Präsentation des Projektes
vor geladenen Experten des CEDEFOP
14.07.2012
CEDEFOP-WS: ECVET 30./31.5.11

EASA Part 66 CAT A - Experiences with units within the dual system in aeronautics

Andreas Saniter, ITB, Uni HB

Agenda

1. Motivation
2. EASA, Part 66, CAT A1: modules
3. EASA <=> ECVET
4. EASA <=> German regulations
5. Proposed reorganisation
6. Lessons learnt

1. Motivation: Pilots: Experiences

According to the actual regulations it is impossible that skilled workers, who graduated in a brilliant vocational training of 42 month in Germany, are allowed to work on an airplane in operation. This means they are very skilled but not allowed to do anything. And possibly somewhere else workers do know a lot, are allowed to work – but have no vocational skills.

(Speaker department Education & Human resources, German Aerospace Industries Association BDLI, own translation)

1: AEROVET: Frame

- Co-financed by the key activity ECVET.
- Running from 2009 to 2012.
- Participating countries: Germany, France, United Kingdom, Spain.
- Participating institutions: Research centres, Competent institutions.
- Supported by Airbus.

1. Motivation: Pilots: Experiences

- Learning outcomes (qualitative dimension)
- Units (structuring element)
- Credits (quantitative dimension)
- Memorandum of Understanding (institutional regulation)
- Mobility passes (individual learning aims)
- Transcript of records (individual achievement)
- Accumulation, obligatory assessment (institutional regulation)

© Dr. Christian Sperle, own translation

2. The EASA-Modules

- Part 66, the licence for Aviation Maintenance consists of 17 modules
- 12 of those are relevant for the basic category A1 “Line Maintenance Certifying Mechanic”

The modules are divided into sub-modules (partly into sub-sub-modules) each one with
- time to be spend on this sub-module
- a division between theory and practice, and a level (1-3) of complexity.
- Mode of assessment is regulated for all member states: Multiple-Choice (75% to be solved) & three essays
2. The EASA-Modules

Level of complexity - taxonomy

**LEVEL 1**
- A familiarization with the principal elements of the subject. (…)

**LEVEL 2**
- A general knowledge of the theoretical and practical aspects of the subject.
- An ability to apply that knowledge. (…)

**LEVEL 3**
- A detailed knowledge of the theoretical and practical aspects of the subject.
- A capacity to combine and apply the separate elements of knowledge in a logical and comprehensive manner. (…)  

=> CAT A: For most of the sub-modules is level 1 sufficient.

---

2: CAT A: Modules

<table>
<thead>
<tr>
<th>Modules</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>20</td>
</tr>
<tr>
<td>Physics</td>
<td>45</td>
</tr>
<tr>
<td>Electrical Fundamentals</td>
<td>22</td>
</tr>
<tr>
<td>Digital Techniques</td>
<td>6</td>
</tr>
<tr>
<td>Materials &amp; Components</td>
<td>120</td>
</tr>
<tr>
<td>Maintenance Practices</td>
<td>183</td>
</tr>
<tr>
<td>Basic Aerodynamics</td>
<td>15</td>
</tr>
<tr>
<td>Human Factors</td>
<td>17</td>
</tr>
<tr>
<td>Aviation Legislation</td>
<td>22</td>
</tr>
<tr>
<td>Aerodynamics, Structures &amp; Systems, Turbine Airplanes</td>
<td>244</td>
</tr>
<tr>
<td>Gas Turbine Engines</td>
<td>72</td>
</tr>
<tr>
<td>Propellers</td>
<td>7</td>
</tr>
</tbody>
</table>

---

2: Tear CAT A1

<table>
<thead>
<tr>
<th>Module</th>
<th>Practice</th>
<th>Theory</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:1 Aerodynamics, structures &amp; systems, turbine airplanes</td>
<td>800</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>11:2 High-speed flight</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11:3 Structures of segments - general concepts</td>
<td>4</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>11a Construction techniques, body, segment, design, formula</td>
<td>1</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>

---

3: Are the EASA-Module in-line with ECVET?

- Yes,
  - Accepted by the competent institutions (National Aviation Agencies)
  - Referring to European Standards
  - Assessment & Recognition assured
  - Independent of training systems (even online: [http://www.easa.eu](http://www.easa.eu) - you can buy the modules and be assessed – but have to show evidence of the practice)
  - Supporting permeability: the 800 h spent by license CAT A holders are fully exempted in the CAT B-programs
  - No double assessment
  - Credits (relative weight) in terms of hours spent

---

3: EASA-Module <=> ECVET?

→ No,
- The modules are input-based (detailed analysis of the curricula)

---

4: EASA <=> Regulations, Delta report FGM

---

Source: Lufthansa Technical Training (2009)
5: Proposed reorganisation (NO)

**Responsible:** Social partners, officially started: 04/2011

**Motivation**
Integration of the content of the EASA part 66 CAT A1 in the curricula

Actually training providers are certified twice:
- By the ministry of education/economics (as VET-provider)
- By the ministry of transport (LBA/EASA)

"Mutual trust" between these two competent institutions!

**Approach**
- Based on the transnational (FR, UK, ES, DE) units of the AEROVET-Project (common for schools & companies)
- Common core of all profiles, part of the core: the EASA-modules as a minimum requirement (but not as standard!), accepted by the National Aviation Agency (LBA)
- Following the "Berufsprinzip" by additional units/more impact on the core units
- Recognition of the equivalence (at least) of the final exams with the assessment of the EASA-modules

5: Draft: the new German occupational group: Aircraft technicians

6: Lessons learnt

**Recommendations on the ECVET-recommendation**
- Use the revision clause ["create the necessary conditions and adopt measures, as appropriate"] by
  - allowing a range of credits for each unit and
  - adopting the assessment regulations (level of legal relevance) to the national requirements.

Units: Mechanic

1. Production of metallic components for aircraft or ground support equipment
2. Production of components of plastics or composite materials for aircraft or ground support equipment
3. Operating and monitoring of automated systems in the aircraft production
4. Joining and dissolving of structural components and aircraft airframes
5. Assembly and disassembly of equipment and systems in the aircraft airframes
6. Functional checks and tuning at the aircraft
7. Maintenance and inspection of the aircraft
8. Analysis and recondition of malfunctions at system components
9. Analysis and reconditioning of damage on structure components
10. Reconditioning of accessory equipment
11. Independent quality inspections

Units: Electric

11. Independent quality inspections
12. Production of bunched circuits for aircraft systems
13. Production or modification of electric devices
14. Passing bunched circuits in aircraft systems
15. Assembly and disassembly of subsystems and devices at aircraft systems
16. Modification of aircraft systems
17. Functional checks and system audit of supply units and control systems
18. Functional checks and system audit of information and communication systems
19. Analysis and repair of malfunctions at bunched circuits in aircraft systems
20. Analysis and repair of malfunctions at supply units and control systems
21. Analysis and repair of malfunctions at information and communication systems
22. Maintenance and inspection of aircraft systems
Visit: www.pilot-aero.net
Contact: asaniter@uni-bremen.de

Supported by: