

Employee Training and Development with Standard Operating Procedures

Second Edition

***Create an Accuracy Controlled Enterprise. Stop error with
3T Failure Prevention Methodology. Use a Value Stream
Map Kaizen SOP format for continuous improvement.***

"In reality SOPs should be written to save organizations time, money, people and effort because, used properly, they will maximise productivity and deliver outstandingly reliable performance every time. Remember, a business that does not pursue excellence in all activities will not last; those that do always prosper."

Make your SOPs the finest, fastest, most certain way to successfully train and develop employees to deliver world-class quality and performance.

**Now with 3T Failure Prevention Methodology
and VSM Kaizen SOP Layout**

***Realise and release across your organisation the continuous
improvement power of Standard Operating Procedures.***

By Mike Sondalini

Preface to the Second Edition

During World War II British airmen referred to ongoing trouble with aircraft, in spite of mechanics' best efforts, as 'gremlins at work'. A gremlin is an imaginary creature that lives inside machinery and equipment causing trouble in devices and systems of all kinds. The gremlins are us.

Unless we are saboteurs none of us intentionally cause problems. Yet why do problems happen so regularly and, in far too many cases, so disastrously? The 'human element' is recognised as the single most uncontrolled cause of failure¹. People cause most problems. The 'human element' is the uncertain, random nature of outcomes from peoples' actions and behaviors. Our technology has advanced the quality and properties of materials, equipment and machines to the point that they are highly unlikely to fail by themselves². It is people that cannot be controlled, it is people who take on tasks they are incapable of doing well or who are incompetent in their jobs. When things go wrong it's most likely the 'human element' at work; we gremlins.

It has long entranced me as to what can be done to address the 'human element' in causes of failure; how can luck and chance, ignorance and incompetence, be turned into certainty of quality results. I believe the answer is surprisingly simple – become an expert at your job, be its master. Know it so well that you know all there is to know about it so that you are in total control.

We call people 'expert' when they skillfully apply knowledge and method to deliver the right results. An expert does their work right the first time because they control it with great certainty to deliver the needed result. This definition of 'expert' gives us hope for solving the problem of the 'human element'. If people can become 'expert' they will do their work right and mostly without error. Everyone needs to be expert at their job. We all count on it. In a company of 'experts' all work is controlled to the highest probability of being done right the first time.

Experts focus on failure prevention and defect elimination to ensure their work is done right first time. They do not want to fix problems; rather, they put their effort into not having problems. They know that making mistakes, or doing work wrongly, is too wasteful and expensive in time, money, energy and resources. Experts do not repeat a job; they do it right the first time. Being expert is far from simple. Today there are far too few experts in the world and this book was written to help fix that problem.

We need everyone to be expert at what they do if the frequency of failure in our businesses is to be reduced. The second edition of this book takes the ‘target and test’ method used in the first edition and improves it to more surely and quickly develop expertise in a job. As in the first edition the focus is on finding and using the hidden power of standard operating procedures to deliver quality output faster and with great certainty of success. The ‘target and test’ method now has tolerance bands about the target, as with an archery board, to make work a challenging, fun game that urges us to become expert faster.

To help explain the value and use of well constructed SOP’s this edition includes new information on the causes of failure. It also includes new information on the reliability of human workmanship – we are not machines and ‘failure’ is often not a person’s fault but is caused by poorly structured work and poor workplace environments condoned by management. A most beneficial inclusion in this edition is a new development to encourage the rapid creation of high skills and abilities throughout an organization. It is called the ‘3T failure prevention method’ – 3T stands for ‘Target, Tolerance and Test’. You will learn how to incorporate it into SOPs so that work quality sky-rockets as people quickly become highly skilled. Another addition worthy of mention is a revised way to layout SOPs horizontally for Value Stream Mapping to drive continually improvement in job performance by identifying wasted time and resources.

The last major inclusion in this edition is to present the simplest corporate quality performance improvement program known. The Accuracy Controlled Enterprise, or ACE, represents an ideal to strive for in running organizations. Much simpler than establishing a quality management system like the ISO9000 series, or introducing Lean or Six Sigma, it still drives the achievement of excellence by focusing on improving individual performance. An ACE uses 3T failure prevention methodology in every task at every level of the organization. The Board members, CEO and senior managers lead from the front by first applying 3T rigor and VSM Kaizen SOP continuous improvement in their work to become ‘experts’ in their duties. Once they deliver ‘expert’ performance they cascade the 3T/Kaizen SOP concepts to middle management and the workforce. The ACE approach delivers quality by ensuring the knowledge and skills are present in the right people, at the right time, to delivery expert accuracy. In an ACE everyone is an expert at their job and as a consequence the organisation cannot help but outperform the competition.

This second edition presents you with information on the best SOP methods yet devised to detect

and stop errors in business processes – the Accuracy Controlled Enterprise, 3T failure prevention SOPs and Value Stream Mapping Kaizen SOP layout. Together they prevent failure, eliminate defects and deliver quality performance faster by ensuring all work is done accurately the first time. With them in place, and in use, a business has the simplest quality system around to get maximum profits and customer satisfaction from the efforts of its people. The new methods of developing standard operating procedures shown in this book will help your organization to become the best and most expert in your industry, fast.

One final indulgence is to thank my wife and children for their years of patience with me. Only an author and their family know what I mean.

Mike Sondalini
July 2007

Let's make a picture of the bus trip process. Figure 1.1 is a flow diagram of the bus trip.

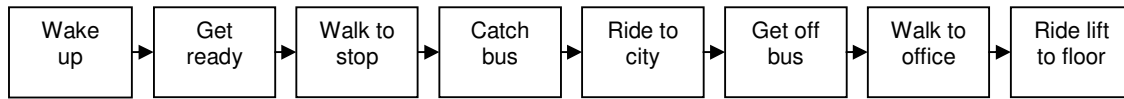


Figure 1.1 Series Process of Steps in Getting to Work by Bus

Your bus trip has eight steps in it; each sequential step is done after the previous step is finished. This is known as a series process. Each step has to go right for the whole trip to go right. If one step goes wrong, the whole trip goes wrong and you don't get to work on time. That would not be a very good way to start a new job.

Let's take a moment here and relate how the bus trip story applies to your business and its operation.

In your business you have people, machines and business processes. Your machines are made of parts working in series, one after the other. In some machines there maybe a few parts, in others there maybe hundreds of parts needed to run the machine. In a few machines, like a space rocket or a newspaper printing press, there are thousands of parts. Machine parts work in series and when a part fails, like Part 6 in Figure 1.2, the whole system of connected parts is also failed. Many times this translates into a complete machine failure, or equipment breakdown. The more machines you have in your business, the more parts there are, and the more likelihood that from time to time a few of those parts will fail and stop the process

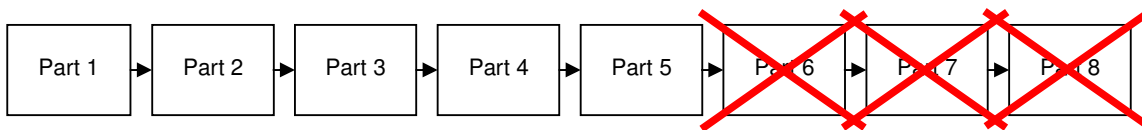


Figure 1.2 One Failure in a Series Process causes the Whole Process to Fail

In your business you also have many operational processes. These are described in your standard operating procedures, if you have them and are kept current. Each process contains many steps, each step in sequence. When a process step suffers a failure, the whole process fails. For example, if the wrong number is keyed into a computer, that error moves throughout the business until it causes a problem. At which point someone will need to stop their normal job and go and fix the

and below ability levels to do higher standard work than they naturally could do unassisted.

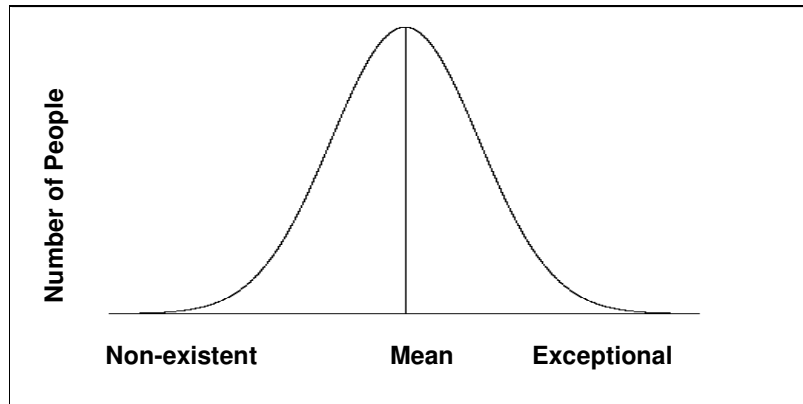


Figure 3.1 Distribution of a Talent in the Human Population

The talent distribution curve also explains why the continual training of people is so important to a company's long term success. If the available labour pool is clustered around the mean performance skill level, then a good way to improve a population's ability to do a skill better, is to teach them how to do it better. Successful training, where knowledge and skills are passed-on to others, has the effect of moving average performers toward the elite portion of the population, as shown in Figure 3.2.

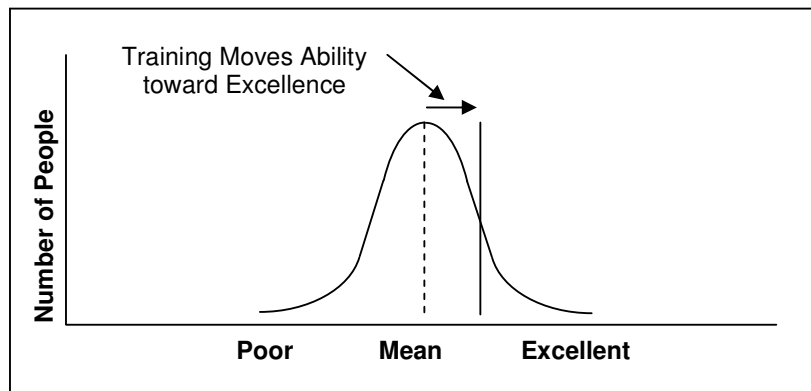


Figure 3.2 The Effect of Training on Developing a Talent

3.1. The Cost of Poorly Written Standard Operating Procedures

Since standard operating procedures control the quality of the work performed by people not expert in a task, they are clearly absolutely critical to the proper running of a business. It is also critically important that they are written in ways to promote maximum efficiency (make use of the least

and solutions are created. New people are employed, new machines are brought and new procedures are put in place. These unnecessary additional costs to the business go unquestioned. They come to be accepted as normal expenses of doing business and the organization carries them as extra operating costs. Often a department grows in size, cost or complexity because the problems brought in from outside must be addressed before it can do its own work. Totally unintentionally, the organization's valuable time, money and resources are spent fixing defects that should not have occurred. Living with problems is a costly and profit destroying practice.

Figure 7.5 shows the best strategy. It is to stop defects entering your business. As a consequence maintenance costs reduce, production downtime falls and there is an increase in equipment reliability, plant availability and productivity. Instead of letting problems enter the operation and then addressing them later, you will make far more profit and have far fewer operating disruptions, if the problems are stopped from getting into the organization in the first place.

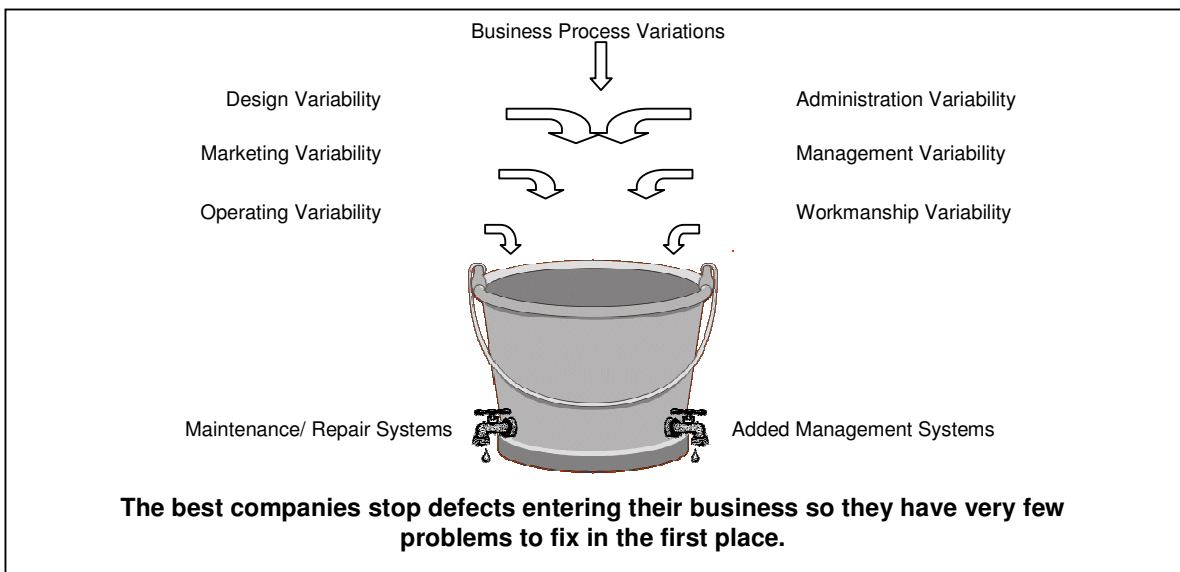


Figure 7.5 Defect Elimination

Accepting process variability as inevitable is sensible, accepting the accompanying failure consequences as inevitable is disastrous. Proactive defect elimination and failure prevention is a most effective variability control methodology for stopping wasted effort, financial loss and operating downtime. The best way to fix a problem is not to have it!

7.2. Why Failures Happen

All goods or services are the results of processes producing variable outcomes. Products can fail

and which do not. Removing waste from the SOP starts by looking for ways to totally eliminate non-value actions. Those non-value actions that remain are scrutinized to reduce their time to the least possible.

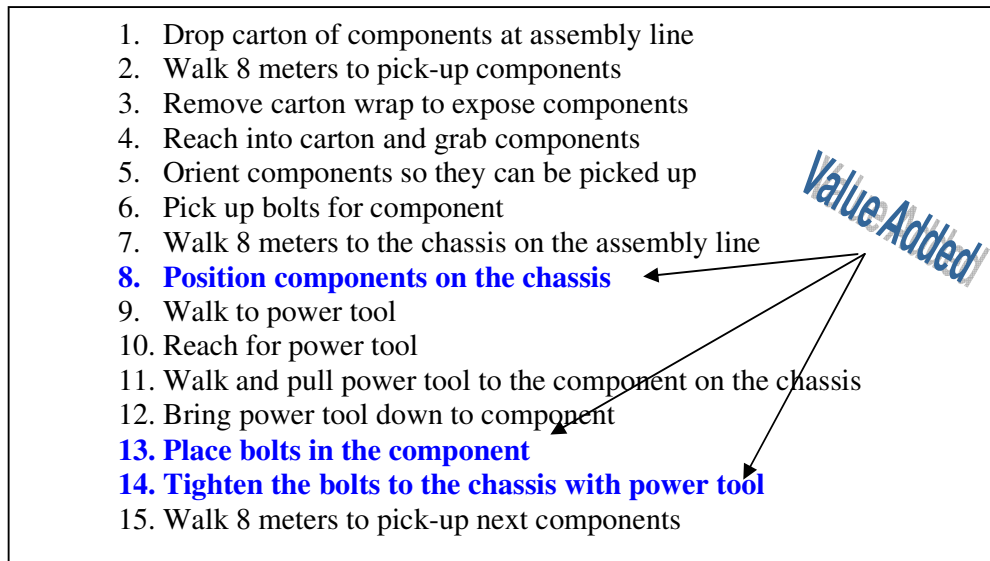


Figure 20.3 Identifying Waste in a Truck Chassis Assembly Process

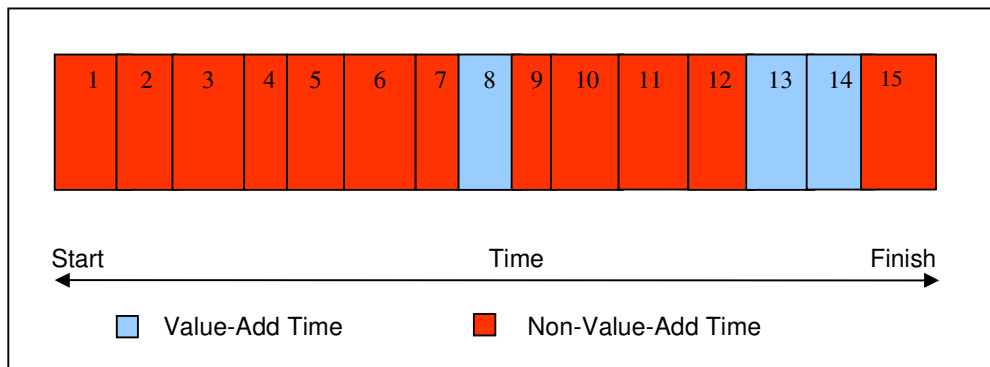
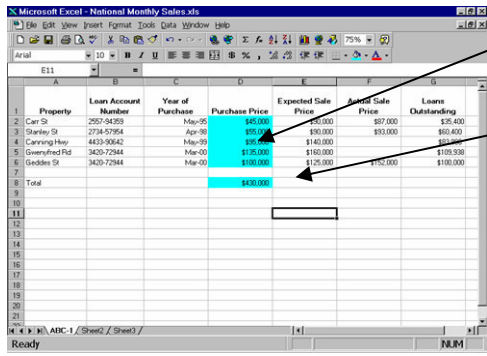


Figure 20.4 Value-Add and Non-Value-Add Time in Chassis Assembly

20.3. Analysis

The worth of VSM becomes self-evident during the analysis phase. Once a business or manufacturing process is drawn as a series of steps and described in numerical terms, the inherent oddities and inconsistencies become evident. The first analysis performed is to compute a ratio of total customer-value-adding time to total process time to see how customer-effective the process is. Most often this figure is in the single digits. A low customer-value-adding ratio indicates a process designed without the customer's wishes being considered. The fortunate aspect of non-customer-oriented processes is the great scope offered to cut big amounts of waste and cost from them.

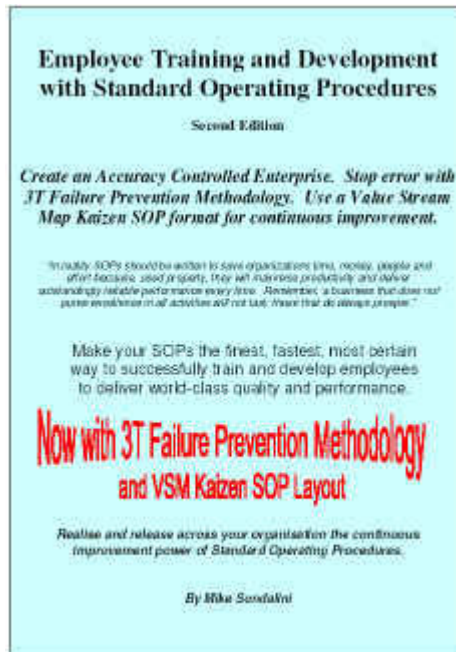
8.	Office clerk	Totals don't agree	<p>If the two numbers are not the same check the formula in the spreadsheet matches the cells that it should.</p> 	Check all individual cells are picked up by the formula in Totals cell.
9.	Office clerk	No spreadsheet error	If the spreadsheet is correct, the error lies in the hardcopy file. Report the error by telephone to the Manager National Sales.	Ring the National Sales Manager.
10.	National Sales Manager	Hardcopy checked	Confirm the totals of individual sales are recorded correctly and ring back the correct individual sales figures.	National Sales Managers advise each sales figure.
11.	Office clerk	Up-date spreadsheet	Correct the figures in the spreadsheet with the correct values and confirm the totals are now correct.	Double check the new total against hardcopy file total
12.	Office clerk	Totals agree	If the totals in both documents agree the job is complete. Save the spreadsheet, close the electronic file and return the hardcopy file to the National Sales Office filing cabinet.	See spreadsheet is saved and file returned.

Example E24 – Sample of a SOP where both images and words are selectively used to explain the

The previous pages where just a sample of ...

Employee Training and Development with Standard Operating Procedures Second Edition

By Mike Sondalini



To download the entire ebook, please visit

<http://www.bin95.com/ebooks/Enterprise-Development-Tool-sop.htm>

Other related titles by Mike Sondalini

True Downtime Cost Analysis - 2nd Edition

By Don Fitchett and Mike Sondalini

See http://www.feedforward.com.au/downtime_costing_activity_based.htm

Defect and Failure True Cost

By Mike Sondalini

See http://www.feedforward.com.au/Defect_failure_waste_cost.htm

**For many more titles by Mike Sondalini, please browse
Feed Forward Publications**

at ... <http://www.feedforward.com.au>

(Feed Forward Publications provides Industrial related Ebooks and Software.)