Loading-Dock Upgrades Can Improve Supply-Chain Performance

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The push for supply chain efficiency has driven changes in over-the-road trucks and how they're loaded. The changes have a direct impact at the loading dock - an essential yet often overlooked link in the supply chain. Innovative dock design and properly applied equipment can help companies keep material flowing smoothly across their docks, keeping production lines supplied and ensuring reliable deliveries. Careful consideration must be given when choosing dock or truck levelers, as well as dock seals and other dock-system components.

Changes on the road

Changes in truck trailers spring from shippers' desire to cut costs by maximizing payload. In the past, the standard trailer was 48-ft. long with an interior rear opening 94-in. to 96-in. wide, and typically 105-in. high. Today, in order to increase payload and profits, the largest trailers are 57-ft. long and have been reconfigured for 98 in. to 101 in. of interior rear opening width, and 110 in. of interior height.

The increased width enables standard 40X48-in. pallets to be "pinwheeled" or "double pinwheeled," meaning they are placed onboard side-by-side with the 48-in. side leading. This eliminates empty space along the trailer sides and creates room for several more pallets. These trailers often arrive at loading docks filled wall-to-wall, sometimes even floor-to-ceiling. In the automotive industry, trucks may carry loads of components on racks that fill the trailer's entire rear opening. Removing these large loads can be problematic if the loading dock is not designed to accommodate them.

Complicating matters, wider trailers typically have beds several inches below the standard 48-in. dock height. Many also have air-ride suspension systems that cause bed heights to fluctuate during loading or unloading. If the air is released from the suspension system at the loading dock, the trailer bed may drop as much as 6 in. This discrepancy can create additional loading and unloading challenges.

Challenges on the dock

The key to servicing these trailers smoothly and safely is to ensure that lift trucks can handle all loads without obstruction. Full access can be difficult to achieve on a traditional loading dock with doors, seals and dock levelers that are not sized properly.

A standard 8-ft.-wide door opening, for example, may obstruct removal of wide

loads. As the forklift struggles to remove a pallet, cartons can be knocked off. In addition to product damage, building walls and door tracks can be damaged. Jostling with loads, especially tall loads can also damage the trailer structure. In addition, improperly selected dock seals can encroach on the door opening, further impeding the removal of loads.

Below-dock trailers create equally serious concerns. Trailers with low-profile tires and air-ride suspensions may have beds as much as 12 in. below dock level. This can make removal of end loads especially challenging. A standard 6- or 7-ft.-wide dock leveler often leaves lift trucks with little room to negotiate loads. If the leveler is 84 in. wide and the trailer's rear opening is 100 in. wide there is a 16-in. discrepancy. As the forklift maneuvers to pick up the load, the pit wall and dock bumper create obstructions. Time is wasted; forklifts and product can be damaged. Standard dock levelers can also create excessive slope when used to service low trailers. As the forklift exits the trailer with a load, the operator must accelerate sharply to climb the ramp. This creates needless wear on the forklift and leveler, and loads may spill.

Solutions for full access

A combination of intelligent dock design and modern dock equipment can eliminate these and other productivity barriers, providing full access to every load on every trailer. Begin with dock doors that are large enough to admit the widest, tallest loads. Doors should be at least 9 ft. wide by 10 ft. high for most industrial applications. Many modern doors have impactable panels that break away when struck from either direction and can be easily reattached. This eases maintenance and repair costs and reduces the potential for dock-position shutdown.

Full access also usually dictates the use of flexible dock shelters instead of basic foam dock seals. A properly sized dock shelter will seal a wide variety of trailers without obstructing a load. Furthermore, some shelters include special side curtains designed to fill the trailer's door hinge gaps for maximum environmental control.

When considering dock design, the trailers being serviced should be considered an extension of the facility. If loading docks can completely adapt to servicing wider, fully loaded below-dock trailers, the full benefits of the load-size increase can be realized. On the other hand, poor dock equipment design can cause serious delays and result in damaged products. Productivity gains achieved elsewhere in the supply chain can come to a screeching halt at the loading dock.

One answer to an extra-wide trailer and load is an extra-wide dock leveler. Rite-Hite Corp.'s JUMBO™ full-access dock leveler, for example, has a single 8.5-ft.-wide platform. This allows forklifts to handle wide loads above and below dock with no delays, straight in, straight out, even end loads. Integral dock bumpers move with the platform, staying out of the way for unimpeded forklift movement. An extended platform length - up to 12 ft. - provides forklifts with a gentle slope into virtually all trailers.

An extra-wide leveler is not always the answer, especially if taller or longer loads

need to be loaded/unloaded from below-dock trailers. Even an extra-wide leveler may provide too steep of a grade to unload/load the trailer without interference from the trailer's ceiling and floor. Thus, another solution is to create an ideal level-loading surface by raising the trailer to dock height, eliminating the grade as well as pit wall and dock bumper obstructions. The objective is to provide efficient operation in high-use environments, while simultaneously minimizing the opportunities for damage to trailers as they are serviced at the dock.

Rite Hite's Thinman™ truck leveler makes this possible. The system includes a low-profile platform that makes positioning of any trailer easy. The unit's vehicle-restraint system holds the trailer securely in place by its rear wheel. Truck levelers can raise even the lowest trailers to dock height for efficient, safe servicing.

Combination control systems can tie all of the most modern dock equipment together as an integrated system for additional efficiency and safety. From a single pushbutton panel at each dock position, personnel can control the dock leveler, vehicle restraint, truck leveler, overhead door, lights, and other powered equipment.

To achieve maximum dock productivity, consult with an experienced loading dock-equipment representative. A smoothly functioning loading dock system not only enhances supply chain performance, it helps companies reach productivity goals and gain a competitive edge.

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