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Meeting The Next Generation Where They Are:

Microlearning and its Role in CBTA/EBT
Training Programs

Meeting The Next Generation Where They Are

Microlearning and its Role in CBTA & EBT Training Programs

- CBTA and EBT are the future of training
- Application of procedures and application of knowledge are notable areas of improvement for safety performance
- The next generation of pilots have come of age in an era of on-demand, bite-sized information
- Microlearning is a good vehicle for learning content that can influence behaviors in these competencies





Application
of Knowledge



Flight Path Management
using Automation



Problem Solving
and Decision Making



Application of Procedures and
Compliance with Regulations



Flight Path Management
Manual Control



Situational Awareness and
Management of Information



Communication



Leadership and Teamwork

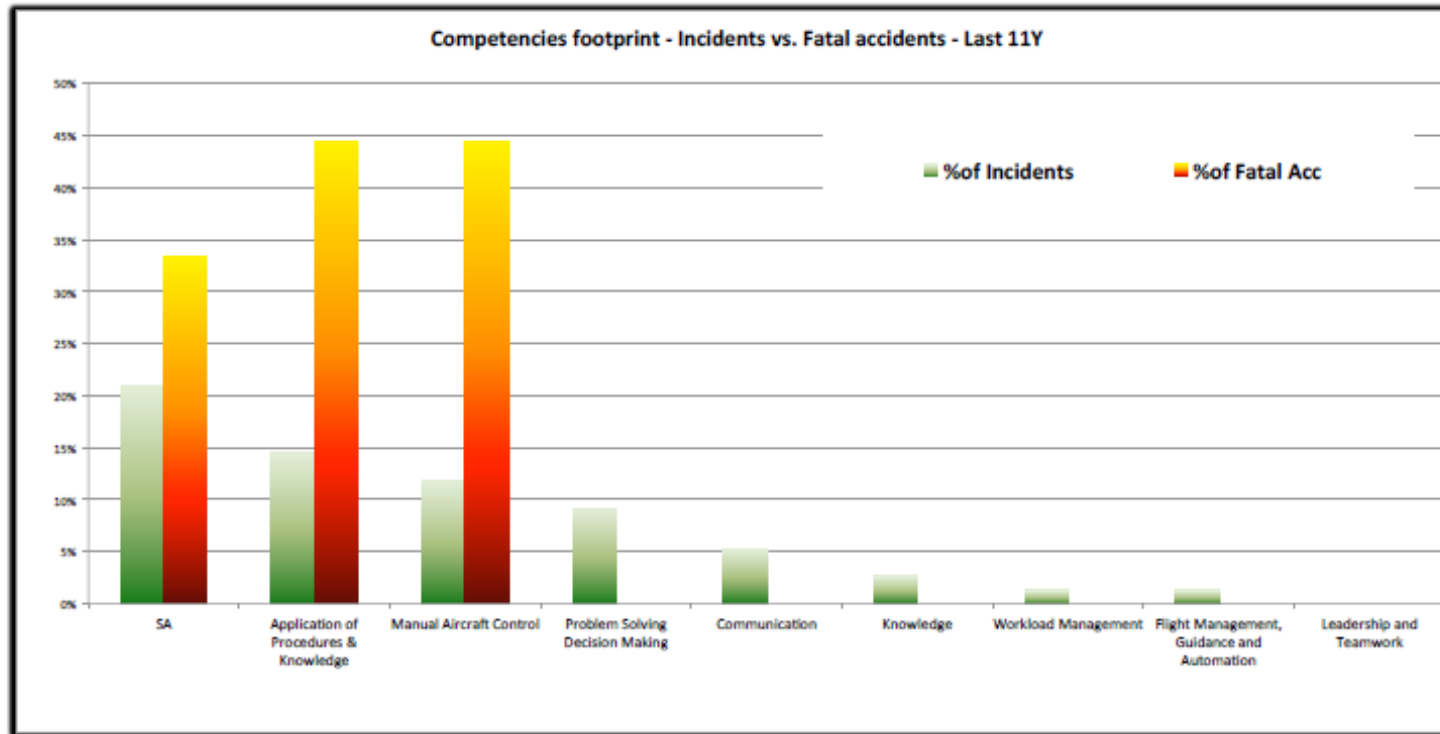


Workload Management

2.14.8 Competency Footprint

2.14.8.1 Distributions of Deficient Competencies in Incidents and Fatal Accidents

Deficient competencies in Incidents vs. Fatal Accidents (Generation 4)



The Problem ...

Deficiency in KNO and PRO cited in 45% of fatal accidents and 15% of incidents.

Current Paradigm

Mass Training Events for Type Rating, Followed by Smaller Mass Training Refreshers

- Based on part FCL 725a requirements, ICAO guidance for learning objectives, and the information in a typical FCOM, there are an average of **2,000** individual learning objectives for a Gen 3 or Gen 4 jet.



What do you Mean by “Learning Objective”?

- The pilot can ***differentiate*** between the AUTO, ALTN, and MAN modes of cabin pressurization control
- The pilot can ***explain*** the primary function and operation of the mach trim system
- The pilot can ***describe*** the meaning of the Range to Target Speed Dot on the VSD Flight Path Vector



Training Development Guide

Competency-based Training Methodology



Annex 1 of ICAO 9941 defines levels of learning and the verbs that correlate to training outcomes.

Microlearning: What it is, and What it is NOT

Microlearning is an **instructional unit** that provides a **short engagement** in an activity intentionally designed to elicit a **specific outcome** from the participant.

*Kapp, Karl and Defelice, Robyn.
Microlearning, Short and Sweet. ATD Press, 2019*

What Microlearning *IS* and *IS NOT*

IT IS	IT'S <u>NOT</u>
Instructional Unit	New
Short	All-Encompassing
Engaging	Static Resource Library
Active	Chopped Up Content
Intentionally Designed	Limited To Knowledge

Think of Microlearning as Legos ...



What is a Micro Lesson?

Specific Building Blocks Designed, Developed and Implemented in a Structured Way

- Individual bricks, manufactured to very specific criteria; components that can stand alone or come together to form a whole
- Can easily be rearranged
- Can easily be repurposed to build something else



Can Microlearning Change Behavior?

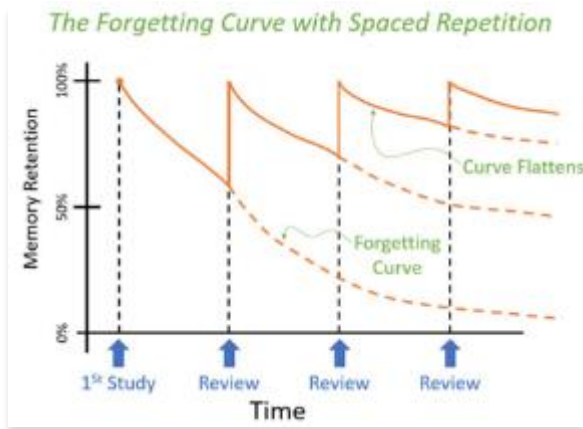
There is Evidence that Microlearning Can Effectively Change Learner Behavior

Efficacy of microlearning in prevention of Type 2 diabetes by lifestyle change in men at high risk - a randomized clinical trial in India.

Ramachandran, Ambady & Snehalatha, C & Ram, J & Selvam, Dr. Samayanan & Simon, M & Nanditha, Arun & Shetty, AS & Godsland, IF & Chaturvedi, N & Majeed, A & Oliver, Nick & Toumazou, Christofer & Alberti, George & Johnston, Desmond. (2013).



Microlearning Can Change Behavior, but How Does it Apply to Aviation?



Spaced Repetition

IATA

9.2 Trainee Performance

According to the industry best practices, the AOC or ATO policy should reflect the following:

- The trainee should demonstrate an **adequate level of performance** corresponding to a **grade 3** for each pilot, and instructor/evaluator competency.
- The trainee may demonstrate a **minimum acceptable level of performance** corresponding to a **grade 2** within a limited number of pilots, or instructor/evaluator competencies.

Competency Assessment	Competency	Trainee Performance	Training Organization
HOW WELL	Graded	Competent metric	Requisite training
not/satisfactory	1	NO	required
minimal acceptable	2	YES	refer to the policy
adequately	3	YES	not required
effectively	4	YES	not required
exemplary manner	5	YES	not required

EBT Assessment



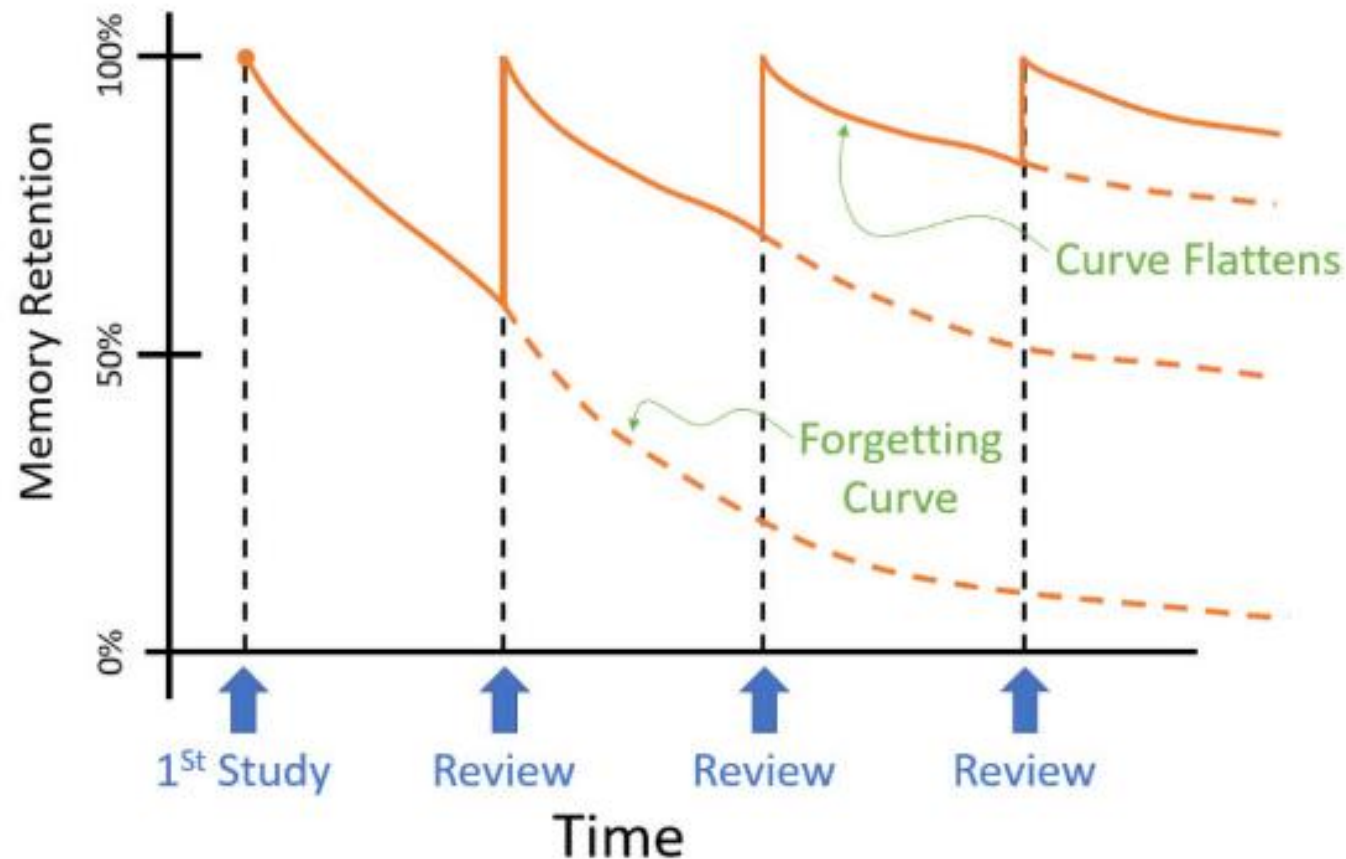
Self-Guided



Adaptive Learning

Spaced Repetition Between Training Events

The Forgetting Curve with Spaced Repetition



On-Demand Self-Guided Learning

The next generation of pilots expects information on-demand



Microlesson Content in EBT Assessments



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Observation relating specifically to the competency being assessed

Competency Assessment	Competency	Trainee Performance	Training Organization
HOW WELL	GRADING	Competent metric	Remedial training
ineffectively	1	NO	required
minimal acceptable	2	YES	refer to the policy
adequately	3	YES	not required
effectively	4	YES	not required
exemplary manner	5	YES	not required

Adaptive Learning – The Future of Refresher?



Q&A
THANK YOU!



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