

ANALYTIC TROUBLE SHOOTING[®]

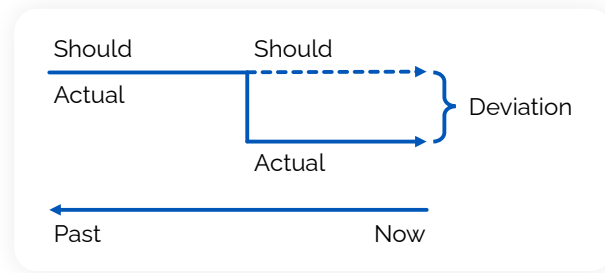
Prework



Identifying Problems

People often use the word “problem” to mean different things—decisions they have to make, plans they have to carry out, etc. This can lead to a great deal of confusion, especially when they are trying to communicate with others. Analytic Trouble Shooting (ATSSM) uses a very specific definition of the word “problem” to sharpen communications between troubleshooters.

We define a problem as a situation in which the actual performance of a piece of equipment, system, or product is different from what it should be, and we don't know why. This is represented by the following diagram:



Of course problems come in all sizes and shapes. In the next few pages, we will define several kinds of problems, give examples, and ask you to identify a few of each kind in your job area. The purpose of identifying problems is to use the ideas and processes you learn in the ATS workshop to find their cause(s).

A. “Small” Problems

A “small” problem is one in which:

1. A great deal of money is not involved, nor a lot of pressure, to solve the problem.
2. The problem has not been around for a long time.
3. Information on the problem can be obtained without too much difficulty.

Examples:

- The left tail light on a forklift has burnt out three times this month.
- Or, a personal computer suddenly can't read a file it created last week.

Every day brings small problems and we don't always know why they happen. Please list a few of these small problems for which you don't know cause:

B. Recurring Problems

Recurring problems are simply problems that keep coming back. Sometimes we fix them and they go away for a while. Then the same problem comes back. Sometimes these problems go away even if we don't do anything, but they always come back. It may be just a few days before they recur, or several months may go by before their next appearance. Recurring problems can be very costly, time-consuming, and frustrating.

Examples:

- On a production line, rejects jump from 5 percent to 20 percent. After three hours, they go back down to normal. This happens once a week.
- Or, every time a vehicle is brought in for service, the brake linings are worn. The linings are replaced, but the next time the vehicle is in, the new linings are also worn.

Please list a few recurring problems for which you still don't know cause:

C. Start-up Problems

Start-up problems are problems where the Should has never been reached. Ever since we got a new piece of equipment, installed a new system, etc., there has been trouble with it.

Examples:

- A machine that was supposed to turn out 20 pieces per hour has only turned out 15 pieces per hour since we started using it.
- Or, since we switched to a new engine, it has been burning excessive amounts of fuel.

Please list several start-up problems which need to be resolved:

D. Multiple Problem Situations

In these cases, several things are wrong. What seems to be one major problem is really several smaller problems lumped together.

It may be that one product, system, or piece of equipment has several problems.

Example:

- A pump "isn't working": it's sluggish, leaking oil, and vibrating all at once.
- Or, unrelated things may have the same trouble.

Example:

- "Production is down." That is, our production rate is down both on Product A and on Product B.
- Finally, we may have several unrelated things, each with different problems.

Example:

- "Nothing's working in Shop A." If we listed all the problems separately, we'd find: compressors have low pressure; some parts don't fit; power keeps cutting out; welds are not smooth, etc.

Please list a few areas where you have multiple problems that need to be looked at carefully and separated:

E. Future Problems

These are problems that could occur in the future, and which we would like to avoid.

Examples:

- We are planning to change suppliers of oil filters to get a better price. Using a cheaper filter might cause us new problems.
- Or, we have decided to extend the period between equipment overhauls from 12 to 18 months. In this extra time, problems could crop up.

Please list a few situations where you think things could go wrong.