

Bauhaus Luftfahrt: Rebirth of a Visionary Research Model

By Clemens Bollinger*

The aviation of tomorrow requires new ideas *today*. In Germany, the ground has been prepared for this with the founding of Bauhaus Luftfahrt in Munich on November 17, 2005. Founding fathers of this think tank, unique in Europe, include the high tech companies EADS, MTU Aero Engines, and Liebherr-Aerospace, together with the Free State of Bavaria. The founders start with traditions that belong to the finest that German culture has to offer: the legendary Bauhaus of the Weimar Republic during its heyday in the Dessau of visionary aviation pioneer, Hugo Junkers. Rebirth of a visionary research model: how did it come about?

An increasing desire for mobility on the part of millions of people, dwindling oil reserves, limited infrastructure — these factors alone indicate that new solutions for air transportation need to go far beyond the conventional approach.

As the founders of Bauhaus Luftfahrt put it, “Bauhaus Luftfahrt [is] particularly committed to creativity in engineering and new approaches to problem solving. ... The technological, financial, ecological and social issues that aviation will face in the future require the collaboration of many specialized disciplines.” — And with that, Bauhaus Luftfahrt carries on the model established by its historical predecessor.

The complex Bauhaus school of thinking originated immediately after World War I in a Germany that was shattered and impoverished, with an uncertain future. The only thing that was clear: after the catastrophe of the First World War, a new age had dawned. The great attractiveness of the new Bauhaus style, its influence on architecture, art and design, is ultimately based on its successful integration in the everyday world of the average citizen.

The need for such integration was absolutely boundless: Technological progress had alienated millions of people from craftsmanship. Artisans had become machine operators, and mass production was posing a threat to aesthetic norms. And finally this insight: Well-designed products are easier to sell. Plenty of reasons to consider a new relationship between technology and art.

In Weimar, where “das Staatliche Bauhaus” was founded by Walter Gropius in 1919, this new relationship was already a component of the required “Preliminary Course” and subsequent workshop and classroom instruction segments. The standard that applied was Gropius’ maxim about the unity of technology and art in a well-ordered, Leibniz-style universe. The master craftsmen of Bauhaus — for example, Kandinsky, Klee, Feininger, Marcks, and Schlemmer — soon became as famous as Gropius himself.

Like a distant echoing historical signal, the first all-metal commercial airplane in the world took to the air in Dessau on June 25th of the same year.

The single-motor Junkers F13 went on to take an unsurpassed victory lap around the world, inaugurating regular, safe air transportation on all continents.

Six years later, Walter Gropius gave his seal of approval to a generous-sized parcel only a stone's throw from this Dessau airport. This was the site chosen for the new "Bauhaus Dessau" building after the politically motivated conservative-nationalistic State Government of Thuringia forced the Bauhaus teachers and students out of Weimar. Fortunately, Gropius had immediate offers from other cities.

His decision in favour of Dessau turned out to be a stroke of luck. In this location, Bauhaus entered a golden age that lasted until the institution's forced closure in 1932. This was where the linkage between Bauhaus ideas and industry first bore fruit.

Dessau, after all, was the home of the renowned Junkers aircraft factory. A large segment of Dessau's population earned their living in the state-of-the-art production lines of this visionary scientist, pioneering engineer, and businessman.

Now called the "School of Design," Bauhaus, too, hoped to benefit from its proximity to the Junkers company. This hope was not misplaced. Mayor Fritz Hesse confirms that Junkers' receptiveness to new ideas led to a close relationship between the company owner and Bauhaus: "He became one of the Bauhaus School's supporters, and soon the Junkers people and the Bauhaus people started forming relationships." For example, the stylized "flying man," the elegant, timelessly beautiful logo of the Junkers factory, was created by the Bauhaus designer, Friedrich Peter Drömmmer. Advertising and sales brochures for Junkers airplanes deliberately used the visual impact of the new Bauhaus building, at a time when no one dreamed it would become one of the most famous buildings of the 20th century.

Hesse notes that when the building was formally opened on December 4, 1926 in the presence of almost 2000 invited guests, "Professor Junkers, an aviation pioneer, was a kindred spirit with the pioneer of the new building style, and also liked him on a personal level. Although otherwise loathe to take part in any social activities, on this occasion Professor Junker could be seen in the midst of the festive crowd long after midnight."

Bauhaus formed a symbiotic relationship with Junkers that was not limited to airplanes, but always came back to them. Housing projects near the airport, detached houses, chairs — there were many areas of common interest with Bauhaus, particularly in metalworking, which Junkers had developed to perfection. Hugo Junkers wanted modern, functional design not only for the exterior of his airplanes, but also in the interior appointments. As a result, starting in 1925, Bauhaus designer Marcel Breuer was able to develop his first steel tube furniture, which in a modified form was later installed in Junkers commercial airplanes.

Unity of form and function, the new practicality: Without Bauhaus in Dessau and its ties to local industry, the world, including the personal living space of millions of people, would look very different today.

But the special spirit of those Dessau years, the Bauhaus values combined with the distinct corporate culture of Junkers, continues to be forward-looking. Not only Bauhaus, but also the Junkers plants were running elite training programs without characterizing them as such. In 1928, Max Bill wrote, "Bauhaus is an intellectual, forward-looking trend, a state of mind..." It is also known that Hugo Junkers instructed his executives to hire only applicants who possessed a broad base of knowledge *and* also had what human resource departments these days generally refer to as "social competence." In the Junkers company, collaborative thinking was already a specific requirement 80 years ago.

Intended parallels between Bauhaus Dessau and Junkers on the one hand, and Bauhaus Luftfahrt on the other, particularly in the area of research: The historical Bauhaus tried to identify the basic physical and psychological needs of humans in their environment, and to respond with an appropriate design. The basic research in this area primarily affected the realm of architecture.

Professor Junkers' scope of research was significantly broader. Next to the factory's airfield in Dessau, he had a private research institution at his disposal that was far and away the leading such facility in the world. Junkers never ever let the work come to a standstill in this institute. Very early on he wrote, "Everything that Junkers does is based on systematic research." Later, more casually, he called it, "my personal obsession."

The discoveries that were made in the Junkers research facility were not only directly applied to Junkers airplane construction, but were also marketed as patents. At least some of the profits flowed back into the research facility – a research ethos that worked without government subsidies.

In the startup period, which is still ongoing, the expenses of Bauhaus Luftfahrt will be borne primarily by the Free State of Bavaria. However, the model of industry-financed research with marketing opportunities, is already a definite part of the plans for the coming years.

In the judgment of the business sector, the Bavarian State Ministry for Business, Infrastructure, Transportation and Technology deserves most of the credit for the fact that Bauhaus Luftfahrt is enriching the research landscape of today. The ministry formed an "Aviation in Bavaria" committee, which discussed new ways to strengthen the aviation industry in a meeting held in Oberpfaffenhofen on February 27, 2002. In addition to the more pragmatic topics such as improvement of education, the room was filled with calls for excellence in research, innovation, and site preservation, without any coherent plan taking shape.

Eventually Peter Pletschacher, the owner of the Munich publishing company, Aviatic-Verlag, spoke up. Based on many discussions with leading figures in the German aviation industry, he said, he knew that the pressures and hectic atmosphere of the daily routine in the industry had ruined a number of very promising starts in research and development.

Things were not much different, Pletschacher said, in the outstanding large research institutions of Germany. There, too, the focus was on orders and deadlines, and scientists were under pressure. What was missing, he said, was an "island of visionary thinking," away from the bustle of daily operations. For visions that could only be developed outside of company constraints and unconfined by conventional technological structures, visions that would then develop an attractiveness of their own.

Having said this, he pointed to the world and methods of the historic Bauhaus in Dessau. The term and concept, Bauhaus Luftfahrt, was born and immediately thereafter found its way up into executive suites and all the way up to associates of Dr. Otto Wiesheu, the national government's Minister of State at the time. With a more general, comprehensive approach, the idea of limiting aviation research to Bavarian territory was soon abandoned, and attention focused on strengthening the aviation industry in all of Europe. Erwin Huber, Otto Wiesheu's successor as Minister of State, promptly made the vision and mission of Bauhaus Luftfahrt his own.

The legal form of *eingetragener Verein* (registered association), with founding members EADS, MTU Aero Engines, Liebherr-Aerospace, and the Bavarian State Ministry for Trade and Industry, Infrastructure, Transportation, and Technology, was chosen in order to ensure that additional partners/members – companies and organizations from all segments of the air transportation system – could join Bauhaus Luftfahrt without expensive formalities.

The theme and vision of all projects initiated jointly or in groups will always remain the same: practical, interdisciplinary aviation research for the benefit of mankind. So that air transportation will still function after 2020, and so that people will still be able to make sensible use of the transportation mode of airplanes.

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