



Lord of very real "palaces in the sky":  
Dr. Claus Bauer in the hangar of the  
Completion Center of Lufthansa Technik



# Lounges of the Skies

**Comfortable versions of private jets for powerful managers are increasingly in demand. At the Completion Center of Lufthansa Technik in Hamburg, the luxury versions of the business jets are already set for low-scale production. In order to ensure that the Product Creation Process was also elevated to a luxury level, Porsche Consulting laid down new rules in the hangar.**

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The fine silver tea service sits next to the large round bed, above which a bedspread made from satin is draped: the view sweeps across the designer wall lamps, past the glass shower cubicle up to the marble wash basin. This is an extremely spacious suite, with only the windows being relatively small in comparison. But in return for this the view is simply breathtaking: Blue sky and towering clouds as far as the eye can see. Rooms with a view at a flying altitude of 10,000 meters: welcome to the salon with 160,000 bhp, on the flying carpet of the modern age. It is not just the Persian carpets on the floor that are real. The dream vision of flying can be explained in glowing terms: “Everything in this jet that looks like gold is in fact gold,” says aircraft designer Thomas Colditz. Such special makeovers, which transform commercial aircraft into flying lounges, represent the very lifeblood of Lufthansa Technik’s Completion Center in Hamburg. Royal families, governments and anybody else for whom First Class does not quite fit the bill simply has entire airplanes customized to cater for their needs here. For instance, a Boeing 747, which would otherwise normally accommodate 400 holidaymakers, is suddenly ▶



On tow: An airplane on its way to be refitted—where it will be given much more than just exclusive seats

transformed so that it then boasts bedrooms, dream bathrooms and libraries for a handful of people. One “V” is not enough: the experts from Lufthansa turn a VIP jet into a VVIP jet. These very, very important people already have their eye on special versions of the mega Airbus A380, the new Boeing B747-8 and the Boeing 787 Dreamliner, which are set to hit the market in the next few years. But even today there is no lack of superlatives; the only plain feature is generally the paint on the outside. The clientele value privacy from the outside world, which is why the look around the hangars which *caracho* was granted is—quite literally—a very exclusive one.

When you are above the clouds, freedom probably knows no bounds, if you have spent tens of millions on having your aircraft kitted out in a special way. This represents finer living, finer flying. It is an exclusive and small segment of the market in which the people from Lufthansa at Fuhlsbüttel Airport have specialized. Despite the noise of jet engines running, the impression

conveyed at the vast site where airlines from all over the world have their aircraft serviced seems maritime: “Aircraft Hangar” reads the sign at the entrance to the high-security hangars, the work stations are referred to as “docks,” and commercial aircraft from the Boeing 737 upwards are considered to be “chunky ships.” In relation to these giants of the skies, the slim silhouettes of the Challenger jets lined up one behind the other in the huge hangar look like yachts for the America’s Cup. But even on a slightly smaller scale, the only limit on originality is set by the size of the fuselage. These airplanes from Bombardier are usually employed as business jets or even regional jets. These luxury versions for business people are becoming increasingly popular, which is why the talk in Hamburg can now be about small-scale production. “The market for VIP and executive jets is currently expanding very fast,” says Dr. Claus Bauer, vice president of Completion at Lufthansa Technik.

The transition from piece production to series production provides one of the starting points for installing ▶





VIP program for the production of VIP aircraft: Porsche consultants Dr. Ulrich Guddat (left) and Andreas Vetter

an efficient and synchronized Production Creation Process (PCP) based on the recommendations of Porsche Consulting at the Completion Center. When it is applied at Lufthansa Technik, it will provide a structured process flow from contract initiation and design through to the production and delivery of aircraft, an increase in transparency and the expansion of quality gates within the entire business environment. The organizational focus on the process, the reduction in the complexity of planning and control measures, and the incorporation of the customer and suppliers in combination with clear reporting complete the range of tasks for the team led by Dr. Ulrich Guddat, head of the Lean Development division. This is effectively a VIP program for the production of VIP jets. But the solutions are not high and mighty but very much down to earth. A special business

division with particular challenges: It was often not the airplane which dictated the development process, but instead the manufacturing and material availability of the furnishings. Each separate project within the Completion Center needed to be planned and managed differently, and there was a lack of hierarchies in the very detailed plans. Toward the end of the idle period, the capacities were tied up considerably above what was planned for.

The clarity with which Porsche Consulting went to work can be gauged by looking at one figure in particular: Whereas there used to be 500 planning elements on real wallpaper, there are now just 90 points listed which are essential for the progress of the project. "During the process of refitting a B747-400, up to 500,000 internal

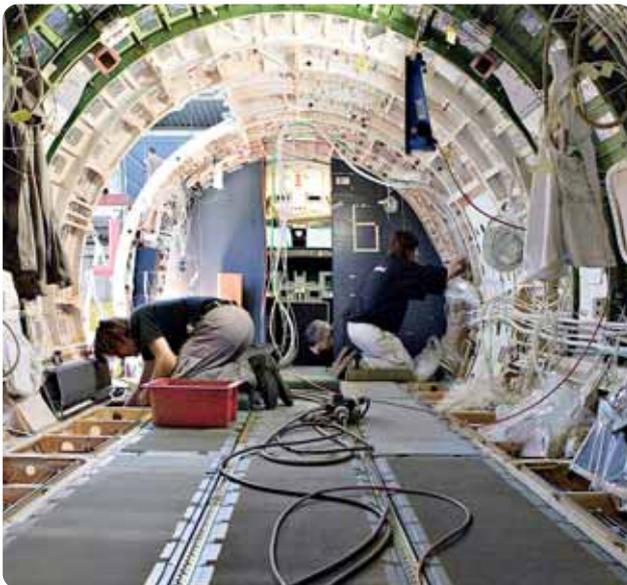
man-hours plus the work of around 250 suppliers may need to be synchronized. The aim of the contract given to Porsche Consulting was to benefit from the know-how in advance automotive development and to provide a suitable management tool for the core project teams at the Completion Center.”

The system for planning and managing the Completion Center was devised and introduced over the course of five months. Its catchy name can be understood very much as a program: PROFI (Planning and Reporting: Organizational and Functional Improvement). PROFI works like an internal radar screen at the Completion Center: It provides clarity on tasks, responsibilities, deadlines and the status within a project. “We used to always have a sense of where we were up to with the project as a whole,” recalls Thomas Colditz, who is responsible for planning and controlling, “but now everybody not only knows where they are up to, they also recognize their impacts on the next steps in the process. Having clearly defined responsibilities also makes it eas-

ier to organize several projects at the same time, which is very much part of everyday operations for us.” The individual wishes of the wealthy clients often force the project planners to react quickly—this is because within the complex process which stretches out over two years the clients often have last-minute requests when it comes to fixtures, fittings and alterations. And they are accustomed to their requests being met. The clients are now involved in the planning process, and there are clear interfaces.

It proved possible to communicate the new mode of operation of the synchronized product development process and the optimization of the procurement tasks to the employees at Lufthansa Technik in the workshops and at the aircraft dock in a clear way: PROFI uses a map as a model on which the completion process is visualized from the contract to the handover stage for the individual sections. This makes navigation easier for everybody. The status of the individual partial processes is likewise clearly highlighted: With traffic lights, even ▶

Manual work for very special clients: The refitting measures also demand an appreciation of the very finest details



though aviation does not usually make use of these traffic signs. For good reason the boards with the A symbols are positioned in the hangar usually right next to the door into the airplane, and also on moving boards, in the hangar and workshop, in order to ensure “circulation of information.” Thus, the progressive status of the projects is also always on the move within the large workshop complex. If one stage of the project slips into the red, countermeasures are initiated immediately within the framework of a standardized escalation process. As in the announcement made over the tannoy on a scheduled flight: The emergency exits must be kept clear...

Milestones and quality gates which need to be reached and passed at a particular stage in the project are especially highlighted on the maps which all employees receive for their section. Only once these reliable intermediate results have been achieved does a review board give the all-clear for the next working steps. The management summary gives the decision-makers such as vice president Dr. Claus Bauer a regular overview of the overhaul status of the airplanes. But every single employee—specialists from a wide variety of trades—also has to be aware of the progress of the project. Checklists and measure sheets are used to ensure this is the case. Productivity progress is of course not just measured on the project map: A central person with responsibility for the process receives suggestions for improvements, ensuring that the map remains active, and the completion process can therefore be continuously improved on a joint basis. Both the aircraft and the lists are maintained in the maintenance hangar.

Dr. Ulrich Guddat, who together with his colleagues Darius Khodawandi, Andreas Vettters and Nicolas Franzwa from Porsche Consulting provided consulting services to Lufthansa Technik, is pleased with the way things are progressing: “Added value and wastage is not found ▶





Seating arrangements in the hangar: Armchairs and sofas create an exclusive lounge atmosphere in VIP jets





Full perspective: No question is left unanswered on the info boards

only in production. Admittedly, these are much more difficult to identify in indirect areas. But this is precisely why a transparent process that concentrates on essential steps in the project is of such crucial importance. It forms the basis for continuous improvement, organizational adjustments and IT support—in this precise order.”

Following the procedure adopted at the automaker Porsche with Porsche Process Optimization (PPO), the second step in the work of Porsche Consulting at the Completion Center was implemented on the basis of the process—the organizational adjustments within purchasing. The consultants based their thinking here on the following key question: Is purchasing correctly positioned between the needs of the particular project and the scale effects of the line? The answers are provided by the process. The detailed analysis highlights wastage, for example through the entry “Look for parts instead of working on the airplane.” At the beginning of the 1990s, Porsche AG was suffering from similar problems. At Lufthansa Technik, the creation of parts lists and



Inspired by the process: Aircraft designer Thomas Colditz

careful selection of suppliers alone have already freed up capacities in the early phases of fitting out aircraft.

In addition, within the project framework, Porsche Consulting has for the first time provided the customer with software for managing the project. “Our aim here is not to take over from standard software such as SAP, but instead to make it possible for every single person to quickly get used to the rules of engagement for managing the project.” Moreover, the software represents ideal illustrative material for the customer’s own IT department for the purpose of designing the permanent software solution in line with the model. So here too the maxim is improvement in small steps—without any time-consuming concepts.

Working with the aircraft manufacturers also allowed the consultants to pick up new skills that they took away with them: They can now spell perfectly using the phonetic alphabet that is used as standard within the aviation industry. Porsche, for example, is Papa-Oscar-Romeo-Sierra-Charlie-Hotel-Echo. ◀