

Study Mission on the Aviation Industry in Germany & the Netherlands

16-22 May 2010

Summary

This study mission enabled us to get an insight into the Aviation industry in Germany where we found out more about the technology and domestic production within the industry. Furthermore, attending the aircraft interiors exhibition and the local association reception provided an effective channel to keep up with the trends and meet industry professionals.

Details

This study mission was organized by HKPC and co-organized by the Hong Kong Aviation Industry Association with the objective of learning the technologies employed by the industry, as well as exploring opportunities for more business and technology cooperation with European companies. Arrangements were made for delegates to visit 4 aviation companies. Other activities were scheduled to include a visit to the Aircraft Interiors Expo in Hamburg and attend a networking reception hosted by the local aviation association.

Remark: The visit to Rexroth Bosch AG in the Netherlands was cancelled because our flight was not able to land in Amsterdam airport due to volcanic ash clouds.

1. The first visit was to Lufthansa Technik AG. The visit started with a pre-tour film about the past, present and future of the Hamburg base. Next, delegates departed on a two hour-long tour of the maintenance and repair station where we were given a survey on the overhaul hangar, the engine shops and the paint hangar.
 - In the hangers, large commercial aircraft from Airbus and Boeing are completely overhauled or equipped with product improvements. Various parts workshops of the hangar complex work on parts from landing gear to the navigation computer to the galley.
 - The engine shop at this base is the largest independent workshop for the repair of commercial aircraft engines worldwide. The offered services range from repair work and overhauls of engines of different manufacturers, of its modules, individual parts and accessory devices.

- The Hamburg base of Lufthansa Technik has a modern hangar in the painting hall for commercial aircraft paint removal and painting.

In addition to ensuring aircraft safety, the procedures involved in the MRO activities, similar to other industries, are required to meet the stiff requirements for environmental protection.



Photo 1 - Mr. Thomas Westphal gave an introduction of the Hamburg base of Lufthansa Technik



Photo 2 - Overhaul hangar
(Source: Lufthansa Technik)



Photo 3 - Paint hangar
(Source: Lufthansa Technik)

2. The second visit was to Dasell Cabin Interior GmbH, a joint venture between Sell and AIRBUS. This company is an OEM manufacturer of lavatories for the entire Airbus family with annual production of about 1600 sanitary units, in addition to other products, including stowages, coatrooms, bar units, doghouses and class partitions to other manufacturers and airlines. All products are designed to meet the high quality and safety standards and are of lightweight construction making optimal use of available space.

Beside the factory tour a business meeting with the purchasing personnel was arranged, in which, they made an introduction of their business and some trends in the future lavatory units design. This company is open to suppliers who are interested in providing any interior parts and manufacturing services, whereas they required quality suppliers (e.g. certified with TS 16949), preferably with related supply experience to the aviation industry.



Photo 4 - Dasell is located beside Airbus Cabin Interior Center.



Photo 5 - Meeting with the purchasing personnel



Photo 6- Final assembly line
(Source: Dasell Cabin Interior)

3. The third visit was to Airbus. The Bremen base is one of the Centres of Excellence (i.e. Wing/Pylon) that Airbus has established and it is the second largest Airbus site in Germany. As part of the production network of Airbus, this site focuses on the design and manufacture of high-lift systems for the wings of almost all Airbus's programs including A380's, with capabilities covering technology engineering, flight physics, system engineering, structural development, verification tests, structural assembly and wing equipping. Another focus is the production of an annual 2.5 million components, particularly sheet metal parts, for the fuselage and the wings.

Metals and composite materials are assembled in the modern high lift systems. Composite materials are popularly used in the aircraft manufacturing industry to reduce weight. However, several concerns regarding structural safety pose limitations on applications in the main body of the wing, for example from the perspective of durability and unforeseen discrete pattern.



Photo 7 - Structural assembly
(Source: Airbus)



Photo 8 - Final assembly line
(Source: Airbus)



Photo 9 - Airbus Bremen base



Photo 10 - Group photo with Mr.
Rckart Wutke from Airbus

4. The forth visit was to Mühlenberg Interiors GmbH & Co. KG, a member of the Group EDAG GmbH & Co. KGaA. This company develops and manufactures aircraft galleys, stowages and other similar lightweight aircraft components. Among all these products, galleys contribute nearly half of the company's gross performance. Great depth of production activities is carried out in house, ranging from conceptual product design, milling of fitting and mounting elements, manufacture of sandwich plates and final assembly to quality assurance. Apart from verifying the design by FEM at the early stage, the company also tests new monuments on their static test racks.

Their products are made of honeycomb sandwich panels which are aramid-based papers coated with phenolic resin. A honeycomb shaped structure provides the panel with a high stiffness relative to its weight while the aramids have excellent

fire resistance making them easily meet FAR 25.853(a). Usually the cell size of the aramid honeycomb for galleys is around 1/8 inch and 3 lb/ft³ in density. These fireproof honeycomb composites are used extensively in the aerospace industry.

In case the customer is unable to read the files in computers during emergencies, the company has to keep all hard copies of the drawings and related documents of a monument for the full active service life of the aircraft using the component.



Photo 11 - Final assembly line
(Source: Muehlenberg)



Photo 12 - Static test rack
(Source: Muehlenberg)



Photo 13 - Honeycomb sandwich panels
(Source: Muehlenberg)

5. The highlight of this study mission was to visit Aircraft Interiors Expo 2010 which showcased tomorrow's cabin designs, in-flight entertainment and passenger services. With more than 500 exhibitors, this event is regarded as one of the largest and most important events of its type in the world. This exhibition provided us a splendid opportunity to see a wide range of suppliers and new products in four exhibition halls within one day. For the first time, Aircraft Interiors Expo introduced an innovative zone where visitors can view the futuristic interior concepts and equipment in a 3D immersive environment.

Following the major trend of the industry, several breakthroughs in interiors development this year are related to weight reduction and environmental friendliness. Meanwhile, cabin design solutions continue to improve customer's comfort. This year particular attention seems to be focussed on solutions for the disabled flyer.



Photo 14 - Aircraft Interiors Expo Hamburg



Photo 15 - A “supersized” passenger and seat



Photo 16 - A doll-like lady was promoting lightweight galleys



Photo 17 - Aerospace alloys Aluminium vs. Magnesium



Photo 18 - Seating fabrics



Photo 19 - Testing service

6. Delegates were invited by Hanes-Aerospace e.V. to a reception at Speicherstadt. Hanes-Aerospace is Germany's largest association of small and medium sized aviation and space companies. Their member companies represent a wide spectrum from development companies, makers and maintenance companies, aviation and space oriented service companies to academic organizations. Besides company representatives from Germany, there were also delegates from France and the Netherlands. This event provided an opportunity for us to meet and network with industry professionals.

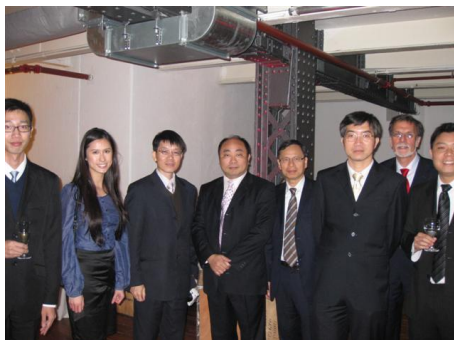


Photo 20 - We are “China Delegates”



Photo 21 - Dinner buffet was provided at the Reception