

# Design and certification process of the Mission M108

## Internship Presentation

Melanie Bombardiere

January 21st, 2014

# Table of contents

## ① Introduction

Lambert Aircraft Engineering  
The Mission M108 LSA

## ② CAD and design work

Radiator  
Cabin heating system  
Brake system  
Instrument panel

## ③ Database

Database presentation  
Database structure  
Database test

## ④ Results

Contribution  
Human experience

# Lambert Aircraft Engineering – Presentation



- ▶ limited series production of aircrafts;
- ▶ avionics maintenance.

# The Mission M108 LSA – Presentation



- ▶ two seater single engine light sport aircraft;
- ▶ welded tubular structure;
- ▶ Rotax 912iS engine.

# The Mission M108 LSA – Presentation



# The Mission M108 LSA – Presentation

- ▶ ASTM: American Society for Testing and Materials;  
Light Sport Aircraft characteristics:
  - ▶ maximal weight: 600kg
  - ▶ Single engine
  - ▶ Maximum 2 seats
  - ▶ ...
- ▶ FAA: Federal Aviation Administration;
- ▶ EASA: European Agency for Safety Aviation.

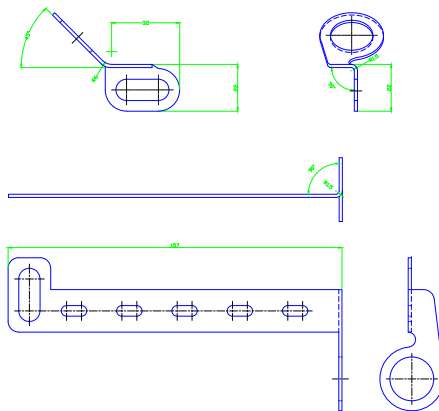


Figure : The upper and lower port side brackets for the radiator





## Cabin heating system

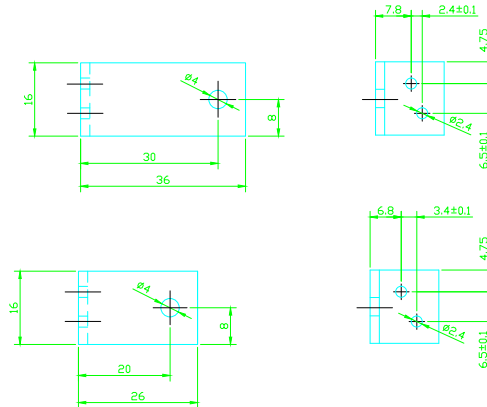
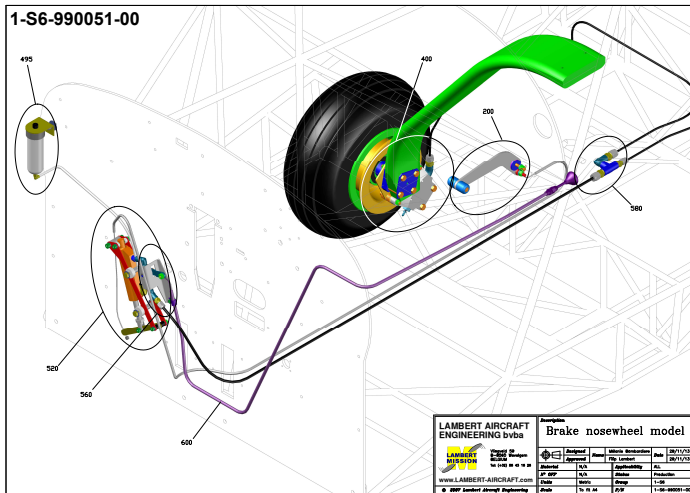


Figure : The L-brackets in the cabin heating system

# Brake system



# Instrument panel



# Instrument panel

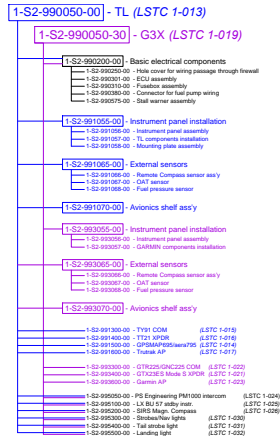
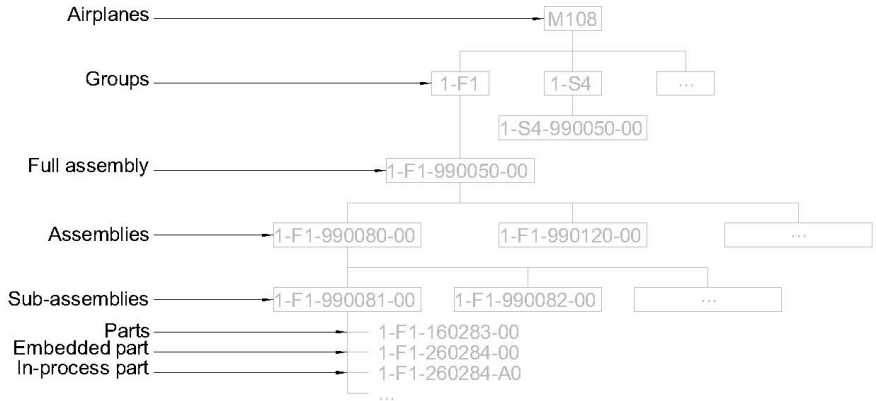


Figure : The IPC structure for the electrical system

# Database

LAMS (Lambert Aircraft Management System)

# Database structure





## Results – Contribution

- ▶ CAD and design work:
  - ▶ Schematics and illustrations ;
  - ▶ Engine assembly: example of the radiator;
  - ▶ Cabin heating system: prevention and poka-yoke;
  - ▶ Illustrated Parts Catalog: combining 3D design and logic;
  - ▶ Pitot & static systems: rethinking existing systems;
  - ▶ Brake installation: designing a new system.
- ▶ Database.



## Results – Human experience

- ▶ Exchanging information;
- ▶ Communication with the customer.

# Conclusion

- ▶ Objective of the internship
- ▶ Design team

# Conclusion

- ▶ Willingness to leverage existing products & tools
- ▶ Being able to take decisions quickly
- ▶ **Getting things done!**