LeanTPS™ | Chapter 7

JUST IN TIME

Coordinating Work With Demand



David Devoe

About this chapter

Just In Time coordinates need with capable execution through demand references, feasible release, suitable quantities, and dependable replenishment. This chapter develops Takt Time, lead time, Heijunka, pull, Kanban, small lots, logistics, supplier relationships, and the response to changed conditions. Quality protection and leadership responsibility remain part of the complete operating relationship.

The opening supplies the references needed for independent reading. Read after Chapters 1–6, the chapter connects management responsibility, workplace conditions, Standardized Work, observation of waste, Jidoka, and Kaizen with flow through the wider process. Four complete constructed studies develop replenishment, mixed-model leveling, information release, and the response to a disrupted replenishment loop.

The experience behind the teaching

My teaching draws on training at Toyota Industries Corporation in Takahama, Japan, and 13 years at Toyota BT Raymond. My experience includes North American TPS working-group participation, Jishuken, Toyota Business Practices, and training with Sadao “Sam” Nomura beginning in 2006. The source notes distinguish retained training material, official Toyota descriptions, and my Lean TPS interpretation.

Illustrations and evidence

The diagrams and comparison tables are original teaching material. Numerical examples are constructed illustrations rather than historical Toyota or client results. Retained third-party presentation artwork is not reproduced.

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CHAPTER 7

Just In Time: Coordinating Work With Demand

7.0 Just In Time Within the Management System

Just In Time connects production and movement with the need they are intended to serve. The operation must understand what is required, in what quantity, and when it is needed. It must then establish a practical relationship among the processes that supply that requirement. The objective includes shorter lead time, less unnecessary accumulation, and more dependable delivery. The method must protect Quality and provide workable conditions for the people responsible for execution.

Toyota identifies Just In Time and Jidoka as the two pillars of the Toyota Production System (TPS). Its published explanation connects JIT with synchronized production and replenishment of parts used by the following process. It also describes keeping necessary minimum stocks in advance, rather than waiting for a final customer order before beginning every component. This explanation is important because JIT should not be equated with a universal instruction to hold no inventory. [1]

The governance language used in this book examines who defines the operating conditions, who can authorize decisions, and how the organization responds when the arrangement cannot meet its requirements. This is my Lean TPS interpretation of management responsibility. It does not add an official Toyota pillar or replace the productive purposes of TPS with a theory concerned only with permission to work.

7.0.1 The Connection With Chapters 1–6

Chapter 1 establishes TPS within Toyota’s wider management system. Chapter 2 develops the workplace conditions around execution. Chapter 3 explains Standardized Work as a reference for the repeatable operator method. Chapter 4 develops direct observation of waste and the conditions creating unnecessary work. Chapter 5 examines recognition, protection,

required response, and recovery. Chapter 6 develops the investigation and verification of improvements. Just In Time connects these responsibilities with the movement of work, material, and information through the wider process.

The relationship operates in both directions. A clearer replenishment method can reduce searching and make a missing item easier to recognize. A Quality concern can restrict a delivery and expose a weakness in the connection between processes. Kaizen can improve the method, quantity, transport route, or response. Leadership must provide the resources and authority needed to make the resulting arrangement usable during ordinary work.

The teaching order does not prescribe a rigid installation sequence. A team may need to improve product protection, material presentation, operator sequence, and replenishment together. A suitable operating reference supports comparison, but perfect stability is not a condition for beginning responsible study. The team should identify uncertainty, protect essential requirements, and develop the arrangement through evidence and authorized decisions.

7.0.2 References for an Independent Reader

Takt Time expresses available production time per unit of customer demand in the same period. Observed cycle time describes the measured duration of an operation or repeating cycle. Lead time describes elapsed time across a defined process boundary. These measures answer different questions. A short machine cycle does not establish a short customer lead time, particularly when work waits between operations.

Standardized Work has three classical elements: Takt Time, work sequence, and standard in-process stock. The third element identifies the minimum stock needed to repeat the stated operator sequence under its defined conditions. It is not a general name for every inventory or queue in the organization. Product requirements, equipment conditions, technical controls, and essential checks remain additional requirements of the method.

Pull connects an upstream action with a defined downstream need or withdrawal. Kanban is a means of communicating an instruction within that relationship. The card or electronic message needs a clear unit, quantity, route, and response. A supermarket is a controlled stock