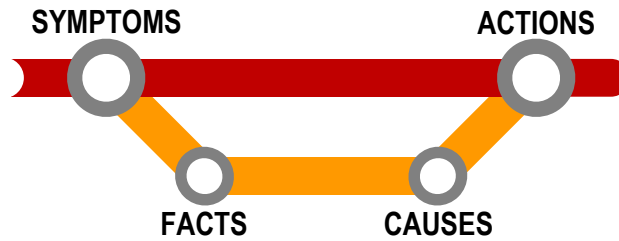


SYSTEMATIC TROUBLESHOOTING



1. SYMPTOMS

- What are the observable symptoms?**
 - Describe the specific, observable symptoms, and how they deviate from expected performance.
- Which symptom should be solved first?**
 - Select the most important and urgent symptom.
- Who will do what by when?**
 - If a short-term corrective action is known or obvious, then continue to **4. ACTIONS**.
 - Otherwise, proceed to **2. FACTS** because an investigation is needed to find the unknown cause.

2. FACTS

- What are the facts?**

	NOT WORKING	WORKING OK
WHAT	[The symptom]	What is working ok?
WHERE	Where is the symptom observed?	Where is it ok?
WHEN	When first observed? And since?	When last working ok?
HOW	How did it occur? When in the sequence of events?	Under what circumstances is it ok?

- The questions are indicative. Consider supporting the facts with a graphical illustration, a timeline, etc.

3. CAUSES

- What could cause the symptom?**
 - List possible, relevant causes quickly and without discussion.
 - Consider error corrections, preventive maintenance, or enhancements made immediately prior to the symptom occurred. Consider inputs, components, and environmental factors.
- How likely are the causes?**
 - Prioritize the causes based on likelihood and ease to check. Consider parallel activities.

4. ACTIONS

- What action could verify the cause?**
 - Reduce the risk of taking unnecessary action to an acceptable level.
- What can we do to restore service safely and quickly?**
 - Decide on and perform best short-term corrective action(s).
 - Verify and validate that the symptom is removed.