



UNITED 
Technical Operations

Westmont's 3-Bay Gantry System Simplifies Operations at United Tech Ops' IAH EBU Shop

Project Benefits

- Improved worker safety & ergonomics
- Enhanced engine access & protection
- Reduction in task time
- Increased floor space
- Cost-effective installation



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William Gilbert

Senior Regional Manager of United Tech Ops

Background

Customer Profile

For nearly a century, United Technical Operations has successfully served as the maintenance, repair, and overhaul division of United Airlines, employing over ten thousand personnel while also supporting over forty commercial and military aircraft operators from around the world. Its engine build-up (EBU) shop at the George Bush Intercontinental Airport (IAH) in Houston, Texas, USA, performs rigorous line maintenance tasks on a high volume of jet engines that power a vast array of acclaimed narrow and widebody aircraft.

Challenge

Until recently, the engines were transported into this shop by shipping stands, removed from their cradles by a lifting sling attached to an overhead crane, and carefully placed into a pedestal set of two forward and two aft pedestals. The latter part of this time-consuming process required a handful of mechanics to align and connect the engine to each pedestal mount. Damage was occasionally sustained to critical components during engine transfer, leading to additional MRO tasks and costs. In addition, the fixed height pedestals complicated fan splitting and mating procedures, created unsafe and poor ergonomic working conditions, and limited engine access around their wide bases.

The Westmont Solution

Westmont Industries partnered with William Gilbert, Senior Regional Manager of United Tech Ops, and his dynamic team to deliver a rugged, user-friendly 3-Bay Gantry System ideal for the horizontal build and MRO of jet engines. The custom-built system simultaneously accommodates three engine models of any size while providing state-of-the-art controls to optimize safety and efficient handling. It also shares floor-mounted column and truss structures for a more cost-effective installation while increasing floor space by minimizing ground-level obstructions.

When transported by shipping stand into one of the three 20-ton capacity bays, the engine can easily interface with adapters suspended from load beams and trolleys on overhead twin rails and be lifted directly from its cradle. It can then be vertically adjusted to an ergonomic ideal working height and manually pushed along the length of the rails to perform additional MRO tasks.

An overhead monorail system containing two electric chain hoists and motorized trolleys can remove and install heavier engine modules on one of the bays. Utilities such as handlamps, tangle-free quick-connect air hoses to power pneumatic tools, and column-mounted oscillating fans further help maintain an organized workspace, boost productivity, and save time.



Westmont's Gantry System removing an engine from a shipping stand.

The Westmont Advantage

Following the on-time and on-budget installation of the Westmont gantry system adeptly overseen by Mr. Gilbert, efficiency has significantly improved at the IAH shop. It has cut the average time to complete shipping stand transfers in half. The vertically adjustable twin rails simplify fan splitting and mating procedures by providing swifter alignment between the engine fan and the fan case transfer dolly, resulting in a 38% task time reduction for widebody engines.

Performing MRO tasks with the NEMA- and OSHA-compliant gantry system instead of pedestal sets has enhanced safety for United's mechanics. Replacing numerous wide pedestal bases with the gantry's few shared floor columns now lessens potential trip hazards around vital workspaces. Access to engine components and hardware underneath an engine is more ergonomic at various heights instead of precariously circumventing the pedestals' low fixed clearance restrictions.

Since its installation, the Westmont gantry has delivered refined engine protection. Shipping stand transfer is now more streamlined, which has helped prevent accidents during this process. In addition, the gantry's many integrated handling features competently secure all engines once suspended. These features include curbing the overtravel of the support rails, ensuring safe rotational operation, and minimizing vibration and friction.

"United Airlines will reap the benefit of this installation for many years," Mr. Gilbert stated. "The potential occupational injury avoidance and a more ergonomically engineered workspace directly benefit the technicians who work in the engine build-up shop at IAH and their quality of life. The immediate gains in efficiency are a benefit to the United family."

Mr. Gilbert added: "We are pleased with the ease of use, functionality, and additional flexibility offered by the gantry system to United Airlines Technical Operations and are glad to partner in this fashion with the professionals of Westmont Industries."



United technicians can now perform MRO tasks more safely and ergonomically.