STRUCTURED PROBLEM SOLVING

Leader: _____ Start Date: _____

1. DESCRIBE THE PROBLEM

☐ A. Problem Statement *(Use a 6W2H to Form a Proper Statement)*:

☐ Implement a Short Term Fix (Until the Root Cause is Identified)	Who	Signature	By Date	Status
☐ Action Taken:				⊕

Status Legend: ◔ 1-Identified ◑ 2-Implemented ◕ 3-Feedback ● 4-Closed

2. UNDERSTAND NEEDS AND REQUIREMENTS

☐ Cutomer Needs:

☐ Product or Process Requirements:

☐ Technical Requirements:

☐ Defining Frequency:

Within this amount of time [ ] Hours We had this many [ ] ÷ out of this many units [ ] x 100% = **Occurrence Rate** %

☐ D. Gemba **"Go See"** the process, track the problem upstream and identify where it is first caused. Use the space provided on back to sketch process / timeline.

3. USE A TEAM APPROACH

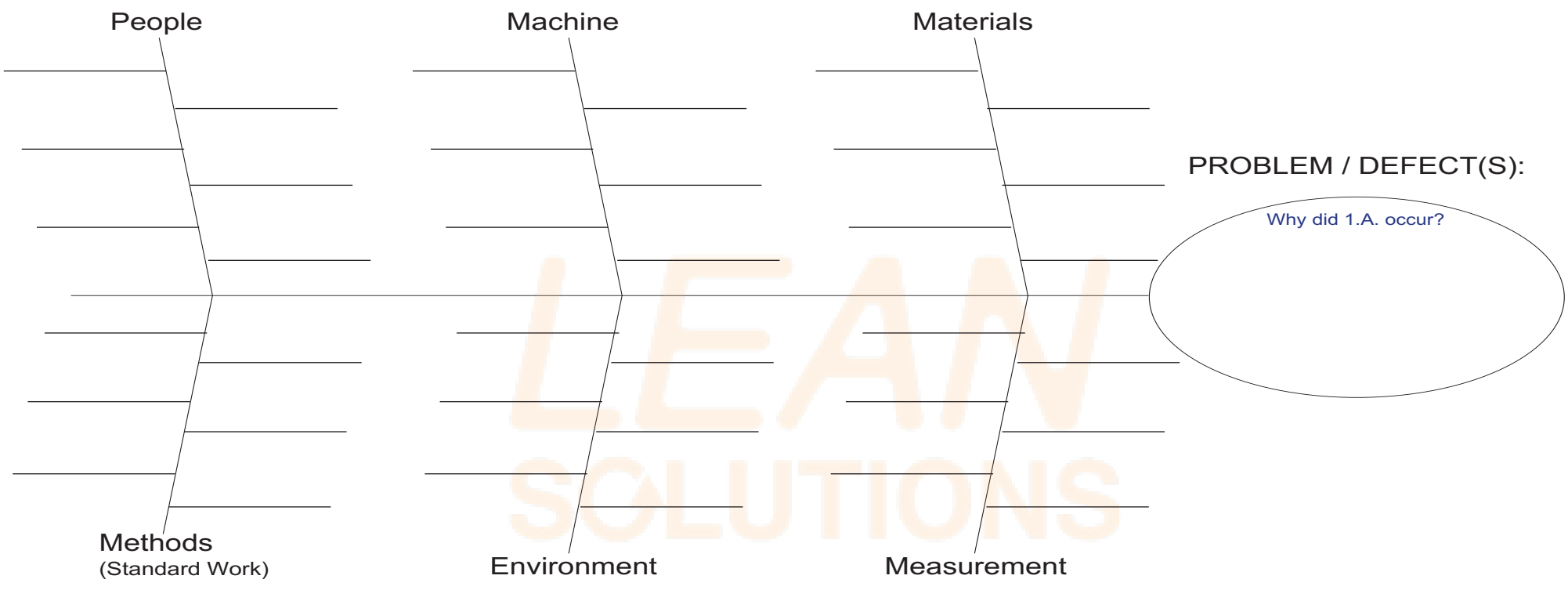
☐ Names:

4. IDENTIFIY POTENTIAL CAUSES: Indicate possible root cause(s) on Fishbone Diagram.

☐ A. Using the fishbone diagram below, turn your problem statement (1.A.) into a question and write it within the head of the fish.

☐ B. Review the 6 major cause categories (the bones of the fish): People, Machine, Materials, Methods, Environment and Measurement

☐ C. Brainstorm and write in more specific cause ideas within each of the major cause fishbone categories. ***(see bottom of back page for ideas)***



☐ D. Use "5 Why?" analysis to brainstorm root cause(s) of specific cause ideas being explored. ***(repeat as needed using space on back page)***

Cause Idea: ← Why this?	Cause Idea: ← Why this?	Cause Idea: ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
☐ Verified	☐ Verified	☐ Verified

5. COLLECT & ANALYZE DATA (To Verify Root Cause)

6. IDENTIFY ALTERNATIVES & SELECT SOLUTION for your Root Cause(s) using the "Impact/Difficulty" matrix on the back of this page.

7. PREPARE A PLAN OF ACTION	Who	Signature	By Date	Status
☐ Action Taken:				⊕

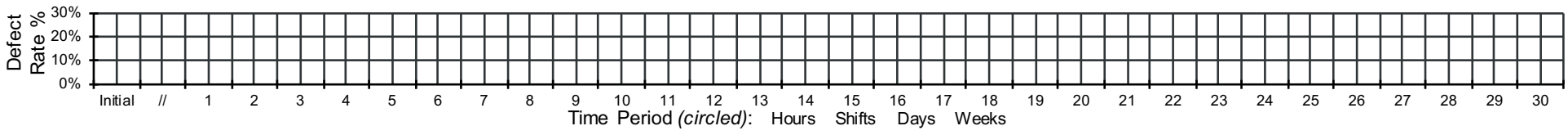
8. GET LEADERSHIP APPROVAL	Who	Signature	By Date	Status

9. IMPLEMENT THE SOLUTION (use PDCA experiment log)

10 MEASURE,MONITOR, & CONTROL	Who	Signature	By Date	Status
☐ Verification Action:	Team Leader:			⊕
	Sponsor:			⊕

☐ Verification Frequency:

Within this amount of time (circle proper unit) [ ] Hours / Days We had this many occurrences [ ] ÷ out of this many units (opportunities) [ ] x 100% = **Occurrence Rate** %



Process Sketch

Sketch the process and note observations ***(optional, as referenced on front page section 1.D)***:

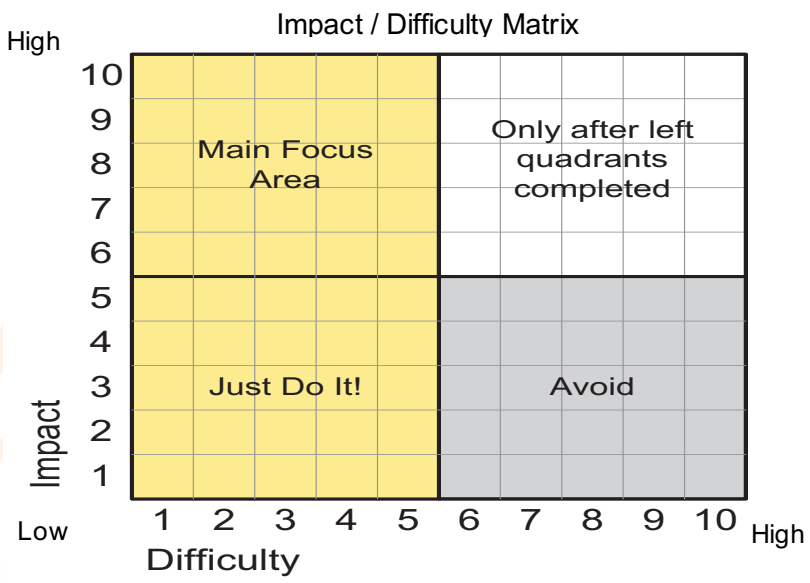
Space for additional "5 Why?" Analysis ***(optional, continuing from front page section 4.D)***:

Cause Idea: ← Why this?	Cause Idea: ← Why this?	Cause Idea: ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Root Cause: ☐ Verified	Root Cause: ☐ Verified	Root Cause: ☐ Verified

Cause Idea: ← Why this?	Cause Idea: ← Why this?	Cause Idea: ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Answer → ← Why this?	Answer → ← Why this?	Answer → ← Why this?
Root Cause: ☐ Verified	Root Cause: ☐ Verified	Root Cause: ☐ Verified

6. IDENTIFY ALTERNATIVES AND SELECT A SOLUTION for selected "Most-Likely" Causes ***(as referenced on front page section 5)***

Root Cause Idea:	
☐ Possible Solution #1: Pro's: Con's:	☐ Possible Solution #2: Pro's: Con's:
Root Cause Idea:	
☐ Possible Solution #3: Pro's: Con's:	☐ Possible Solution #4: Pro's: Con's:
☐ Possible Solution #5: Pro's: Con's:	☐ Possible Solution #6: Pro's: Con's:



More specific cause ideas listed below for reference when brainstorming ***(optional, as referenced on front page section 4.C)***:

Fold toward front page

People	Machine	Materials	Methods	Environment	Measurement
- Level of staffing - Training [*to what "Method"*] - Competency or experience - Conflicting goals - Compliance with procedures - Personality issues - Physical ability or function - Communication between peers and/or supervisor	- Machine maintenance or calibration - Machine controls or lack of controls - Machine fault or defect - Software or network fault - Machine related contamination - Machine tooling or fixtures - Incorrect machine or tester	- Defective - Out of specification - Contaminated - Improper storage conditions - Labeling or identification - Incorrect amount or quantity - Improper transportation or handling - Expiration date exceeded or unknown - Problem with product design - Wrong materials	- Incorrect definition - Incorrect sequence - Missing definitions, unclear rules - Poor process controls - Poor measurement controls - Lack of critical information - Incorrect information - Excessive queues - Handling - Orientation - Incorrect revision - Poor change control	- Physical environment (temperature, lighting) - Security or safety systems-Distractions in the environment-Particulates - Contamination	- Poor repeatability (not able to achieve same readings when the same part or machine setting is measured by the same person several times) - Poor reproducibility (not able to achieve the same readings when the same part or machine setting is measured by the different people several times) - Poor accuracy (too much difference between the observed average value of measurements and the master value) - Poor stability (the system isn't predictable from one measurement to the next) - Poor linearity (not equally good at measuring small parts or machine settings as measuring large parts or machine settings) - Invalid/excessive measurement or test method