Driving the Cultural Shift and Breaking the Lean Plateau

MAKING IMPROVEMENT CONTINUOUS

“We have spent 7 million Euro and still don’t have a lean culture.”

Dutch Corporate Lean Director

If we are talking about a *culture change...*

What is “culture?”

A simplistic working definition:

CULTURE:

The rules for being a "good citizen" of the group.

The norms and rituals that structure how people *interact* with each other and their environment.

"OK. What do you mean by 'lean culture' … what does it *look like*, what would you *see*?"

"People find and eliminate waste every day."

What would you see if they were doing that?

What do you expect them to *do* when they find waste?

What are the rules for being a "good citizen" of a "lean culture?"

Key Point:

If we are not really clear
about what we want,

it is pretty difficult to expect
anyone else to do it.

A *Target Condition*:

"A description of how the process should operate in order to achieve the goal."

- From *Toyota Kata* by Mike Rother, 2010

What are the norms for how people interact with one-another, and with the processes, in a *lean culture?*

A Story of Discovery About the Role of Leaders

We had a problem:

Hundreds of kaizen events.

Hundreds of black belt projects.

But leaders, especially first and second level leaders, were not supporting the changes.

The Solution:

Have a meeting and discuss it.

OK… so what did we talk about?

Why don’t leaders support the changes?

But first, shouldn’t we consider the question:

What do we want the leaders to do?

What does “leadership support” look like?

We all knew how it worked in our benchmark company.


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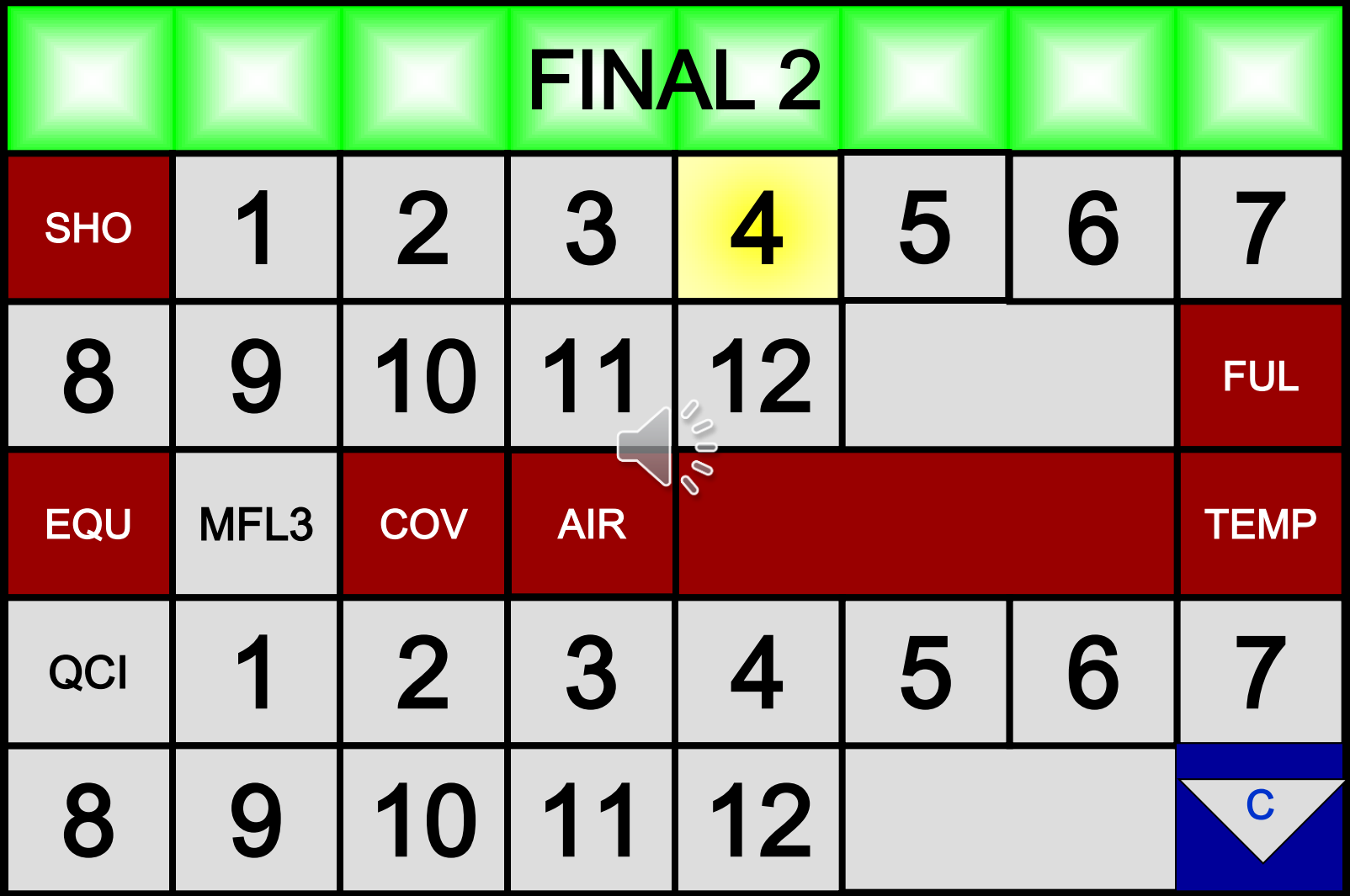
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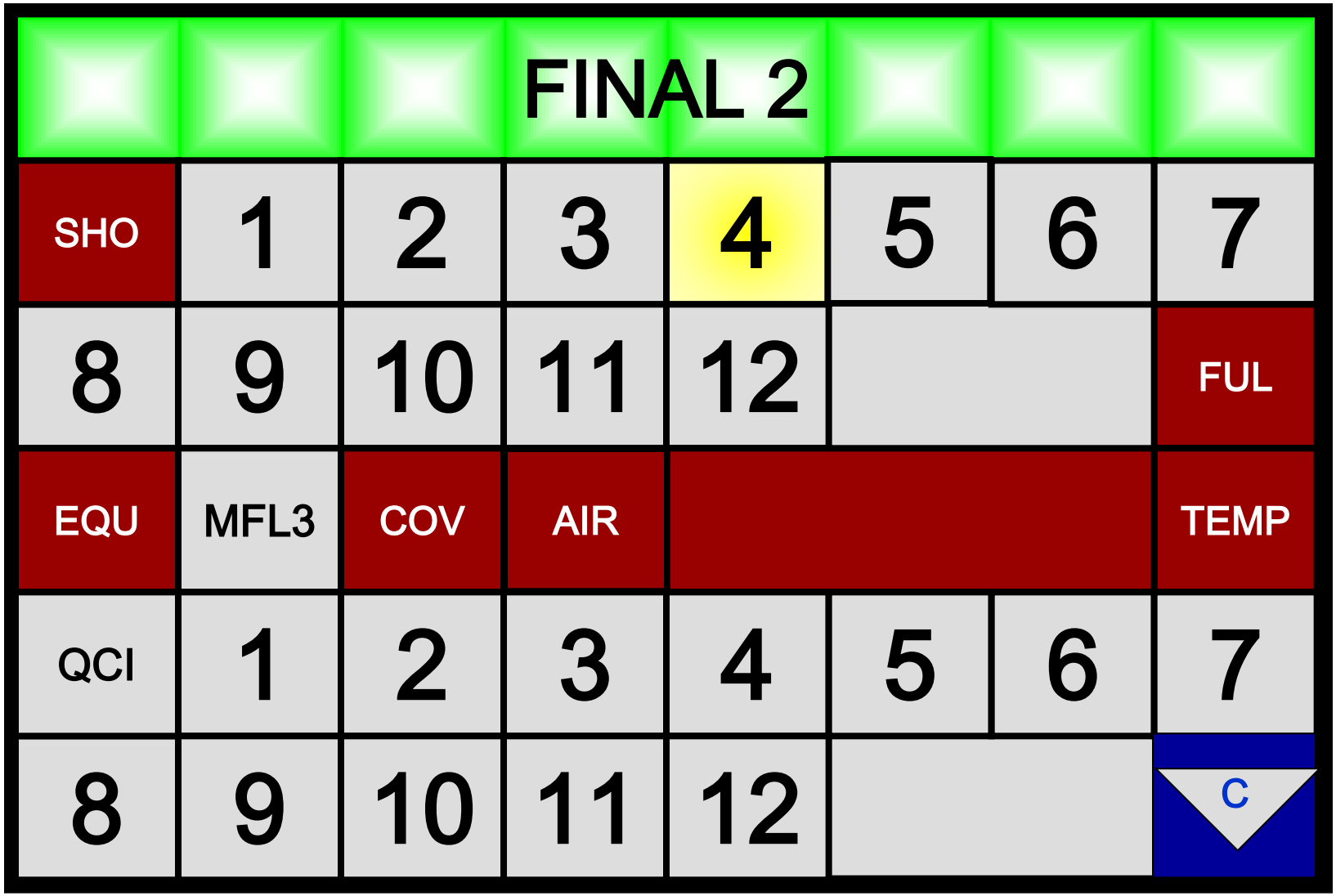
Question:

Why did the Team Leader want *that bolt*?

Question:

What would have happened if he had not cleared the problem?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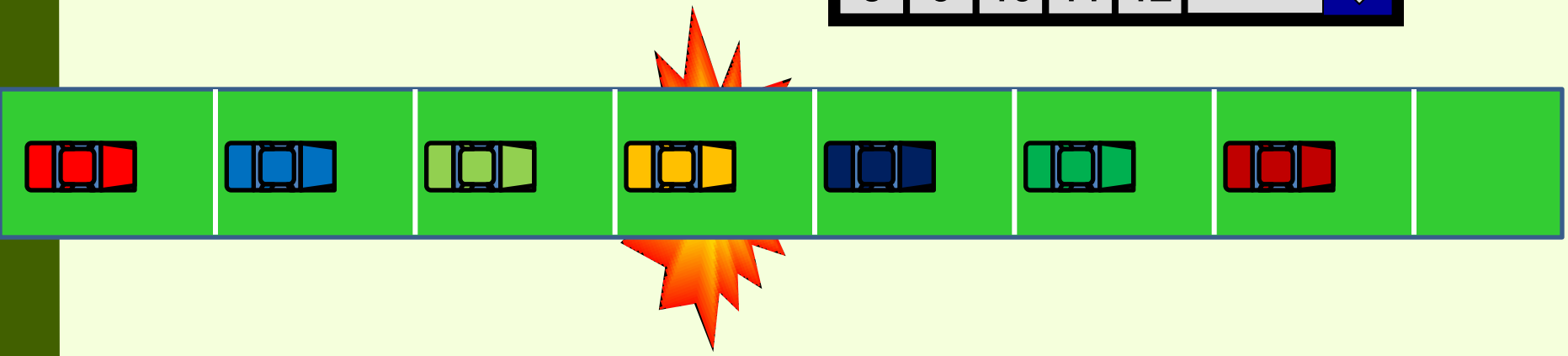
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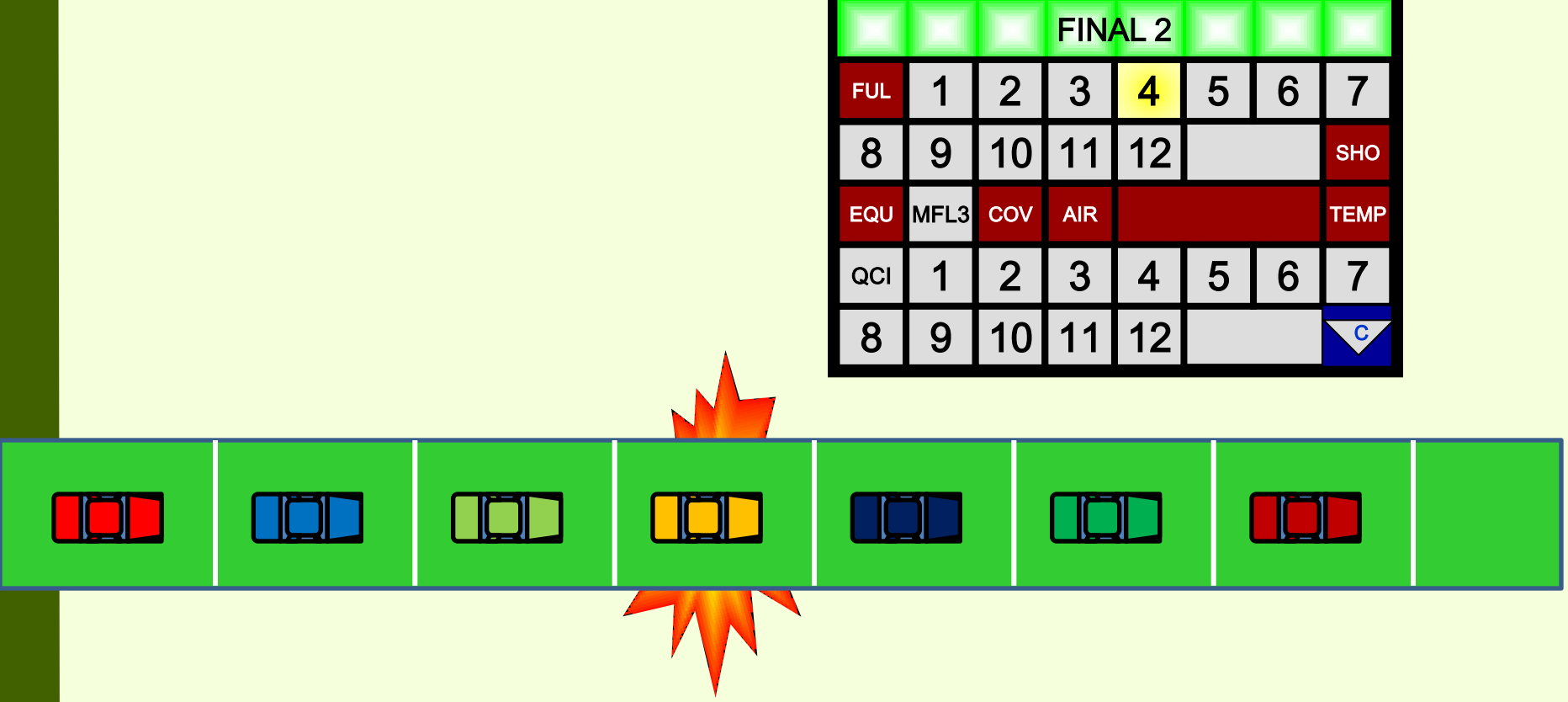
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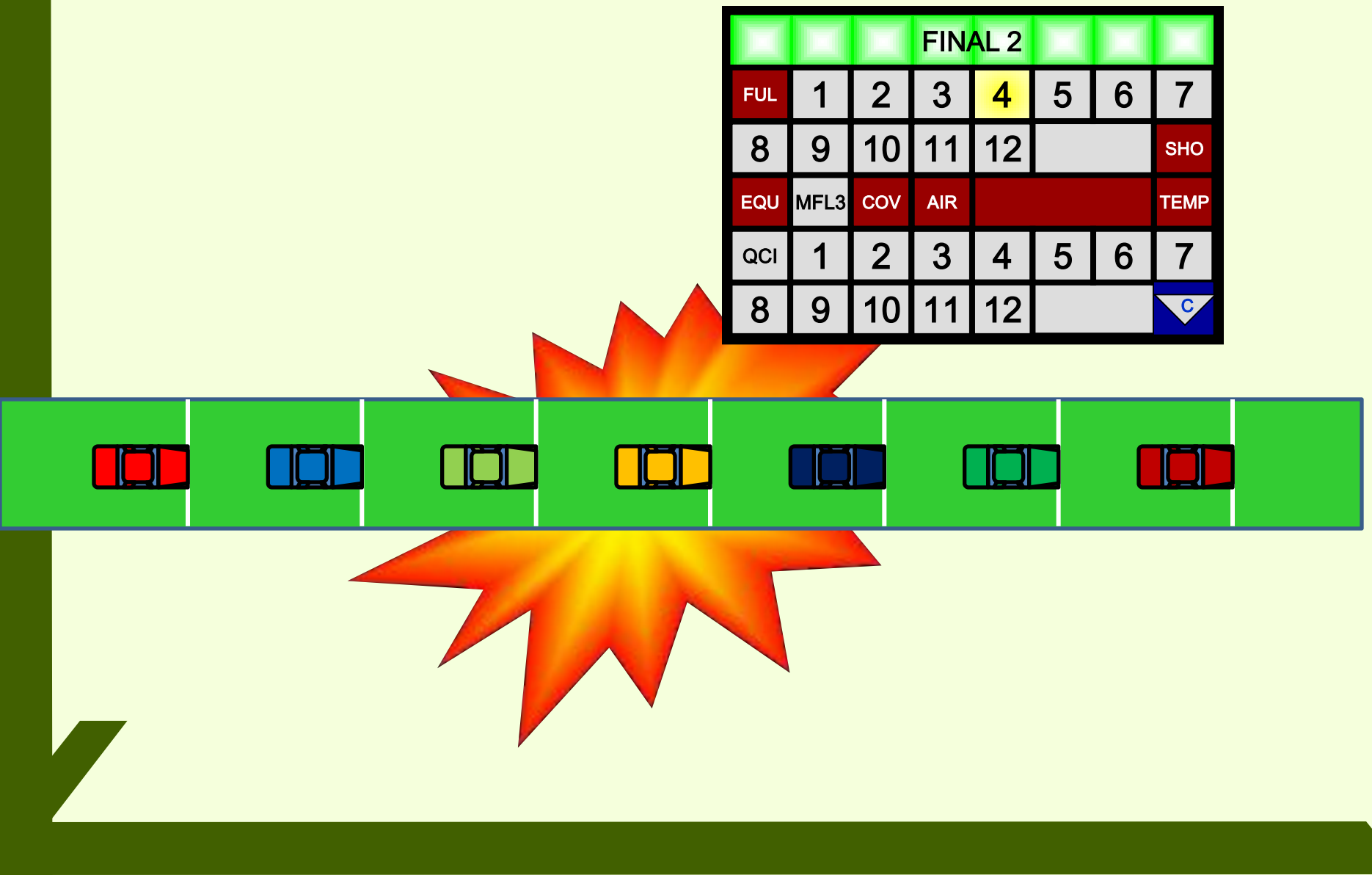
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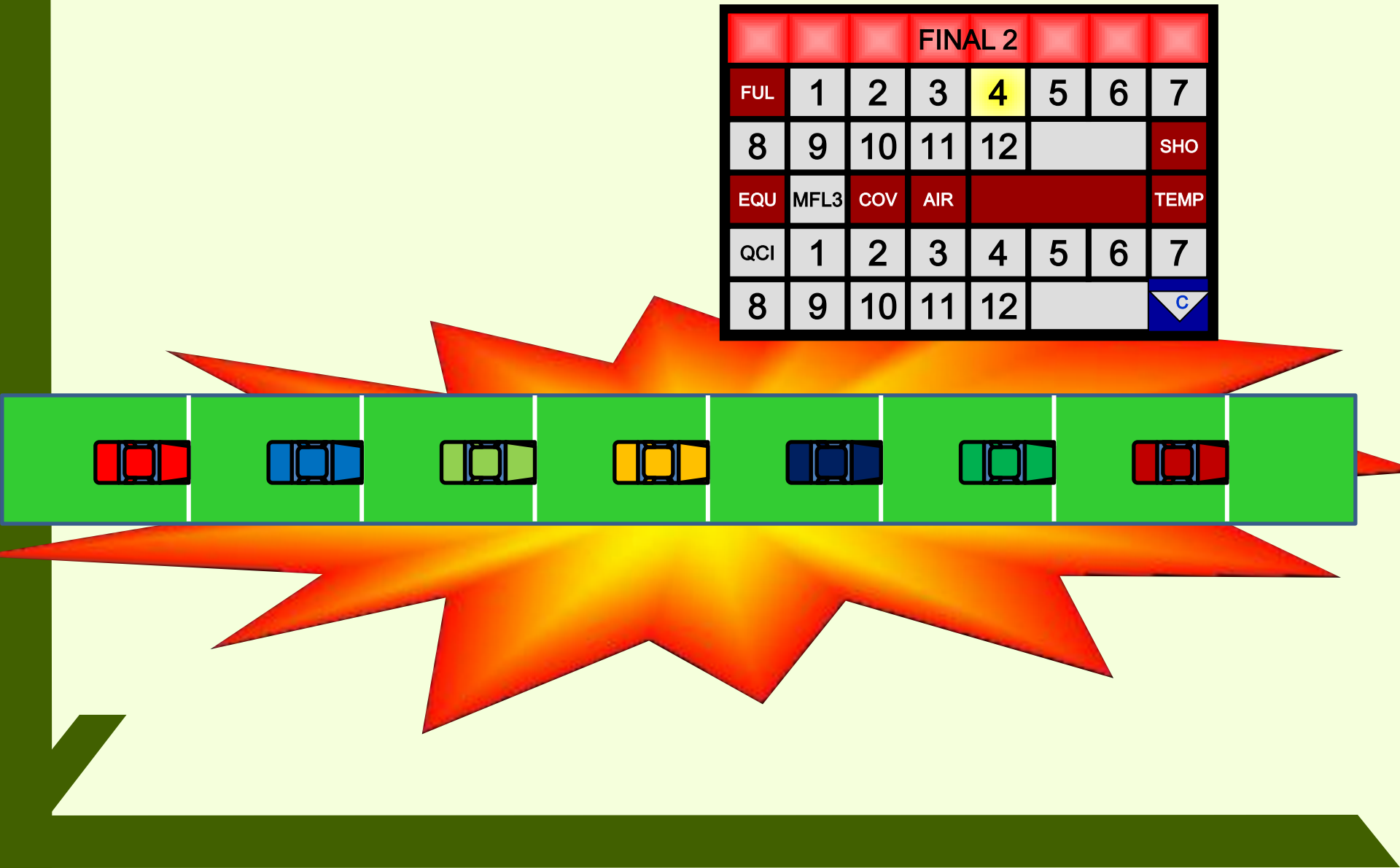
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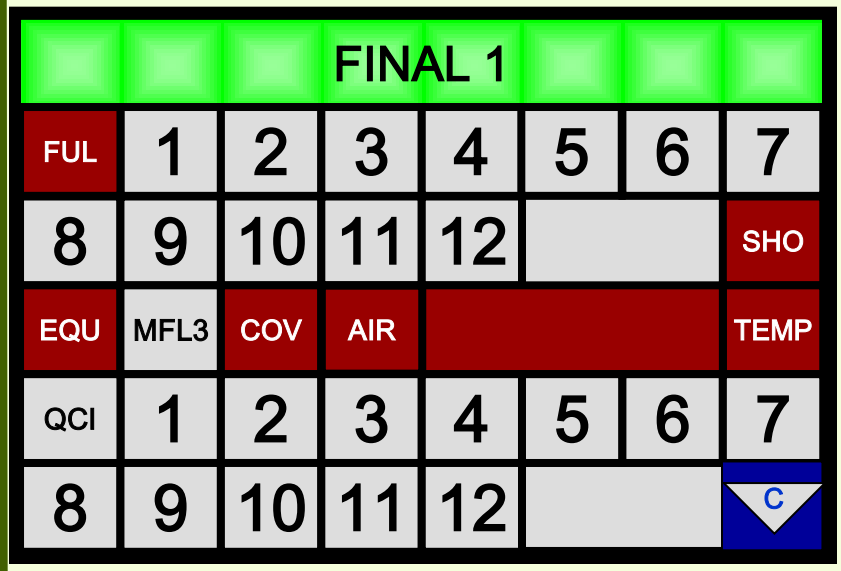
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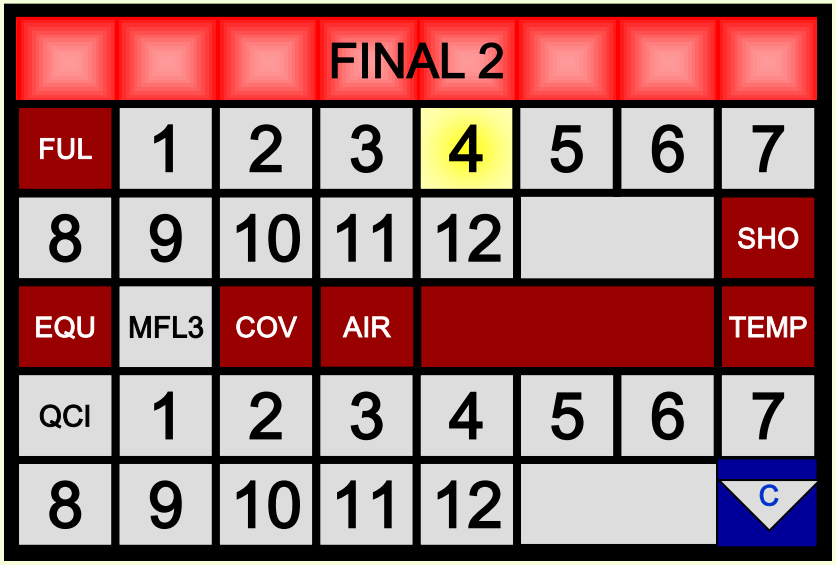
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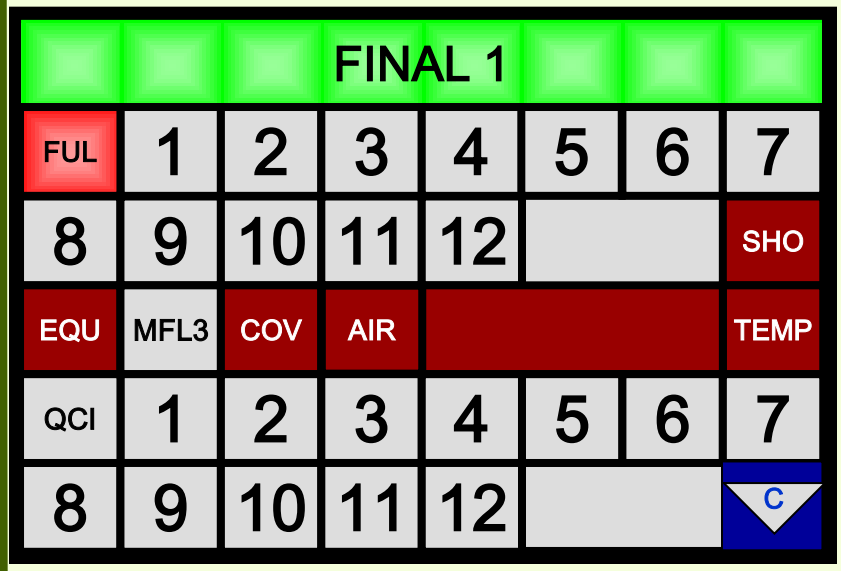
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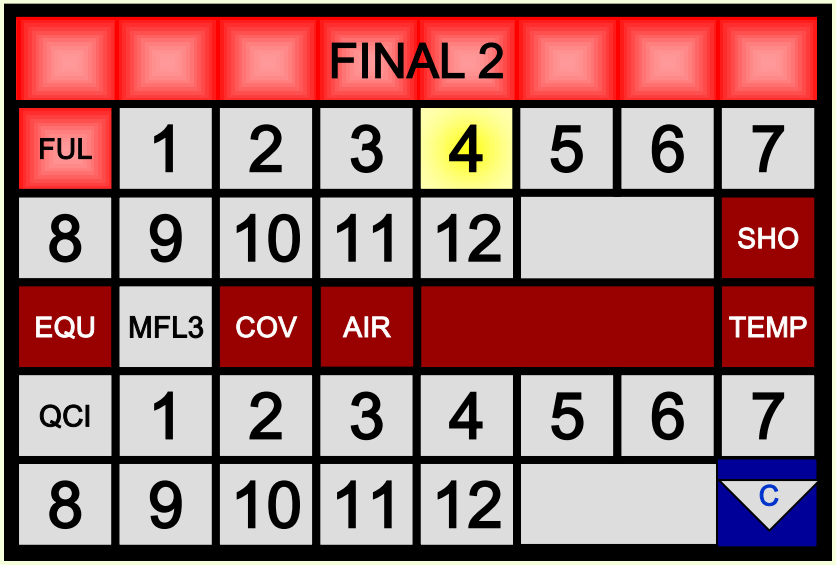
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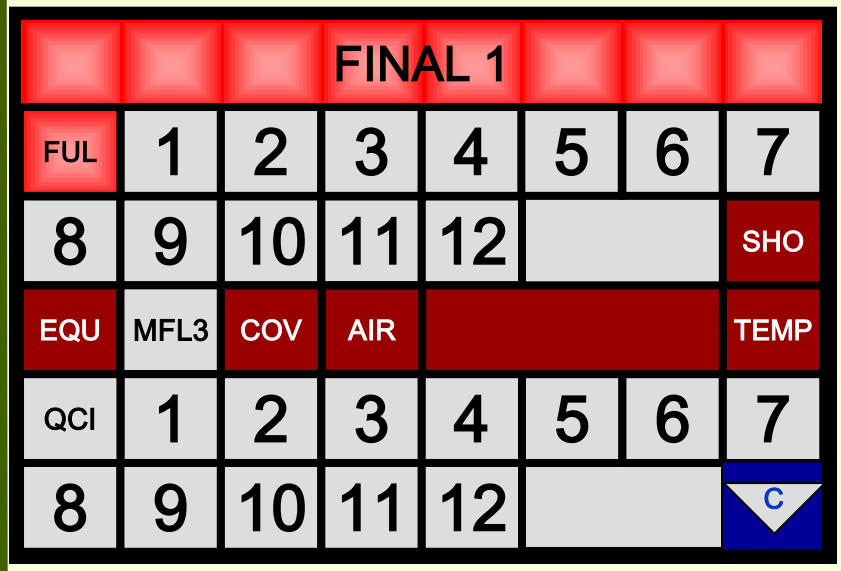
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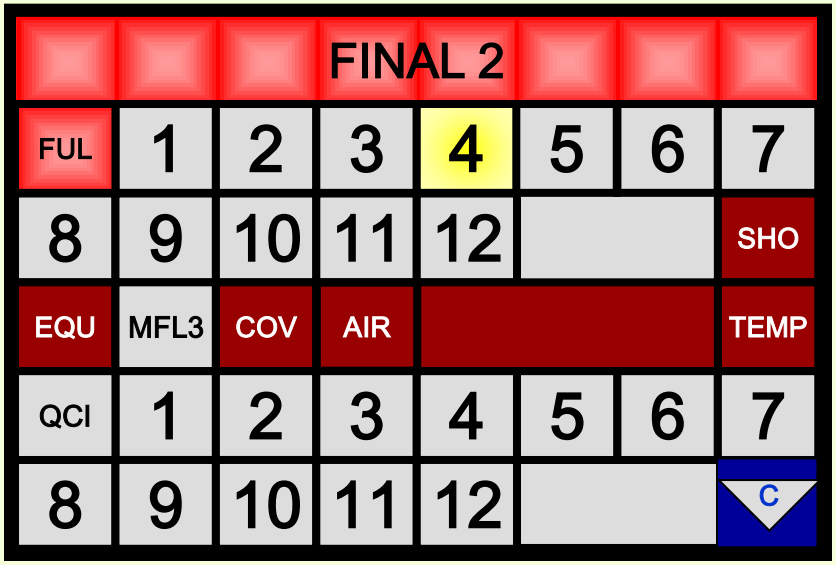
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The Theory *Behind* Continuous Improvement

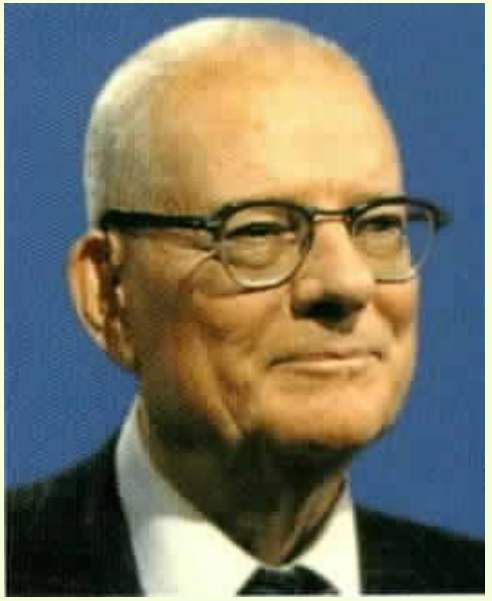
Clearly specify what should be happening.

Content, Sequence, Timing and Outcome

IF-THEN.
"*If* we do these things" *then* "we *should* have this result."

Put another way:

"Management is prediction."



Practically Speaking:

IF *the standard work can be performed as specified:*

If the components are correct.
If the tools are working correctly.
If the team member has no problems.

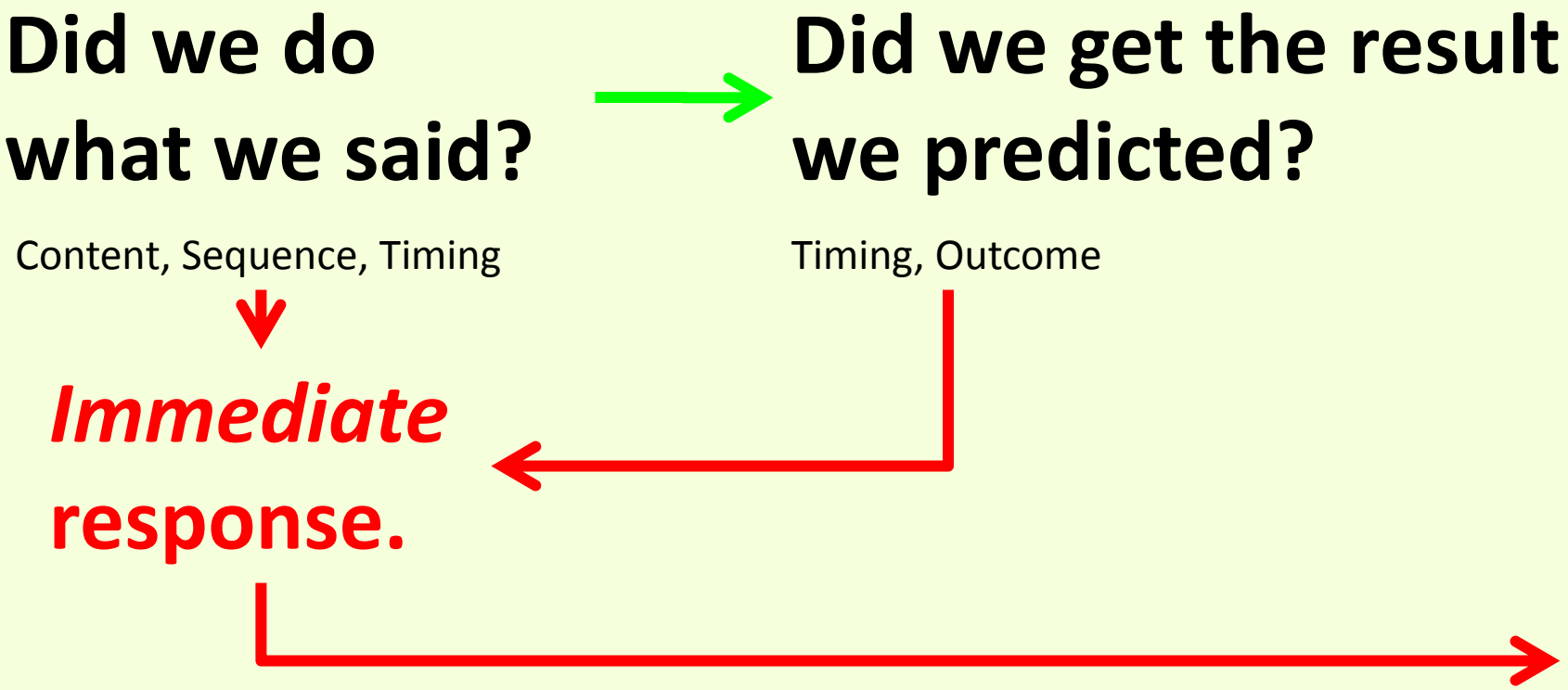
THEN, we predict that:

The work will be safely completed in exactly 55 seconds.
Quality will be perfect.

The team member won't drop the bolt.

But the Team Member *did* drop the bolt.

Continuously compare "what is actually happening" with "what should be happening."



Any departure from "what should be happening" triggers an ***immediate response***.

Restore **the standard condition or normal pattern.**

As a minimum, a temporary countermeasure that:

- ***Assures safety.***
- ***Assures quality.***
- ***Protects the customer.***

This question is what drives us toward *profound knowledge*.

Then, ask **"*What did we not understand* about what was specified, or what actually occurred?**

Continuous improvement happens here.

But, just as importantly, ***process control*** **happens here too.**

The Scientific Method

Based on current understanding, construct a hypothesis.

Develop a prediction. *If* this is true, *then* if I were to (conduct this experiment) I should see (these results).

Control the experiment. Verify I did what I said.

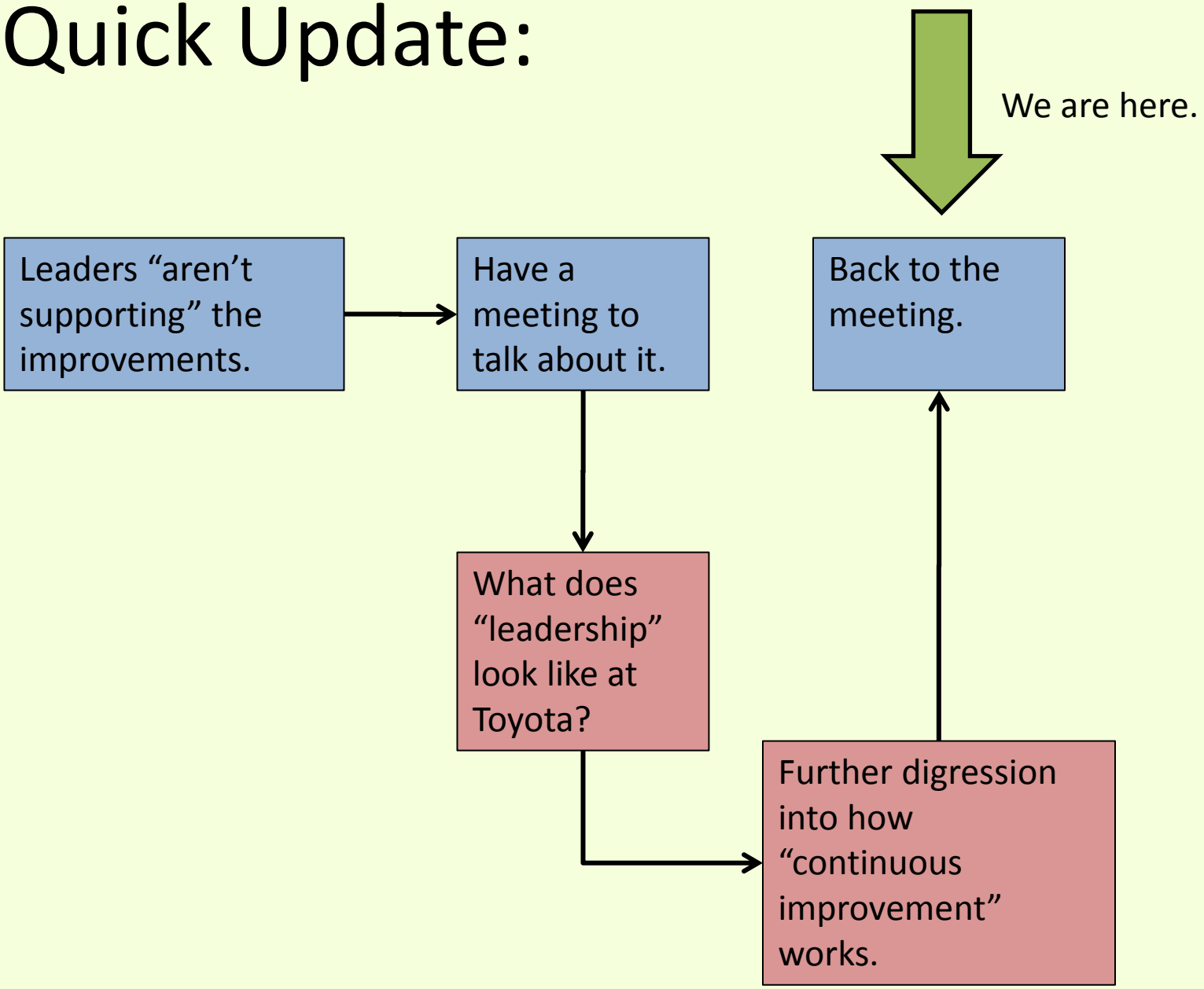
Compare results vs. prediction. Use any difference to ask “What didn’t I fully understand?”

Question:

In this scenario, what does “leadership support” look like?

Who is responsible for continuous improvement?

A Quick Update:



Back to our meeting.

What does “leadership support” look like?

Who is responsible for continuous improvement? **Whose *work is it*?**

↓

Clearly, at Toyota, it is the work of line leaders.

So why don't *our* line leaders embrace it?

And how can we "get them to do so?"

But wait…

It was working for us in *some* areas…

Key Questions:

Where was it working, and why?

What did those areas (where it was working) have in common?

How did they differ from areas where it wasn't working?

The “Positive Performance Outliers”:

Had little or no dedicated kaizen staff.

We (the “Directors”) engaged them directly,
when we had time.

So…

> We were all from different backgrounds. What did *we* do that (seemed to) work?

Our Performance Outliers:

What *we* did:

- **Engaged leaders on the shop floor.**
- **Focus on *defining "problems" and seeing them.***
- ***We all asked similar questions:***
  - *What should be happening?*
    - *What is your target?*
  - *What is really happening?*
    - *What is the current condition?*
  - *How can you tell?*
    - *How can anyone tell?*
  - *What is the next step to fix it?*
  - *When do you think you can do that?*

So…

If that was what *we* were taught to do…

What were we teaching our kaizen staff to do?

Dave had the most organized answer.

What we taught our people:

- **Teach the technical modules.**
- **Plan and lead formal kaizen events.**
- **Follow-up kaizen event action items.**
- **Audit 5S.**
- **“Lean Assessments.”**
- **“Look for waste.”**
- **Direct the teams to implement the “lean tools.”**

Dave's Insight

Dave had the most ~~organized~~ answer.

insightful

ah

snap.

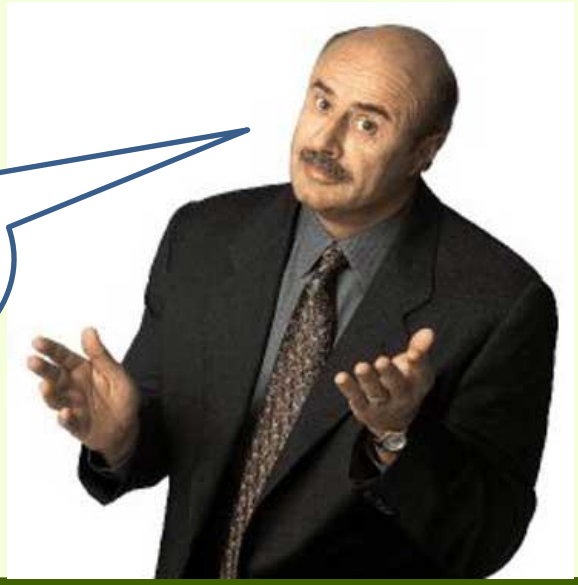
The leaders were not engaged because we were not teaching *our people* to engage them.

Who is responsible for continuous improvement? Whose *work is it*?

Clearly, at Toyota, it is the work of line leaders.

And when we engaged directly, we did so by coaching those leaders.

But *we* had taught our people to make it *their* work… the work of *technical specialists*.



ah

snap.

Fredrick Winslow Taylor

1911: **The Principles of Scientific Management**

Separated “work” from “thinking about how work should be done.”

Made “improving work” the domain of technical specialists.

How far have we really come?

1911 ← 100 years → 2011

Full time industrial engineers act as internal consultants.

They select a job for improvement, analyze the current state, devise improvements, and work with the workers to implement them.

The work is performed to the new standard until the I.E. decides to improve it again.

Full time improvement event or project leaders act as internal consultants.

They select an area for improvement, analyze the current state, *teach the workers how to apply the tools*, facilitate developing ideas, and work with the workers to implement them.

The process is fixed until another event or project changes it.

In practical terms…

What is different from 100 years ago:

The improvements are the ideas of the team members.

What is the same as 100 years ago:

How to do improvement and *when to do improvement* is still the delegated to the technical experts.

We were stuck in a 100 year old paradigm.

	Our Toyota Example	Our Performance "Outliers"	Other Areas (Dave's Insight)
Definition of "a problem"	• Any ambiguity. • Any difference between "should be" and "is."	• Anything that disrupts safe, quality, smooth production.	• Things which bring external attention: •Late deliveries. •Shortages. •Complaints. •Excessive overtime.
Response to "a problem."	• Stop. • Fix / Correct • Understand cause, develop counter-measure.	• Stop. • Fix / Correct • Understand cause, develop counter-measure.	•Recovery plan.
Improvement driven by:	• Progressive targets based on strategic needs of the business (hoshin) • Leader coached daily problem solving.	• "Lean Tools" implementation and *PDCA thinking* by line leaders, **guided by senior experts**. • Leader managed daily problem solving.	• "Lean Tools" implementation by shop floor people, **directed** by **technically focused staff**.

What things drive <u>leaders</u> to <u>learn</u> about process *and how to improve*?	Our Toyota Example	Our Performance "Outliers"	Other Areas (Dave's Insight)
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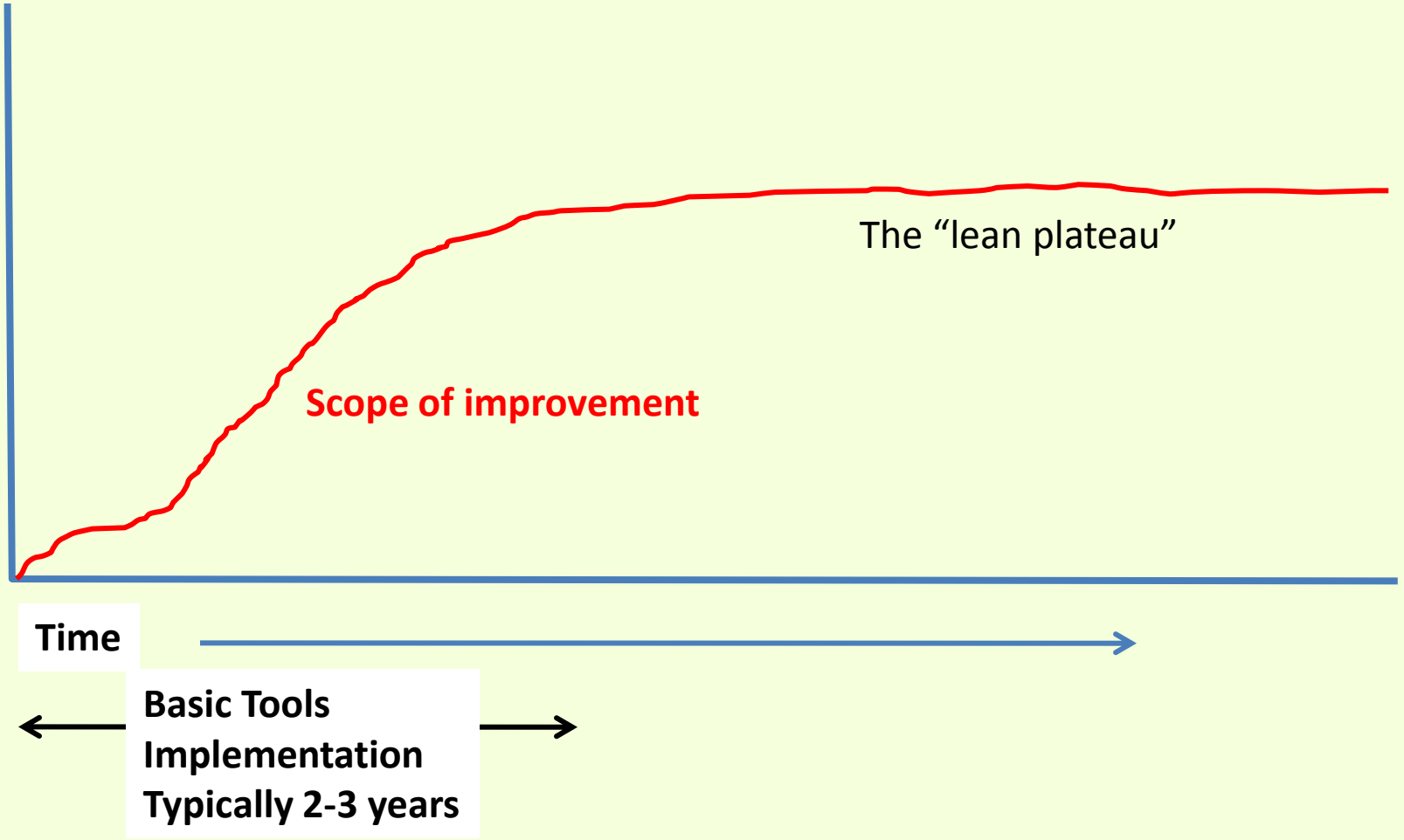
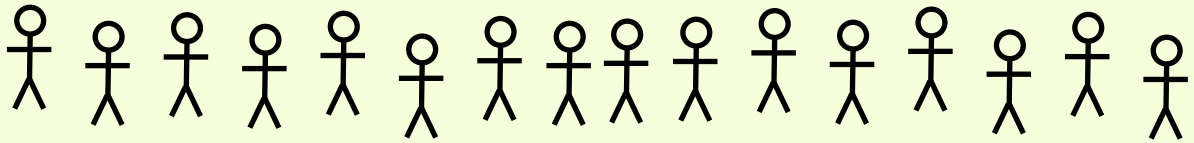
The Result:


The “lean plateau”
Scope of improvement
Time
Basic Tools
Implementation
Typically 2-3 years

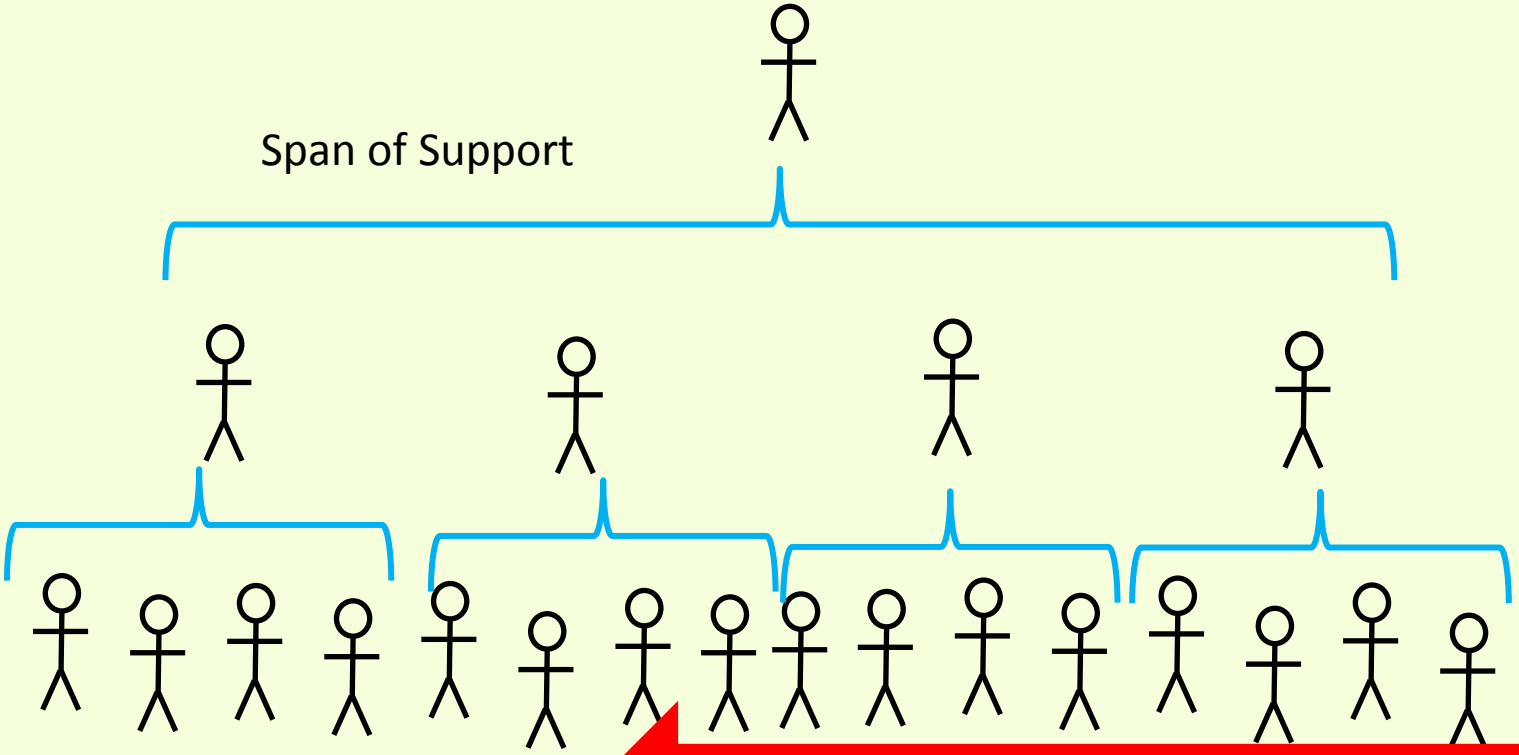
Traditionally,

improvements focus where people interact with the work.



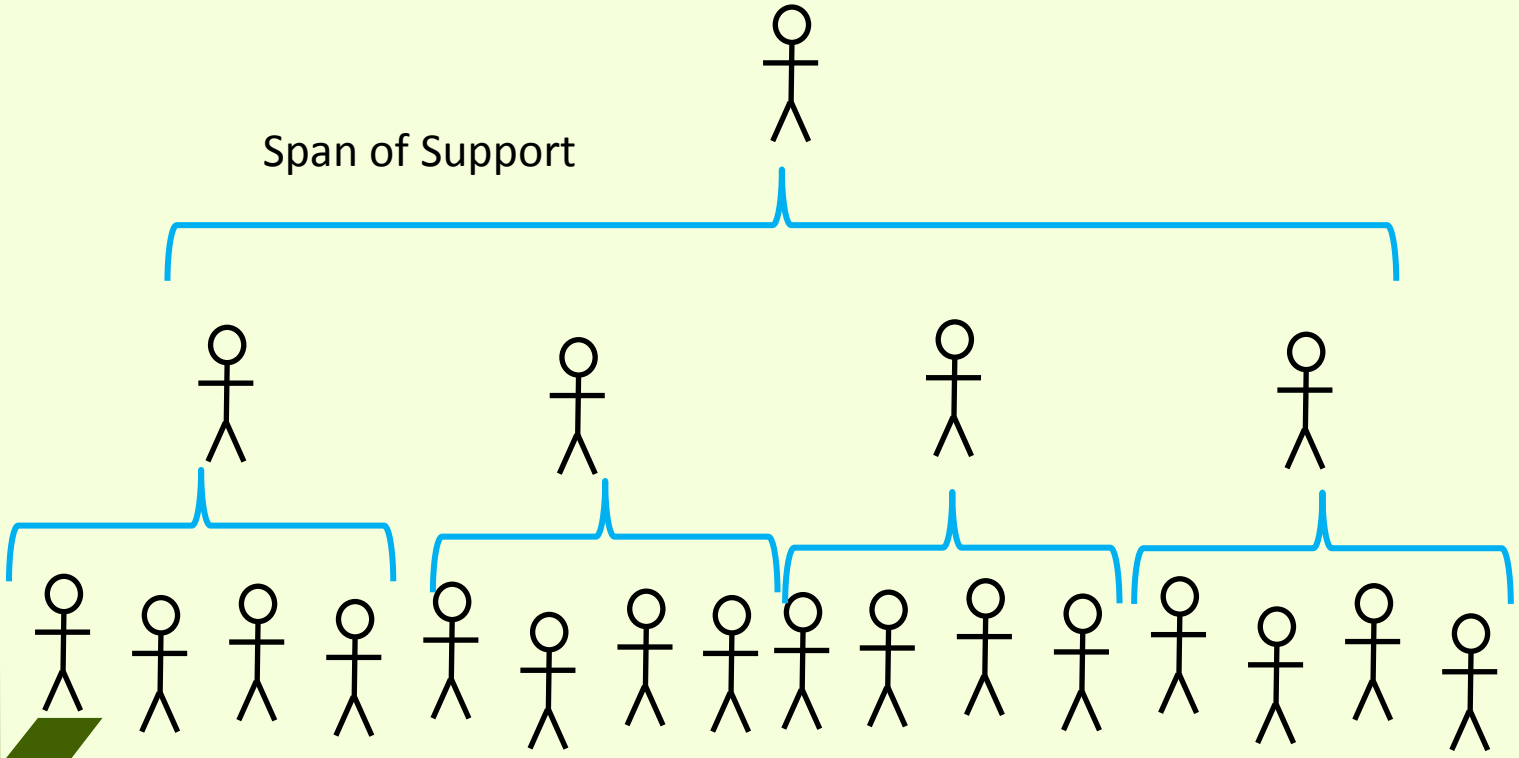
At this level

If we limit our attention to the process itself, we do not develop the "span of support."



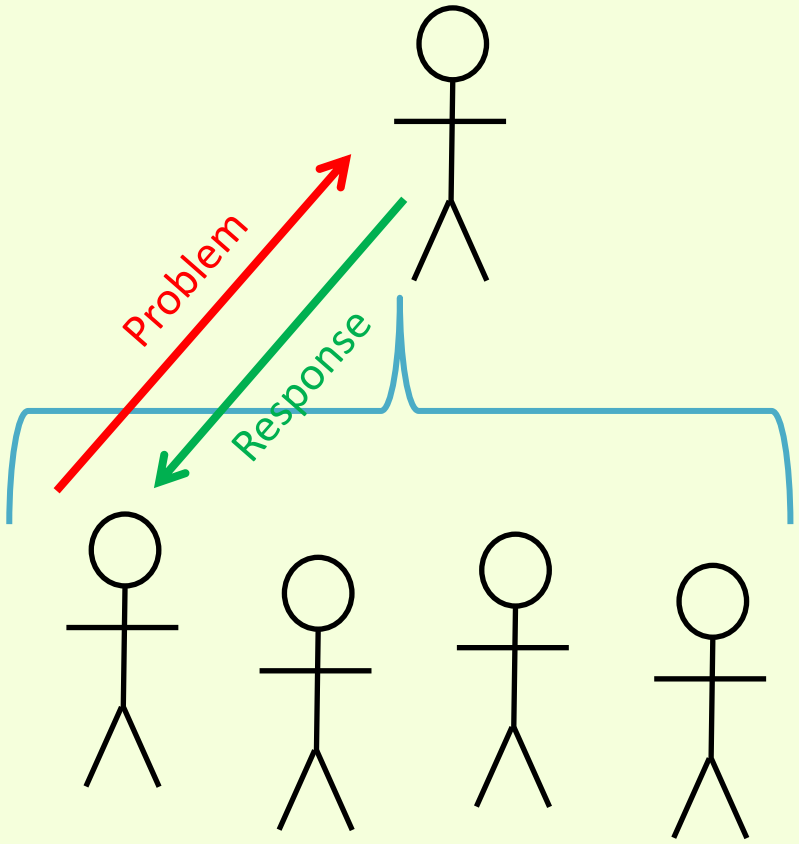
And people are on their own to cope with problems.

An *improvement culture* emerges from how *people interact with <u>each other</u>.*

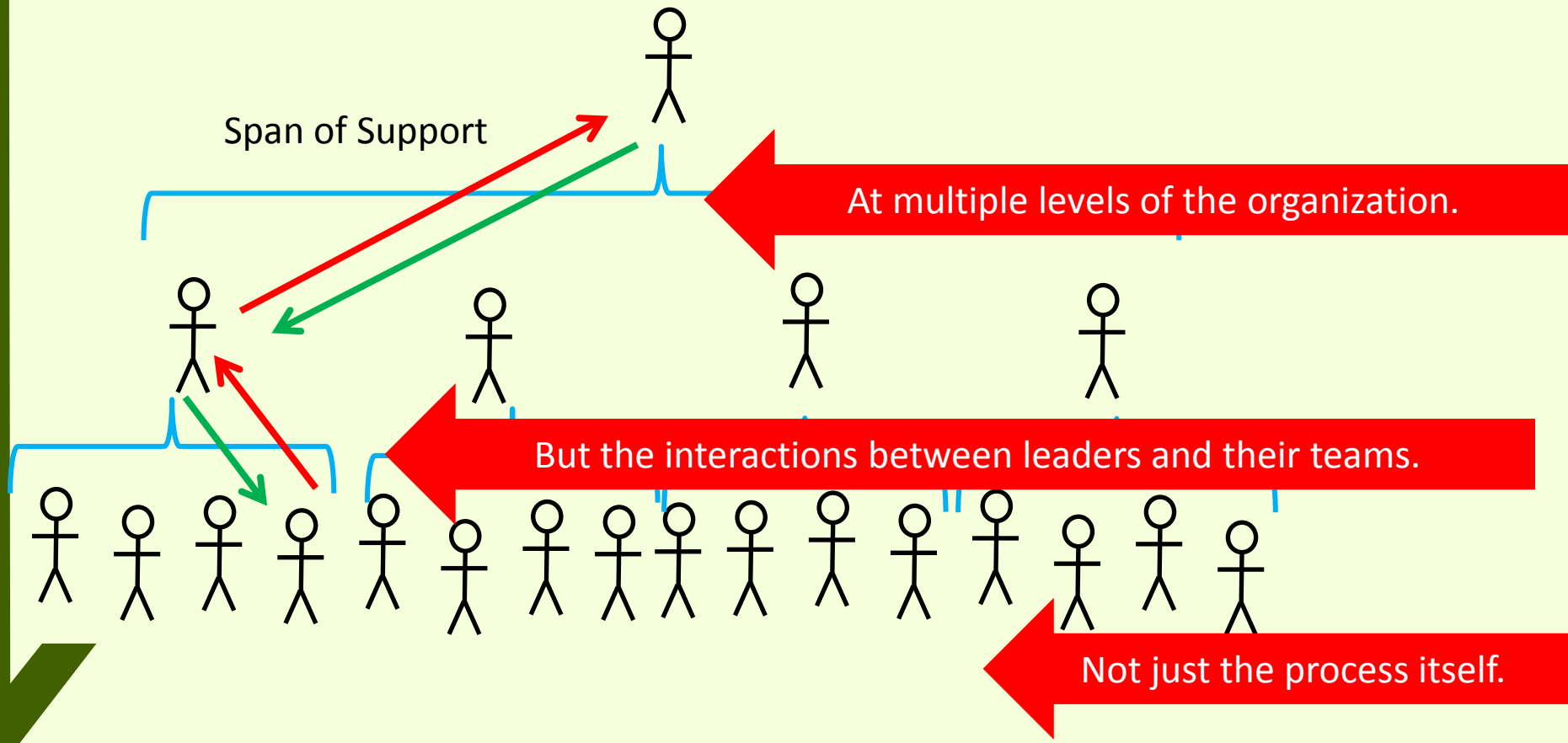


- Each level is responsible to *detect* problems in their own work.
- A "problem" is *any departure from the normal pattern.*
- Each level above supports by:
  - Rapid response.
  - Take ownership and clear the problem.
  - Provide coaching and assistance to solve the problem ***while developing people's capabilities.***

True continuous improvement is focused on developing the capability of *people*.



We must work on *defining the normal pattern, and* improving *the response to problems*.
Detecting them. Clearing them. Solving them to root cause.



Outside Toyota

New plant start-up.
Familiar product.
Applying all *technical* lean knowledge.

1/10th the capital.
1/3 the people.
135 inventory turns vs. a very respectable 40.
180 minutes raw material -> finished product vs. 2-3 days.

Outside Toyota

Daily improvements vs. “kaizen events.”
No “workshop leaders.”
(Very good manufacturing engineering staff.)

Doubled production over 18 month period.

- *No more people.*
- *No overtime.*
- *No more space.*
- *No more capital.*

How did they do it?

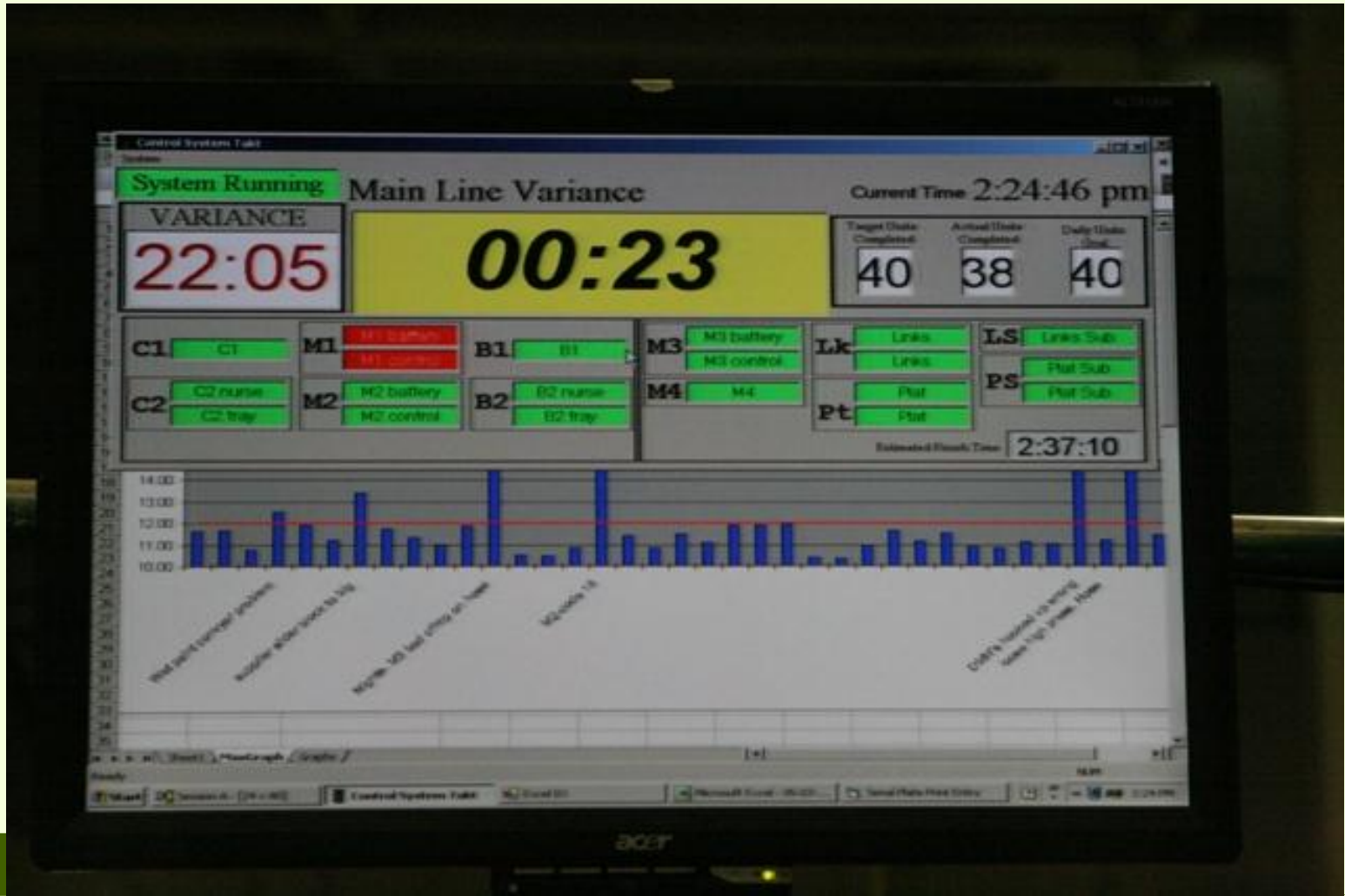
Every production cycle an “experiment.”
Every production cycle, by *every* team member timed *every day.*

- Can every Team Member make takt time?

This question was asked and answered hundreds of times a week.

How long *should* it take?
How long *did* it take?

How long *should* it take?
How long *did* it take?



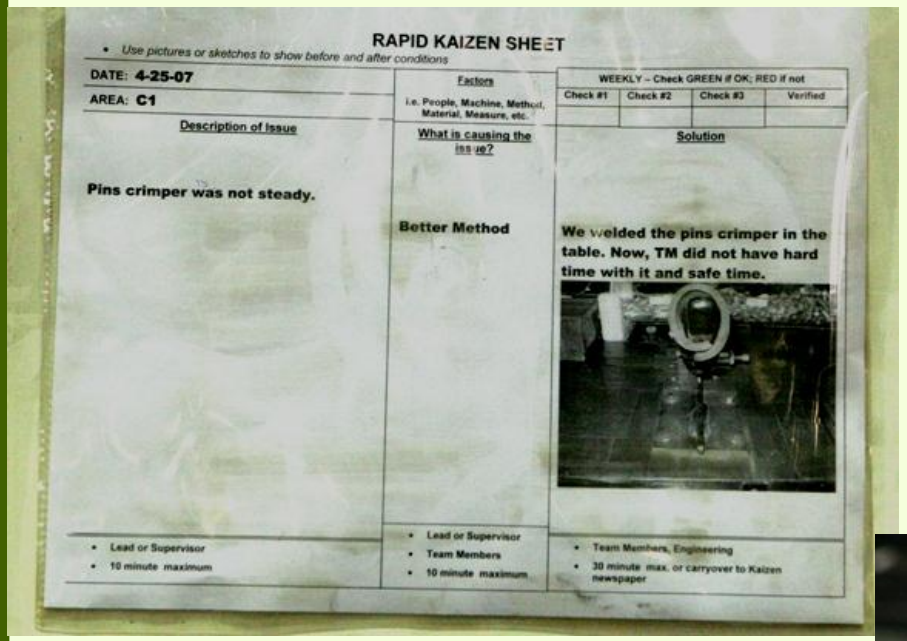
How long *should* it take?
How long *did* it take?

A “Problem” = Anything that interrupted work

Immediate response.
Clear the problem.
Then…

What are we going to do about it?

What are we going to do about it?



RAPID KAIZEN SHEET

- *Use pictures or sketches to show before and after conditions*

DATE: **4-25-07**

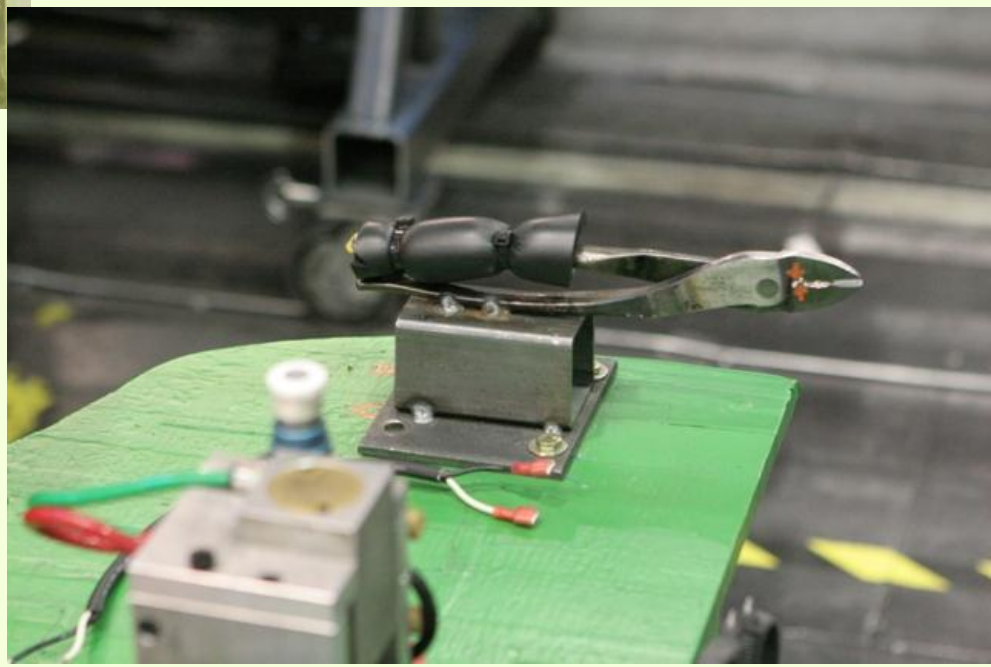
AREA: **C1**

Description of Issue	Factors i.e. People, Machine, Method, Material, Measure, etc.	WEEKLY – Check GREEN if OK; RED if not: Check #1 / Check #2 / Check #3 / Verified — Solution
Pins crimper was not steady.	What is causing the issue? **Better Method**	**We welded the pins crimper in the table. Now, TM did not have hard time with it and safe time.**
• Lead or Supervisor • 10 minute maximum	• Lead or Supervisor • Team Members • 10 minute maximum	• Team Members, Engineering • 30 minute max. or carryover to Kaizen newspaper

Was ~~allowed~~ ~~expected~~ required to make one improvement on *something that caused variation in his work that day.*

***Every* Team Member**

***Every* Day**



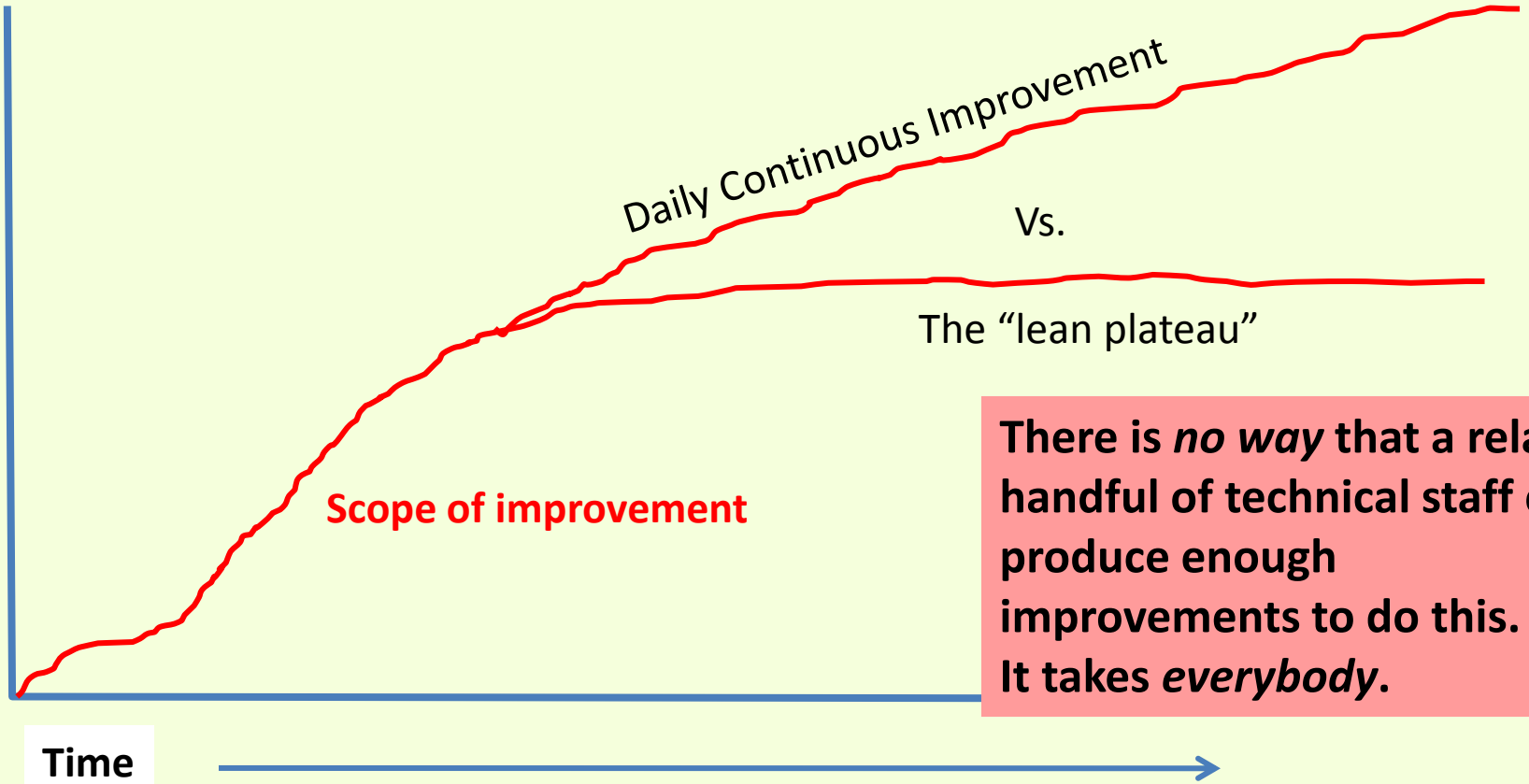
It adds up.


MONDAY
RAPID KAIZEN SHEET
TUESDAY
RAPID KAIZEN SHEET
MONDAY
TUESDAY

It adds up.

It adds up.

The Result:



There is *no way* that a relative handful of technical staff can produce enough improvements to do this. It takes *everybody*.

Basic Tools Implementation Typically 2-3 years

What these successful organizations had in common:

- Leaders who were *willing to be engaged <u>in their own self development</u>*.
- They came to *truly expect great things* from their people.
- **They took personal responsibility** and did *not delegate improvement. They learned to do it themselves, and then taught it to others.*