

Exhibiting Lean

Lean experts in Commercial Airplanes teach and learn from community project

By Dawsalee Griffin

Photos by Marian Lockhart/Boeing

At first glance, planes and penguins don't seem to have much in common. But Boeing airplanes and the Humboldt penguins at Seattle's Woodland Park Zoo share something that you can't see: Both have benefited from Lean+.

Using the Lean skills and tools they teach to Boeing employees who build airplanes, Lean experts from Boeing

For Boeing employees, the zoo project validated the Lean techniques they use—no matter the setting. “For me,” said Bart Taylor, a Boeing Production System manager with the 787 program and a Lean facilitator on the zoo project, “it confirms the lesson that Lean tools work in any business environment to improve processes and eliminate waste.”



Commercial Airplanes helped zoo staff find more efficient ways to design a new penguin exhibit, which opened in May, 12 months ahead of schedule and \$100,000 under the cost estimate.

Using a full-scale mock-up of the exhibit area allowed the zoo to refine the design in real time and helped contractors make more accurate bids, saving time and money once building began. Using other Lean tools, zoo staff also reduced the time it takes to feed the penguins and clean the exhibit and holding areas by 90 minutes a day. These timesaving process improvements were incorporated into the new exhibit. The zoo also established its own Lean group to continue to improve processes.

The new exhibit takes advantage of the latest environmental technologies. Each year, it will save 3 million gallons (11.4 million liters) of water and 75 million BTUs of energy over the previous exhibit. In addition, all of the water used in the exhibit is recycled or reused.

When the Woodland Park Zoo began planning a new penguin exhibit three years ago, retired Boeing employee Dan Becker was a member of the zoo's board. Becker suggested the zoo use Lean+ tools—which promote continuous improvement—to improve processes, save money and develop the exhibit faster. Boeing agreed to help by providing an initial in-kind grant of Lean+ support, training and advice to help the zoo staff plan and design the exhibit.

“An in-kind grant can provide assistance to an organization beyond dollars,” said Neelima Shah, an environment community investor with Boeing Global Corporate Citizenship. In-kind grants can be for something tangible, such as surplus equipment, or they can take the form of sharing the skills and expertise of Boeing employees. (See the sidebar “Boeing grants” on the next page.)

“Boeing shares its Lean+ expertise to bolster the impact and efficiencies of nonprofit organizations,” Shah continued. “This

Lean+ results:

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- \$100,000 under the cost estimate
- 90 minutes a day saved for zoo staff who feed the penguins and clean the exhibit

is a great example of transferring business-based knowledge to make the nonprofit sector more effective.” Boeing experts not only teach Lean processes and facilitate workshops, they also train facilitators and may act as advisers throughout the life of a project. While some of these types of projects may include in-kind grants to kick-start the project, others are supported by volunteers using skills they’ve honed at Boeing.

The zoo team’s first exposure to Lean was a weeklong workshop with the 737 wings team in the Renton, Wash., factory. “It was important to bring the zoo team to Boeing to participate on a team so they had hands-on experience with the process,” said Andrew Takamiya, one of the Commercial Airplanes Lean consultants who worked with the zoo. “That way, zoo staff could see how a diverse group can use Lean tools to come up with solutions.”

The workshop—known as a production preparation process, or 3P—was particularly useful to the zoo’s needs because the 3P tool focuses on eliminating waste in the design stage of a product or process. “The workshop we went through was about making large capital changes,” said Bruce Bohmke, deputy director of the Woodland Park Zoo and leader of the zoo’s Lean team. “That’s exactly what we were going to do with the penguin exhibit.”

After the initial experience at Boeing, the zoo staff held 3P workshops, led by Boeing Lean experts, to look at every aspect of the future penguin exhibit. Elizabeth Girdler, a Lean practitioner in Commercial Airplanes, helped the zoo staff identify exhibit customers (penguins, zoo staff and guests) and define what each group would need to make the exhibit successful. “The Lean tools pushed the zoo staff to approach designing the exhibit in a different way,” Girdler said. “It was challenging at times to convince them to work through the process because they’d never done anything like this before.” That is familiar territory for Girdler, who has seen Boeing employees react the same way in Lean events when asked to take a new look at a process they may have been doing for years.

And according to Taylor, who trained the zoo facilitators, led workshops and helped develop the mock-up of the new exhibit, “We looked at everything, from ways to keep the pool clean and flush out dirt, to the configuration of the penguins’ dens behind the scenes.”

“The exhibit is great and I’m proud I was part of the effort,” Takamiya said. Summing up the team’s experience, Takamiya said, “it’s a good feeling that we were able to help the zoo achieve the things that they really wanted to do and teach them tools they can use from here on.” ■

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Boeing grants

Boeing’s support for communities includes sponsorships, monetary grants and in-kind grants. Monetary grants provide money for a specific purpose—for example, creating an educational outreach program. In-kind grants provide goods or services to a nonprofit agency or community partner, depending on the need. Boeing works to match the needs with the skills and expertise of Boeing employees.

PHOTOS: (LEFT) Some of the Boeing Lean team who worked on the new penguin exhibit for Seattle’s Woodland Park Zoo visit the result: Dennis Richter (left), Commercial Airplanes Lean consultant and project lead; Andrew Takamiya, Commercial Airplanes Lean consultant; Elizabeth Girdler, Commercial Airplanes Lean practitioner; and Jon Akers, Commercial Airplanes Lean practitioner. **(ABOVE)** Seattle’s Woodland Park Zoo opened its new Humboldt penguin exhibit in May, a full year ahead of the original schedule.