LeanTPS™ | Chapter 3

STANDARDIZED WORK

Human Responsibility in a Changing Production System



David Devoe

About this chapter

This chapter examines the repeatable operator method through Takt Time, work sequence, and standard in-process stock. These references become useful through observation, instruction, suitable operating conditions, and a dependable response when the work becomes difficult. The chapter also develops prospective examples of human-machine coordination, with particular attention to model differences, confirmed handoffs, exception work, and the authorization of restart.

The chapter can be read independently. Start with one repeating operation. Distinguish the demand reference from observed cycle time, identify the sequence and required checks, and examine the stock needed to repeat the method. The aim is informed application and improvement, rather than completion of a form.

The experience behind the teaching

My teaching draws on training at Toyota Industries Corporation in Takahama, Japan, and 13 years at Toyota BT Raymond. I was a core member of the Toyota Material Handling Manufacturing North American TPS Working Group and led Jishuken within Toyota Material Handling North America, including activities hosted by Susumu 'Sonny' Toyoda. My experience includes Toyota Business Practices and training with Sadao 'Sam' Nomura beginning in 2006, including Dantotsu Radical Quality Improvement. I write from participation in this work: the development of people, management responsibility, and the practical integration of TPS into an organization. The archive records reproduced here support that account; they do not stand in for it.

Figure credits

The diagrams were prepared for this edition. The timing illustration uses teaching values, with simultaneous waiting and machine time identified explicitly. The setup and test photograph is from my workplace teaching archive. None of the illustrative values is presented as a measured improvement result.

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Chapter contents

Select a section title to navigate. Page numbers refer to this illustrated edition. PDF bookmarks also provide access to the main sections and figures.

3.0 The Purpose of Standardized Work 4

3.1 Standardized Work as System Control 18

3.2 The Three Non-Negotiable Elements of Standardized Work 38

3.3 Standardized Work and Flow as a Unified Control System 60

3.4 Standardized Work in Flow 75

3.5 The Standardized Work Chart 97

3.6 Leadership Confirmation and Flow Governance 114

3.7 Standardized Work and Jidoka Integration 141

3.8 Standardized Work and Respect for People 155

3.9 Standardized Work as a Learning System 178

3.10 Standardized Work in Mixed-Model Human-Humanoid Environments 205

3.11 Chapter Review 209

Source Notes 212

Archive records and further references 214

CHAPTER 3

Why Standardized Work Exists in the Toyota Production System

3.0 The Purpose of Standardized Work

Standardized Work makes a repeatable operator method explicit within the Toyota Production System. Its timing, sequence, and standard in-process stock connect with the conditions around the work, the protection provided by Jidoka, and the coordination required by Just In Time. Toyota's wider management system must provide the instruction, resources, and leadership response that make the method usable. The method therefore carries both an operating reference and an obligation to support the person performing it.

Unclear sequence, timing, or necessary stock makes work harder to coordinate. People may adjust task order, accelerate after a delay, or hold extra material to keep production moving. These responses deserve examination because they may reveal a method that lacks capacity, support, or a workable handoff. Leadership must understand the actual work before concluding that an acceptable output total demonstrates a dependable arrangement.

The three classical elements of Standardized Work are Takt Time, work sequence, and standard in-process stock. Together they describe the demand reference, the order of the operator's work, and the stock needed to repeat that sequence. Cycle time is measured and compared with the demand reference. A usable method also incorporates the relevant safety precautions and Quality requirements. Defining these elements provides a reference for observation; it does not, by itself, prove that the process is capable or that every risk has been controlled. [1] [6]

Built-in Quality requires the necessary checks, process conditions, and response to be part of the method. A chart must not make a cycle appear feasible by omitting that work. When a required condition is absent, the team needs a defined protective response and the authority to obtain help.

The responsibility extends beyond documenting the sequence to confirming whether the work can be performed as intended.

Daily work develops capability when people learn the method, understand its important points, compare actual performance with the reference, and investigate meaningful differences. Required protection or containment takes priority when people or Quality are at risk. Investigation then examines the method, equipment, materials, instruction, and operating conditions. A verified improvement should be reflected in the relevant standard and support, taught to the people affected, and confirmed in subsequent use.

Takt Time, sequence, and standard in-process stock make several important relationships visible. Takt provides a reference for demand. Sequence describes the operator's method. Standard in-process stock identifies what is needed to repeat that method. Observed cycle time shows how the work actually performs relative to the demand reference. These elements help reveal imbalance, method changes, and material problems. They are not an exhaustive description of system capability: equipment reliability, product requirements, skill, ergonomics, and supply conditions also matter.

Sequence defines the order in which the work is performed, including the points at which essential checks occur. A consistent sequence provides a basis for understanding differences in method. Takt Time expresses the available production time per unit of customer demand. Cycle time records the duration of a defined operation or repeating cycle. Standard in-process stock identifies the necessary material within the repeating sequence. Keeping these meanings distinct prevents demand, measured performance, and inventory policy from being treated as the same thing. [5]

These definitions give the team an operating reference that can be tested at the workplace. When the sequence cannot be followed, observed timing repeatedly exceeds the planned cycle time, or necessary stock is missing or accumulating, the team has a specific difference to investigate. The response must reflect the concern and the applicable controls. Some differences require immediate stopping and containment; others require assistance, investigation, or planned revision. Clear expectations improve consistency while leaving people able to recognize unfamiliar problems.

In the House Toyota Built teaching model used in this book, Standardized Work supports both TPS pillars. It gives Jidoka additional references for