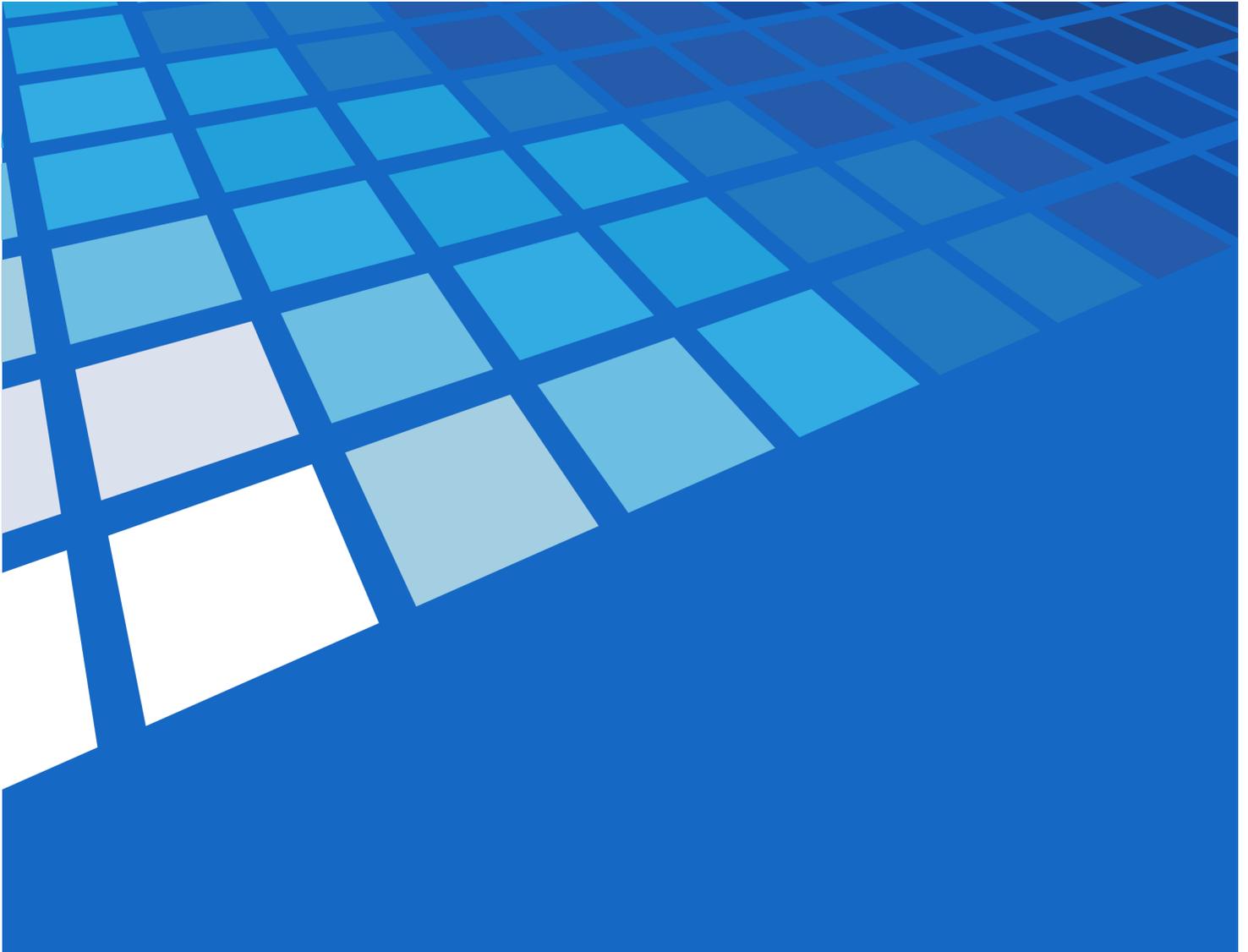
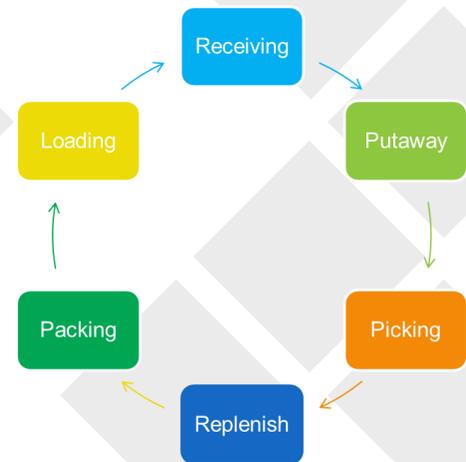


Engineered Labor Standards

The Foundation for a High Performance Workforce





Achieving Higher Performance with Engineered Labor Standards

Today's hyper-competitive marketplace requires that manufacturers and distributors optimize labor performance and minimize labor spend. The cost of labor already makes up more than half of a typical distribution center's total costs—and that is sure to increase as businesses and consumers place smaller, more frequent orders and demand more value-added services.

A critical first step to balance labor productivity and costs is developing and implementing engineered labor standards (ELS). Engineered labor standards establish a baseline for performance measurement and are used to assess productivity and utilization levels in key cost areas such as order picking, packing, shipping, receiving and putaway.

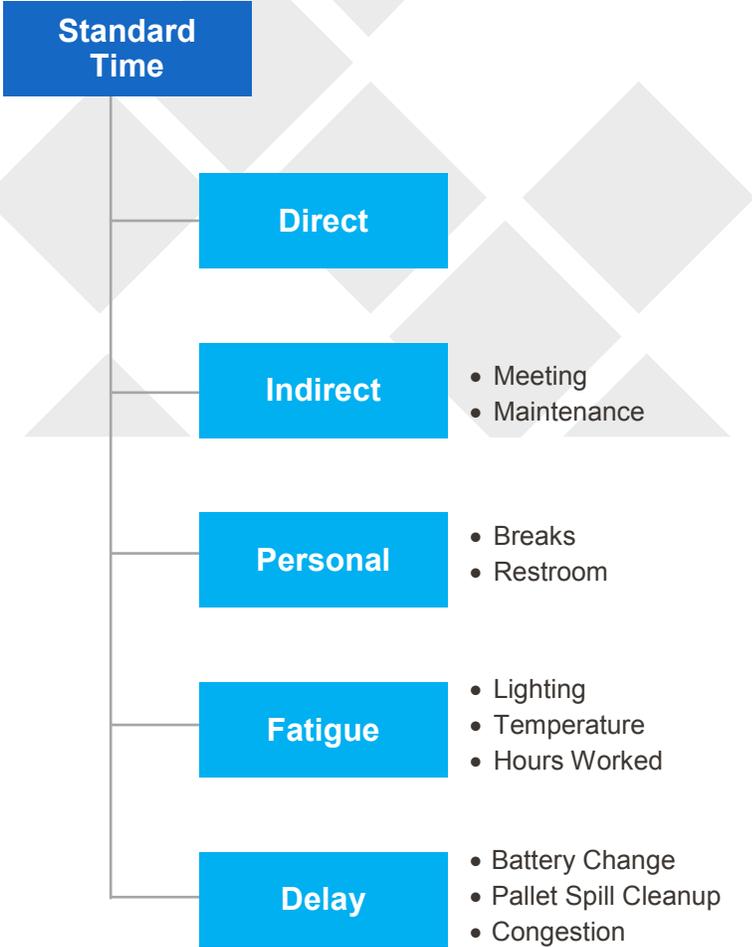
What are Engineered Labor Standards?

An engineered labor standard defines the time necessary for a trained worker, working at an acceptable pace, under capable supervision, and experiencing normal fatigue and delays, to do a defined amount of work of specified quality when following the prescribed method.

Example:

Building mixed-case pallets can be separated into the following motions, each with an associated time: travel to the pick location on a pallet jack; walk from the pallet jack to the slot; bend to reach the case; pick up the case; walk back to the pallet jack; and bend and place the item on the pallet jack.

Using standards enable operations executives to effectively manage workforce performance while also implementing improved labor planning and budgeting. With engineered standards in place, organizations can focus on driving high performance in day-to-day operations.



What are the Elements of an Engineered Labor Standard?

Direct activities are tasks related to the movement of products that can be timed, measured, and utilized to assess associates performance.

Indirect activities are tasks that must be done but are not held to a standard, such as meetings, maintenance and clean up.

Personal activities include restroom breaks, a phone call, water fountain stops and other interruptions of a personal nature.

Fatigue covers the time the worker should be given to compensate for tiredness as hours worked increases, or due to work-related stress and conditions. Fatigue can be impacted by physical factors (standing), mental and cognitive factors (mental strain and eye strain), and environmental factors (poor lighting, noise, or excessive heat or cold).

Delay activities are work-related tasks that must be done in order to complete a process, such as pallet spill clean-up or battery change on a forklift.

MTM	Methods-Time Measurement
MOST [®]	Maynard Operation Sequence Technique
MSD	Master Standard Data

How are Engineered Labor Standards Developed?

There are four work measurement techniques commonly used to build accurate labor standards:

1

Time Study (or Time & Motion Study)

An industrial engineer carefully times the effort required to perform one or more full cycles of the defined task with a time measurement device, adjusting for any observed variance from normal effort or pace.

2

Predetermined Motion Time System (PMTS)

Time is obtained from published standards, such as MTM or MOST[®] for basic body motions, such as reach, move, turn, grasp, position, release, etc.

3

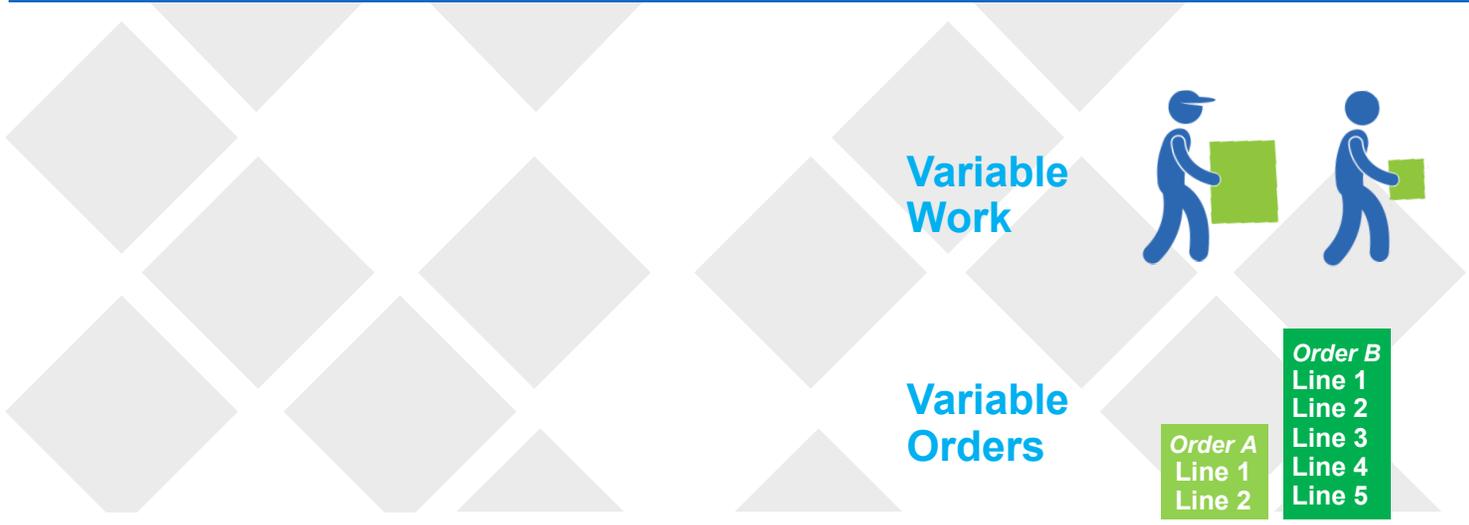
Master Standard Data (MSD)

A database of predetermined time values developed for groups of motions commonly performed together, such as picking up a carton and placing it on a conveyor. Master standard data can be developed using time studies or predetermined motion, and can be used as an estimate for the group of motions.

4

Work Sampling

A statistical technique for determining the proportion of time spent by workers in various categories of activity (e.g. setting up a machine, assembling two parts, etc.). It can be used to supplement or check standards developed by the other, more definitive techniques.



Variable Work



Variable Orders



Variable Skills



Using Single and Multiple Determinant Standards

Labor standards are typically characterized as single determinant or multi-determinant.

Single Determinant Standards are based on just one variable, generally calculated in “units per hour” or “lines per hour” and based on historical averages.

The one advantage of single variable metrics is that they can be easy to calculate: the volume of units divided by the total number of hours to produce those units.

Because work content is becoming more variable and complex in today’s warehouses, “units per hour” can be inaccurate when measuring work content: picking fifty cases at one pick location is much quicker than picking fifty cases at fifty different pick locations.

Multi-Determinant Standards incorporate more than one variable. A standard for picking items to cartons on a cart, for example, might be based on the product class (bulky or heavy items would have a greater time allowance), the number of items to be picked, the number of lines on the order, how many locations the worker needs to visit, and the number of cartons on the cart that needs to be filled.

In all but the most simple distribution environments (and there are very few simple distribution operations these days), multiple determinants are crucial to setting fair, accurate performance targets and to getting associate buy-in for those standards.

Dynamic Labor Standards are a more detailed version of multi-determinant standards. With dynamic standards, multiple parameters are calculated, such as the actual distance traveled, the type of material handling equipment (e.g., a cart, pallet jack, forklift, etc.), the type of rack used, and the actual case sizes and weights.

Because the time allotment in dynamic standards are based on the actual work performed, they help eliminate the perception of “good jobs” versus “bad jobs” and provide floor level employees the most accurate, fair, and achievable performance metric.

Utilize Engineered Labor Standards to Optimize Supply Chain Operations

Performance Reporting

ROI Analysis

Cost Control

Labor Planning

Incentive Programs

Why Use Dynamic Labor Standards?

Dynamic engineered labor standards provide the foundation for more efficient and more cost-effective warehousing, distribution and production processes and activities:

Performance Reporting

Comparing associate and department performance against standards becomes a critical component of identifying opportunities for productivity improvements and cost savings.

ROI Analysis

Standards allow you to estimate improvement potential for process changes, new facility layout and equipment investments.

Cost Control

Using standard work measurements provides the best way to get a handle on labor costs per units and for specific order types or customers.

Labor Planning & Scheduling

Having accurate labor standards ensures the correct labor hours and resources are assigned to each activity and provides essential data for budgeting, staffing, and workload planning.

Incentives

Having measurable standards applied to activities is critical to establishing fair, accurate pay for performance programs.

Engineered Labor Standards from the Associates' Perspective

Using labor standards, developed with input from associates, can boost morale and engagement by:

- Setting clear performance expectations
- Facilitating fair measurements across different tasks and activities
- Promoting better communication between associates and supervisors
- Providing more objectivity in performance reviews

But First, Take a Step Back

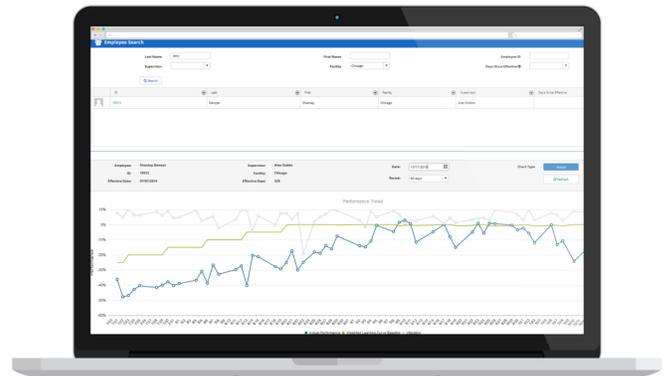
Before establishing engineered labor standards, companies need to understand how work is being performed and how it can be optimized. Current processes should be documented and evaluated—with as many non-value added steps eliminated as possible. These steps enable companies to develop process improvements and establish best practices before developing the standards for each operation.

TZA Has 30 Years of Labor Standards Expertise

TZA has the experience and insight to take your workforce to the next level by helping you develop engineered labor standards for each activity within your operation. Our approach to developing standards ranges from traditional time and motion studies and predetermined standards, to a hybrid approach that combines the strengths of both engineering techniques to shorten the development period while maintaining high accuracy.

Our *ProTrack* Labor Management Software captures and calculates multiple determinants, so you can ensure that each standard represents the work cycle appropriately. This creates dynamic standards that flex up or down automatically as work content changes, so they require little or no maintenance.

Contact TZA to learn more about developing engineered labor standards or updating your existing standards. We can also provide recommendations on establishing Lean best practices, implementing incentive programs, and building employee engagement with your labor management program.



ProTrack Labor Management Software utilizes engineered labor standards to optimize performance monitoring and management, as well as enhance labor planning, incentives and coaching.

About TZA

At TZA, we focus on helping our clients improve workforce performance, reduce costs and drive continuous improvement across their supply chain. We provide them with the technology and services to achieve higher standards of productivity, utilization, quality, safety and customer service:

- **ProTrack Labor Management Software** to plan, monitor and measure labor performance
- **Labor Management Services** to educate, engage and empower managers and associates

