It is the Operator's Fault!

Have you heard that before? It is the operator's fault!!! After all, he is doing the job. So, how can it be anyone else's fault? This month's publication examines why mistakes occur and how to handle them.

In this Issue:

It is Your Fault!

You work in a distribution warehouse. Your job is simple. A customer order is printed. This contains the various items and quantities the customer wants. The order ticket also contains where each item is located in the warehouse. You walk to each location, count out the number the customer wants of each item and put them into your cart. You then take the cart to packing where the order is packed and then shipped to the customer. So simple.

It is Tuesday morning. Over the intercom, you hear the warehouse manager saying your name and that she wants you to come to her office. This is what the warehouse manager says:

> "I just got a call from Tom, our Vice-President of Sales. He just got off the phone with our major customer. The order you picked for them last week was not correct and they are very upset. Tom wants to know why I can't hire people who can simply read and count! What happened? Why didn't you fill the order correctly?"

Poor you. You just stands there. You don't even remember the order from last week – after all, you fill so many each week. But, for the warehouse manager (and the Vice-President of Sales), it is your fault.

Of course, it is your fault. You are the operator – you are doing the work – you are closest to the process. Heard these reasons for why it is the operator's fault?

- He didn't follow our job work instructions. These are written out and the operator has been trained. The operator just didn't follow those clear-cut instructions.
- He wasn't paying close enough attention.
- The equipment is down because the operator didn't run it correctly. And then he didn't take the time to call maintenance to fix it.
- She didn't take time to re-check her work.

- He simply doesn't care.

How many other ones have you heard? Yes, operators make mistakes. But to blame the operator each and every time it happens is simply poor leadership. It is the easiest thing for leadership to do - to write the operator up – to give the operator time off with no pay – to retrain the operator (how often does this really work?) – to demote the operator – to take away the bonus.

To really get to root cause requires work. And it is seldom easy. This month's publications takes a look at one approach to handle mistakes – the approach of understanding variation.

Everyone Makes Mistakes

How true it is that everyone makes mistakes. Please do the following: count the number of "F" letters in the following statement:

- Finished files are the result of years of scientific study combined with the experience of many years.

How many did you get? The answer is at the end of this publication. The reality is that most people don't get the correct answer. If you didn't, you made a mistake. Come on, this is simply counting. Can't you do that?

Read out loud the words in the triangle below.

What did you read? Most likely you read the following: A bird in the bush. Is that what you did? If so, you made a mistake. Can't you read? Didn't you realize that something is repeated? Yes, "the" is repeated twice.

The only way you can avoid making a mistake is by not doing anything. So, if you don't make mistakes, then you don't make anything.

Obviously, we don't plan on making a mistake.

- Do you leave home in the morning thinking that today you are going to ship the wrong item to customer?
- Do you show up for work thinking that today you are going to cause equipment downtime by neglecting to do your preventative maintenance tasks?
- Do you show up at your desk thinking that you are going to record the customer deposits into the wrong account?
- Do you show up at your work site planning on having an accident?

Sometimes we do forget to do things. Ever said to yourself "I need to remember to take my umbrella with me to work today. It is going to rain." Later in the day, the rain starts. And where is your umbrella? Home.

So, how should we handle mistakes that occur? The answer on how to handle mistakes is really contained in the teachings of Dr. W. Edwards Deming. It begins with understanding variation. Below is an excerpt from our first publication back in January 2004.

Variation

I used to, now and then, spill a glass of milk when I was young. Our table slanted toward where my mother sat. So, the milk always headed in her direction. And she usually had some choice words when this happened. Of course, I was at fault. I needed to be more careful. Or was that really true?

If you understand variation, you will realize that most of the problems you face are not due to individual people, but to the process -- the way it was designed and the way it is managed on a day-to-day basis.

Variation comes from two sources, common and special causes. Think about how long it takes you to get to work in the morning. Maybe it takes you 30 minutes on average. Some days it may take a little longer, some days a little shorter. But as long as you are within a certain range, you are not concerned. The range may be from 25 to 35 minutes. This variation represents common cause variation --- it is the variation that is always present in the process. And this type of variation is consistent and predictable. You don't know how long it will take to get to work tomorrow, but you know that it will be between 25 and 35 minutes as long as the process remains the same.

Now, suppose you have a flat tire when driving to work. How long will it take you to get to work? Definitely longer than the 25 to 35 minutes in your "normal" variation. Maybe it takes you an hour longer. This is a special cause of variation. Something happened that was not supposed to happen. It is not part of the normal process. Special causes are not predictable and are sporadic in nature. They stand out like the red car in the picture to the right.

Why is it important to know the type of variation present in your process? Because the action you take to improve your process depends on the type of variation present. If special causes are present, you must find the cause of the problem and then eliminate it from ever coming back, if possible. This is usually the responsibility of the person closest to the process. If only common causes are present, you must FUNDAMENTALLY change the process. The key word is fundamentally -- a major change in the process is required to reduce common causes of variation. And leadership is responsible for changing the process.

It has been estimated that 85 to 94% of the problems a company faces are due to common causes. Only 6 to 15% are due to special causes (that may or may not be people related). ***So, if you always blame problems on the people, you will be wrong at least 85% of the time.*** It is the process most of the time that needs to be changed. Leadership must set up the system to allow the processes to be changed.

So, Mom, sorry. But most of the time, spilling the milk was not my fault. It was usually yours -leadership. The glasses were too big for my small hands (no spill-proof cups in those days). When I wanted to put it by the edge of the table to make it easier to reach, you said move it back - I might spill it. And with the meal-time conversation, how could I concentrate on my milk!

A great example of common and special causes is the red bead experiment performed by Dr. Deming. It shows clearly how the vast majority of problems you face are due to the process – not the people in the process.

The Challenge

So, the challenge is to determine if a mistake is due to common or special causes. The most effective way to separate the two is through the use of a control chart. But here is a simple rule of thumb to determine if an operator's mistake is due to common or special causes:

If more than one or two people are making the same mistake, the odds are that it is a process problem caused by common causes of variation – not a people (special cause) problem.

This is true even if the mistake rarely happens. For example, suppose you have an incorrect shipment just once every two months or so.

If you can "predict" how often you will have one, then it is a process issue – not a people issue. Punishing people (putting a letter in their files, giving them time off with no pay, etc.) is not fundamentally changing the process – which is the only way to address common causes of variation.

Types of Mistakes

Mistakes happen for a variety of reasons (adapted from Network Rail). You can look at mistakes as coming from two major categories:

- Error: an action that was not intended
- Violation: intentionally not sticking to the procedure

Why do errors occur? After all, we don't intentionally mean to create an error. There are many, many reasons why errors occur. This is why that most errors are due to common causes. What are some of these common causes of variation?

• Too much work	• Bonus/Incentives	• Inexperience
• Too little work	• Work environment	• Lack of breaks
• Too much overtime	• Poor supervision	• Motivation
• Lack of training	• Repetitive work	• Lack of teamwork
• Poor training	• Shift work	• Poor communication
• Time pressures	• 12 hour shifts	• Poor instructions

There are many more that can be added to this list. Most of the time these common causes of variation combine to create errors. For example, return to your job in the warehouse. You are paid an incentive on lines picked per day. You warehouse manager is paid a bonus on reducing overtime. Many order print out late in the day as sales enters orders to meet their incentives. See some issues there. Recipe for errors to happen as you hurry to pick orders and not work any overtime.

Why do violations occur? Violations occur when we willing don't follow the procedures. Some violations occur when we frequently don't follow procedures and no one cares. It simply becomes a normal way of doing the job. This can occur because the "other" way saves time or because the procedures are too restrictive. Other times they occur because of pressures from the job (e.g., time pressures can cause people to knowingly cut corners).

Violations are different than errors. It takes different approaches to deal with each. Leadership that blames the operators for each violation or error assumes one approach works everywhere.

How to Handle Mistakes

Reducing mistakes takes more than punishing the operator. In fact, that is the wrong approach to take almost all the time. Mistakes are usually due to common causes of variation. The best approach to handling mistakes is to involve the people doing the work. ***Form a team to work through a structured problem solving model to discover how to prevent the error from occurring – or at least decrease the probability that it will occur again.*** So simple. Anything can be improved. And those closest to the process – those operators we tend to blame for mistakes – usually have great ideas about how to prevent the mistakes from occurring.

Leadership must take the first step in changing how mistakes are handled. Quit blaming the operator each time a mistake is made. Instead, seek to understand why the mistake was made and to work with a team environment to correct the problem.

I have used this true story in the past to demonstrate how blaming the operators all the time does not work. A plant produced a number of different powdered products. Each of these products was run through the same production equipment at different conditions and put into unique silos (one or more for each product type).

To ensure that the product went to the correct silo, an operator had to set up the lines from the process to the correct silo. If product was introduced into the wrong silo, the entire silo had to be sold as off-grade, at a tremendous reduction in price. The cost was typically $30,000 per incident.

The plant leadership had a policy that anyone who cross-contaminated a silo received three days off with no pay. What type of variation did leadership assume was present? Special cause. They assumed that the operators were at fault. One manager said that he was not going to "idiot proof" the plant.

Was leadership correct? The only way to find out is to collect data. It turns out that anyone who had worked in the unit for more than three months had time off for cross-contaminating a silo. If everyone is doing it, what type of variation is it? Common cause. And the only way to reduce common cause of variation is to change the process.

Leadership put together a team that worked on the problem. The team came up with two simple solutions: label the lines and put better lights out at night. Easy solutions but beyond the authority of the operators to get done by themselves. With the solutions implemented, the problem, which had been occurring almost monthly, went away entirely. So simple if you understand variation.

Summary

Everyone – you and me included – make mistakes. The mistakes can be unintentional errors or intentional violations of procedures. But remember:

- ***If more than one or two people are making the same mistake, the odds are that it is a process problem caused by common causes of variation – not a people (special cause) problem.***

The challenge for leadership is to understand why the mistake was made and use their influence to help a team work on preventing the mistake in the future. It is not to blame the operator.

How Many F's are There?

Six. Most people miss the f in "of."

Quick Links

Visit our home page

SPC for Excel Software

SPC Training

SPC Consulting

SPC Knowledge Base

Ordering Information

Thanks so much for reading our publication. We hope you find it informative and useful. Happy charting and may the data always support your position.

Sincerely,

Dr. Bill McNeese
BPI Consulting, LLC