Helping carry the load

Regenia Bean (center), an Integrated Defense Systems technical designer from Wichita, Kan., confers on a 747-8 Freighter issue with Jeff Stucki, a Commercial Airplanes stress analyst based in Everett, Wash. BCA engineer Brian Nelson is in the foreground.

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Engineering work on 747-8 Freighter elevates BCA, IDS cooperation

By Dan Ivanis

Brian Thorpe, 747 airframe chief engineer, didn't know where to turn. It was late 2006 and there was a mountain of structures design, engineering and stress work to complete for the newest member of the 747 family, the 747-8 Freighter. Major assembly was set to begin in less than two years.

Boeing Commercial Airplanes' core of experienced structures talent was already spread thin supporting other development programs. The manpower to get the 747-8 off computer monitors and into the Everett, Wash., factory simply wasn't available.

Before looking for skills outside the company, Thorpe and his team turned to the structures core skill team and scoured the enterprise for people with the skills they needed. "We knew at that time that Integrated Defense Systems in Wichita (Kan.) was working on the Airborne Laser (ABL) program, which uses a 747 as its platform," Thorpe said. "So we knew they had experience in 747 structures and there was an opportunity to use some available skills there."

Finding the right skills available and waiting to be tapped, Thorpe and his leadership team turned to IDS for help. Today, of about 1,200 employees working on 747-8 Freighter structures, about 110 are in Wichita. In addition to ABL experience, Wichita has a group of engineers who have worked on the 747 platform for the Special Air Mission organization, which provides engineering, maintenance and modification support for the United States' fleet of executive aircraft. During the past couple of years, the 747-8 structures engineering effort has expanded further to include IDS teams in Huntington Beach, Calif., and Renton, Wash.

The arrangement continues a line of programs where BCA and IDS are working together. "It wasn't unprecedented, because BCA and IDS are teaming on a number of different programs" such as the Airborne Warning And Control System aircraft and the P-8A Poseidon, said Curt Haney, 747-8 fuselage engineering leader, who's spent most of his career in IDS and Phantom Works. "This was kind of the next phase."

The collaboration, however, didn't get off to the smoothest start. Ben Miller, senior manager for the 747-8 aft fuselage, said the biggest initial hurdles were communication and understanding. "There were differences in processes and how we used tools," he said. "Once we came to that understanding, our communication and our work improved."

"Things really got better when management stepped in and helped set priorities for all of us," said Brian Nelson, a BCA design engineer in Everett. "Some of us were being pulled in different directions and weren't sure where our focus should be."

Regenia Bean, an IDS technical designer who's spent the past 18 months in Everett working on the 747-8 program, acknowledged there's been a learning curve. "It was bumpy at first because we seemed to be spending all of our time trying to figure out logistics—what worked and what didn't," said Bean, who serves as her Wichita team's on-site representative. "Now, I couldn't ask for better working-together groups."

Jeff Stucki, a BCA stress analyst from Everett who spent a month in Wichita, said a major factor was having key people spend quality time with their counterparts in other locations: "I was able to put myself in their shoes for a while and understand where they were coming from."

"The colocation of key individuals for significant amounts of time was very important," said Terry Moser, IDS-Wichita 747-8 chief engineer. "We can't lose that going forward."

With major assembly beginning on schedule this month, this step in the evolution of BCA and IDS cooperation is considered a success. In fact, Thorpe and his leadership team hope to keep the same teams for work on the passenger version of the 747-8, the Intercontinental.

"We've learned a lot and we'll do some things differently going forward," Thorpe said. "There will always be room for improvement, but we've progressed a long way." ■

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