



ICAO

SAFETY

Session 4

Introduction of Competency-based Training & Assessment Concepts



Overview

- Understanding competency-based training
 - Traditional vs. competency-based approach
- Overview of competency-based training
- Development of competency framework
 - Including components
- Q&A



Understanding Competency-based Training

- Traditional aviation training programmes
 - Designed to acquire standards established to meet qualifications of licence, rating or privilege
 - Embedded in national regulations
 - Standards expressed in quantitative terms
 - prescribe training programme “inputs”
 - Programme design and content influenced by Authority’s testing criteria and methods





Understanding Competency-based Training

- **Competency:** combination of skills, knowledge and attitudes required to perform task to prescribed standard
- Detailed and accurate job/task analysis
- Competency units & elements derived from analysis
- Subjected to further phases of ISD methodologies
- End result is fully integrated and “outcomes-focused” training
- **Goal:** provide graduates with competencies to be safe, efficient and highly effective in performance of duties
- *Refer to Manual on Approval of Training Organizations (Doc 9841) for further guidance*



ISD: Example of ICAO Course Development

<i>Category</i>	<i>Phases</i>	<i>Outputs</i>
ANALYSIS	Phase 1 — Preliminary study	Training proposals, their justification and proposed course of action
	Phase 2 — Job analysis	Task description and performance standards
	Phase 3 — Population analysis	Trainees' characteristics and their existing skills and knowledge
DESIGN AND PRODUCTION	Phase 4 — Design of curriculum	Training objectives, mastery tests and sequence of modules
	Phase 5 — Design of modules	Mode of delivery, training techniques and media, draft training material
	Phase 6 — Production and developmental testing	Production of all trainee materials
EVALUATION	Phase 7 — Validation and revision	Try-out of course and revision as required
	Phase 8 — Implementation	Human resources trained
	Phase 9 — Post-training evaluation	Evaluation of training effectiveness; plans for remedial action

Refer to PANS-TRG (Doc 9868) for further guidance



Competency-based Training & Assessment

- Competency-based approaches characterized by:
 - Emphasis on job performance
 - Knowledge & skills required to perform on the job
- **Competency-based training** aims at progressively building and integrating knowledge and skills required for job performance
- **Competency-based assessments** aim at measuring how well competencies necessary for the job are demonstrated to specified performance standards



ICAO

SAFETY

Development of the ICAO Competency Framework



Understanding the Framework

- Framework consists of:
 - Competency units
 - Competency elements
 - Performance criteria
- Framework describes:
 - Job requirements
 - i.e. technical competencies
 - What effective performers do
 - i.e. non-technical competencies
- Non-technical competencies (skills) are transportable across different areas of aviation
 - Can be broken down into observable and measurable actions
 - Aimed at improving performance towards excellence
 - beginner to expert





Framework Development Process

- In order to revise training material in competency framework...
- ICAO needed to determine what competencies cabin crew member needs
 - To conduct duties
 - Effectively handle expected and unexpected
 - during normal, abnormal and emergency situations





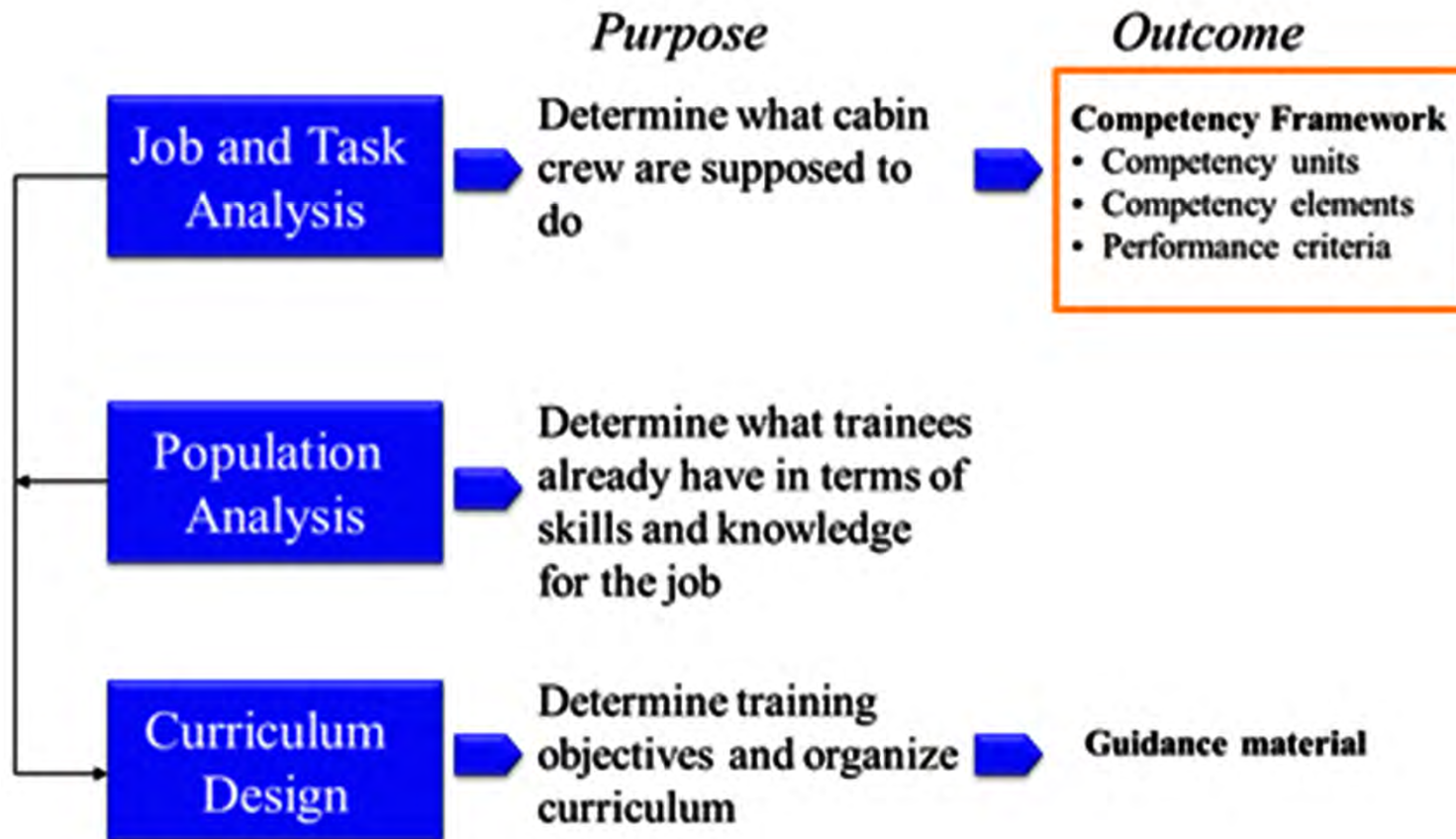
Framework Development Process

- Accomplished in two-step approach:
 1. Define the end-state first (competencies) that need to be achieved
 2. Reverse-engineer training and assessment based on end-state
- Process of consensus by ICSG
 - Internationally agreed upon baseline for crew competencies





Framework Development Process



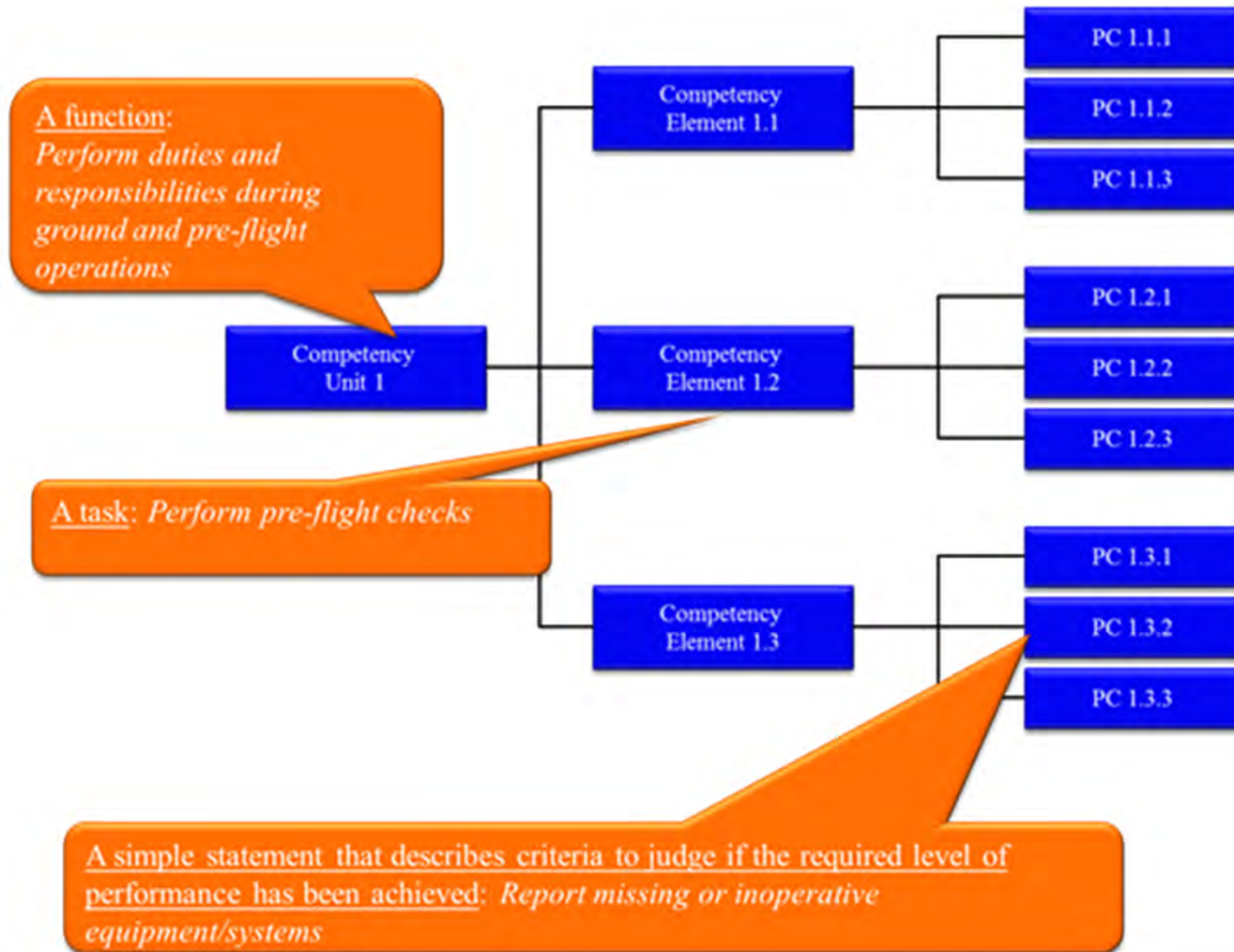


Framework Components

- **Competency unit:**
 - Discrete (i.e. distinct) function consisting of a number of competency elements
- **Competency element:**
 - Action that constitutes task
 - has triggering & terminating event that clearly defines limits
 - and an observable outcome
- **Performance criteria:**
 - Simple, evaluative statement on required outcome of competency element
 - And description of criteria to judge whether required level of performance is achieved
- **Reference material relevant during training**
- **Duties assigned to I/C**
 - In a multi-crew operation



Relationship between Components





Points to Remember

- Differences between traditional and competency-based training approaches
- The two-step approach to develop competency-based:
 - Define end-state first (competencies) to be achieved
 - Reverse-engineer training and assessment based on end-state
- Importance of job and task analysis
- Framework components and their relationship



ICAO

SAFETY

