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Boeing Deploys Systems Analysis Approach to Optimize 787 Assembly

Zach Tyree emerged from a meeting reflecting on The Boeing Company's 787 kitting process. It had its problems. Tyree, senior manager of 787 Airframe Manufacturing Engineering, specifically had been discussing strategy for improving production rates with Michael Jordan and Miles Mason, both managers on the airframe's engineering team.

The 787 program had pioneered numerous innovative manufacturing processes, which Boeing planned to implement on other commercial programs. Chief among the processes was the use of kit carts to deliver parts and tools to mechanics. But in the three years since "kitting" had been implemented, Boeing had struggled to deliver kits to the right place, at the right time, and with the right parts.

Just one incorrect or incomplete kit on the production floor had proven to cause mechanics to wait hours or sometimes days to receive missing parts, increasing travelled workⁱ and overtime. The delays had led to challenges with assembly schedules, on-time delivery, and financial consequences. Still, Boeing executives believed kitting was a critical strategy for streamlining the 787 assembly process.

Tyree, Jordan, and Mason urgently wanted to mitigate the risks in the 787 kitting process. They decided to enlist a University of Michigan Tauber Institute for Global Operationsⁱⁱ intern team, consisting of students Kartik Raju and Yatri Patel, to review the entire process. Following its analysis, the team would make recommendations to Boeing's top executives about how to improve.

ⁱ Time spent looking for a part and not working on the plane.

ⁱⁱ The Tauber Institute for Global Operations at the University of Michigan is a multidisciplinary operations program working closely with the university's business and engineering schools.

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