The Call for International and Civil-Military Cooperation on Airworthiness

Oct. 14th, 2015

Certification Planning Division
Analysis, Test and Evaluation Bureau
Defense Acquisition Program Administration
ROK A/W Certification Organization

A/W Cert’ Board
Advisory Consultant

Decision-Making & Advisory on the policy/engineering issues

Analysis, Test & Evaluation Bureau

Control & Coordination

Engineering Center (Air Force)

Program management organization

IPT, Industries

Military Service

A/W Team

Add
DTAQ
ARMY
AIRFORCE

Cooperation

Ministry of Land, Infrastructure & Transportation

Civil A/W Cert’ Authority

Airspace Strategy Division

Korea Institute of Aviation Safety Technology

Defence Acquisition Program Administration

ROK Military A/W System (1/1)
ROK Military A/W Status (1/5)

- ROK Indigenous A/C

  - Basic Trainer (KT-1)
  - Export Version
  - Advanced Jet Trainer (T-50)
  - Export Version
  - Utility Helicopter (KUH-1)
  - Derivative Version
KT-1P Airworthiness Certification Status

Subsonic Aircraft

- Airworthiness Certification Criteria
  - TACC based on FAR Part 23
  - 876 Articles / 8 Criteria (General, Strength, etc)
- Type Certificate issued on December 22, 2009
T-50/FA-50 Airworthiness Certification Status

- Supersonic Aircraft
- Airworthiness Certification Criteria
  - TACC based on Mil-HDBK-516B
  - 1,324 Articles / 14 Criteria (General, Structure, etc)
- Type Certificate issued on October 31, 2012
ROK Military A/W Status (4/5)

KUH-1 Airworthiness Certification Status

- Airworthiness Certification Criteria
  - TACC based on FAR Part 29
  - 773 Articles / 9 Criteria (General, Structure, etc)
- Type Certificate issued on June 18, 2012
Military Airworthiness Certification

- TC-2009-001 (KT-1T)
- TC-2012-002 (FA-50)
- TC-2012-001 (KUH-1)

Development

- MTC (LAH)
- MTC (KFX)

- ‘09.12.
- ‘12.6.
- ‘12.10.
- 2015.
- 2020
- 2022
- 2025
New Projects that requires international cooperation

1. LAH Project
2. KF-X Project
Light Attack Helicopter(1/6)

Multi-National Project
- Basic platform: Airbus (France)
- Engine: Turbomeca (France)
- Modification: KAI (Korea)
- Parts: France, Korea… etc.

Multi-Purpose Platform
- Civil: LCH (Light Civil Helicopter)
- Military: LAH (Light Attack Helicopter)

Requires cooperation among various countries and with civil sector
Light Attack Helicopter (2/6)

Specification

(Unit: mm)
### Modification Scope

- **Structure**
  - Structural reinforcement

- **Rotor**
  - Newly-designed Main Rotor Blade

#### Avionics
- High performance computer system

#### Weapon / Fire control system
- Machine gun, Rocket, AGM
- TADS/HMD

- **TADS** : Target Acquisition and Designation System
- **HMD** : Helmet Mounted Display
Mission

1. Air Strike
2. Air assault Covering
3. Ground Unit Covering
4. Air Surveillance
5. Anti-amphibious attack
## Project Overview

### Light Attack Helicopter (LCH) System
**Development** (68 months)

- **2015**: SSR, PDR, CDR
- **2016**: Detailed Design
- **2017**: 
  - #1 Producing (AH)
  - Components for ATC (18 Item)
- **2018**: 
  - Flight Test
  - LCH (AH)
  - Components for STC (41 Item)
- **2019**: 
  - #1 Producing (AH)
  - Dummy Weapon
  - #2 Producing (KAI)
  - Components for STC (41 Item)
- **2020**: 
  - Flight Test
  - Live Fire
- **2021**: 
  - #2 Producing (KAI)
  - KAI (STC)
  - Flight Test
- **2022**: 
  - #3 Producing
  - Airbus Helicopter
  - Flight Test

### Light Attack Helicopter (LAH) System
**Development** (90 months)

- **2015**: SSR, PDR, CDR
- **2016**: Detailed Design
- **2017**: 
  - #1 Producing (AH)
  - Components for ATC (18 Item)
- **2018**: 
  - Flight Test
  - LCH (AH)
  - Components for STC (41 Item)
- **2019**: 
  - #1 Producing (AH)
  - Dummy Weapon
  - #2 Producing (KAI)
  - Components for STC (41 Item)
- **2020**: 
  - Flight Test
  - Live Fire
- **2021**: 
  - #2 Producing (KAI)
  - KAI (STC)
  - Flight Test
- **2022**: 
  - #3 Producing
  - Airbus Helicopter
  - Flight Test
Certification Basis

- **LCH (Light Civil Helicopter)**: JAR-29 (TC+ATC) + KAS-29 (STC)
- **LAH (Light Attack Helicopter)**: FAR-29 + MIL-HDBK-516 (MTC)
KF-X Project (1/4)

Multi-National Project

- Budget: $800 Billion (Indonesia: 20%)
- Platform: KAI (Korea)
- Parts: Korea, Indonesia… etc.

Requires cooperation among various countries
* Certification Basis : MIL-HDBK-516
Mission

1. Anti-Air Warfare
2. Air Strike

KF-X Project (3/4)
# KF-X Project (4/4)

## Project Overview

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- **Preliminary Design**
- **Detailed Design**
- **Producing**
- **Ground Test**
- **Flight Test**

**Timeline:**
- 2016: Preliminary Design
- 2017: Detailed Design
- 2018: Producing
- 2019: Ground Test
- 2020: Flight Test
- 2021: Pre-production
- 2022: Operational Test
- 2023: Post-production
- 2024: Deployment
- 2025: Completion
Conclusion

• International Cooperation is essential for the success of LAH and KF-X projects

• Internationally Coordinated procedure for Civil-Military airworthiness is an urgent task for airworthiness community