

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



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# Agenda

1. Motivation
2. EASA, Part 66, CAT A1: modules
3. EASA  $\Leftrightarrow$  ECVET
4. EASA  $\Leftrightarrow$  German regulations
5. Proposed reorganisation
6. Lessons learnt

# 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) ?

# 1. Motivation

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)

## 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: CAT A1: Modules

| 12 Modules:                                              | 800 hours: |
|----------------------------------------------------------|------------|
| Mathematics                                              | 20         |
| Physics                                                  | 45         |
| Electrical Fundamentals                                  | 22         |
| Digital Techniques                                       | 6          |
| Materials & Components                                   | 126        |
| Maintenance Practices                                    | 183        |
| Basic Aerodynamics                                       | 16         |
| Human Factors                                            | 17         |
| Aviation Legislation                                     | 22         |
| Aerodynamics, Structures & Systems,<br>Turbine Airplanes | 264        |
| Gas Turbine Engines                                      | 72         |
| Propeller                                                | 7          |

### 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-66.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 $\Leftrightarrow$ ECVET?

→ No,

- The modules are input-based (detailed analysis of the curricula)

## 4: EASA <=> Regulations, Delta report FGM

| Zielgruppen u. Voraussetzungen                                                                                                                                                                                                              | Erfahrung<br>in Jahren | Module      |         |                         |                    |                        |                       |                    |               |                      |                                                     |                     |           | Stunden<br>ges. | Tage<br>ges. | Lg.-Nr.    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------|---------|-------------------------|--------------------|------------------------|-----------------------|--------------------|---------------|----------------------|-----------------------------------------------------|---------------------|-----------|-----------------|--------------|------------|
|                                                                                                                                                                                                                                             |                        | 1           | 2       | 3                       | 5                  | 6                      | 7                     | 8                  | 9             | 10                   | 11a                                                 | 15                  | 17        |                 |              |            |
| Fluggerätmechaniker/-elektroniker<br>mit IHK-Abschluß an einer Part-147 zugelassenen<br>Schule (duale Ausbildung)                                                                                                                           | 1                      |             |         | X                       | X                  | X                      | X                     | X                  | 11            | 11                   | 33                                                  | X                   | X         | 55              | 9            | FJA1003-01 |
| Fluggerätmechaniker/-elektroniker<br>mit IHK-Abschluss                                                                                                                                                                                      | 1                      |             |         | 22                      | 6                  | 44                     | 44                    | 11                 | 11            | 11                   | 112                                                 | 37                  | 7         | 305             | 50           | FJA1002-01 |
| Förderliche Berufsausbildung außerhalb der Luftfahrt                                                                                                                                                                                        | 1 <sup>1</sup>         |             |         | 22                      | 6                  | 58                     | 85                    | 16                 | 17            | 22                   | 264                                                 | 72                  | 7         | 569             | 90           | FJA1001-01 |
| Teil-66 Forderung für „Certifying Mechanic<br>Cat A1“                                                                                                                                                                                       | 1 <sup>1,2</sup>       | 20          | 45      | 22                      | 6                  | 126                    | 183                   | 16                 | 17            | 22                   | 264                                                 | 72                  | 7         | 800             | 123          | FJA1000-01 |
| Differenzschulung von Cat. B2 zu Cat. A1                                                                                                                                                                                                    | 0,25                   |             |         |                         |                    | 19                     | 42                    |                    |               |                      | 141                                                 | 72                  | 7         | 281             | 46           | FJA1xB2-01 |
| <p>X = Abschluß mit Prüfung in diesem Modul</p> <p>1 Die praktischen Erfahrungen können nach dem Grundlagenlehrgang erbracht werden</p> <p>2 Für andere technische als förderliche Berufe mit IHK-Abschluß entfallen die Module 1 und 2</p> |                        | Mathematics | Physics | Electrical Fundamentals | Digital Techniques | Materials & Components | Maintenance Practices | Basic Aerodynamics | Human Factors | Aviation Legislation | Aerodynamics, Structures & Systems, Turbine Aeropl. | Gas Turbine Engines | Propeller |                 |              |            |

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)

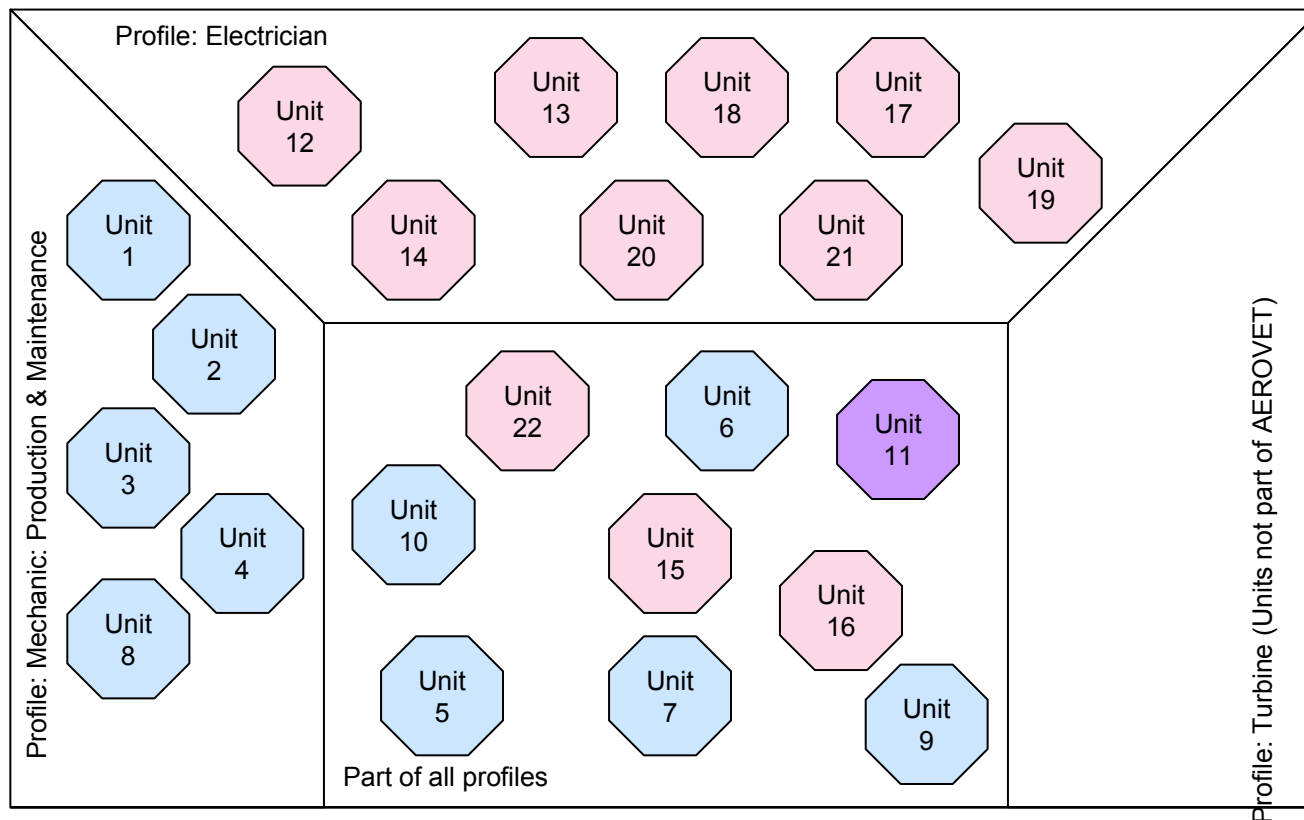
⇒ "Mutual trust" between these two competent institutions!

## 5: Proposed reorganisation (NO)

### 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.

The



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