



**Civil Aviation Department**  
The Government of the Hong Kong Special Administrative Region

# Composite Material Structures “Challenges”





# Content

- **Basic knowledge development**
- **Certification issues**
  - **Design**
  - **Maintenance**
- **Training**
- **Expectation**



# Knowledge development

- **Establish a basic knowledge and Safety awareness of composite materials in our aviation industry**

**e.g. Maintenance repair organisation, Design organisation**



## Certification issues

- **Design perspective**
  - Methodologies for design and certification, e.g. recognised approved analysis method, full scale test or combination
  - Material properties, e.g. fire behavior (toxic fumes, fire release etc.)
  - Aging issues, e.g. moistures absorption, delamination, manufacturing quality maintained.
  - Impact damage consideration (defect vs damage vs failure)



## Certification issues

- **Design perspective**
  - **Crashworthiness in composite**
  - **Is there any unexpected deterioration, cracking etc.**
  - **Design and certification of bonded structures, including repair**
  - **Guidance material how to show compliance with static strength and damage tolerance requirements (airframe structures & non airframe product)**



## **Certification issues**

- **Maintenance perspective**
  - **Guidance material for performing repair on composite material structures.**
  - **Skill development for performing maintenance task on composite structure, such as damage detection for aircraft structure**



# Training

- **Training / workshop**
  - **Industry**
  - **Regulator**



# Expectation

- **Support from FAA**
  - **Training / workshop / conference etc.**
  - **Guidance material**
  - **Regular meeting for knowledge sharing**





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**Thank You!**