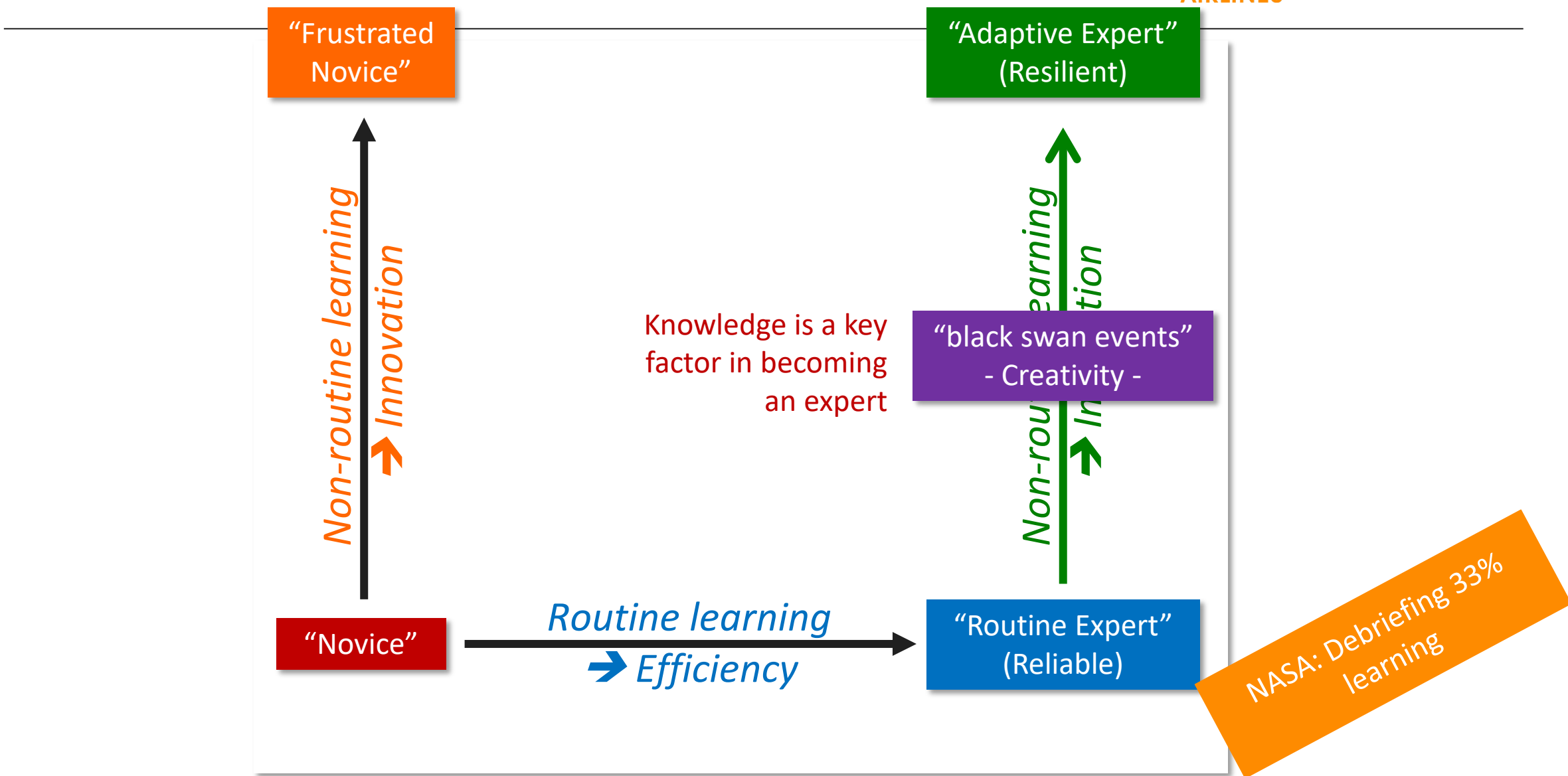


# Comparison by aircraft generation – new technology – is it always a safety enhancer?



# Simulator Training Phases







# Training topics - Gen4

Gen4 Jet Training Topics	A	Adverse weather	B	Adverse wind	C	ATC
		Automation management		Aircraft system malfunction		Engine failure
		Competencies non-technical (CRM)		Aircraft System management		Fire and smoke management
		Compliance		Approach, visibility close to minimum		Loss of communications
		Error management		Landing		Managing loading, fuel, performance errors
		Go-Around management		Runway or taxiway condition		Navigation
		Manual aircraft control		Surprise		Operations or type specific
		Mismanaged aircraft state		Terrain		Pilot incapacitation
		Monitoring & cross-checking		Workload, distraction, pressure		Traffic
		Unstable approach				Upset recovery
			Windshear recovery			

EBT Baseline Programme  
ICAO DOC 9995

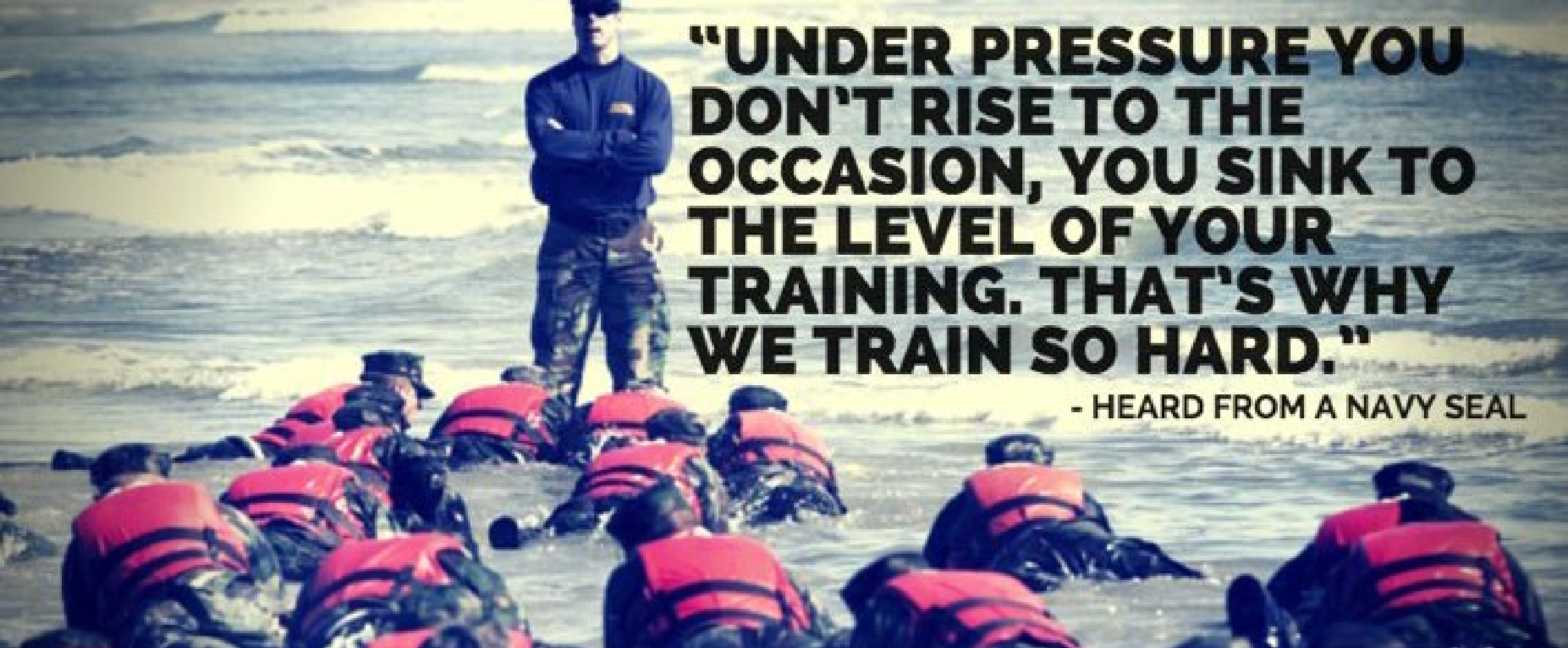
Absence from flying

Degraded manual skills

Degraded decision making

Degraded cognitive capacity

Surprise and startle effect

A photograph of a Navy SEAL instructor standing on a beach with his arms crossed, looking towards a group of SEALs. The SEALs are kneeling in a circle on the sand, wearing red life jackets and dark uniforms. The ocean waves are visible in the background.

**“UNDER PRESSURE YOU  
DON’T RISE TO THE  
OCCASION, YOU SINK TO  
THE LEVEL OF YOUR  
TRAINING. THAT’S WHY  
WE TRAIN SO HARD.”**

**- HEARD FROM A NAVY SEAL**

Training & checking

# Nylig erfaring... betyder det noget?

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Minimum **3 starter og landinger** på typen **hver 90 dage**

Ved fravær:

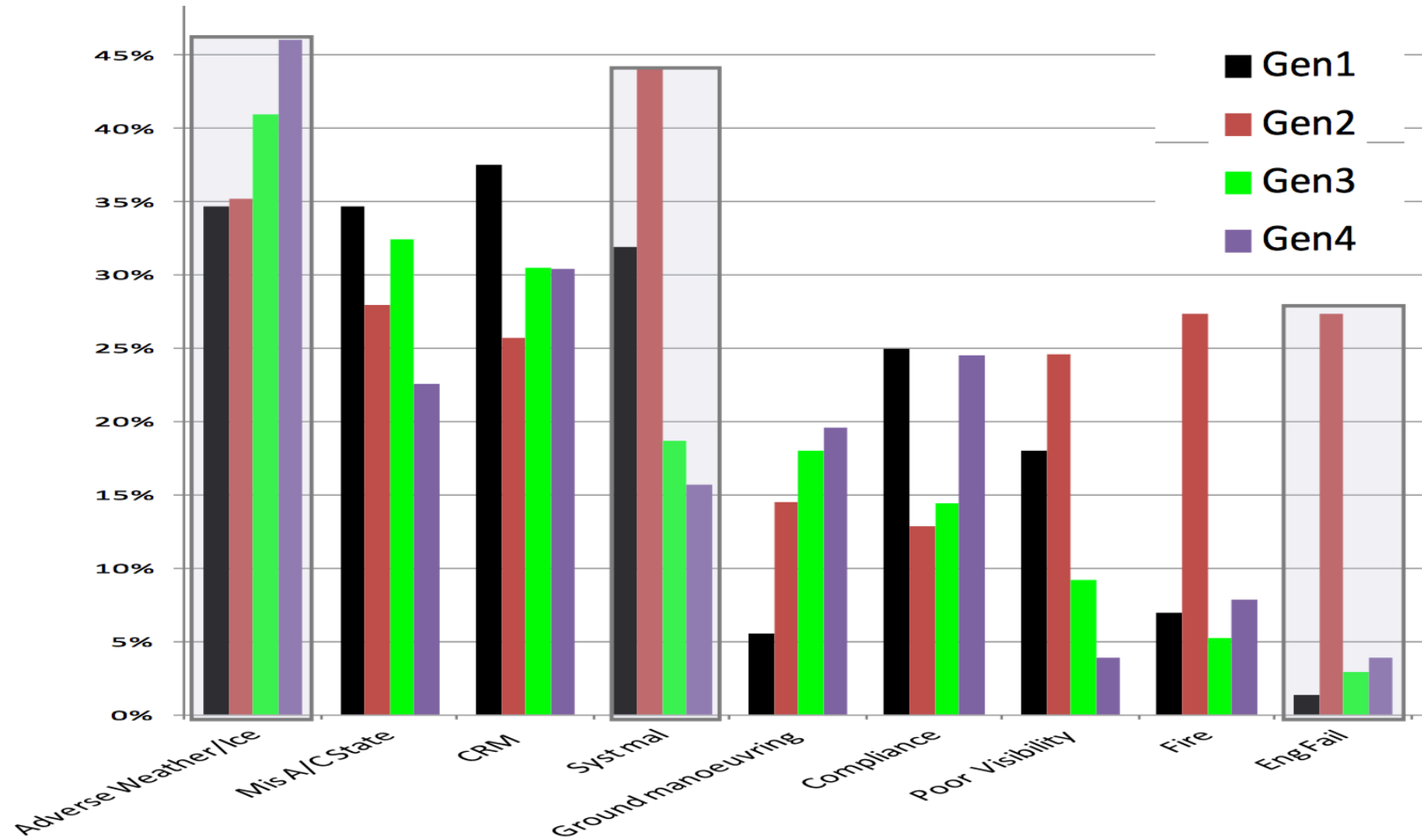
- › Simulator træning og supervision
- › Mere end **3** års fravær, ny initial typeuddannelse – no credit for past experience

**Special lufthavn eller område (special procedures)**

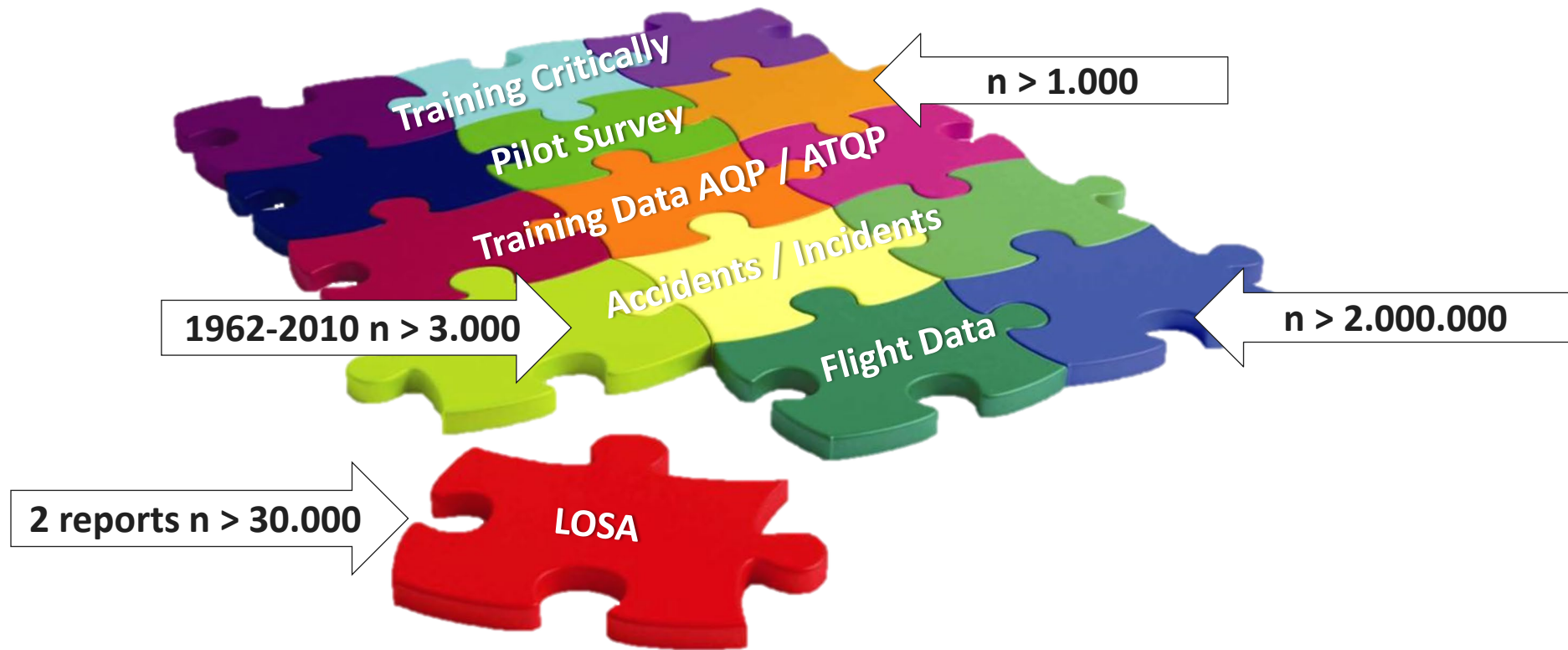
- › Requirement on training and recency described in training manual



# % of accidents & incidents with each factor – last 15 years



# Evidence Based Training – data analyses



# Competency grading used as data

## 30 Day Competencies

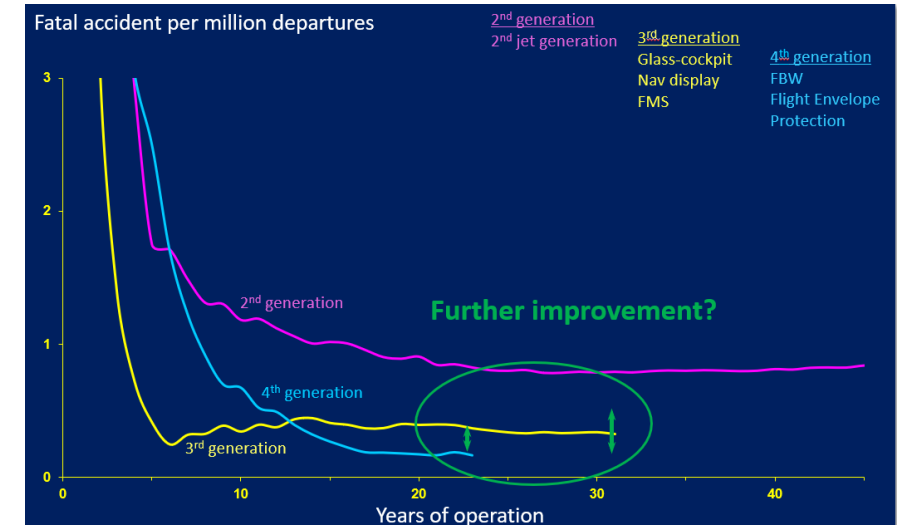
RANK	Flight Path Management, Manual Control	Flight Path Management, Automation	Know ledge	Application of Procedures	Workload Management	Problem Solving and Decision Making	Situation Aw areness	Leadership and Teamw ork	Communication
A321 CPT	4.2	4.0	4.3	3.9	4.5	4.4	4.5	4.1	4.3
A321 FO	4.0	4.1	4.2	3.8	4.0	4.3	4.0	4.0	3.9
A330 CPT	4.2	4.2	4.2	3.8	4.9	4.7	4.9	4.7	4.6
A330 FO	4.1	4.1	4.1	3.7	3.9	4.1	3.9	3.9	3.7
B757 CPT	4.4	4.3	4.4	4.4	4.5	4.4	4.5	4.5	4.4
B757 FO	3.9	3.9	4.0	4.0	4.0	3.9	4.0	4.2	3.7
B767 CPT	4.4	4.3	4.4	4.4	4.5	4.4	4.5	4.5	4.4
B767 FO	3.7	3.7	4.0	3.8	4.2	3.8	4.2	4.2	3.7

## 6 Month Competencies

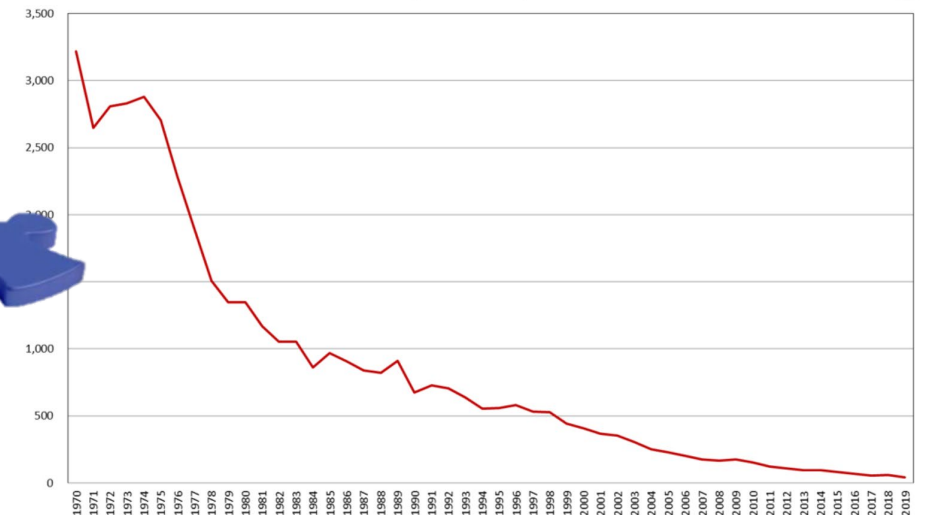
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A330 FO	4.1	4.1	4.1	3.7	3.9	4.1	3.9	3.9	3.7
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B767 FO	3.7	3.7	4.0	3.8	4.2	3.8	4.2	4.2	3.7

# How can we afford?

- > All crew are always proficient!
- > All roles are always occupied with qualified crew!
- > Standby cover of app. 7 %
- > Standby callout 50-70%
- > **ANY exceptions?**



Aviation Safety: Fatalities per trillion RPK





"Sometimes you need to look at Life  
from a different perspective."



