

CASE STUDY



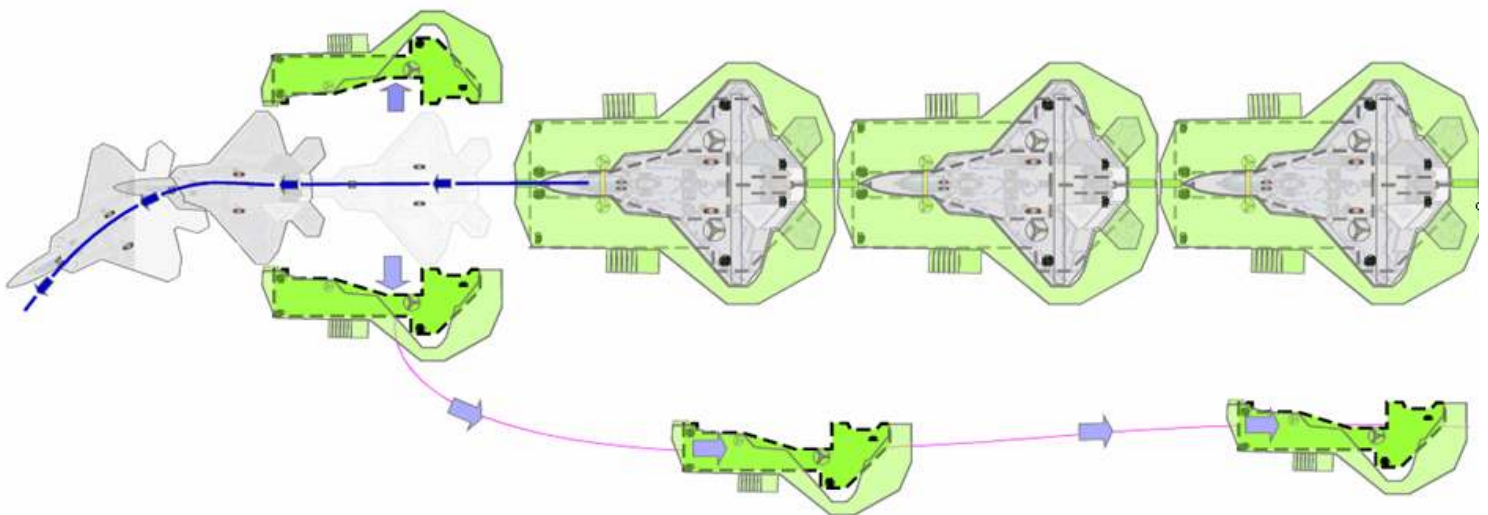
A government contractor identifies Doerfer's Omni-directional Wheelift Technology to drive a unique solution for use in their new and aging production facilities.

Challenge: To provide a lean manufacturing solution for a continuously moving assembly process challenged with large structures, WIP accessibility, tooling staging, no hydraulics, and a 1" per minute travel speed.

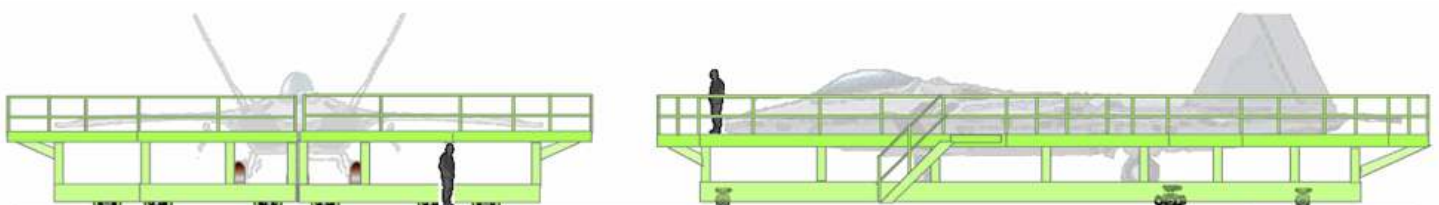
Solution: Provide a modular self-powered tooled mezzanine structure with automatic and manual control driven by Wheelift's Omni-directional AC servo drive wheel modules.

Benefit

- Process control
- Process flexibility
- Close "dual level" access for tooling, kitting, accessories, work stations, etc.
- Increased productivity driving reduced line time

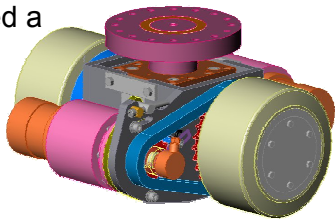


Continuous traveling split work platforms tooled for value added production processes

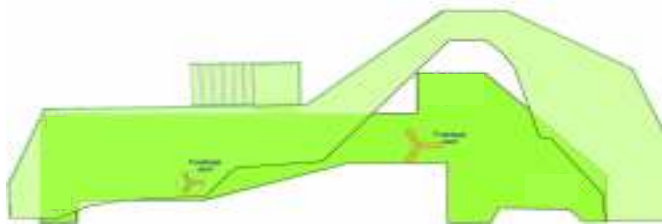


Lean manufacturing principals continue to drive a re-evaluation of existing sub-assembly and final assembly work processes within the aerospace industry. Retaining flexibility for rate, process, product, and staffing is at the forefront of these new programs. Traditional production line systems using overhead cranes, tuggers, air bearings, and castor platforms have all fallen short over the years at supporting lean manufacturing principals.

Mobilizing production workers and materials close to the WIP was identified a critical element driving increased productivity, accountability, and shortened work processes.



Doerfer's Omni-directional Wheelift wheel modules were identified as an enabling technology to incorporate a "traveling work platform" concept for the final assembly line of large airframes. In this case, the work platforms form two halves that encapsulate and carry the fuselage through the assembly process. The fuselage is supported on four jacks, which are used to lower the finished WIP onto the floor at the end of the line for removal from the Wheelift Assembly fixture. The airframe is towed out; the work platform halves separate and return to the start of the process for re-loading.



Each of the work platform halves is an independent module capable of Omni-directional maneuverability. Weight capacity for the WIP support machinery, test equipment, tooling, parts, and work stations is a non-issue, easily and cost-effectively accommodated with the inherent high capacity Wheelift modules.

For joined movement, the assembly platforms are latched with a communication link established to become one integrated work platform with one controller becoming the "master" and the other the "slave", allowing the two assembly platforms to function as a single multi-axle powered assembly fixture. Movement and positioning of the paired platforms are accomplished via a single hand-held joy-stick pendant, with auto-guidance control used for the continuous assembly line motion.



The Wheelift module provides low profile, high capacity along with a degree of flexibility not obtainable through other technologies. Worldwide niche markets drive manufacturing flexibility for product customization and configurable work processes. Wheelift Transporters and AGVs facilitate this requirement.

Manufactured in Iowa, **Wheelift** Transporters and AGVs are custom developed to each application including close positioning die loading, roll transfers, assembly, and general material handling. Load deck and fixturing is built to suit with load capacities to 500+ tons and deck heights as low as 18". Power options include LP gas, diesel, battery, or on-board generator. Electric or hydraulic drives are standard. For more information on our Wheelift Transporter and inertial/wire guidance AGV systems, please visit us at www.wheelift.com

Headquartered in Iowa, **Doerfer** develops application specific, custom manufacturing systems and machinery - many which revolutionize the way our customers manufacture, assemble, move, package, and test their products. We thrive on your toughest process challenges for manufacturing. For more information on our capabilities, please visit us at www.dorfer.com