# Solving Start-up Problems

## Purpose

To gain the intended benefit of the start-up.

## Introduction

Many of the problems you face on the job have been there since “the beginning”:

- The machine has never produced the expected number of parts.
- The new system continues to have errors.
- The person in this position has never performed to expectations.

Since these concerns represent deviations of what is actually happening from what should be happening, you can resolve them using Problem Analysis. However, since these deviations have existed since start-up, you must use the ideas and techniques a little differently.

## Realism of Should

If performance has never reached expectations, first question how realistic are the standards. The standard or Should may have been:

- Set by someone unfamiliar with the performance in question.
- Set under ideal conditions rather than work conditions.
- Subject to changes in technology or work procedures.
- Based on assumptions about conditions that no longer hold true.
- Set in similar circumstances but for a slightly different operation.

If the Should appears clearly unrealistic, first establish an appropriate standard to see whether a problem really exists. Be cautious, however, in assuming the Should is at fault. Lowering the standard can too easily become the immediate response to a start-up problem. The result is a lost opportunity for improvement.

## Comparison of Actual and Should

If you are convinced that the Should is realistic, then test the Actual for accurate measurement. You can be sure there is a deviation only if the Actual is measured in the same terms as the Should.

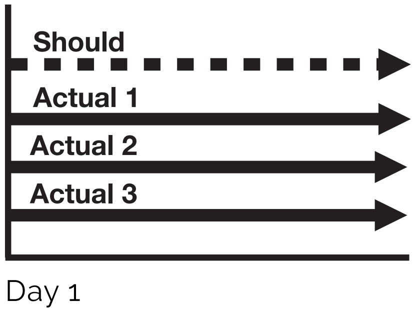
Comparing the Actual with the Should will confirm whether you indeed have a concern. In addition, it will help identify the kind of start-up problem you are facing.

## Types of Start-up Problems

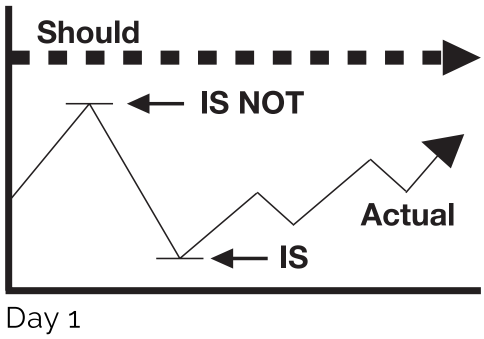
There are three common types of start-up problems, each requiring a slightly different approach.

*Stable:* A single machine, system, unit, or person performs at a constant level, consistently below Should. For example, you may have purchased a machine to fill a unique production need largely because the manufacturer's specifications indicated 7,000 units per hour. In spite of your efforts, the machine has maintained a first-day production rate of 6,000 units per hour.


*Multiple:* Several machines, systems, units, or people perform below expectation, but vary in level of individual performance. The deviation between Actual and Should is different for each unit. For example, you have three chemical vats for mixing raw materials from a common source. Production from the vats has been below the expected level of 100 units since their first use, but they yield different volumes: 83 units, 89 units, and 91 units.




*Fluctuating:* The performance of a single unit varies over time but always remains below the Should. For example, the performance of your sales leads program has varied substantially since its initiation three months ago. However, you have never achieved your projected level of leads.



## Adapting Problem Analysis Techniques

While the fundamental ideas of describing the problem, identifying and evaluating possible causes, and confirming true cause apply to start-up problems, you must make minor modifications to the Problem Analysis techniques.

Stable and multiple problems share a common characteristic of consistent performance over time. Since performance is constant, you cannot reasonably search for changes after installation to help develop possible causes. You must, therefore, generate possible causes from experience or through the process step of distinctions.

Developing distinctions for a stable problem depends on finding a closely related IS NOT. For a unique unit (for example, the production machine), you can compare:

- The low-performance unit to similar units in your own or other organizations, or to prototypes.
- Your organization conditions to pilot test conditions.
- The current unit to detailed manufacturer's specifications or drawings.

For multiple problems, you can take advantage of the different levels of performance to find distinctions by separating the problems and first comparing:

- The poorest performance to the one closest to the Should.

Finding the cause of this discrepancy may allow you to bring performance of all units to a level you know you can achieve. You may also gain insight into how performance can be increased to the expected level.

For fluctuating problems, performance varies over time. You can, therefore, look for changes that could have caused the problem by comparing:

- The lowest "valley" of performance with the highest "peak" (for a large number of changes).
- Nearby valleys and peaks (to focus on specific changes).

## Instructions

Review your list of job concerns for any start-up problems.

1. How will you test the realism of the Should?

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2. How will you confirm the accuracy of the Actual?

3. What type of start-up problem is this? What approach will you take for solving this problem? For example, for a stable problem, what comparisons will you use for the single unit? For a multiple problem, which units will you compare?


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