

CASE STUDY

Scaling to Meet the Mission: How an Aerospace & Defense Supplier Boosted Output 45% Without Adding Headcount

CLIENT

U.S. aerospace & defense component manufacturer

CHALLENGE

- Dramatic, short-notice volume increase
- Increased headcount and overtime could not deliver on the demand
- Severe cycle-time imbalances and redundant handling added significant time to the assembly flow
- Quality control included counting and re-kitting the same parts up to five times before reaching final assembly

SOLUTION

- TBM separated kitting/replenishment from assembly
- Introduced visual kitting templates that made missing parts instantly obvious
- Standardized work through time studies and takt-based line balancing at every work cell
- Process flow improvement and sustainment backed by Kaizen events and ongoing floor coaching

RESULTS

- **45% increase** in monthly output within roughly three months
- **40% reduction** in labor hours per unit (11 → 6 hrs/unit)
- Achieved with the same team — no added headcount
- Quality performance improved through the ramp-up
- Sustained improvements enabling flexibility to handle another increase in volume

THE CHALLENGE

When Demand Outpaced Capacity

The client's end customer needed a dramatic, fast increase in monthly volume — a jump the client's own operation, even after adding people and pushing overtime, couldn't reach.

The team added headcount and hours and still landed well short of the target its customer needed. Leadership sensed the problem was bigger than staffing, so they called TBM.

TBM's team started with a diagnostic: a value stream map spanning receiving all the way to finished-goods pack out. That mapping surfaced two connected problems.

- First, cycle times across the value stream were badly out of balance, with multiple constraint points that made a reliable, higher-volume month structurally impossible no matter how much overtime was added.
- Second, a large share of labor time — close to 70%, by TBM's later analysis — wasn't going into assembly at all. It was going into non-value-added handling: operators breaking bulk shipments of roughly 250 individual part numbers out of boxes and envelopes, counting them, re-counting them, kitting them, and walking long distances to bring them to the line.

"They were probably handling and counting the same part at least four times" before it ever reached the line, TBM's project lead recalled. For safety-critical hardware like this, that repeated counting felt necessary to the client's team — missing a component in an aerospace or defense assembly isn't something you can afford. It was also, TBM found, consuming most of the available labor hours.

THE SOLUTION

Redesigning the Flow and Quality, Together

TBM's project lead and site consultant ran the diagnostic together and then built a phased work plan executed on-site through a series of monthly Kaizen events over roughly three months. Two moves mattered most:

01

Separating logistics from assembly

Instead of having assemblers stop mid-build to unpack, count, and re-kit parts, TBM created a dedicated “supermarket” and staffed a person to manage replenishment through kitting and carts. That single change removed close to 70% of the non-value-added handling time that had been baked into the assembly process.

02

Building quality into the kitting itself

TBM designed visual kitting templates — effectively formed cutouts for each part — so a missing component was immediately, visually obvious without anyone having to count. That eliminated the repeated hand-counts that used to happen at every stage, and it turned out to be more accurate than the manual process it replaced: the paperwork loop the client used to true up over- and under-counts with the warehouse disappeared almost entirely.

70%

of labor time was consumed by non-value-added handling rather than assembly — the share TBM's supermarket and kitting redesign took out of the build.

Underneath both changes was a standard lean foundation: time studies at every workstation and sub-assembly — eight of them in total — a calculated takt time, and a target cycle time set for each work cell so supervisors had something concrete to audit against. TBM also set up min/max stock levels and shift-by-shift replenishment targets, since the product's 24-to-30-hour production lead time meant a store that wasn't stocked by a specific hour would jeopardize the next day's output.

None of this involved new technology or a management system. As TBM's project lead put it, this was “pure, plain old line balance and flow.” However, one of the follow-on opportunities TBM flagged for the client was that it would eventually benefit from a formal management system, since the plant was still running on ad hoc supervisor follow-up with no escalation process.

Change management ran alongside the shop-floor work. TBM and plant leadership held a plant-wide kickoff so every team member understood why the effort was happening and what to expect, including unfamiliar practices like time studies. Team members took part directly, running their own stopwatch studies during Kaizen events, and TBM stayed engaged between formal events with recurring floor coaching. The message repeated throughout was consistent: employees weren't being asked to work harder — they were being asked to spend their existing minutes on work that hadn't already been engineered out of the process.

Some employees who weren't invested in the change moved on. But by the end, team members told TBM their jobs were easier and their expectations clearer than before. “My job is easier,” one team member said. “I know exactly what my expectations are, and I come in and get it done.”

THE RESULTS

More Output, Less Labor Content, Same Team

45%

Increase in monthly output, in ~3 months

40%

Reduction in labor hours per unit

11 → 6

Labor hours per unit

0

Added headcount

Within about three months of starting, the client's monthly output rose 45%, and labor hours per unit dropped from 11 to 6 — a roughly 40% reduction in labor content per unit. Just as important, the gains didn't come from adding people. The client hit its new output target with the same-size team it started with, which is also why the labor-hours-per-unit metric moved as much as the output number did.

Quality didn't suffer for the sake of speed. The client's own quality measures and process improved — largely because the visual kitting approach caught missing parts before assembly rather than after.

TBM's diagnostic-stage estimate had put the realistic range at roughly 25-35%, so the client outperformed the original business case, and there's more room to run: TBM identified a further ~10% opportunity (down to about 6 labor hours per unit) through additional equipment and layout changes, along with an estimated 20% gain available simply by changing how units are handed off between shifts.

SUSTAINMENT

Built to Hold, With Room Left to Run

Sustaining the gains was part of the design. TBM left the client with a structured audit — roughly 35 checkpoints — to verify the supermarket and store levels stayed correctly configured after the engagement ended. In follow-up, TBM confirmed the client is still meeting its output targets; the only misses since project close have

come from upstream part shortages, not from the flow methodology breaking down. The client has also absorbed additional demand since the project, including an unplanned order for 100 more units from an overseas customer, without the operation buckling.

“My job is easier. I know exactly what my expectations are, and I come in and get it done.”

TEAM MEMBER

Capacity Comes From Flow, Not From Headcount

For manufacturers facing a sudden step-change in demand, especially in industries like aerospace and defense where quality can't be compromised for speed, the instinct is often to add headcount and overtime. This client's experience shows a different path: a disciplined value stream diagnostic, a redesigned material flow, and a kitting approach that builds quality into the process itself can unlock more capacity than adding people ever could.

TBM's approach to rapid capacity ramp-ups — pairing lean fundamentals with hands-on floor coaching — has proven it can turn an at-risk customer relationship into a stronger one, without asking the team to simply work harder.

NEXT STEP

Is your operation leaving capacity on the floor?

TBM helps manufacturers unlock the capacity already inside their four walls — redesigning flow, building quality into the process, and leaving the team able to run it.

Contact Us Today →

Speed wins every time.

TBM specializes in operations and supply chain consulting for manufacturers and distributors. We accelerate operational performance to make you more agile and help you accelerate business performance 3–5x faster than your peers.



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