



Manufacturing Materials Planning & Logistics Services

Comprehensive MP&L Solutions via Plan for Every Part (PFEP)
Methodology

Material Planning & Logistics and Warehouse Optimization

Design & Simulation

- Intralogistics concept design and detailing
- Warehouse modernization and automation design
- Virtual Commissioning - 3D Layout, Simulation, Emulation
- Process and Productivity Improvement Initiatives

Warehouse Process Consulting

- Process Engineering
- Value Stream Mapping
- Labor Analytics
- Business Case / ROI Build • Change Management Assessments
- Requirements Gathering / Prioritizing

WMS Implementation

- SAP EWM/WM System Implementation
- Integration of RFID, Scanners, Printers, Scales
- WCS/WES/Automation Integration (conveyer, sortation, AS/RS..)
- Integration of Voice Picking, AR Picking, Smart Carts..
- Autonomous Warehouse Robot Integration

Warehouse Performance Improvement

- Advanced Warehouse Analytics
- Interleaving
- Slotting / Rearrangement
- Labor Performance
- Advanced Returns Management
- Digital Warehouse (IoT)



Logistics & Sequencing/Kitting Center Planning

- **Strategic Design & Development**
 - Facility Master Planning & Greenfield/Brownfield Facility Design
 - Feasibility Studies & Material Handling System Design
- **Operational Execution & Strategy**
 - Plan for Every Part (PFEP) Development
 - Assembly Process Design & Sequencing/Kitting Strategy
 - Plant Communication Systems & Kanban System Designs



Logistics & Sequencing/Kitting Operations Support

- **Process Simulation & Optimization**
 - Material Flow Simulations & Flow Optimization
 - Layout Optimization & Waste Elimination
- **Workforce & Labor Efficiency**
 - Predetermined Time Studies & Rightsizing of Labor
 - Standardized Work Development & Operator Work Instructions



Warehouse Planning & Design Services

- **Strategic Warehouse Analysis**
 - Warehouse Consolidation & Expansion Studies
 - Benchmarking Best-in-Class Operations & Gap Analysis
- **Facility Layout & Inventory Strategy**
 - Layout & Flow Optimization
 - Min/Max Inventory Analysis
 - Material Handling Methods Assessment



Warehouse Operations Support

- **Inventory & Storage Management**
 - Optimized Storage Density & FIFO Strategies/Analysis
 - Inventory Turns Analysis & Seasonal Adjustment Strategies
- **Fulfillment & Labor Optimization**
 - Optimization of Pick & Pack Processes
 - Right-Sizing of Labor & Waste Elimination
 - Predetermined Time Studies



SELECT CASE STUDIES

General Dynamics OTS -

Existing Facility Layout and Material Flow Optimization



Summary

- ✓ Double throughput for 155mm artillery shell production

Maintain operations inside a constrained WWII-era facility

Address limited floor area, long material and WIP travel paths, and process conflicts

Scope

- ✓ Developed multiple layout concepts for equipment, material flow, WIP, personnel travel, forklift routes, staging, maintenance access, and inspection points

Evaluated concepts against travel reduction, backtracking elimination, operator access, safety, and phased implementation

Shifted quality checks upstream and automated inspection where practical

Success

- ✓ Delivered a practical, decision-ready layout strategy to increase output with minimal disruption

Identified bottlenecks and optimized equipment placement, material handling, operator movement, and quality verification

Demonstrates direct relevance to Capability 2: optimizing workflows in constrained legacy facilities while supporting throughput growth

Sub-Zero -

New Warehouse & Material Logistics Planning



Summary

- ✔ Plan material flow and layout for a new assembly facility in Cedar Rapids, IA, and a new warehouse in Wisconsin
- Maximize use of available footprint and vertical space
- Improve material movement efficiency while minimizing labor and maintaining safety

Scope

- ✔ Evaluated BOMs and developed PFEPs to support facility planning
- Created layout concepts for dock locations, racking, offices, and automation
- Analyzed rack densities, take rates, and material paths using spaghetti diagrams
- Compared material movement methods such as fork trucks and tuggers

Success

- ✔ Developed efficient facility layouts and material flow strategies
- Reduced labor requirements while supporting safer logistics operations
- Established new material handling and logistics engineering standards and specifications



MP&L ENGINEER BIOS

JAMIE DUGAN

Engineering Specialist / Project Manager, The Productivity Team

- Over 34 years of hands-on engineering experience in material handling, logistics, and lean manufacturing, including 14 years focused specifically on Material Handling Engineering and Lean Manufacturing methodology.
- Background spans custom-built conveyor systems, warehouse and delivery strategy, and PFEP (Plan For Every Part) implementation, as well as SMART synchronized material flow and kitting systems.
- At Ford Motor Chicago Assembly, he spent 7 years as a Material Handling and Packaging Engineer, leading indirect labor studies, material flow analysis, and labor rebalancing across major vehicle launches (Explorer, Lincoln MKS, Lincoln Aviator).
- Earlier, as Head of Engineering at Prime Conveyor, he designed specialty conveyor systems from initial sales concept through final assembly, and later oversaw manufacturing operations as General Foreman across machine shop, welding, paint, and final assembly departments.
- Today at The Productivity Team, Jamie applies this deep material handling and logistics background to redefine final assembly lines and market area layouts, combining 20 years of AutoCAD-based facility layout work with practical shop-floor engineering expertise.

MIKE JORDAN

Material Handling Automation Professional & Material Handling Safety Subject Matter Expert

- Brings 32 years of experience designing, specifying, integrating, and supporting material handling automation systems, including Automatic Guided Vehicles (AGVs), Automated Storage and Retrieval Systems, conveyor and linefeed systems, and ergonomic presentation equipment. Recognized within Ford and its supply base as an expert in material handling automation, he combines deep technical expertise with 25 years of engineering management experience leading cross-functional teams.
- Over 30+ years at Ford Motor Company, he advanced from Material Handling Automation Engineer to Platform Supervisor of Material Flow Engineering, most recently leading material flow plans, facilities, and equipment launches across 5 plants for the F-150 program, including the F-150 Lightning.
- His career highlights include implementing 950+ AGVs across 28 systems (~\$122M in value) and leading the replacement of 5 AGV systems in 12 months (310 vehicles, \$40M). He also served as Manager of Material Handling Safety, Equipment and Compliance, overseeing a ~4,500-vehicle powered material handling fleet valued at ~\$24M and providing subject matter expertise on material handling safety, pedestrian protection, and automation standards for corporate safety and the UAW-Ford National Joint Committee on Health and Safety.
- Has a Bachelor of Science in Electrical Engineering from the Rochester Institute of Technology and has authored global standards and safety white papers, including AIAG's OHS-12 Industrial Truck Pedestrian Sensing Systems paper, and serves on the ANSI B56.5 Safety Standard committee for driverless and automatic guided industrial vehicles.



Thank You