



ICAO Cabin Crew Safety Training Manual (Doc 10002)

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Overview of Presentation

1. Why did ICAO develop Doc 10002?
2. How do you implement Doc 10002?
 - What is the role of Government Inspectors?
 - What is the role of Airlines / Training Centers?
3. What is competency-based training?
 - Explanation of concepts
 - Practical applications
4. Example:
 - Scenario-based training for fire fighting



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Why did ICAO develop Doc 10002?



ICAO & Cabin Crew Safety Training

- ICAO (Annex 6 - Part 1) requires initial and recurrent cabin crew safety training
 - Must be approved by State Authority
- ICAO originally developed guidance material on Cabin Crew Safety Training (Doc 7192 Part E-1)
 - Documentation addresses training requirements in Annex 6
 - Now obsolete





Objectives of Doc 10002

- Raise awareness of importance of cabin crew safety training
- Provide guidance material for initial & recurrent cabin crew safety training
- Present competency-based training for cabin crew
- Provide additional guidance on aspects not addressed by ICAO requirements



ICAO Cabin Safety Group





Overview of Chapters

1. Cabin Crew Training Requirements and Qualifications
2. Training Facilities and Devices
3. Competency-based Training Approach
4. Aviation Indoctrination
5. Normal Operations Safety Training
6. Abnormal and Emergency Situations Training
7. Dangerous Goods
8. Human Performance
9. Cabin Health and First Aid
10. Aviation Security
11. Safety Management Systems
12. Fatigue Management
13. In-Charge Cabin Crew Training
14. Management Aspects of the Cabin Safety Training Programme





How do you implement Doc 10002?



Role of Airline / Training Center

- Airline must develop content of airline training program
 - Must be in accordance with national regulations
- Airline must implement training program
 - That is satisfactory to Government inspectors
- Content of Doc 10002 developed as guidance for airlines:
 - Guidance for all content to be included in training
 - Guidance to develop/ implement specific components of training:
 - Qualifications of personnel (e.g. instructors)
 - Establish facilities and devices
 - Determine delivery methods (e.g. computer-based training)



Role of Government Inspectors

- Inspector must review and approve content of airline training program
 - Documentation review
- Inspector must verify that training is implemented according to approved training program
 - On-site inspections
- Content of Doc 10002 developed as guidance for inspectors:
 - Cross check that training includes all required content
 - Evaluate suitability of specific components of training:
 - Qualifications of personnel
 - Facilities and devices
 - Delivery methods used by airline (e.g. computer-based training)



What is competency-based training?

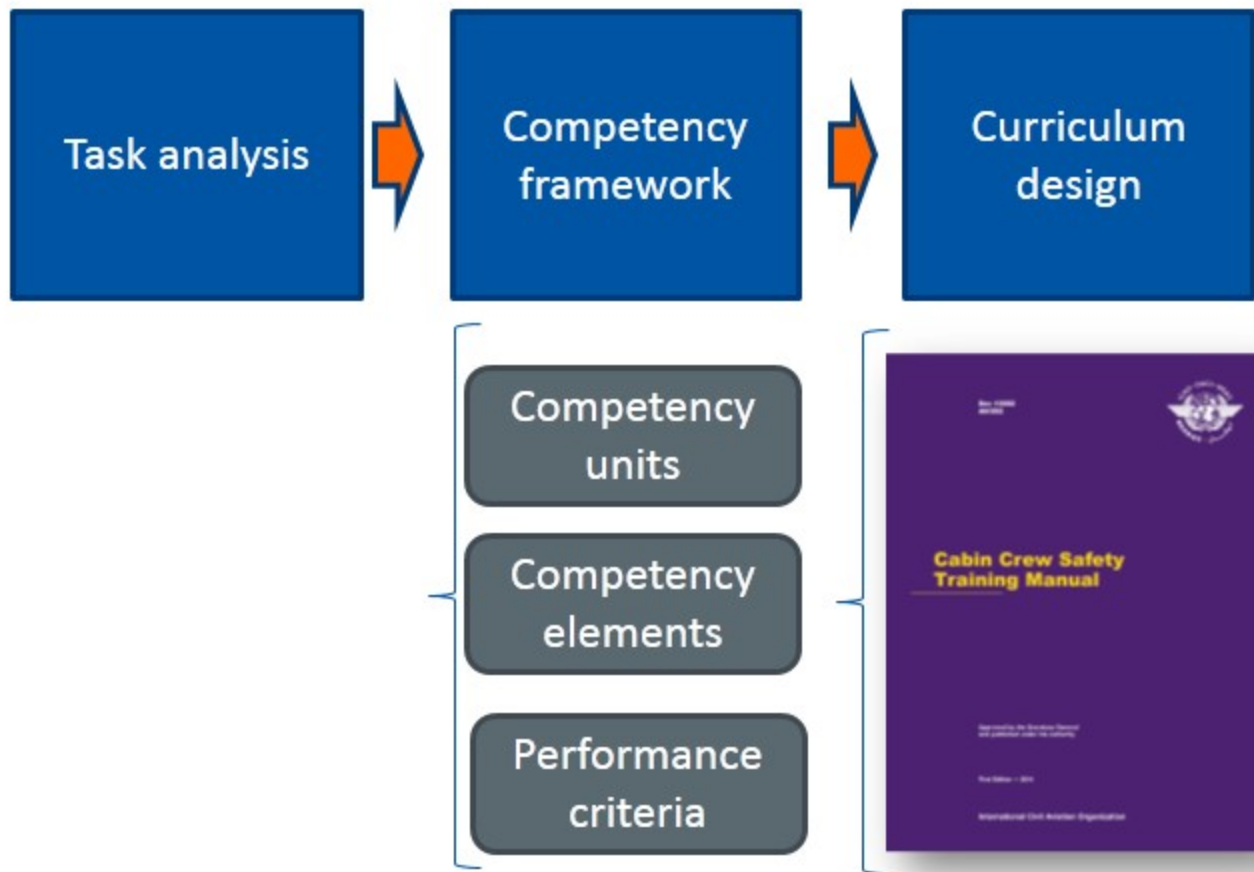
Explanation of concepts

What are the benefits?

- Focused training on job performance
- Competencies are observable and measurable
- Better prepares cabin crew for on-the-job requirements
- Establishes baseline for cabin crew competencies



How was Doc 10002 Developed?



Cabin Crew Competencies





Cabin Crew Skills

All cabin crew:

1. Communication
2. Teamwork and leadership
3. Error recognition and management
4. Workload and time management
5. Decision-making
6. Situational awareness

In-charge cabin crew member:

All CC skills, plus following:

1. Flexibility
2. Delegation
3. Empathy
4. Planning & coordinating resources

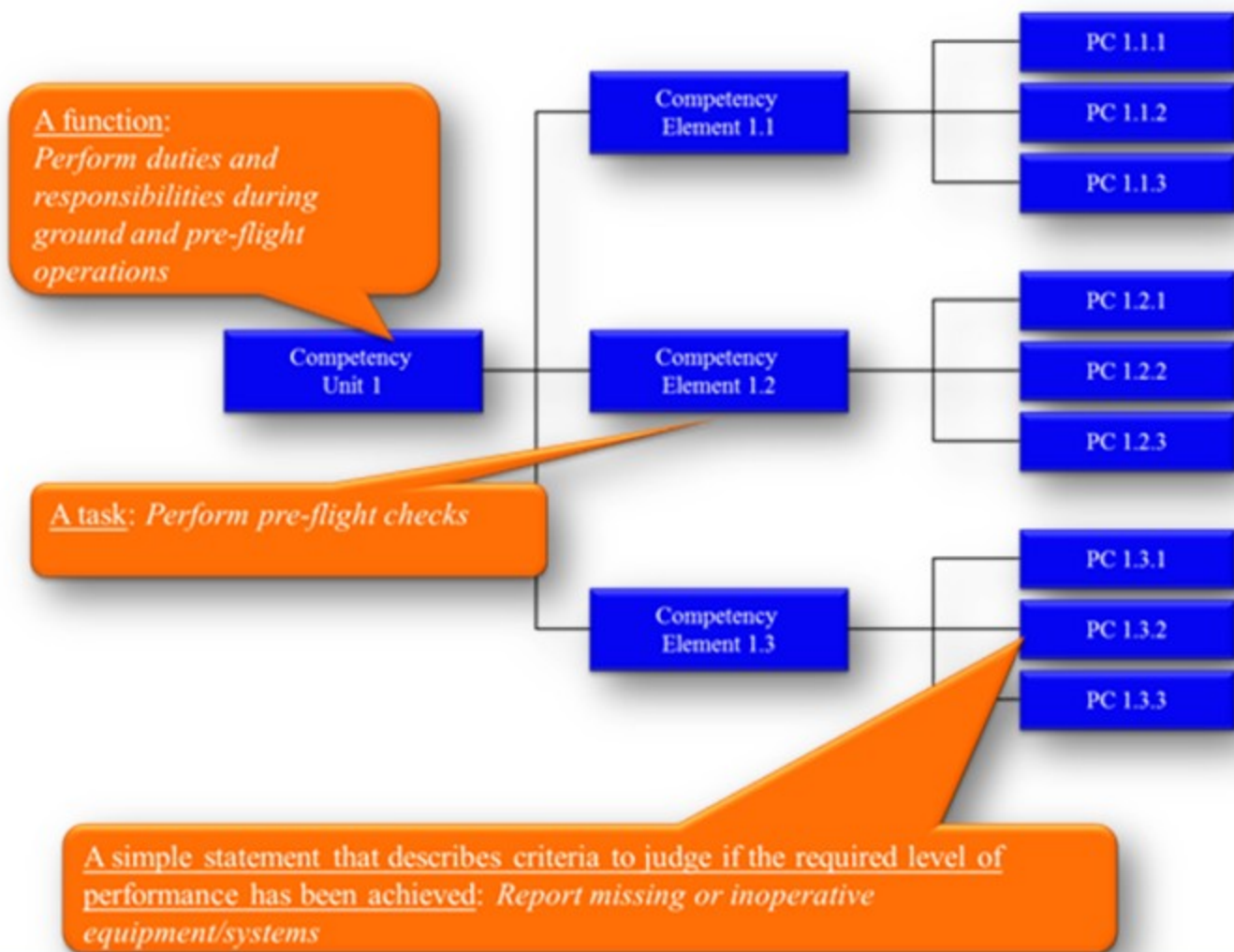


Example of Skills & Behavioral Indicators: Communication

Skill Description	Behavioral Indicators
Demonstrates effective verbal, non-verbal and written communications, in normal, abnormal and emergency situations.	<p><u>Desired behaviors:</u></p> <ul style="list-style-type: none">• Conveys information clearly, accurately and concisely using standard operator phraseology.• Communicates with the appropriate crew member(s) using the operator’s designated common language (multi-lingual flight/cabin crew) including pertinent information such as What, When, Where and How.• Is aware of, and correctly interprets, the non-verbal elements inherent in communication.• Actively listens, seeks clarification and asks relevant questions.• Transmits information in a timely manner. <p><u>Undesired behaviors:</u></p> <ul style="list-style-type: none">• Communicates using incomplete, untimely or unclear messages.• Inhibits the communication process.



ICAO Competency Framework



Structure of Competency Framework & Doc 10002 Structure

1. Competency unit
2. Competency element
3. Performance criteria
4. Reference material
 - needed during training
5. Duties which may assigned to I/C
 - in multi-crew operation



- Guidance material provided on:
- a) Conditions under which training should be conducted
 - classroom-based training
 - hands-on exercises
 - etc.
 - b) Performance standard
 - used to verify that performance criteria are met
 - c) Knowledge
 - that trainees must possess
 - d) Skills
 - to support competencies

COMPETENCY FRAMEWORK FOR CABIN CREW DUTIES AND RESPONSIBILITIES DURING ABNORMAL AND EMERGENCY SITUATIONS

Competency unit: 1. Perform duties and responsibilities during an abnormal or emergency situation

The competencies described below relate to duties and responsibilities that are performed by a cabin crew member in the event of an abnormal or emergency situation.

Competency element	Performance criteria	I/C Duty	Reference
1.1 Apply fire fighting procedure	1.1.1 Detect and eliminate fire hazards		Operations Manual
	1.1.2 Locate source of fire		
	1.1.3 Identify the type of fire		
	1.1.4 Apply communication procedures		
	1.1.5 Use appropriate fire fighting equipment and protective equipment, as required		
	1.1.6 Fight fire		
	1.1.7 Manage passengers and cabin, as required		
	1.1.8 Apply post-fire fighting procedure		
	1.1.9 Complete the applicable documentation	X	



Example of CE: Apply Fire Fighting Procedure

Performance Criteria

1.1.1 Detect and eliminate fire hazards

1.1.2 Locate source of fire

1.1.3 Identify the type of fire

1.1.4 Apply communication procedures

...



Performance Standard

a) Cabin surveillance to identify/monitor potential sources of fire. This includes, but not limited to:

i. debris in ovens (e.g. oil spills, papers, inserts);

ii. electrical malfunctions (e.g. tripped circuit breakers, overheating IFE);

iii. lavatories (e.g. waste bins, panels);

iv. investigating abnormal smells; and

v. detecting smoke (e.g. coming from panels, due to electrical systems, etc.).

...



Example of CE: Apply Fire Fighting Procedure

Performance Criteria

1.1.1 Detect and eliminate fire hazards
...

Performance Standard

a) Cabin surveillance to identify/monitor potential sources of fire. This includes...



Knowledge

- a) Understanding of fire prevention techniques. This includes, but is not limited to:
- i. monitoring smoking in the cabin and lavatories;
 - ii. inspecting the integrity of automatic lavatory extinguisher;
 - iii. checking that the lavatory waste bin cover flap is closed at all times;
 - iv. preventing ignited materials from being discarded in trash carts; and
 - v. identifying and eliminating hazardous flammable materials.



Example of CE: Apply Fire Fighting Procedure

Performance Criteria

1.1.1 Detect and eliminate fire hazards
...

Performance Standard

a) Cabin surveillance to identify/monitor potential sources of fire. This includes...



Skills

- a) Communication;
- b) Teamwork and leadership;
- c) Error recognition and management;
- d) Workload and time management;
- e) Decision-making;
- g) Planning and coordinating resources (for in-charge cabin crew); ...



Example of CE: Apply Fire Fighting Procedure

Reference

- a) Operations manual

Conditions

- a) Classroom & computer-based
- b) Hands-on exercise:
 - on retrieving and operating fire fighting & protective equipment
- c) Simulated fire fighting exercise:
 - in representative training device capable of reproducing appropriate environment/equipment characteristics
 - where cabin crew apply operator procedures & associated crew responsibilities for dealing with situation
- d) Live fire fighting using fire fighting equipment:
 - e.g. extinguisher, PBE, gloves, axe, etc.



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Practical applications



Scenario-based training

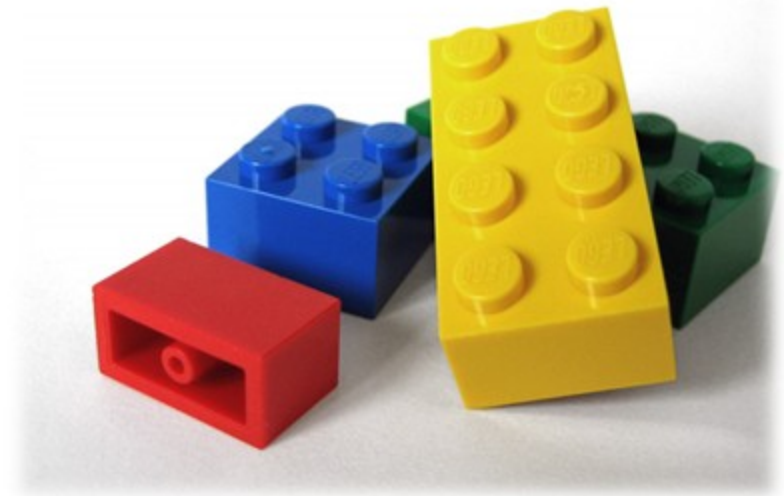
- Why?
 - Simulate realistic flight conditions when human error occurs
 - Look at chain of errors that can cause accidents
 - Builds cabin crew confidence
- Integration of skills
 - Performing as a team vs. an individual
- Operator should use its own occurrences to build scenarios
- As alternative, occurrences other operators





What is needed to build a scenario?

- Define key elements in a scenario:
 - Objectives
 - Location of scenario
 - Training aids
 - Conditions of the flight
 - Triggers
 - Distracters
- Incorporate skills (CRM)
- Determine different roles
- Develop guidance for instructors





Objectives of scenario

- **What will be trained or evaluated?**
 - Application of operator procedures
 - Operation of equipment or systems
 - Application of skills
 - Communication, team work, etc.
 - Understanding of Operations Manual
 - e.g. emergency checklist use
- **If all of the above are selected**
 - All need to occur during the scenario
 - Applying SOP, using checklist, applying CRM skills, etc.
- **A single scenario can evaluate multiple items**



Location of scenario

- **What type of training will be utilized?**
 - Classroom training
 - Hands-on exercise
 - Simulated exercises
- **What are the training facilities available?**
 - One single training center
 - Multiple training centers with different training devices
- **Why is this important?**
 - Need to create a fair training environment across centers
 - Ensure consistency in training delivery



Use of training aids

- Need to define what training aids are needed
 - Create list of all training aids required for simulation
- Training aids include:
 - Equipment
 - Props (e.g. portable smoke simulator)
 - Briefing cards
 - etc.





Conditions of the flight

- Define conditions pertinent to exercise
- Produce outline of conditions:
 - Aircraft type
 - Assigned crew positions
 - Phase of flight
 - etc.
- Description of flight
 - e.g. wide body aircraft, 3 hrs. in flight, crew is in aisle picking up after service
- Training device and aids must support conditions:
 - To provide a realistic environment for trainees





How to determine participation?

- Class size is essential component in developing scenario
- How many trainees can actively participate?
 - **Active**: trainees as operating crew members
 - **Passive**: trainees acting as passengers or observing exercise
- Built to match operator's typical minimum crew requirements
 - e.g. 3 or 4 cabin crew members
- How many people are needed to support scenario?
 - Active participants must have clear tasks to accomplish
 - There should be a comparable amount of activity for each trainee

What are triggers and distracters?

- **Trigger** is method by which scenario begins
 - e.g. Passenger alerts crew of another passenger being ill
- **Distracters** are planned actions by “passengers” that distract crew from performing specific tasks
 - e.g. Passenger is concerned over missing connection due to medical diversion and becomes unruly



Triggers & Distracters

- Consistency is needed for both triggers and distracters
- Instructor or trainee selected to act scenario must know:
 - **What** to do
 - **When** to do it
- Clear instructions for each participant playing a role
 - e.g. use of cue cards with information



Recommendations for scenario

- Scenario should be 10-15 min
- Additional 15 min reserved for:
 - Setting up scenario
 - Debriefing
- Participants should conduct walk around simulator
 - To familiarize themselves with environment
- Approximately 60 minutes in total time for entire session





How to evaluate students?

- Operator must follow 2 steps:
 1. Determine rating scale (ratings for evaluation of performance)
 2. Determine success criteria (what to observe from students)
- Both are specific to the operator

How is rating scale developed?

- **Need to identify rating methodology**
 - To grade performance standards against performance criteria
- **What to consider?**
 - Criticality of actions/inactions
 - including errors
 - Impact on safety of flight
 - Outcomes of the event





Example of rating scale

GRADE		CRITERIA
1	Unsatisfactory	Major deviations from the prescribed qualification standards occur that are not recognized or corrected. Individual or crew performance could result in hull loss or loss of life. CRM skills are not effective.
2	Below Standard	Deviations from the prescribed qualification standards occur that are not recognized or corrected. Individual or crew performance is safe but would be unsatisfactory if diminished by any amount. CRM/DRM skills are not completely effective.
3	Standard with Debrief	Deviations occur from the prescribed qualification standards that are recognized and most corrected. Individual or crew performance meets expectations. CRM skills are effective.
4	Standard	Minor deviations occur from the prescribed qualification standards that are recognized and corrected in a timely manner. Individual or crew performance meets expectations. CRM skills are clearly effective.
5	Excellent	Performance remains well within the prescribed qualification standards. Individual or crew performance, management and CRM skills are exemplary.

Source: FAA AC 120-54a



Example: Scenario-based training for fire fighting





Context

- You are part of training dept. at XYZ Airlines
- Operator conducts scheduled passenger flights
 - on both domestic and international routes
- Fleet is composed of A320 and B737-500 aircraft
- Both types operated with minimum of 3 cabin crew
- Operator has two training centers (in different cities)
 - Static cabin training device, without smoke simulating capabilities
 - Portable smoke generators



Context (Cont'd)

- Operator has two training centers (in different cities)
 - ABC and DEF
- Center at ABC:
 - Emergency evacuation training device, capable to simulating smoke and motion
 - Static cabin training device, without smoke simulating capabilities
- Center at DEF
 - Static cabin training device, without smoke simulating capabilities
 - Classroom equipped with some rows aircraft seats and mock-ups of parts of aircraft galleys
- Both centers are equipped with portable smoke generators



Context (Cont'd)

- Operator is transitioning to competency-based training
- Will include scenario-based training during **recurrent** training next year
- Class sized will be **20 trainees**
- Training department tasked with developing scenarios to complement classroom and computer-based training



Pieces need to make scenario

Objectives
Location
Training aids
Conditions (of the flight)
Triggers
Distracters



Scenario description

- Scenario: *risk of in-flight fire due to passenger mobile phone*
- Class of 20 students:
 - 5 rotations of 4 crew
- 4 operating positions:
 - L1 – In-charge
 - R1 – Galley operator
 - L2 – Cabin position
 - R3 – Cabin position
- Roles
 - Fire fighter
 - Communicator
 - Back-up
 - Crowd control
 - Passengers (instructors)

Objectives

- To correctly apply fire fighting procedure
- To demonstrate correct use of fire fighting equipment
- To demonstrate appropriate skills
 - communication, teamwork, decision-making
- To deal effectively with medical scenario



Locations

- **Training Centre #1 - ABC**
 - Static cabin training device using portable smoke generator
- **Training Centre #2 - DEF**
 - Static cabin training device using portable smoke generator





Training aids

- Halon Fire Extinguishers x4
- Fire Gloves x2
- PBE x4
- Oxygen x4
- Teapot/ice bucket
- Atlas container
- Service cart
- Service items (trays, cups)
- Mobile phone (located at 2A)
- Charger (located at 2A)
- Prompt cards x5 (for instructors playing roles)





Conditions of the flight

- A320
- CDG – SVO
- Day flight
- Cruise – 2 hours into flight
- Meal service



Triggers

- Call bell triggered 90 seconds after scenario starts
- Passenger seated at 2A informs cabin crew attending call that mobile phone is hot and starting to smoke





Distracters

1. Fire fighter

- Distracter: experience fire fighter offers assistance

2. Communicator

- Distracter: passenger is asking for a gin and tonic

3. Back-up

- Distracter: passenger is asking what is going on

4. Crowd Control

- Distracter: passenger starts to hyperventilate
 - Medical scenario



Performance standards – Halon use

A	GRADE	CRITERIA
1	Unsatisfactory	Major deviations from standard operations. Halon not initially located. Incorrect operation of the Halon leading to an undesired aircraft state.
2	Developing	Difficulty in locating the halon. Deviations in the use of the halon are recognized but operation is not effective whereby the situation has worsened. Undesired aircraft state.
3	Effective with feedback	Minor deviations in the use of the halon occur. Initially incorrect operation of halon, mistakes recognized and self-corrected most of the deviations. Used within a appropriate timeframe with some hesitation whereby the situation has been managed effectively.
4	Effective	Minor deviations in the use of the halon occur. Initially incorrect operation of halon, mistakes recognized and self-corrected all of the deviations. Used within a appropriate timeframe whereby the situation has been managed effectively.
5	Outstanding	Confident operation of the halon with no deviations observed. Situation managed in a time-efficient manner.



Evaluation of skills - Communication

A	GRADE	CRITERIA
1	Unsatisfactory	Lack of ability to relay information or to accurately answer queries.
2	Developing	Hesitant delivery of speech. Delay in answering queries. Inaccurate information given. Incorrect terminology used.
3	Effective with feedback	Confident delivery of speech. Correct terminology as per standards. Some details require clarification. Message conveyed adequately with some details missing.
4	Effective	Confident delivery of speech. Correct terminology as per standards. Some details require clarification. Message conveyed effectively.
5	Outstanding	Concise, specific terminology used all details communicated accurately. Message conveyed without clarifications required. Pro-actively communicated with others.



Conclusion

- ICAO Doc 10002 designed to:
 - Assist airlines & training centers develop training programs
 - Assist inspectors with approval / inspections of training
- Competency-based approach better prepares cabin crew for job performance
- Scenario-based training is important practical application
- Must be structured approach, to measure competency of cabin crew



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