

Design & certification process of the Mission M108

Internship Presentation

Melanie Bombardiere

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Lambert Aircraft
Engineering
The Mission M108 LSA

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Lambert Aircraft Engineering – Presentation



- ▶ limited series production of aircraft;
- ▶ 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.

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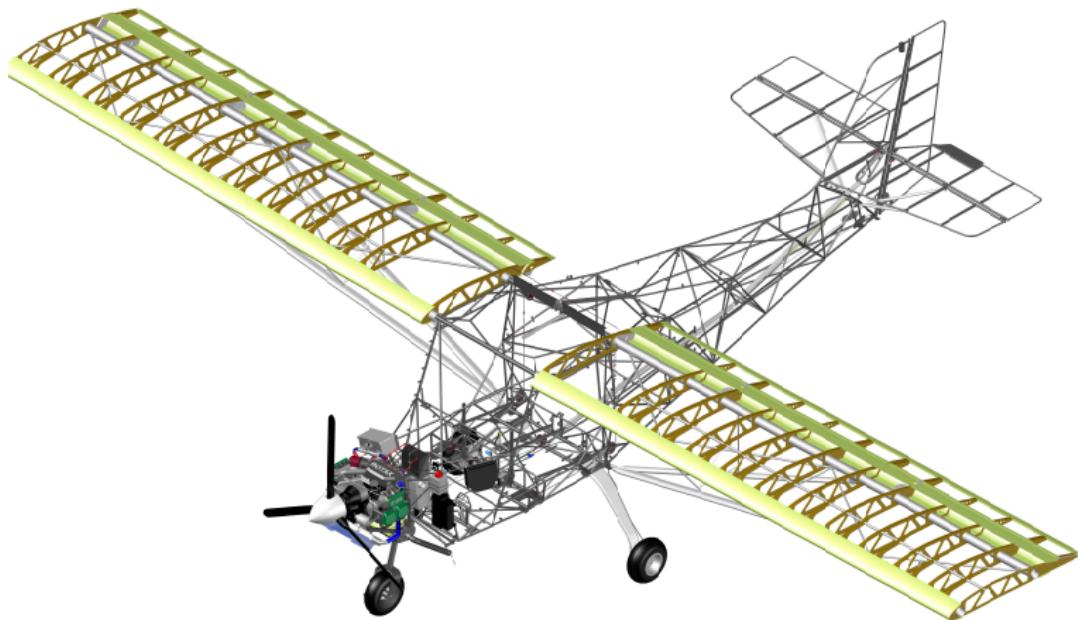


Figure : The Mission M108

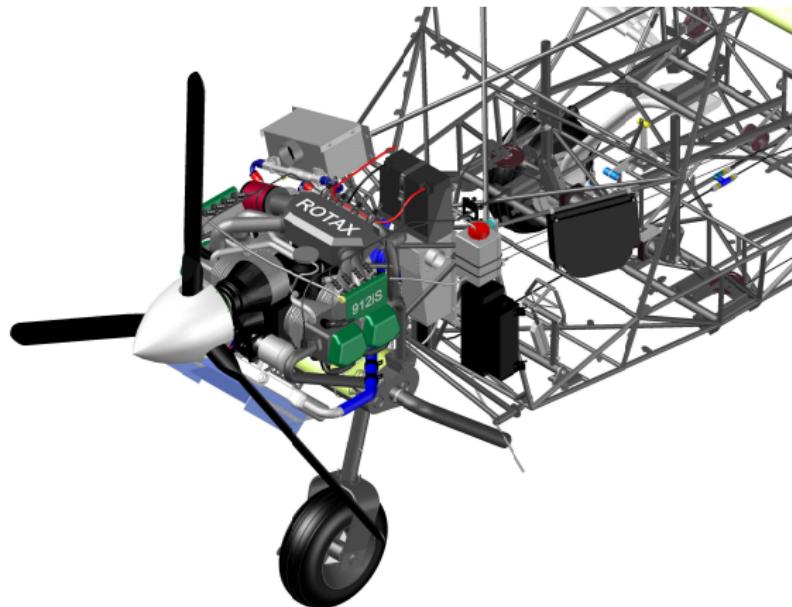


Figure : The Mission M108

Radiator

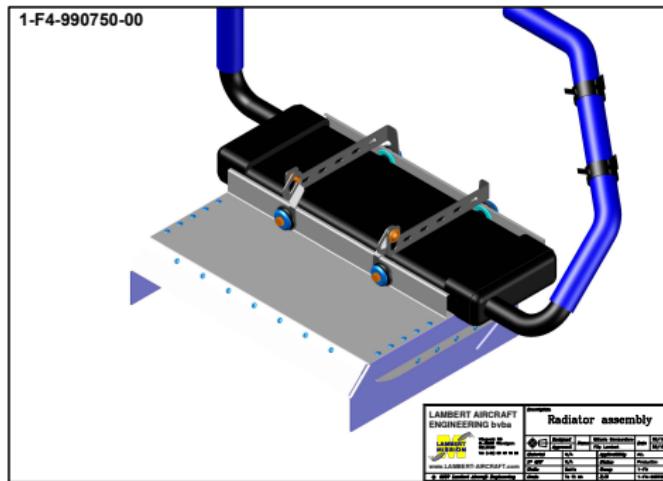


Figure : The radiator assembly

Radiator

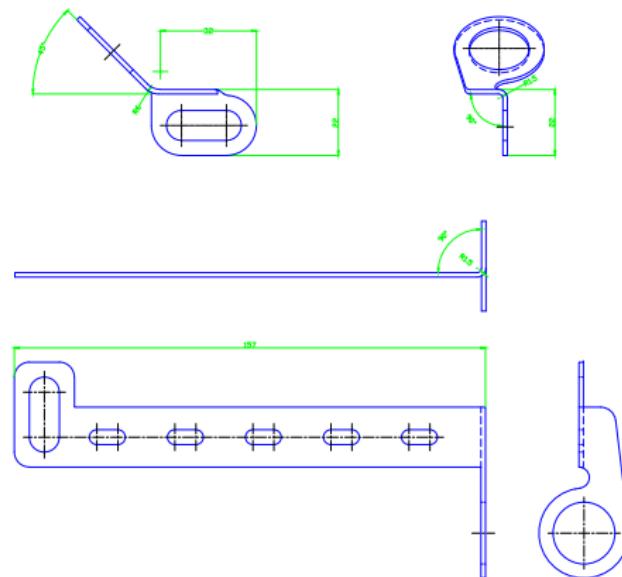


Figure : The upper and lower port side brackets for the radiator

Cabin heating system

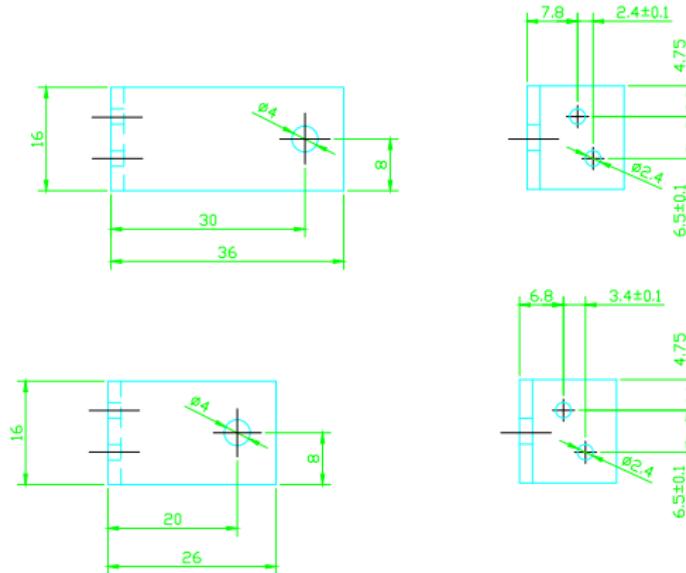


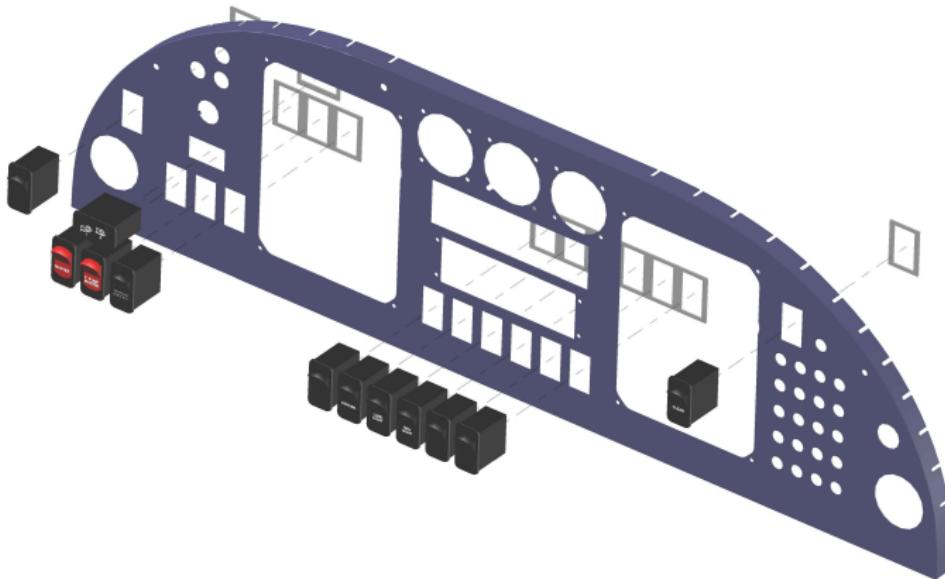
Figure : The L-brackets in the cabin heating system

Instrument panel

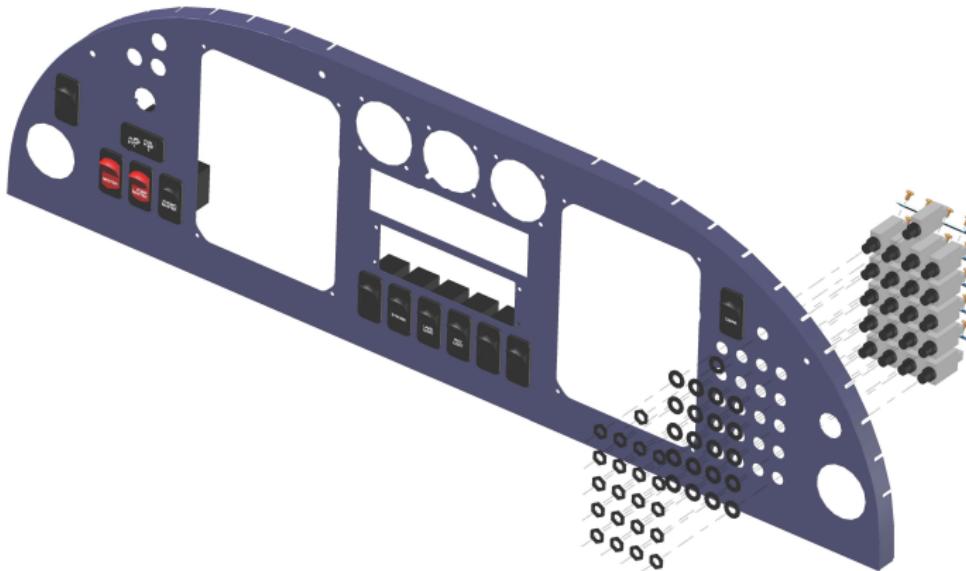


Figure : The instrument panel

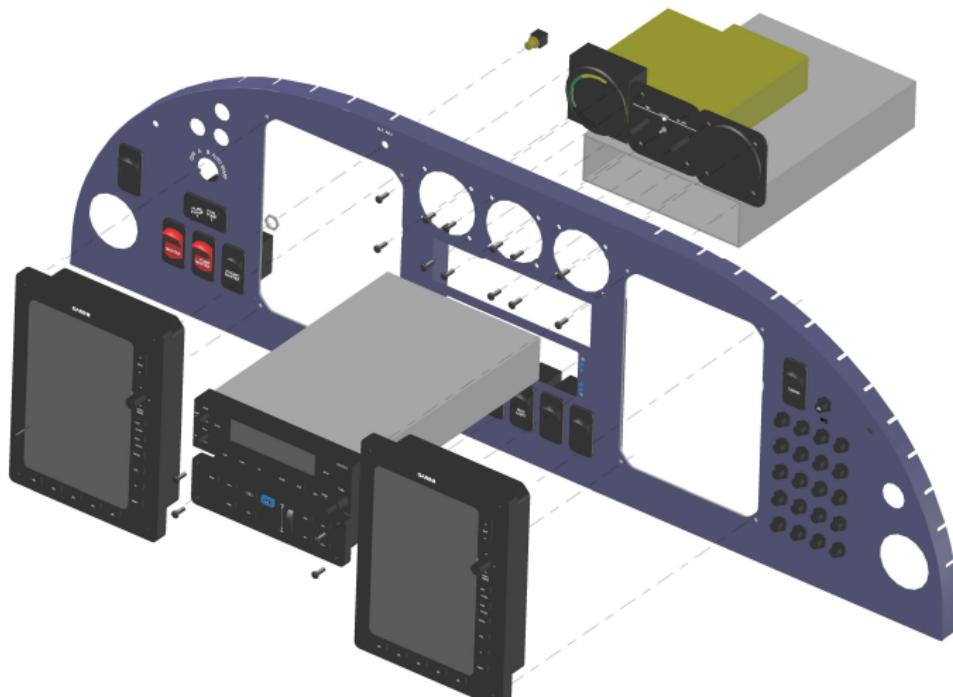
Instrument panel



Instrument panel



Instrument panel



Instrument panel



Instrument panel



Instrument panel

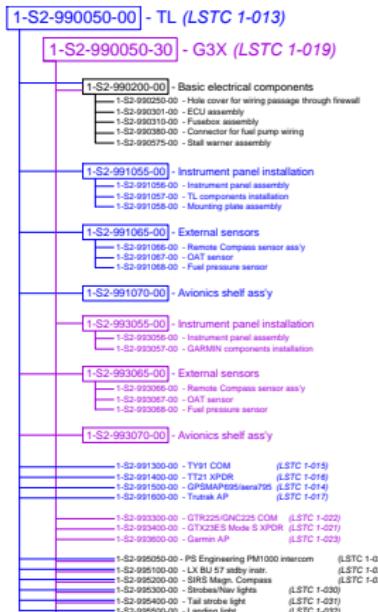
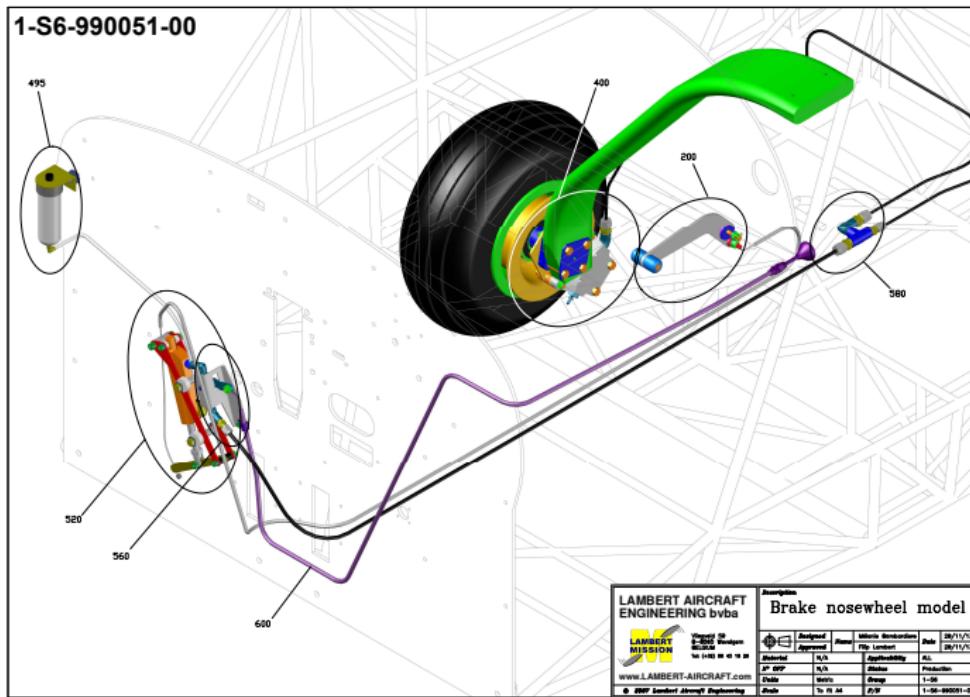


Figure : The IPC structure for the electrical system

Brake system



Brake system

1-S6 - Brake system

1-S6-990215-00

-00 : s/n 108001-

No.	Description	Part Number			
208	Stainless steel end cap for stranded cable 1-S6-060205-00	1-S6-050208-00	1		
220	Brake lever	1-S6-160220-00	1		
221	Knob on brake lever unthreaded part	1-S6-170221-00	1		
222	Knob on brake lever threaded part	1-S6-170222-00	1		
223	M6 x 25 mm hexagon socket head cap screw, DIN 912, zinc plated	1-S6-010223-00	1		
225	M6 hexagon slotted and castle nut, DIN 935-1, zinc plated	1-S6-010225-00	1		
226	Nylon washer, O.D. 30 mm, I.D. 6 mm, thickness 4 mm	1-S6-150226-00	1		
227	M6 wood washer zinc plated	1-S6-010227-00	1		
228	Nylon washer, O.D. 30 mm, I.D. 6 mm, thickness 2 mm	1-S6-150228-00	1		
229	Cotter pin 2 x 20 mm, DIN 94, zinc plated	1-S6-010229-00	1		
230	Cable terminal	1-S6-090230-00	1		
231	M6 nyloc nut, DIN 985, zinc plated	1-S6-010231-00	2		
232	M6 plain washer, DIN 125-1 A, zinc plated	1-S6-010232-00	1		
233	Nylon washer, O.D. 14 mm, I.D. 6 mm, thickness 1 mm	1-S6-150233-00	2		

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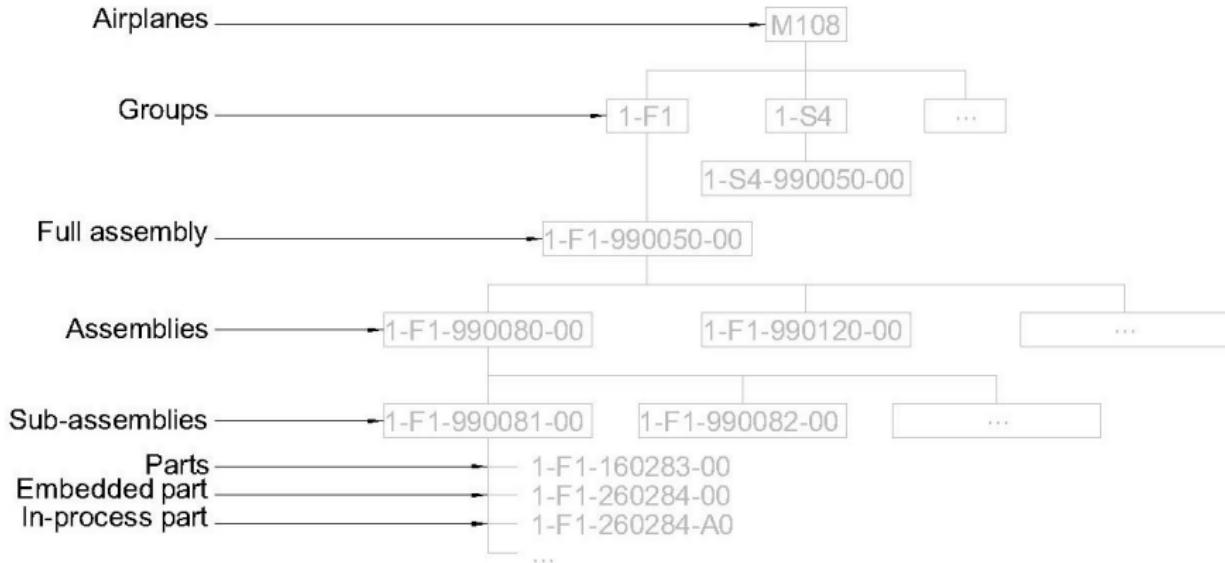
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Database

LAMS (Lambert Aircraft Management System)

- ▶ identifying parts in assemblies;
- ▶ stock control;
- ▶ cost calculations.

Database structure



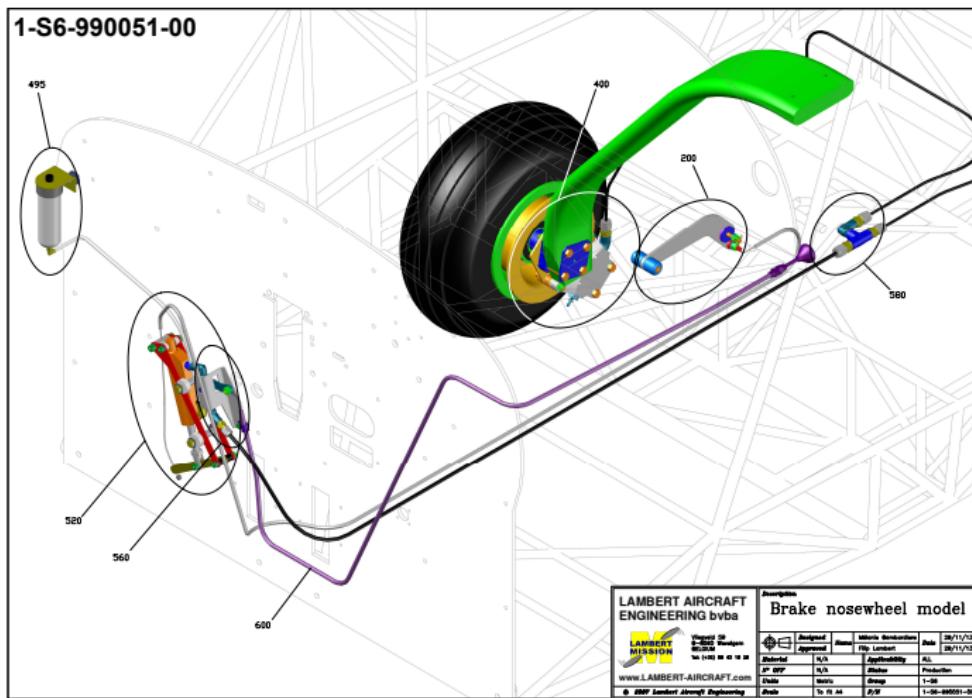


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Results – Contribution

- ▶ 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.

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Conclusion

- ▶ Objective of the internship;
- ▶ Design team.

Conclusion

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