apats2024 SINGAPORE

CBTA Workshop

- Secrets of successful evacuation -

Dr. Mizuki Urano

Aviation Safety Advocate

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Agenda

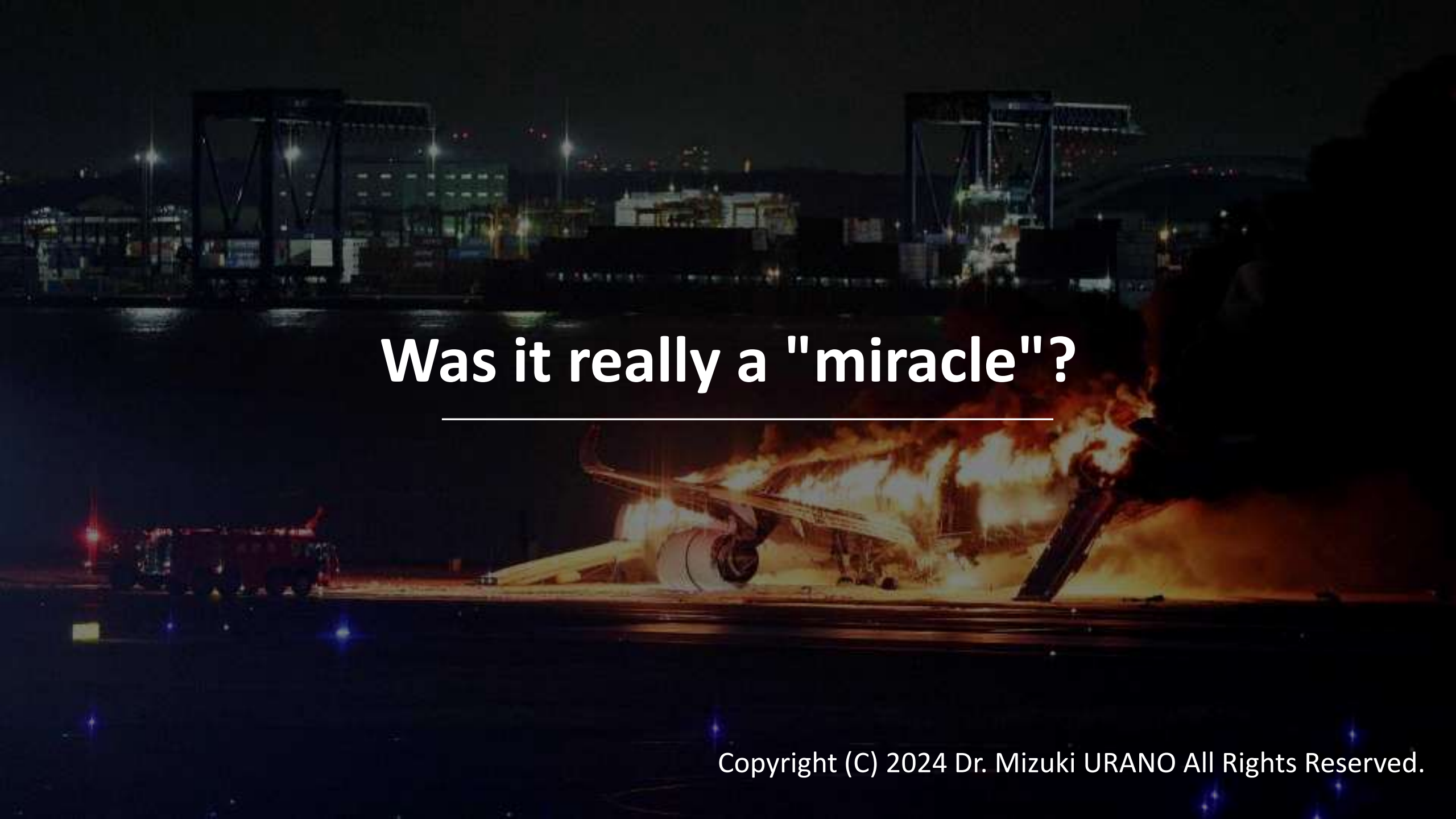
1. Safety Ⅱ
2. ICAO Cabin Crew Competencies
3. Evaluate performance
4. Adapted competency model and competency assessment

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Introduction

A Critical Proposal for a “Miraculous Evacuation”

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.



Was it really a "miracle"?

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

JL 516 Accident

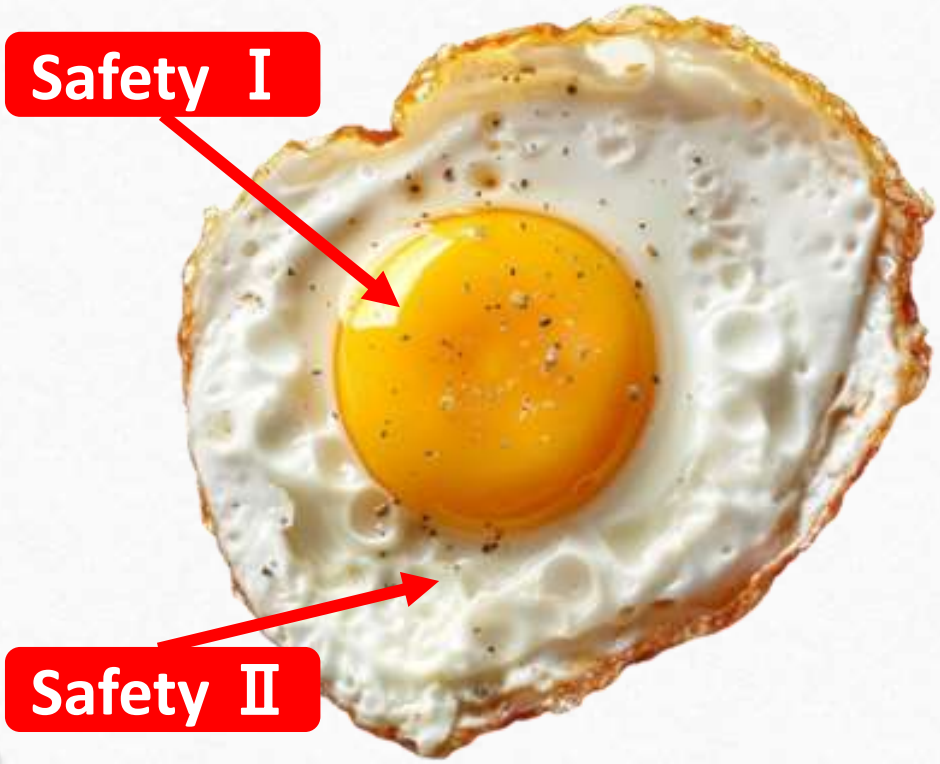
- During the evacuation, PA system did not work, so CCMs **used a megaphone and their own voices to guide PAXs**.
- CCMs **identified the exits** that would allow safe evacuation and all PAXs and crew evacuated through 3 exits.

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

PART 1
Safety Ⅱ

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Why competencies?



- Key elements for **proactive safety management**
- Change the definition of safety from “avoiding that something goes wrong” to **“ensuring that everything goes right”**
- Learn from **positive performance**

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

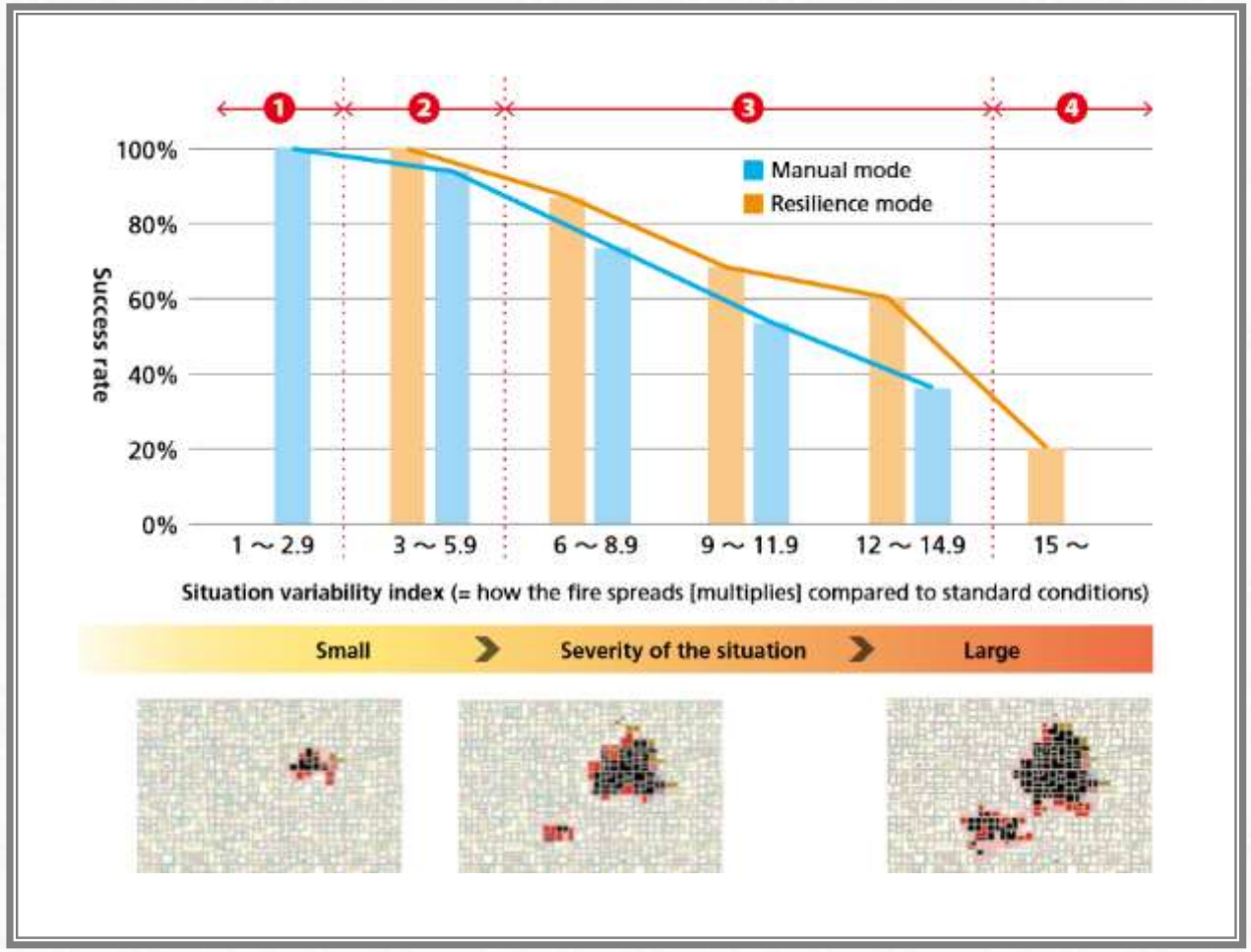


Figure1. Simulation experiment to observe human decision-making by modelling fire scenes by Dr. Miwa Nakanishi, 2018.

Resilience

- When a situation is about 6 times worse than normal, better outcomes can be attained by **acting resiliently** as the circumstances dictate rather than by following steps as outlined in the manual.

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Resilience Competence

What do you do when you are under time pressure?

What do you do when information is missing?

Know-Why

What will you do if something unexpected happens?

How do you prepare for the work?

Do you adjust your behaviour according to the situation?

What is the best way to carry out the task?

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

PART 2

ICAO Cabin Crew Competencies

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Overview of ICAO Doc 10002

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

ICAO Doc 10002-Edition 2

- **New Chapters**
  - CBTA (Competency-based training and assessment) approach to cabin crew training and assessment
  - Trafficking in persons
  - Training facilities and devices (new checklists for device approval)
  - Scenario-based training
  - Transitioning from traditional to competency-based assessments

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

CBTA approach to Cabin Crew Training and Assessment

Principles:

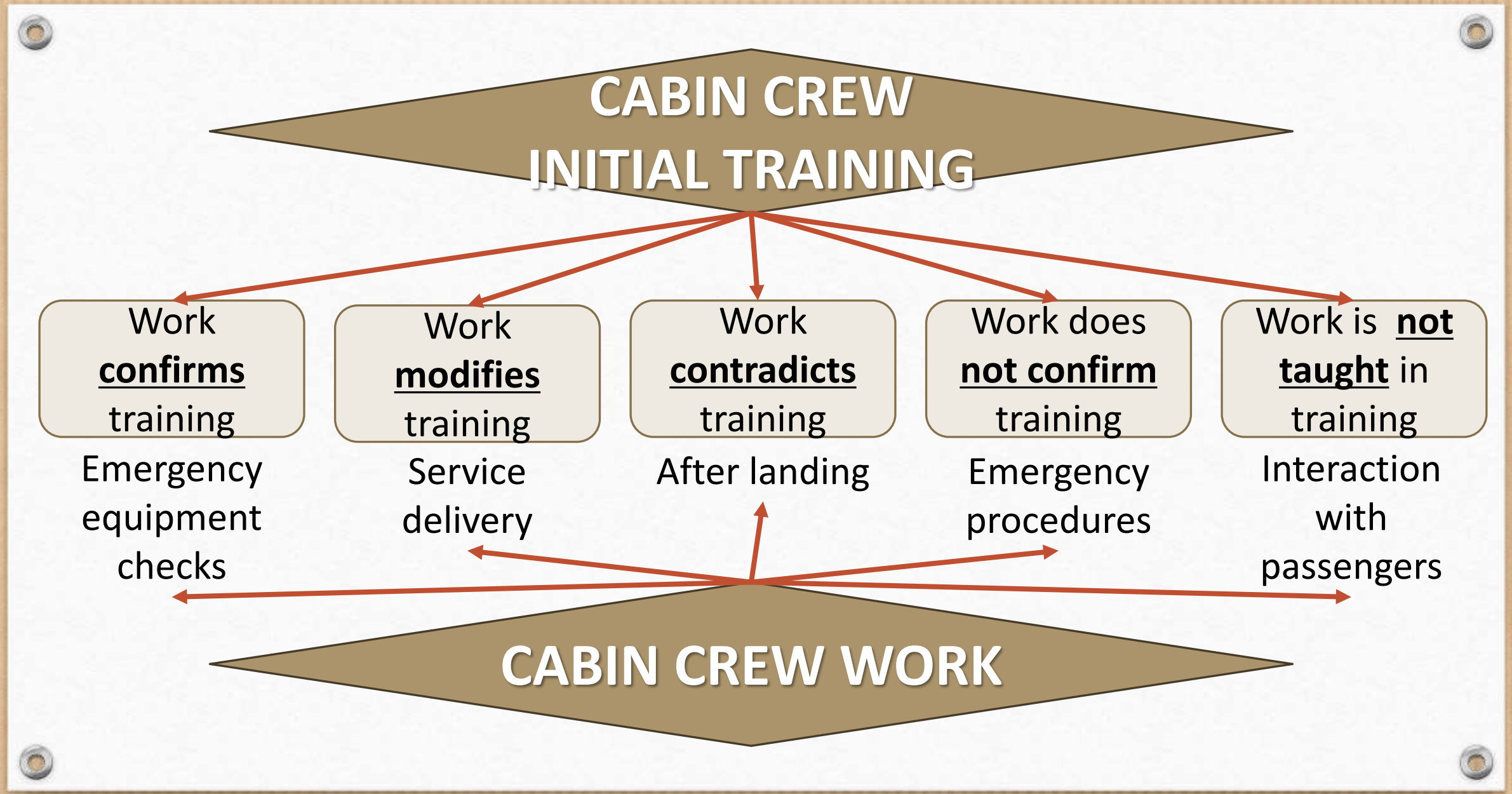
- Link between competencies, training, performance and assessment
- Clear performance criteria
- Calibration of instructors’ and evaluators' judgements

Goal: Ensure a competent cabin crew workforce for safe and efficient operations

Benefits:

- Integration of knowledge, skills and attitudes
- Ability to cope with predictable and unforeseen situations
- Supports continuous learning and performance improvement

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.



Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Transitioning from traditional to CBTA

Develop	Conduct	Apply	Challenge	Shift	Establish
Develop the operator's own programme to meet its specific needs and target operational issues	Conduct with the approval of and in collaboration with the State	Apply an ISD methodology to analyse, design, develop, implement and evaluate the training programme	Challenge instructor/ evaluator reliability and data collection and analysis	Shift from the notion of errors to the notion of **error management**	Establish a rating scale and success criteria

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

ICAO competency framework for cabin crew

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Competency Framework

- A description of **cabin crew performance** in the particular operational and environmental context
- **A generic model** applicable to all cabin crew members
- Examples of **observable behaviours** that may be used to assess cabin crew competency in a training environment or during line checks
- Reflect the operator's **specific local environment and requirements**

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Core Competencies for Cabin Crew

Application of Policies and Procedures

Communication

Leadership and Teamwork

Passenger Management

Problem Solving and Decision Making

Situation Awareness and Management of information

Workload Management

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

ICAO competency framework for cabin crew

Communication

Description	Observable Behaviours	
Communicates through appropriate means in the operational environment, in both normal, abnormal and emergency situations	OB 2.1	Determines that the recipient is ready and able to receive information
	OB 2.2	Selects appropriately what, when, how and with whom to communicate
	OB 2.3	Conveys messages clearly, using designated common language (e.g. multilingual flight/cabin crew)
	OB 2.4	Confirms that the recipient demonstrates understanding of important information
	OB 2.5	Listens actively and demonstrates understanding when receiving information
	OB 2.6	Asks relevant and effective questions
	OB 2.7	Uses appropriate escalation in communication to resolve identified deviations
	OB 2.8	Uses and interprets non-verbal communication in a manner appropriate to the organizational and social culture
	OB 2.9	Adheres to standard operator phraseology and procedures

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

PART3
Evaluate performance

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Training

- **Initial training**
  - ensures that each trainee acquires **the competencies, knowledge and skills required to perform the tasks** related to the safety of passengers and flight during normal, abnormal and emergency situations.
- **Recurrent training**
  - ensures that cabin crew members, by **practicing most tasks and the associated competencies**, maintain the required level of performance.

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Initial Training

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Initial training
Example of a task – decompression

- **Task and Sub-tasks**

5.5.3 Cabin pressurization problem/decompression

Task 1.3: Manage cabin pressurization problem/decompression	
Sub-tasks:	
1.3.1	Recognize signs and symptoms of cabin pressurization problem/decompression
1.3.2	Don nearest oxygen mask, if installed
1.3.3	Secure self and occupy nearest seat, if available
1.3.4	Apply communication procedures
1.3.5	Apply post-decompression procedure
1.3.6	Complete the applicable documentation

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Initial training
Example of a task – decompression

- **Knowledge**

a) hypoxia: elementary physiology of oxygen intake and utilization;

b) general effects of hypoxia: recognition and dangers associated with hypoxia's euphoric effect; aggravation by exertion; individual susceptibility in healthy persons; increased susceptibility in some medical conditions; altitude/time-of-useful-consciousness relationships (duration of consciousness without supplemental oxygen);

c) body gas volume changes: abdominal pain on cabin altitude ascent; "blocked ears" on emergency descent of aircraft;

d) effects on the human body of reduced atmospheric pressure;

e) effects of rapid decompression on any unsecured objects or persons;

f) recognition of conditions in the cabin and the potential threat to flight safety caused by rapid and slow decompressions;

g) concept of cabin altitude profiles during rapid decompressions and cabin pressurization problems; potential causes of rapid decompression (e.g. fuselage failure, window/door blowout, air pack failure, etc.) and cabin pressurization problems (e.g. door seal leaks, cracked windows, system malfunctions, etc.);

h) location, pre-flight check and use of portable oxygen devices;

i) immediate actions required to be taken in the case of rapid decompression or cabin pressure leaks;

j) operation of passenger oxygen systems and the use of oxygen masks;

k) procedures for crew communication and coordination; for passenger communications during a rapid decompression and cabin pressurization problems; identification of specific information to be relayed to the flight crew and back-up means of communication should normal systems be rendered inoperative (e.g. structural damage);

l) knowledge of anticipated flight crew response (e.g. emergency descent) and its effect on the cabin and its occupants;

m) need of cabin crew members to obtain oxygen first before attending to passengers' needs;

n) post-decompression procedures; and

o) procedures for completing the applicable documentation, such as an incident report form.

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Initial training
Example of a task – decompression

- **Competencies**

a) application of policies and procedures;

b) communication;

c) leadership and teamwork;

d) passenger management;

e) problem solving and decision making; and

f) situation awareness and management of information

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Example of an assessment sheet for a task
1. Task assessment

Decompression Drill	Practice	1	2	3
Fit nearest oxygen mask				
Secure yourself in nearest seat				
Hear PIC PA – “Cabin crew carry out follow up duties”				
Transfer to portable oxygen bottle (turns on bottle)				
Assist crew passengers				
Assess cabin – Area as per positional duties				
Report to CM/CSM/PIC				
Result:	**Complete**	**C**		**NYC**

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Example of an assessment sheet for a task
2. Competency assessment

Cabin Crew Skills & Behavioural Indicators Decompression

Decision Making	
Desired	**Undesired**
➢ Perceives and accurately identifies situations including validating the information. ➢ Employs appropriate decision-making process. ➢ Applies the appropriate problem-solving strategies and procedures.	➢ Does not make a decision. ➢ Is focused on fixations. ➢ Makes incorrect decision. ➢ Demonstrates lack of proficiency. ➢ Acts based on judgements or assumptions without complete information.
Behaviour observed when/where (specify) :	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Example of an assessment sheet for a task
2. Competency assessment

Cabin Crew Skills & Behavioural Indicators Decompression

Teamwork and Leadership	
Desired	**Undesired**
➢ Maintains open communication and encourages team participation. ➢ Works quickly to constructively resolve conflict and disagreements. ➢ Follows and provides instructions when necessary. ➢ Gives/receives constructive feedback.	➢ Ignores other crew members' input or concerns. ➢ Does not follow instructions. ➢ Does not take part in team consultation or decision-making.
Behaviour observed when/where (specify) :	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Recurrent Training

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Recurrent training
Example of competency assessment

Table A-1. Example of a rating scale for the communication competency

Grade		Performance Criteria
1	Unsatisfactory	— Lack of ability to relay information or to accurately answer queries.
2	Below standard	— Is hesitant in delivery of speech — Delays in answering queries — Uses inaccurate information given — Uses incorrect terminology
3	Standard with debrief	— Is confident in delivery of speech — Correct terminology as per standards — Some details require clarification — Conveys message adequately with some details missing
4	Standard	— Is confident in delivery of speech — Uses correct terminology as per operator standards — Some details require clarification — Conveys message effectively
5	Excellent	— Uses concise, specific terminology. — Transmits all details accurately — Conveys message without clarifications required — Pro-actively communicates with others

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Example of an overall assessment sheet

TASK	
1	Take brace position
2	Shout brace commands
3	Panic Control
4	Assess inside and outside conditions
5	Judgement
6	Don life jacket
7	Obtain evacuation order or initiate evacuation
8	Open exit
9	Hold on to fixed part of the aircraft to prevent fall
…	

COMPETENCY							
Competency	OBs	Effective	Preferred	Competency	OBs	Effective	Preferred
Application of policies and procedures	OB 1.1			Communication	OB 2.1		
	OB 1.2				OB 2.2		
	OB 1.3				OB 2.3		
Competency	OBs	Effective	Preferred	Competency	OBs	Effective	Preferred
Teamwork and leadership	OB 3.1			Passenger management	OB 4.1		
	OB 3.2				OB 4.2		
	OB 3.3				OB 4.3		
Competency	OBs	Effective	Preferred	Competency	OBs	Effective	Preferred
Situation awareness and management of information	OB 5.1			Problem solving and decision making	OB 6.1		
	OB 5.2				OB 6.2		
	OB 5.3				OB 6.3		
Competency	OBs	Effective	Preferred				
Workload management	OB 7.1						
	OB 7.2						
	OB 7.3						

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

PART4

Adapted competency model and competency assessment

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Example of an adapted competency model

Competency	Explanation		
	Description	**Generic OBs**	**Scenario-based key OBs**
Communication	Communicates through appropriate means in the operational environment, in both normal, abnormal and emergency situations	OB 2.1 Determines that the recipient is ready and able to receive information OB 2.2 Selects appropriately what, when, how and with whom to communicate OB 2.3 Conveys messages clearly, using designated common language OB 2.4 Confirms that the recipient demonstrates understanding of important information OB 2.5 Listens actively and demonstrates understanding when receiving information OB 2.6 Asks relevant and effective questions OB 2.7 Uses appropriate escalation in communication to resolve identified deviations OB 2.8 Uses and interprets non-verbal communication in a manner appropriate to the organizational and social culture OB 2.9 Adheres to standard operator phraseology and procedures	• Adopts an appropriate what, when, how and with whom to communicate to able to work within the team across roles. • Listens actively and demonstrates understanding when receiving information. • Confirms that the recipient demonstrates understanding of important information and negotiate to build consensus.

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Example of a competency assessment

Competency	Performance Criteria		Rating	Comments
	Final competency standard	**Conditions**		
Communication	1. The sharing information and prior experience, **actively** seeking opinions, giving input not just when requested but also **proactively**. 2. **Positive** responses to inputs (e.g giving acknowledgement, repeating messages).	➢ Smoke in the cabin ➢ High passenger load ➢ Fire fighting	☐ 1 Fail ☐ 2 Legal (Needs additional training) ☐ 3 Fit	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

<Group Activity>

Build your own competency model and assessment criteria

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Scenario
-Evacuation on land-

- **Training Device:** Cabin Simulator
- **Situation:** Landing on land

- **Condition/state cabin:** No.2 engine (L-side) exploded soon after takeoff, fuel leak was observed, no smoke nor fire in CBN, many non-English speaking PAXs in AFT.
- **Systems:** IFE system failure, all other systems and equipment available.

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Application of policies and procedures
＜Adapted competency model＞

Competency	Explanation		
	Description	**Generic OBs**	**Scenario-based key OBs**
Application of policies and procedures	Identifies and applies appropriate policies and procedures in accordance with published operating instructions and applicable regulations	OB 1.1 Identifies where to find policies and procedures OB 1.2 Applies relevant policies and procedures OB 1.3 Applies procedures or adapts them to ensure safety OB 1.4 Operates cabin systems and equipment OB 1.5 Complies with applicable policies and procedures	● … ● … ● … ● …

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Application of policies and procedures
＜Competency assessment＞

Competency	Performance Criteria		Rating	Comments
	Final competency standard	Conditions		
Application of policies and procedures 	1. … 2. …	➢ … ➢ … ➢ …	☐ 1 Fail ☐ 2 Legal (Needs additional training) ☐ 3 Fit	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Communication
＜Adapted competency model＞

Competency	Explanation		
	Description	**Generic OBs**	**Scenario-based key OBs**
Communication	Communicates through appropriate means in the operational environment, in both normal, abnormal and emergency situations	OB 2.1 Determines that the recipient is ready and able to receive information OB 2.2 Selects appropriately what, when, how and with whom to communicate OB 2.3 Conveys messages clearly, using designated common language OB 2.4 Confirms that the recipient demonstrates understanding of important information OB 2.5 Listens actively and demonstrates understanding when receiving information OB 2.6 Asks relevant and effective questions OB 2.7 Uses appropriate escalation in communication to resolve identified deviations OB 2.8 Uses and interprets non-verbal communication in a manner appropriate to the organizational and social culture OB 2.9 Adheres to standard operator phraseology and procedures	● … ● … ● … ● …

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Communication
＜Competency assessment＞

Competency	Performance Criteria		Rating	Comments
	Final competency standard	Conditions		
Communication 	1. … 2. …	➢ … ➢ … ➢ …	☐ 1 Fail ☐ 2 Legal (Needs additional training) ☐ 3 Fit	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Leadership and teamwork
＜Adapted competency model＞

Competency	Explanation		
	Description	**Generic OBs**	**Scenario-based key OBs**
Leadership and teamwork 	Influences others to contribute to a shared purpose Collaborates to accomplish the goals of the team	OB 3.1 Encourages crew participation and open communication OB 3.2 Demonstrates initiative and provides direction when required OB 3.3 Engages others in planning OB 3.4 Considers inputs from others OB 3.5 Gives and receives feedback constructively OB 3.6 Addresses and resolves conflicts and disagreements in a constructive manner OB 3.7 Exercises decisive leadership when required OB 3.8 Accepts responsibility for decisions and actions OB 3.9 Carries out instructions when directed OB 3.10 Identifies deviations and safety hazards and applies effective intervention strategies OB 3.11 Manages cultural and language challenges	● … ● … ● … ● …

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Leadership and teamwork
＜Competency assessment＞

Competency	Performance Criteria		Rating	Comments
	Final competency standard	Conditions		
Leadership and teamwork 	1. … 2. …	➢ … ➢ … ➢ …	☐ 1 Fail ☐ 2 Legal (Needs additional training) ☐ 3 Fit	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Passenger management
＜Adapted competency model＞

Competency	Explanation		
	Description	Generic OBs	Scenario-based key OBs
Passenger management	Demonstrates effective passenger management techniques	OB 4.1 Exhibits assertive behaviour, when applicable, e.g. during an evacuation or ditching OB 4.2 Identifies and manages conflict and disagreements between passengers OB 4.3 Demonstrates conflict resolution techniques OB 4.4 Informs and monitors passengers for compliance with operator policies, procedures and regulations OB 4.5 Uses effective communication and tone of voice appropriate to the circumstances	● … ● … ● … ● …

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Passenger management
＜Competency assessment＞

Competency	Performance Criteria		Rating	Comments
	Final competency standard	Conditions		
Passenger management 	1. … 2. …	➢ … ➢ … ➢ …	☐ 1 Fail ☐ 2 Legal (Needs additional training) ☐ 3 Fit	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Problem solving and decision making
＜Adapted competency model＞

Competency	Explanation		
	Description	**Generic OBs**	**Scenario-based key OBs**
Problem solving and decision making	Identifies precursors, mitigates problems; and makes decisions	OB 5.1 Identifies, assesses and manages threats and errors in a timely manner OB 5.2 Seeks accurate and adequate information from appropriate sources OB 5.3 Identifies and verifies what and why things have gone wrong, if appropriate OB 5.4 Perseveres in working through problems while prioritizing safety OB 5.5 Identifies and considers appropriate options OB 5.6 Applies appropriate and timely decision-making techniques OB 5.7 Monitors, reviews and adapts decisions as required OB 5.8 Adapts when faced with situations where no guidance or procedure exists OB 5.9 Demonstrates resilience when encountering an unexpected event	● … ● … ● … ● …

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Problem solving and decision making <Competency assessment>

Competency	Performance Criteria		Rating	Comments
	Final competency standard	Conditions		
Problem solving and decision making 	1. … 2. …	➢ … ➢ … ➢ …	☐ 1 Fail ☐ 2 Legal (Needs additional training) ☐ 3 Fit	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Situation awareness and management of information
＜Adapted competency model＞

Competency	Explanation		
	Description	**Generic OBs**	**Scenario-based key OBs**
Situation awareness and management of information	Perceives, comprehends and manages information and anticipates its effect on the operation	OB 6.1 Monitors and assesses passenger and crew behaviour OB 6.2 Monitors and assesses the general environment, state of the aircraft and cabin systems as these may affect the operation OB 6.3 Validates the accuracy of information and checks for errors OB 6.4 Maintains awareness of the people involved in or affected by the operation and their capacity to perform as expected OB 6.5 Develops effective contingency plans based upon risks associated with threats and errors OB 6.6 Responds to indications of reduced personal situation awareness	● … ● … ● … ● …

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Situation awareness and management of information ＜Competency assessment＞

Competency	Performance Criteria		Rating	Comments
	Final competency standard	Conditions		
Situation awareness and management of information	1. … 2. …	➢ … ➢ … ➢ …	☐ 1 Fail ☐ 2 Legal (Needs additional training) ☐ 3 Fit	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Workload management
＜Adapted competency model＞

Competency	Explanation		
	Description	**Generic OBs**	**Scenario-based key OBs**
Workload management	Maintains available workload capacity by prioritizing and distributing tasks using appropriate resources	OB 7.1 Plans, prioritizes and monitors tasks through the utilization of all available resources OB 7.2 Manages time efficiently when carrying out tasks OB 7.3 Offers and gives assistance OB 7.4 Delegates tasks OB 7.5 Seeks and accepts assistance, when appropriate OB 7.6 Monitors, reviews and cross-checks actions	● … ● … ● … ● …

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Workload management
＜Competency assessment＞

Competency	Performance Criteria		Rating	Comments
	Final competency standard	Conditions		
Workload management 	1. … 2. …	➢ … ➢ … ➢ …	☐ 1 Fail ☐ 2 Legal (Needs additional training) ☐ 3 Fit	

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Feedback

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Interview with Michael Von Reth, Cabin Service Manager, Qantas 32

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Acting Resiliently

"I went straight to emergency procedures mode. Manual OK, you do the C'K list quietly."

"I spoke to them in German. Same as the initial PA, it changed the entire area."

"I went to GLY to GLY and said we've been trained for this. We are safety professionals."

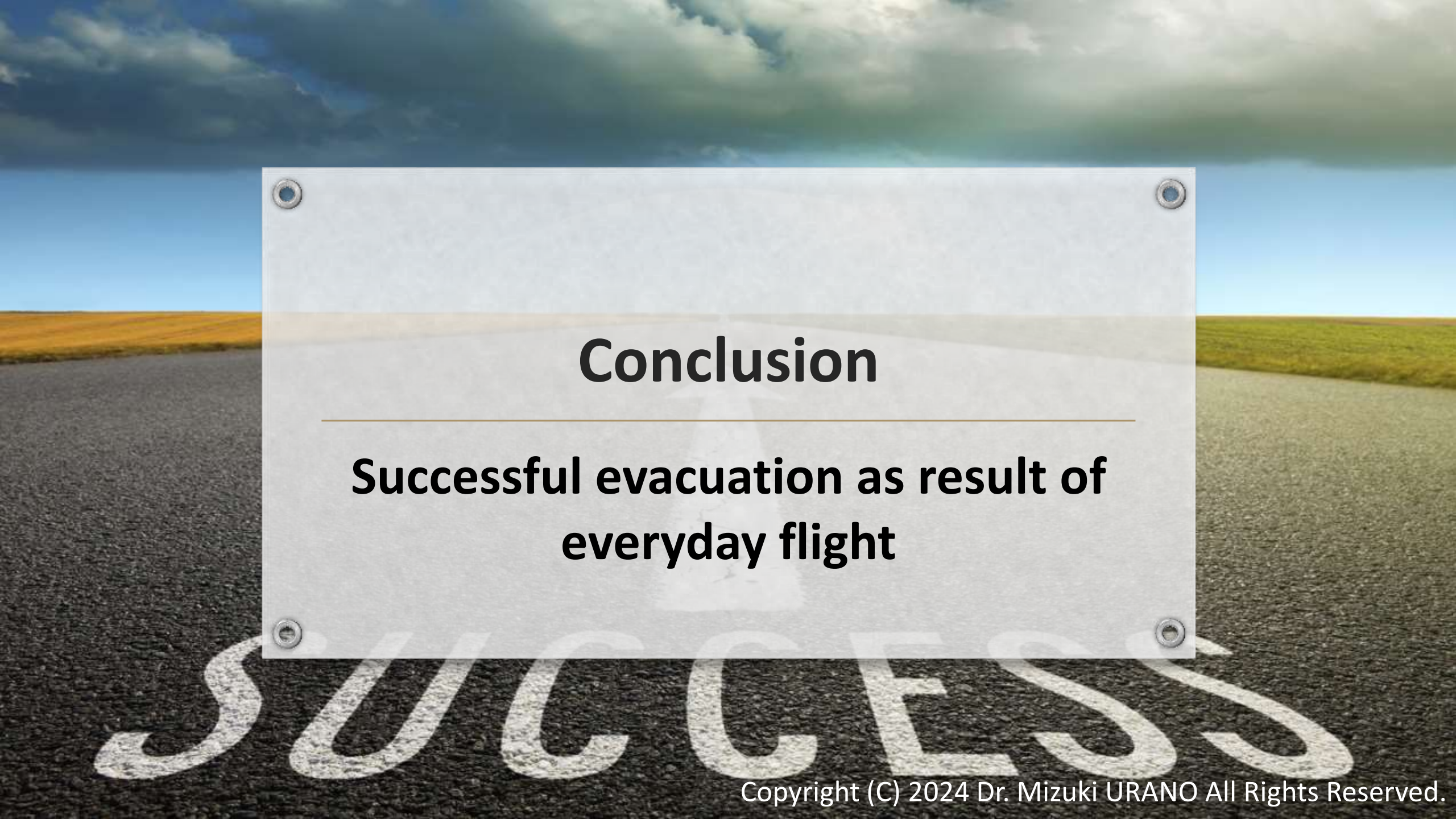
"I made an assertive PA "No electronic devices" ."

"I got the entire crew on R-side check CBN and PAX, L-side crew to watch outside. "

"This is the moment I have to take over now."

"From now on, the upper deck is yours. Crew reports through you to me."

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.



Conclusion

Successful evacuation as result of everyday flight

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Copyright (C) 2024 Dr. Mizuki URANO All Rights Reserved.

Thank
you!