



WHITE PAPER

# Benchmarking and improving distribution center metrics

Best practices to optimize warehouse operations and lift truck fleet utilization for 2025

Whether replenishing retail locations or facilitating direct-to-consumer deliveries, you're tasked with moving inventory more quickly than ever to meet growing demand, making flexibility and efficiency imperative.

And to compete as a modern warehouse, metrics are critical to help you identify latent inefficiencies in daily work and power through peak challenges. But what distribution center (DC) metrics are most valuable? What data should you lean on to track business strategies and ultimately drive operational efficiency?

The Warehousing Education and Research Council (WERC) surveys the distribution and fulfillment industry each year to understand these top metrics as a reflection of today's demands. This white paper presents the findings from the 2025 DC Measures Report and highlights best practices to help leverage lift truck fleets for best-in-class performance.



## Top 12 warehouse operational metrics

The 2025 WERC Report revealed the new top 12 metrics identified by warehouse professionals.





1. On-time shipments
  2. Average warehouse capacity used
  3. Peak warehouse capacity used
  4. Order-picking accuracy
  5. Dock-to-stock cycle time, in hours
  6. Inventory count accuracy
  7. Internal order cycle time
  8. Total order cycle time
  9. Percent of supplier orders received damage free
  10. Lines picked and shipped per person hour
  11. On-time ready to ship
  12. Overtime hours to total hours
- Metrics 3, 4, and 5 are tied. Metrics 9 and 10 are tied. Metrics 11 and 12 are tied.

### YEAR-OVER-YEAR CHANGES

The 12 most popular measures in 2025 reflect more of a continuation than a course correction from 2024's themes. Operations- and capacity-based metrics remain key priorities to drive efficiency and cost savings. However, this year there is added emphasis on quality metrics for even more granular control over costs as supply chain professionals brace for continued economic uncertainty. While the focus on cost control persists, it's notable that, like 2024, no financial metrics appear in the top 12 for 2025. Instead, the report suggests supply chain leaders are deliberately focusing on foundational performance metrics that reduce errors, improve throughput and ultimately deliver downstream cost savings. For example, increased order picking accuracy leads to fewer mistakes and lower costs typically associated with wasted time and customer returns.

# Lift truck operations and best-in-class performance

In the WERC report, surveyed warehouse operations ranked the most important DC metrics, including on-time shipments, average warehouse capacity used, order picking accuracy and dock-to-stock cycle time. The table below summarizes what the 2025 WERC Report revealed as best-in-class performance for these metrics. High performance is difficult to maintain across all aspects of warehouse operations, so DCs generally make strides in certain areas and run into greater challenges or setbacks with others. For this reason, there are instances where the measure for best-in-class performance does not improve, even as that metric grows in relative importance. Such is the case for total order cycle time, which leapt from No. 20 in 2024 to No. 8 in 2025. Even so, the best-in-class measure for order cycle times rose from less than four hours in 2024 to less than six hours in 2025. Order picking accuracy also shot up the list, from No. 33 in 2024 compared to No. 3 this year, despite a slight performance decline (0.22%) among best-in-class operations.

| METRIC   | DESCRIPTION  | BEST-IN-CLASS MEASURE* | YEAR-OVER-YEAR TREND   |
|--|--|------------------------|--|
| <br>On-time shipments                 | Percent of orders shipped at the planned time, meaning off the dock and in transit to its final destination.         | $\geq 99.5\%$          | Best-in-class performance increased slightly from 99.2%, indicating a slight improvement for warehouses.   |
| <br>Average warehouse capacity used | Average amount of warehouse capacity used over a specific interval, such as a monthly or yearly window.              | $\geq 90\%$            | Best-in-class warehouses are using about 2% less of their space, suggesting a slight improvement in asset utilization since a high average value is not beneficial.  |
| <br>Order picking accuracy          | Measures the accuracy of the order picking process, where errors can be caught and corrected before shipment.        | $\geq 99.68\%$         | Best-in-class picking accuracy dipped very slightly from 99.9%, underscoring how difficult it is for warehouses to sustain and improve on an already-high benchmark. |
| <br>Dock-to-stock cycle time        | Time elapsed between the arrival of goods and when they are put away and recorded into inventory management systems. | $< 3.5$ hours          | Best-in-class cycles lengthened by a half hour, the most significant performance decline among the top 12 metrics.   |

\*Best-in-class operations exhibit a level of performance that falls within the top 20% of all respondents.



# On-time shipments

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Best-in-class operations ship more than 99.5% of orders on time, meaning off the dock and in transit to the customer. To reach this level of efficiency, operations must make sure lift truck fleets are running at peak efficiency, with minimal downtime. Three factors that can contribute to peak efficiency include:

- Using best-fit power solutions
- Delegating repetitive tasks to automation
- Ensuring proper maintenance and parts availability

## USING BEST-FIT POWER SOLUTIONS

Lift truck power options are now more robust than ever, with newer technologies like lithium-ion batteries and thin plate pure lead (TPPL) proving their worth. By implementing the right lift truck power source, operations can unlock greater productivity.

Traditional lead-acid batteries can suffer performance degradation during the second half of their charge, leaving operators with a less-capable lift truck. This can negatively impact performance metrics, including the percent of shipments that leave later than expected.

TPPL offers a middle ground between lead-acid and lithium-ion. Relative to lead-acid, TPPL enables opportunity charging and eliminates battery maintenance requirements, and also provides faster recharging and less of a power output decline as the charge depletes. Lithium-ion batteries, meanwhile, deliver consistent power until full depletion and charge up to two times faster than lead-acid.

## DELEGATING REPETITIVE TASKS TO AUTOMATION

Advances in sensor technology and processing power permit automated lift trucks to pick up, transport and drop off pallets independently and reliably. By providing smooth, consistent operation of repetitive tasks, automated lift trucks help increase operational uptime and productivity, while reducing errors associated with misplaced or damaged goods.



## ARRANGING PROPER MAINTENANCE AND PARTS AVAILABILITY

Factory-trained, certified technicians offer superior product knowledge to help keep lift trucks running and shipments moving. The combined geographic footprint of the lift truck original equipment manufacturer (OEM) and dealer network affects service capacity and how quickly unscheduled service issues can be addressed. The larger the dealer network, the faster the response, the less downtime.

Additionally, telemetry systems with fault-code monitoring can automatically contact the service organization to initiate maintenance if a fault code is triggered. This can prevent minor issues that may not be apparent to operators from escalating into more serious problems.

# Average warehouse capacity used

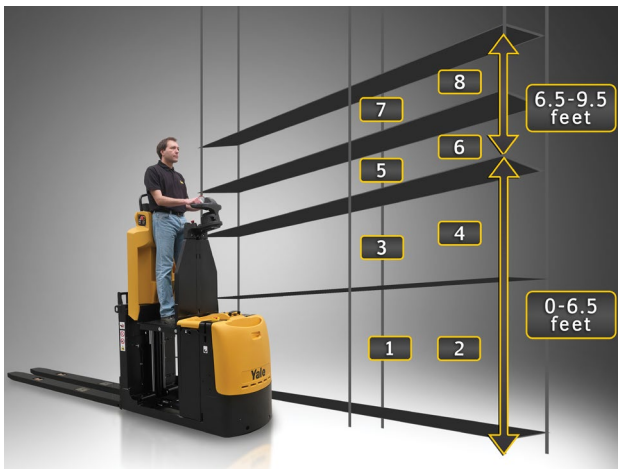
Best-in-class operations, on average, utilize 90% of available warehouse space. Operations can improve their response to shifting inventory demands by using lift truck fleets that are designed to support optimized storage configurations and efficient workflow strategies. Best practices that support optimization include:

- Implementing slotting and storage strategies
- Using cross-docking

## IMPLEMENTING SLOTTING AND STORAGE STRATEGIES

Growing SKUs and order counts can complicate efficient use of space. These conditions can force DCs to expand their picking footprint, reduce slot sizes and reduce inventory in each pick slot, risking decreased efficiency and productivity. Conducting a slotting analysis can determine the optimal storage space and location for each item — some of which might be at height. The conversation then shifts to enlisting the right equipment, with appropriate speed, dimensions and vertical heights to access the loads.

For instance, a low-level order picker can raise operators vertically to expand the “golden zone” of the pick face. This can enable new slotting strategies to help increase pick positions up to 400% and slot capacity 140% within the same footprint.



Warehouse configurations with tall, narrow aisles can benefit from reach trucks with double-deep reach capabilities that allow operations to maximize storage density by easily storing and retrieving loads from storage positions that are two pallets deep. When lifting and placing loads at height, characteristics such as strong visibility through the mast are especially important for productivity. A significant front field of view for the operator helps optimize visibility of the forks and load for precise, efficient handling. Other tools like wireless cameras, built-in fork LED lights or even fork laser levels can help boost precision and accuracy when picking and placing loads at height.

## USING CROSS-DOCKING

Cross-docking involves transferring incoming merchandise from receiving directly to shipping — without spending time in storage. This workflow can help move goods more rapidly, reducing inventory levels and permitting for more efficient use of existing warehouse storage capacity.

# Order picking accuracy

Best-in-class operations pick more than 99.68% of their orders correctly. The core focus of this benchmark is accuracy — picking the right items, every time — but the efficiency of those picks is important, too. While delivery speed expectations may have softened post-COVID, speed within the four walls of warehouses still matters. Order picking efficiency plays a key role in overall turnaround time. Recommendations to support order picking performance include:

- Focusing pickers on picking
- Optimizing operator handling and visibility

## FOCUSING PICKERS ON PICKING

Best-in-class operations focus on minimizing pickers' travel time, on foot and on lift trucks, so they can dedicate more time to actually picking orders. Strategies like limiting the number of aisles a picker must cover help reduce time spent in transit, minimize product touches and damage, and ease aisle congestion. When longer distances are unavoidable, using ride-on pallet trucks, instead of pallet jacks that operators must walk behind or alongside, can significantly speed up travel between pick locations.

Focusing pickers goes beyond shaving the physical territory they must cover — it's equally important to keep them comfortable and confident on the job. If operators are picking at floor level, consider a pallet truck with features designed for operator comfort and productivity that lasts through the shift. Examples include a platform cushion for reduced vibration, a handrail with auxiliary controls to minimize wrist stress and power assist steering for easier maneuverability.

If picking at height, medium and high-level order pickers should provide a sense of stability and security while operators are working on a raised platform. Retractable side gates with one-hand operation offer side protection and quick access can help increase operator confidence and performance in the compartment. Stepless speed control can maximize travel speed while smoothing out speed adjustments to minimize the “pogo effect” that can distract or unsettle operators picking at high-level bays. Look for technology that drives productivity. A wire guidance system allows operators to focus on picking — not steering. Assisted pallet clamps automatically center and grip pallets for faster alignment with loads. Multi-turn steering increases sensitivity for more granular control and agility.

#### OPTIMIZING OPERATOR HANDLING AND VISIBILITY

To improve order picking accuracy and efficiency — especially in high-throughput environments shaped by e-commerce demand — warehouse professionals should consider using specialty picking carts or baskets with dividers. These attachments, which can be mounted on order pickers or pallet jacks, allow operators to sort multiple orders simultaneously while keeping items separated, increasing the odds that the right products end up in the right package.



For operations focused on case or pallet-level fulfillment, particularly in the food and beverage sector, layer picker attachments are another valuable tool. Mounted to electric sit-down forklifts, these devices use rotating claws to grab and place full layers of product to assemble mixed pallets. This approach significantly speeds up order building for bulk shipments while maintaining precision. Leveraging the right attachments can help teams work smarter while meeting modern fulfillment demands.

Just as visibility is critical for picking and placing loads in storage, it's also important for correctly, efficiently pulling the right items, whether at height or floor level. Equipment features like LED fork lights can enhance visibility at the pick point and help minimize risk of collisions that disrupt smooth, efficient picking. Also consider overall facility lighting upgrades, especially if workspaces are dimly lit. Additional or brighter lights can noticeably enhance speed and accuracy.

## Dock-to-stock cycle time

According to the WERC Report, best-in-class operations can move inventory from the receiving dock to storage and record it in inventory management systems in less than 3.5 hours. But operations are challenged with two major trends: accommodating growing SKU counts and deliveries, and labor shortages, leaving warehouse positions unfilled and turning over regularly. Best practices to enhance put away include:

- Using technology to move product more efficiently
- Eliminating unnecessary product touches

#### USING TECHNOLOGY TO MOVE PRODUCT MORE EFFICIENTLY

Because automated lift trucks reliably handle a range of repetitive functions without intensive supervision and intervention, they can help operations more efficiently move loads to storage with less labor. For instance, an automated tow tractor can be deployed to handle horizontal moves in picking and putaway workflows, allowing lift trucks that are specialized for vertical storage to stay in racking aisles doing the work they perform best.



One day, automated solutions will also shape how operations handle products in dark warehouses. But operator assist solutions (OAS) are a step that warehouses can take today, speeding up dock-to-stock times by supporting both operator confidence and productivity. Disruptions like crashes or tip overs can delay product put away and result in equipment downtime that further hampers productivity. An OAS can help to limit the risk of these accidents by increasing reaction time and reinforcing adherence to best practices.

#### ELIMINATING UNNECESSARY PRODUCT TOUCHES

Unnecessary product touches and movements are wasteful and slow cycle times. Using telemetry systems, operations can track movements to eliminate unnecessary steps, minimizing product touches and reducing put away times.

## Rising to best-in-class DC performance

You can't afford to settle for status quo solutions and strategies — achieving best-in-class performance requires both the attention and resources for continuous improvement. Top DCs strive to constantly improve velocity and accuracy, while fostering a culture of self-examination that enables warehouses to identify and remove inefficiencies and excess costs.

The labor, safety and productivity challenges that make it so difficult for operations to attain and uphold high levels of performance should directly inform materials handling solutions. At Yale, customer challenges are the foundation of product design and engineering, so that resulting equipment and technologies are precisely matched solutions to help address these issues.

For a deeper conversation about achieving best-in-class performance, contact a solutions expert at your local [Yale® dealer](#).