

# ***On Baseball, Bowling Balls, and Teamwork***

**Presented by Bill Bellows**

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# Abstract

As with many success stories, the American pastime of baseball has many fathers (and mothers), with a heritage that extends well beyond the original thirteen colonies to England. Consider the design of the playing field, with “foul” lines emanating from “home plate,” to the left, past third base, all the way to the outfield fence, and to the right, past first base, to the right field fence. Nine defensive players are distributed around this diamond and across the outfield. None of their jobs are defined by outlines that restrict their roles in the way that a goalkeeper in soccer can use his or her hands only within the confines of the penalty area.

# Abstract

What if, in contrast, baseball players were each constrained in their field positions by solid boundaries, painted on the field? Might this situation begin to approximate the operation of an organization with inflexible job descriptions, wherein employees are left to believe their respective roles are independent? In the absence of interdependence, the concept of a team sport might instead be known as a group sport, with a common aim superseded by individual aims.

# Abstract

Beginning with an exploration of baseball and bowling balls, this aim of this presentation is to share a proposal for “better thinking about thinking” as it applies to teamwork in all aspects of our lives.



# Agenda

- *Background*
- *Reflections*
- *Modes of Thinking*
- *Purposeful Resource Management*
- *Opportunities to Act*
- *Opportunities to Think*

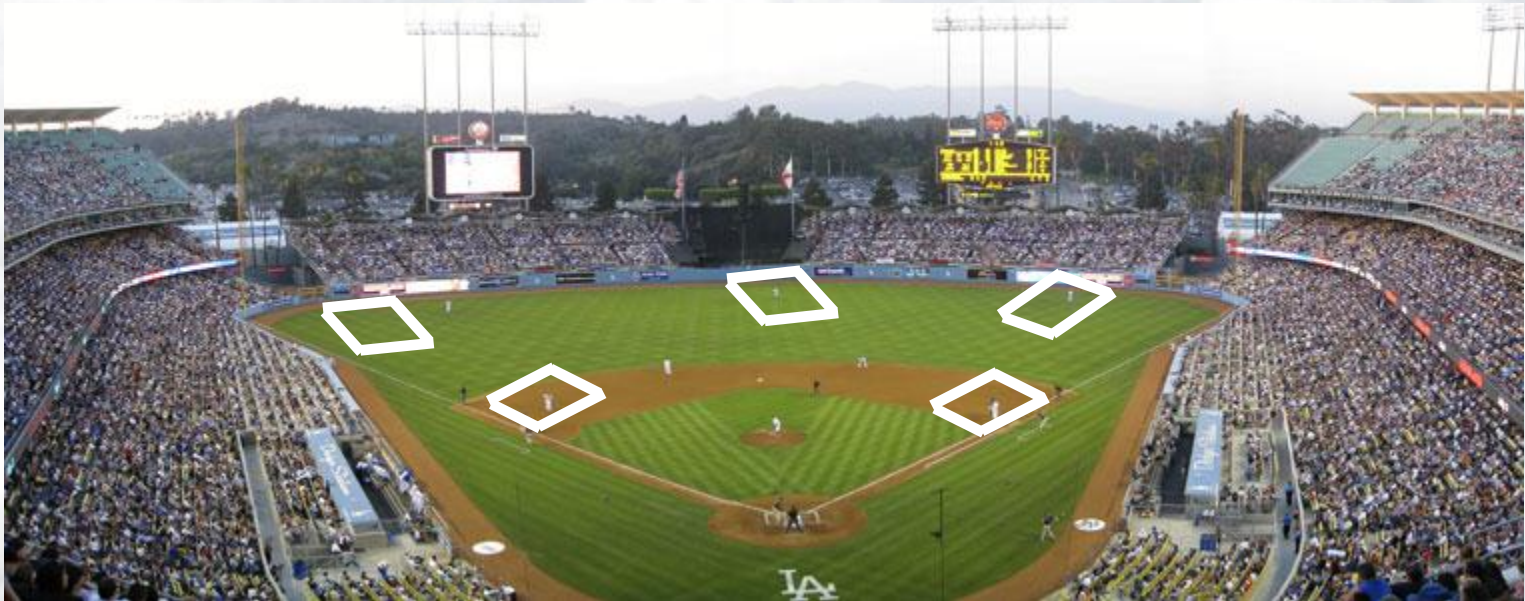
# Background

# On Baseball





# On Baseball





# Product / Program / Project

*As Conceived*



# Product / Program / Project

## *As Conceived*



The top 5 uses:

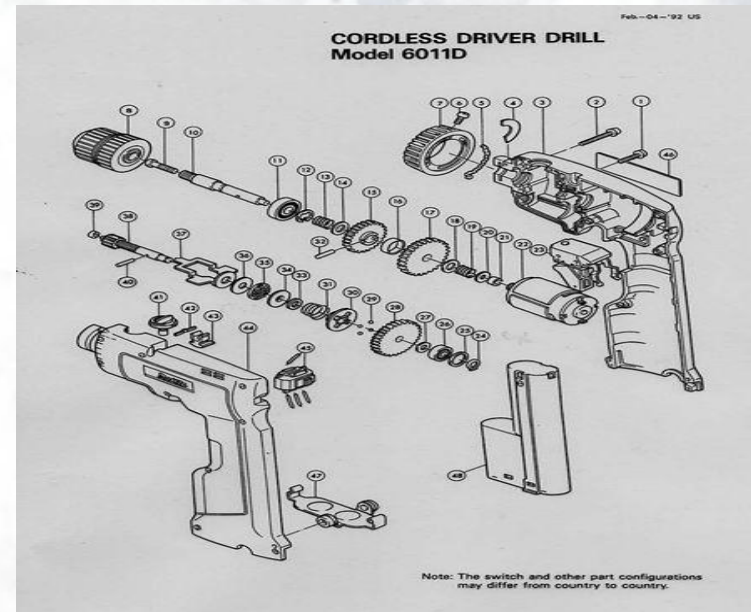
1. Replacing the screwdriver
2. Pilot holes
3. Hole saw
4. Drywall installation
5. Concrete

# Product / Program / Project

*As Conceived*



*As Managed*





# Mental Models

...ideologies are the shared framework of mental models that groups of individuals possess that provide both an interpretation of the environment and a prescription as to how that environment should be structured.

Source: Shared Mental Models, Denzau, A. and D. North

Bill Bellows, [william.bellows@rocket.com](mailto:william.bellows@rocket.com), 818-519-8209

# Mental Models

...mental models are the *internal* representations that individual cognitive systems create to interpret the environment and the institutions are the *external* (to the mind) mechanisms individuals create to structure and order the environment.

Source: Shared Mental Models, Denzau, A. and D. North

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# Mental Models

*Essentially, all models are wrong,  
but some are useful.*

Professor George Box

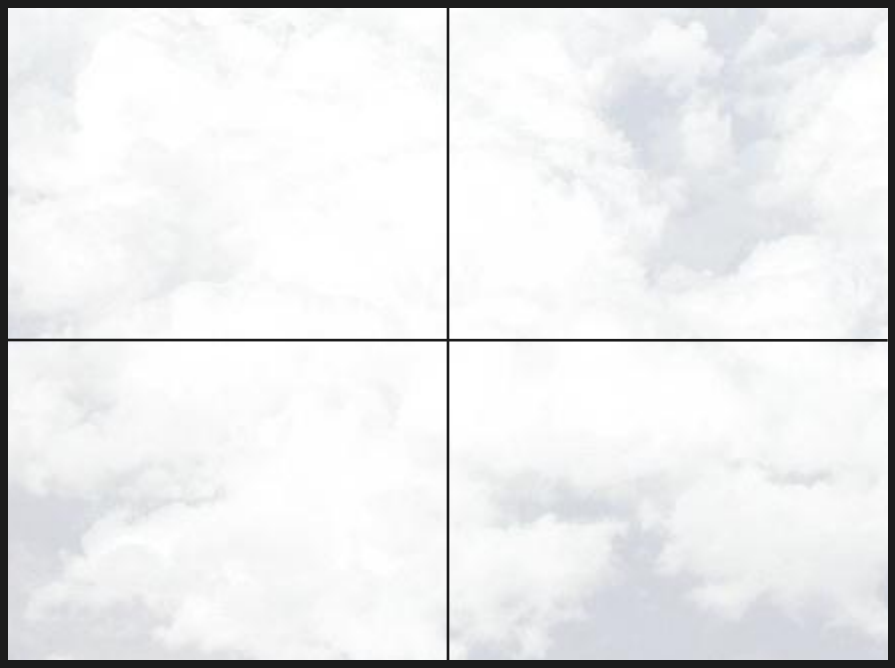


# Resource Management

**A  
C  
t  
i  
v  
i  
t  
y**

*Proactive*

*Reactive*



*“Mine”*

*“Ours”*

**Ownership**

# Resource Management

Proactive – applying effort while “good,” “OK,” “well,” or “correct” is happening

# Resource Management

Proactive – applying effort while “good,” “OK,” “well,” or “correct” is happening

Reactive – applying effort after “bad,” “not OK,” “sick,” or “incorrect” happens



# Resource Management

*“An ounce of prevention is worth a pound of cure”*

Ben Franklin

# Resource Management

*“An ounce of prevention is worth a pound of cure”*

Ben Franklin

*“A stitch in time saves nine”*

Francis Baily

# Resource Management

*“An ounce of prevention is worth a pound of cure”*

Ben Franklin

*“A stitch in time saves nine”*

Francis Baily

*“Every dollar we invest in high-quality early education can save more than \$7 later on”*

Barack Obama

# Perception & Thinking

*“What we see depends on what we thought before we looked.”*

Myron Tribus



# Ink & History

*“The very ink with which all history is written is merely fluid prejudice.”*

Mark Twain

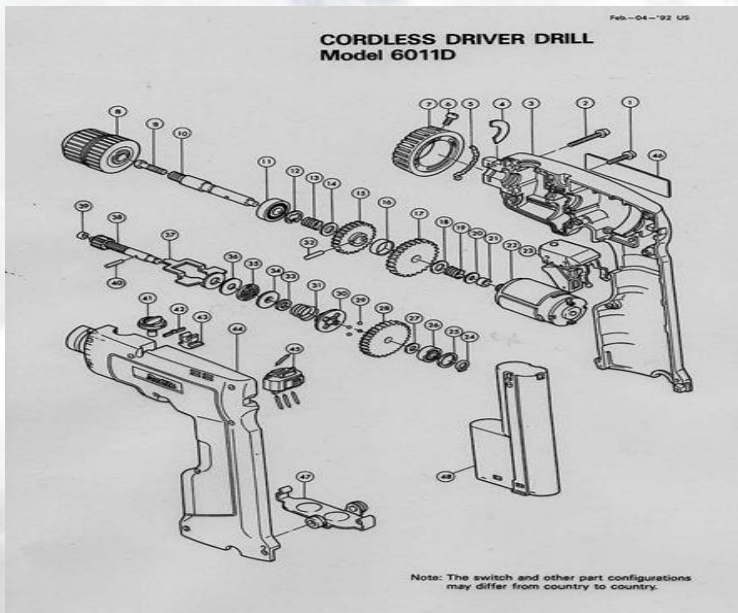
# Actions & Interactions

*“A system is never the sum of its parts. It is the product of the interactions of its parts.....the art of managing interactions is very different indeed than the management of actions, and history requires this transition for effective management.”*

**Russ Ackoff**

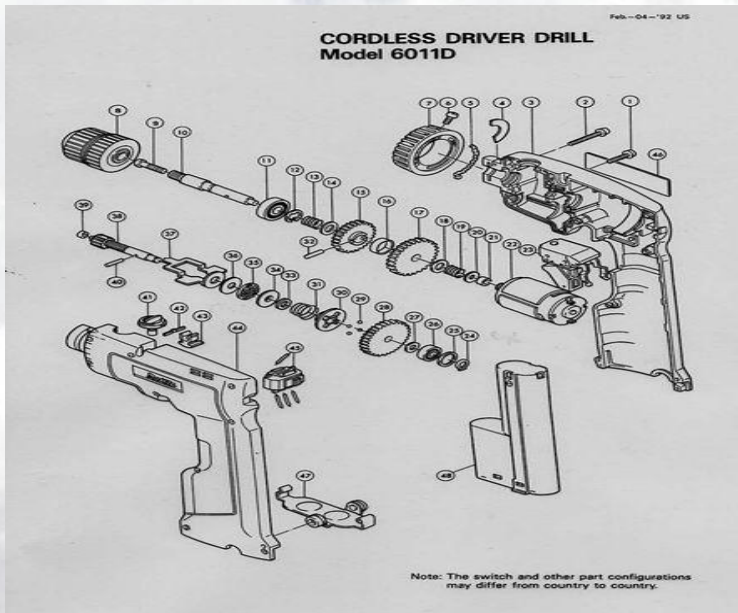
# Actions & Interactions

## Actions - Parts



# Actions & Interactions

## Actions - Parts



## Interactions - Gaps





# Reflections

# Horse Trading

*“The secret to selling a horse is...*



Robert Frost

# Horse Trading

*“The secret to selling a horse is...  
to sell it before it dies.”*



Robert Frost

# Time Management

How much time is spent discussing parts, tasks, activities, program milestones, etc. which are good and completed on time?



# Time Management

How much time is spent discussing parts, tasks, activities, program milestones, etc. which are good and completed on time?

How much time is spent studying for the final exam, questions from weekly quizzes and the mid-term which were correct?

# Time Management





# Buying Watermelons and Briquettes



# Buying Watermelons and Briquettes



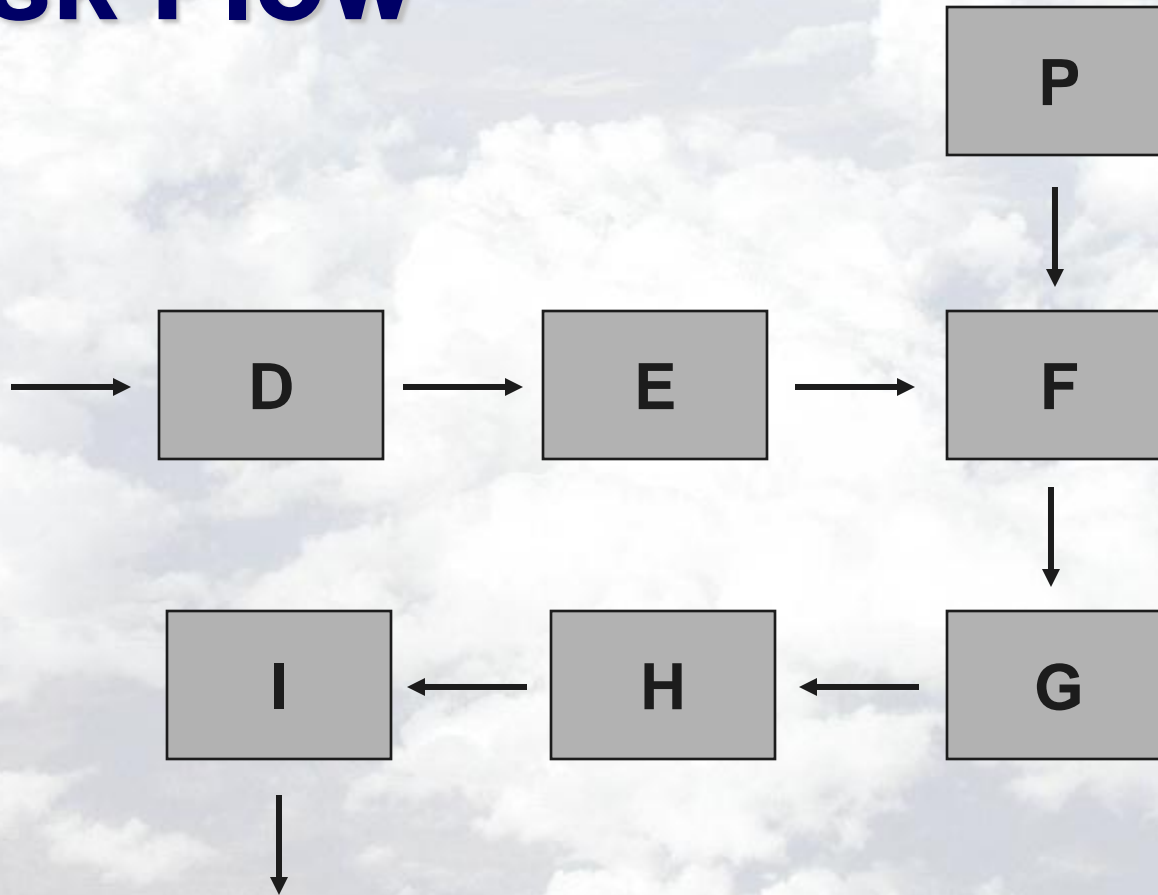


# Grades

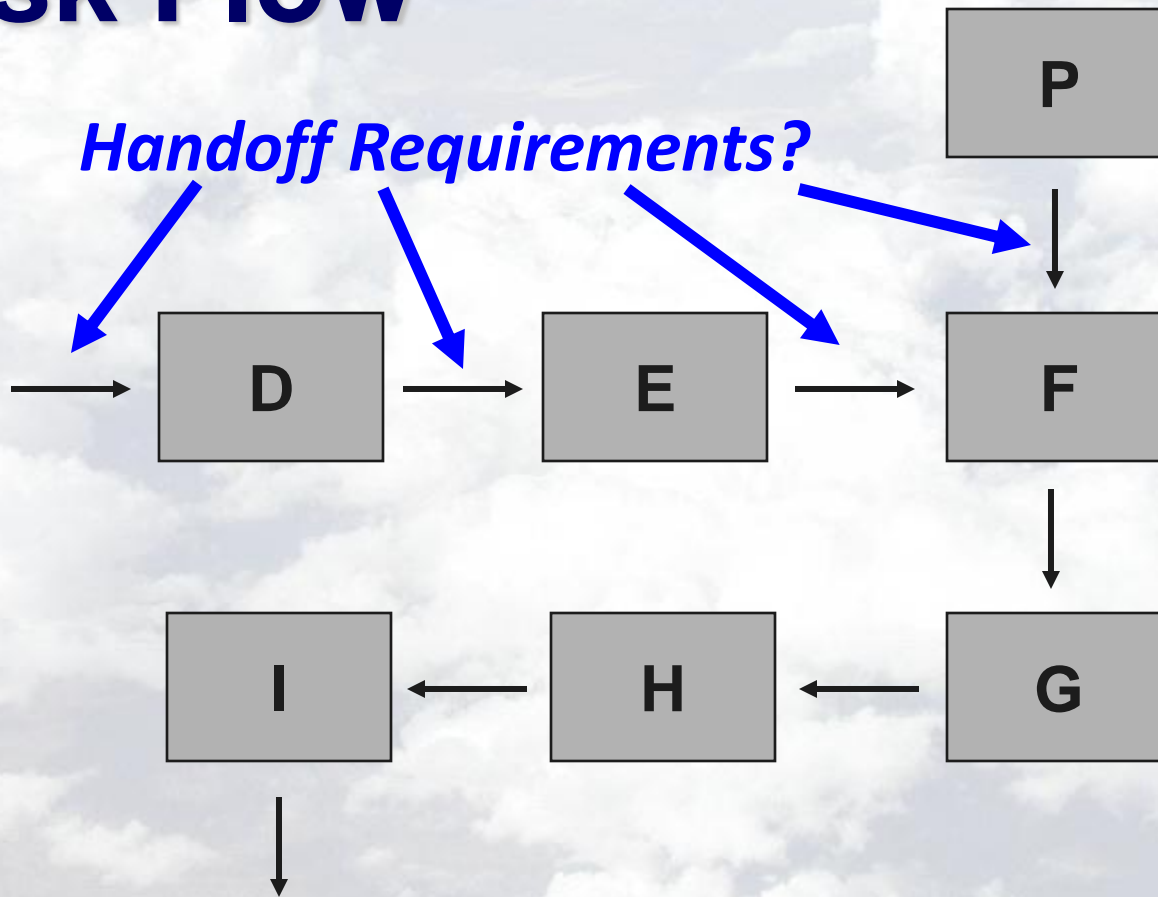
What letter grade is required for all purchased parts and services, as well as tasks completed internally?



# Task Flow



# Task Flow

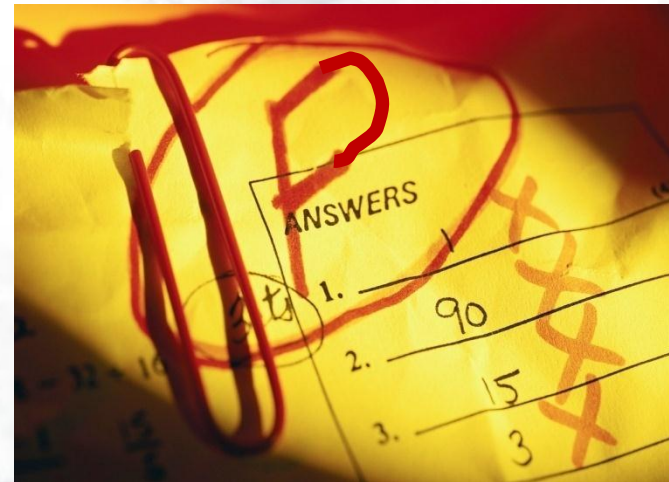


# Task Grades

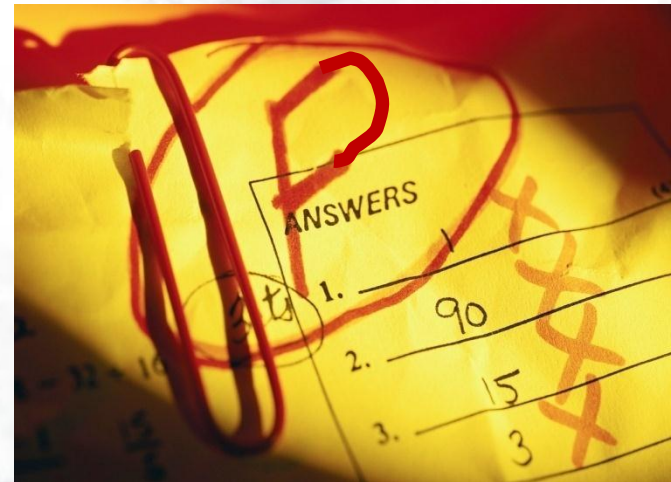
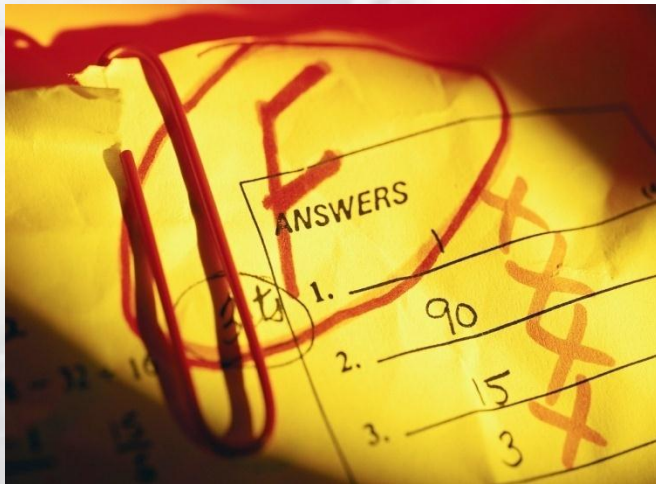




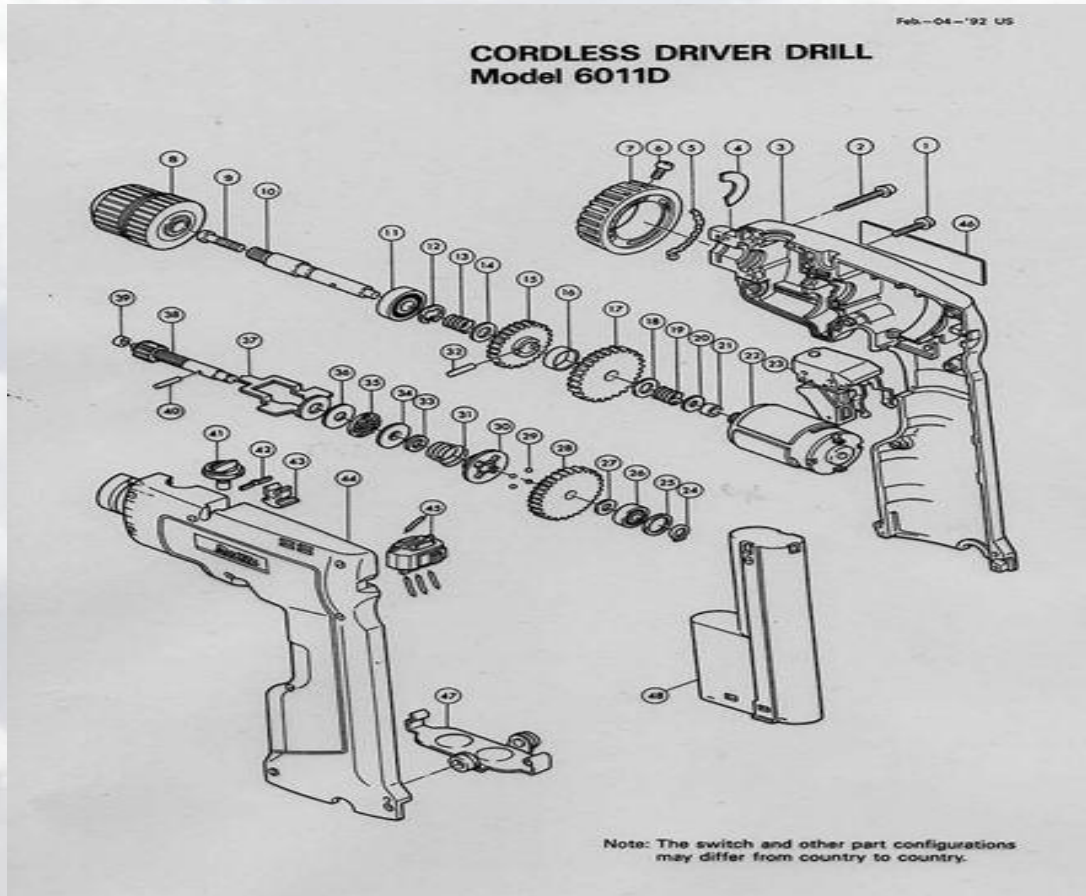
# Task Grades



# Task Grades

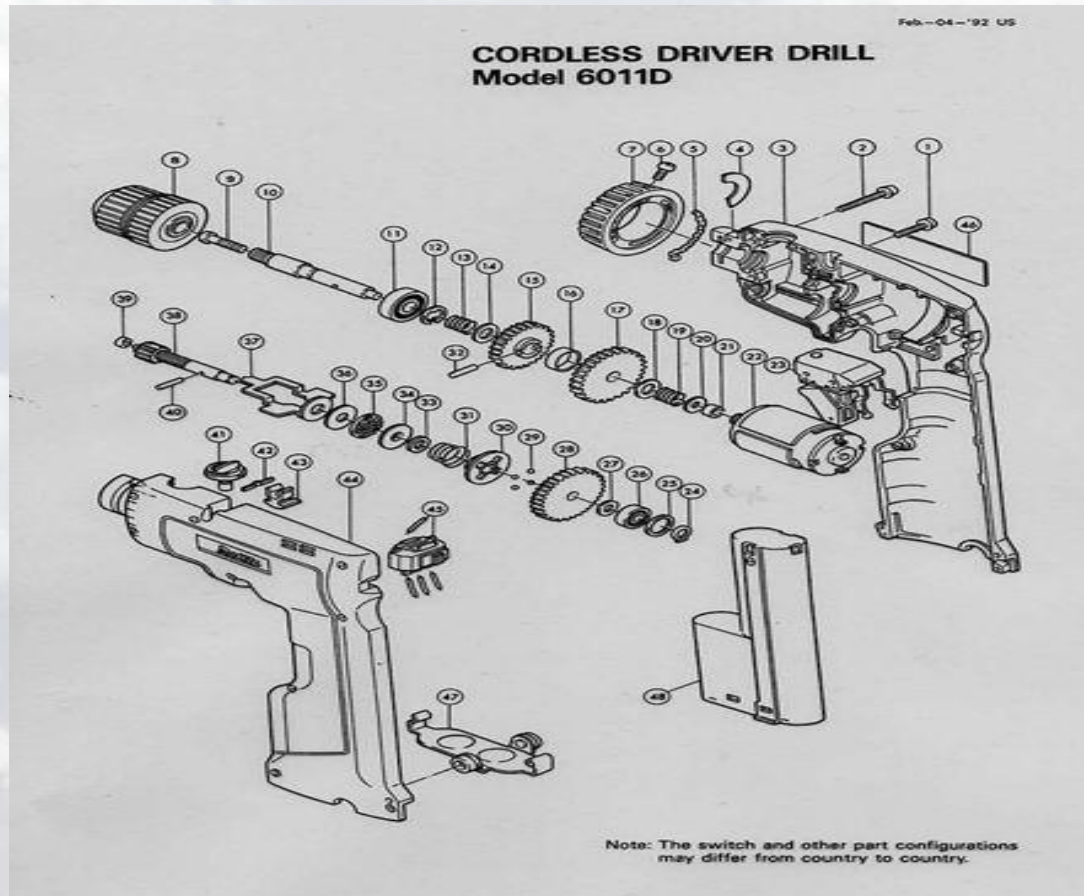


# Task Management





# Macro System Model





# Macro System Model

**Task Completion**

# Macro System Model

## Task Completion

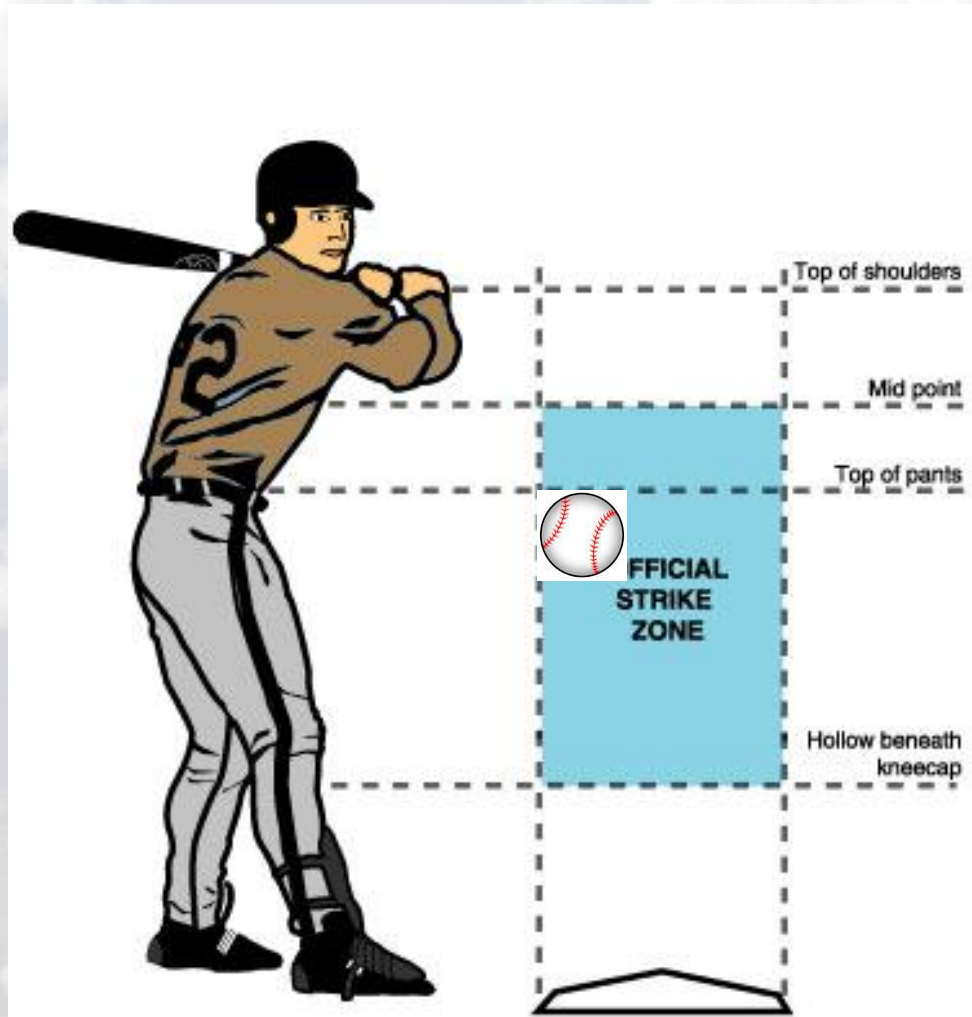
- Step 1
- Step 2
- Step N

# Macro System Model

## Task Completion



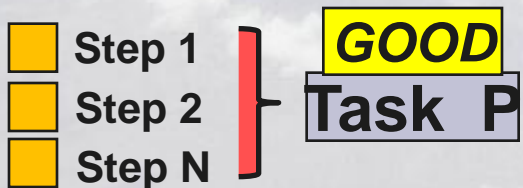
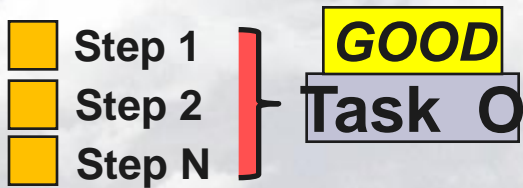
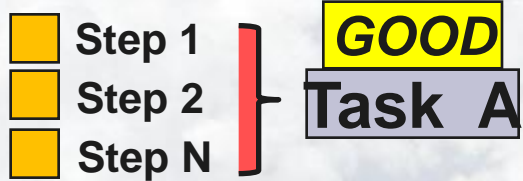
# On Ball and Strikes





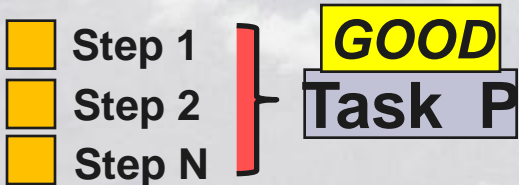
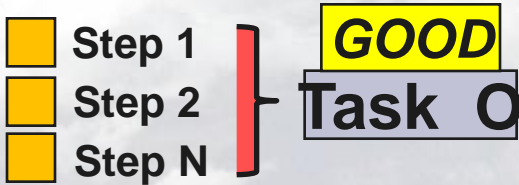
# Macro System Model

## Task Completion



# Macro System Model

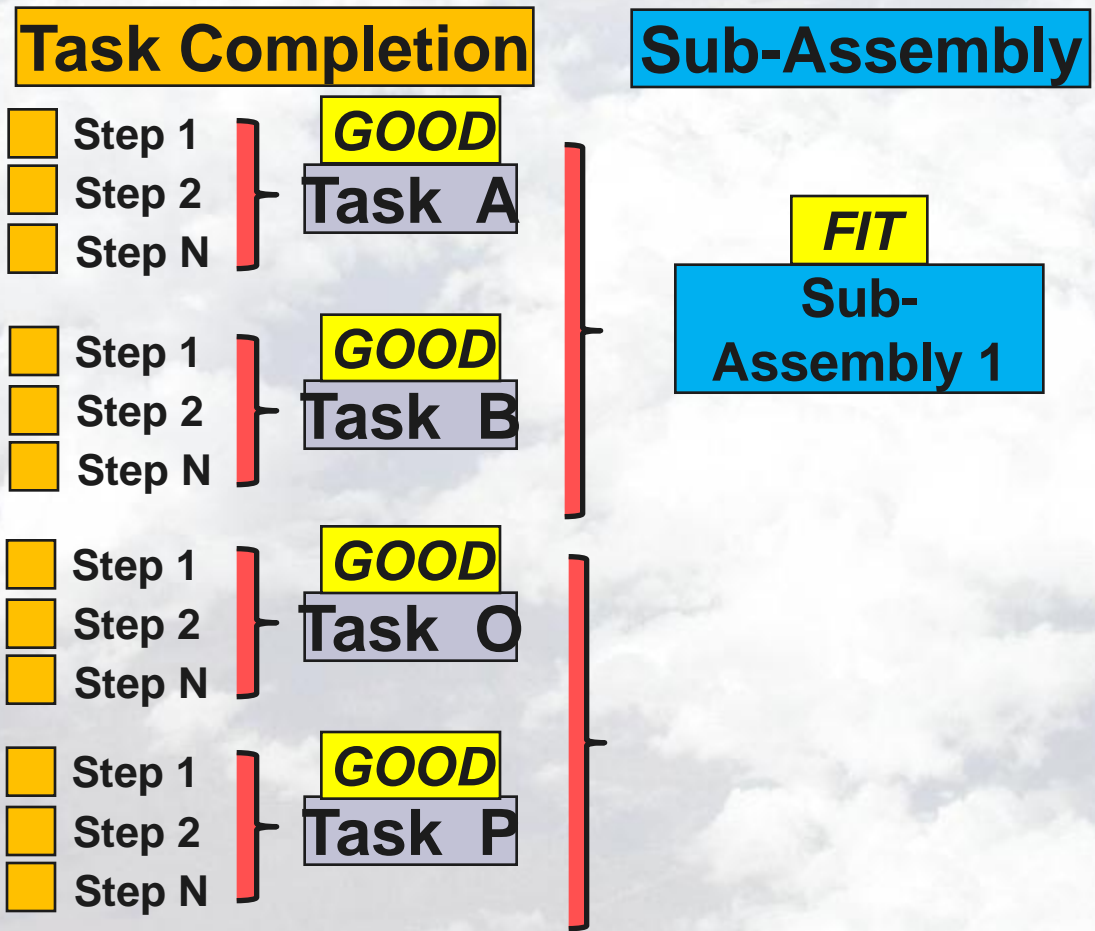
## Task Completion



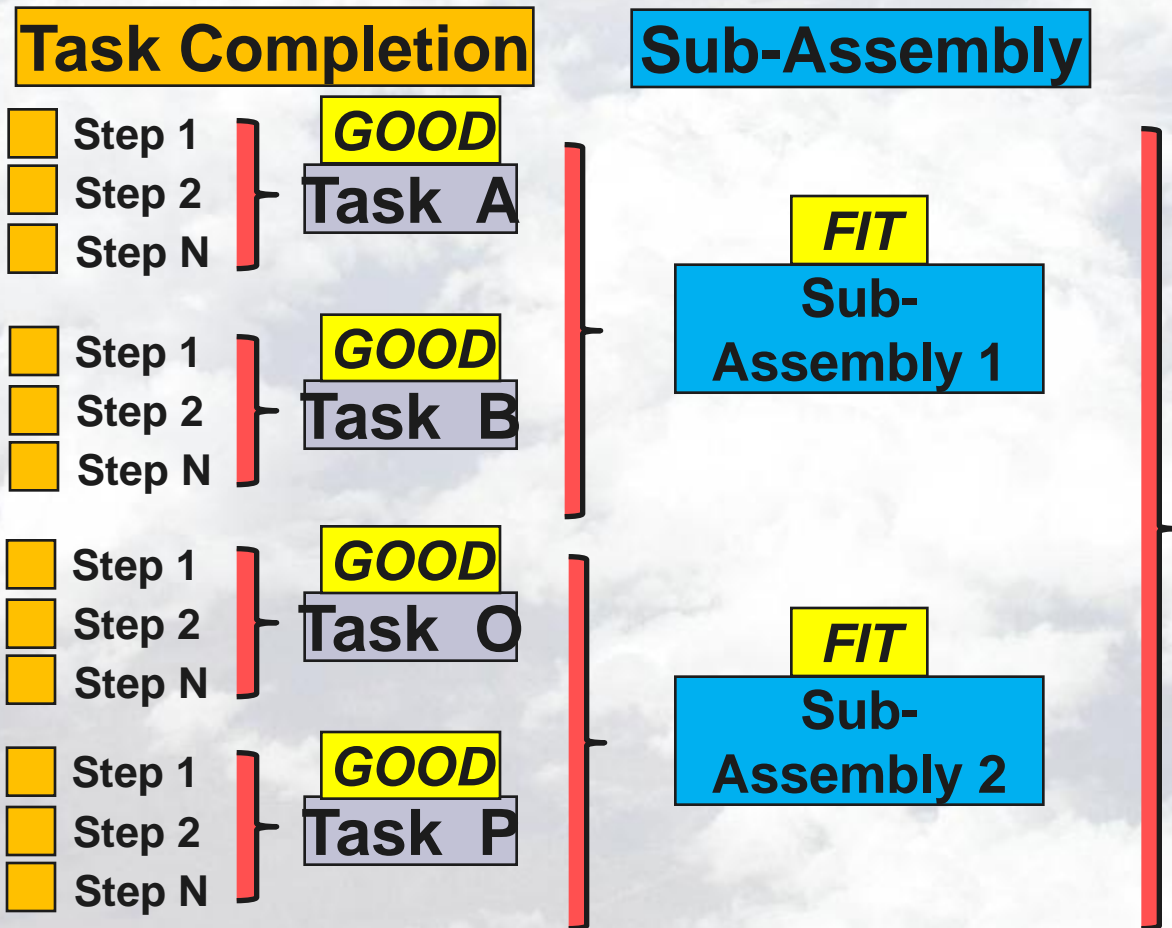
## Sub-Assembly



# Macro System Model

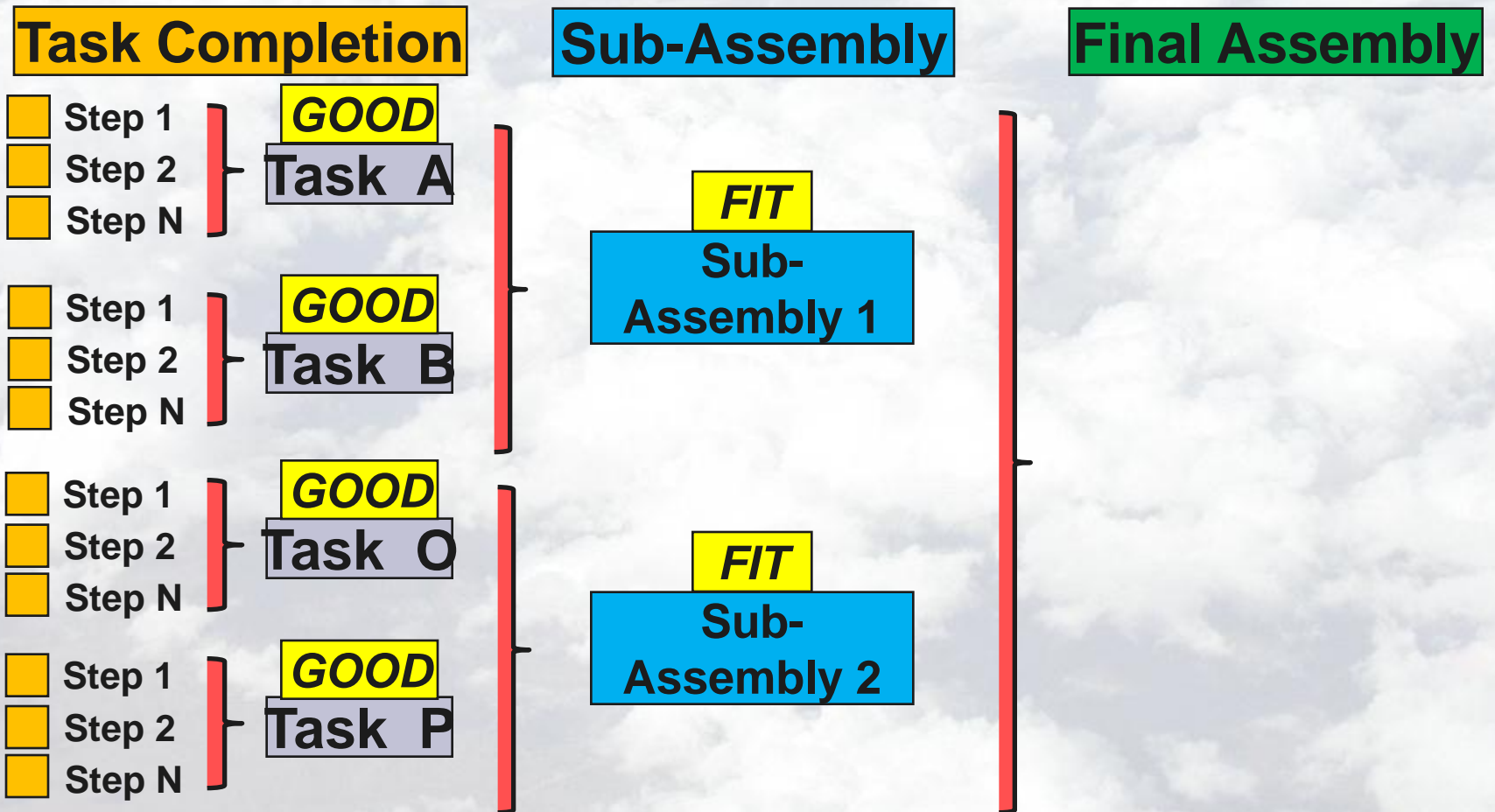


# Macro System Model

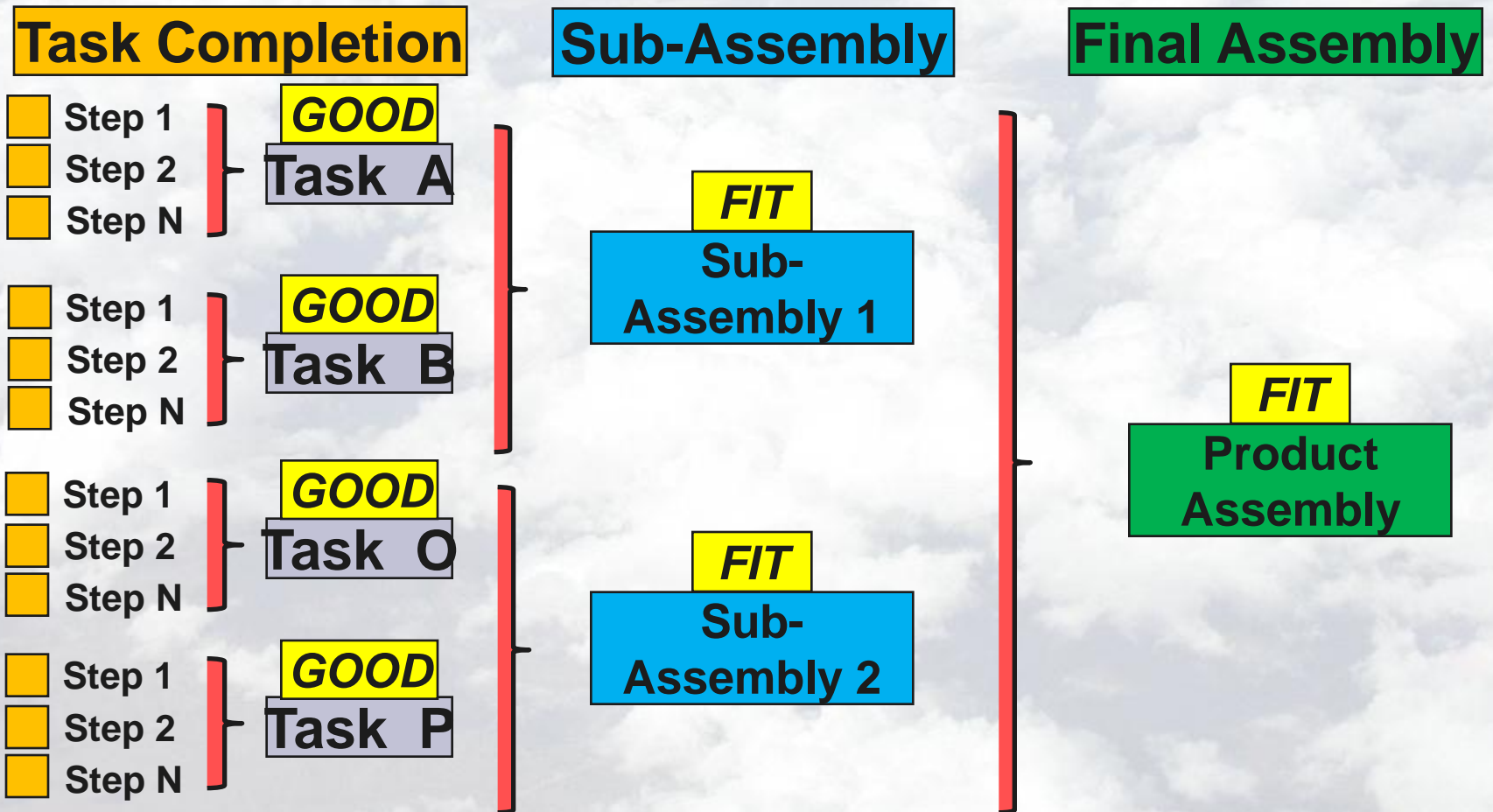




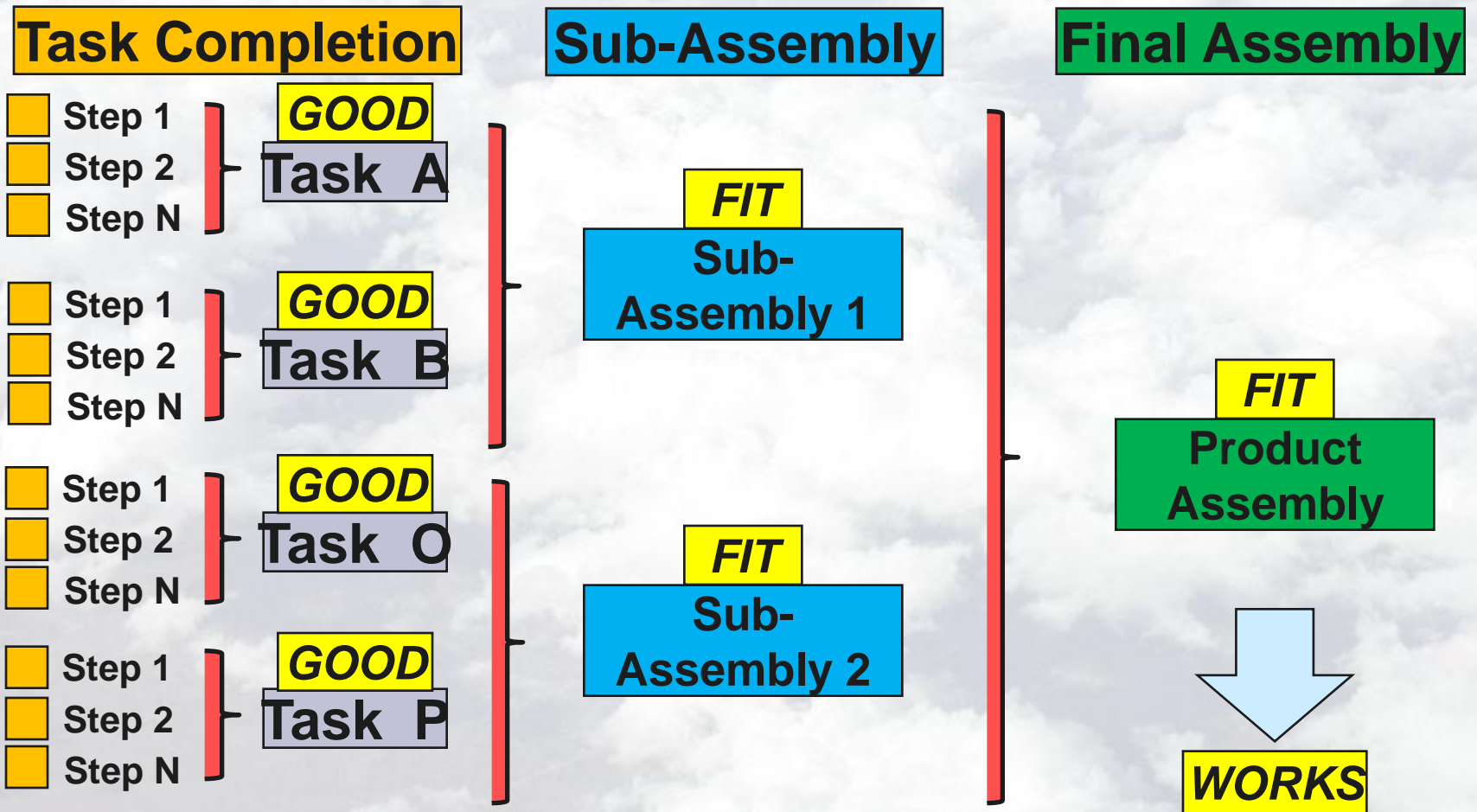
# Macro System Model



# Macro System Model



# Macro System Model

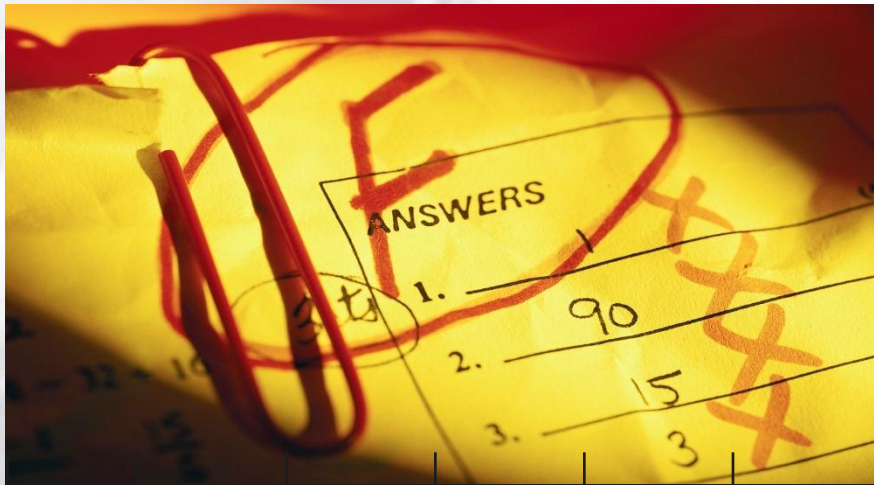


# Task Grades





# Task Grades



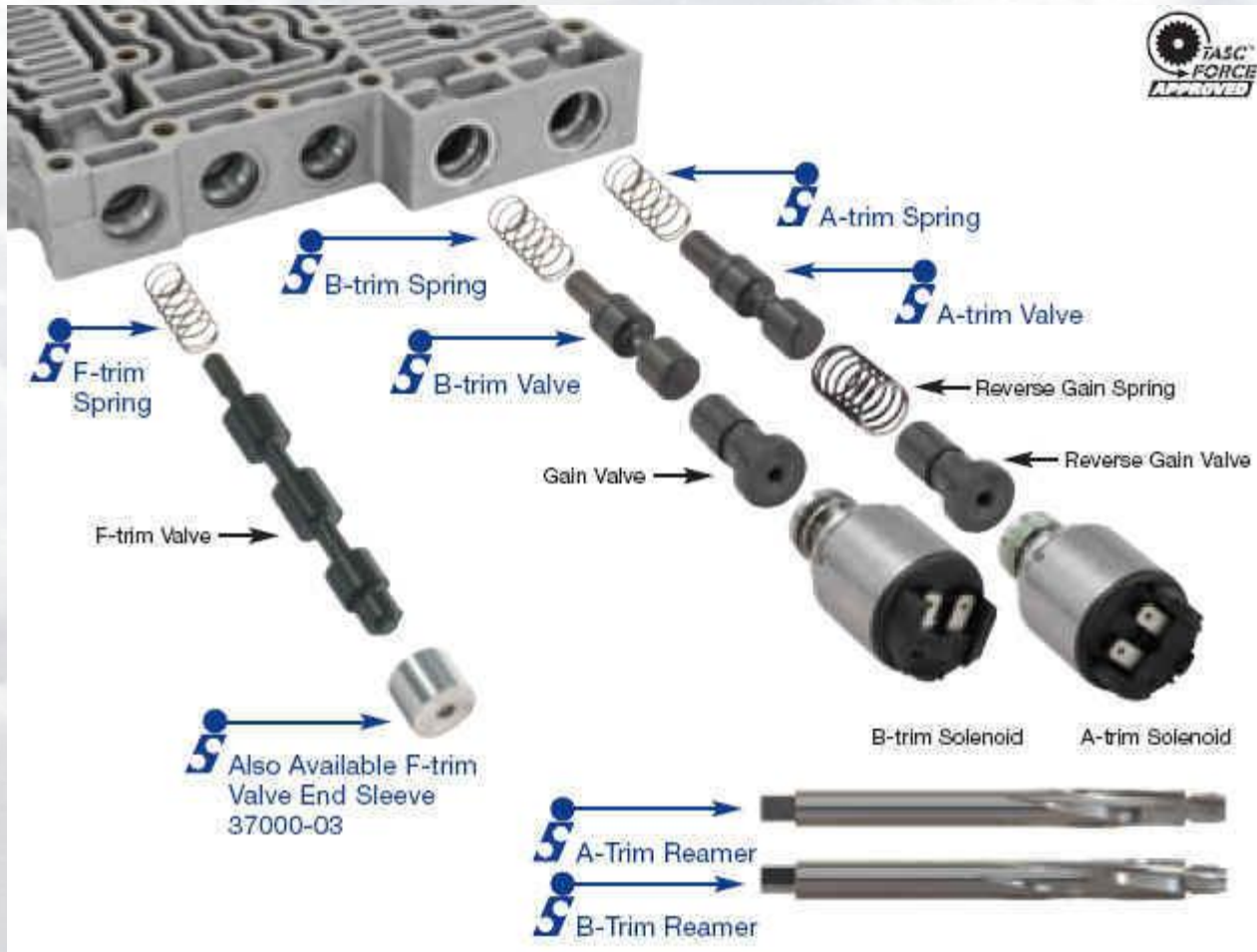
# Interactions, not Actions

One inspiration for challenging the mental model of “good parts” is the 1983 discovery by Ford Motor Company of a dramatic difference in warranty claims between automatic transmissions designed by Ford and produced in two locations, one in Batavia, Ohio, the other by Mazda in Japan.

# Interactions, not Actions

Much to the surprise of Ford's corporate warranty office, the number of complaints associated with the erratic shifting of the transmissions produced in Batavia were a factor of 3 greater than the complaints against the transmissions produced by Mazda.

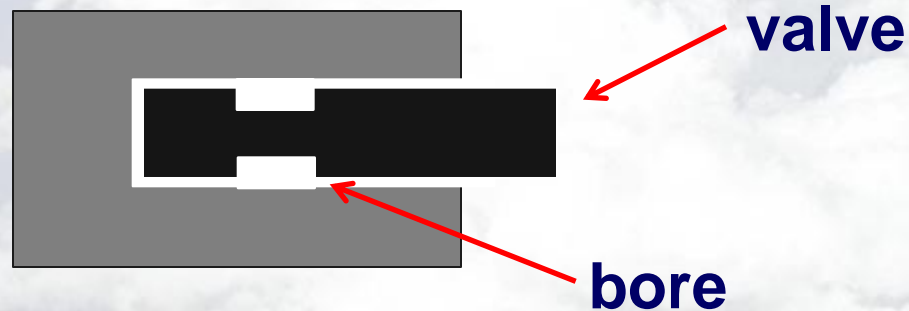
# Interactions, not Actions





# Interactions, not Actions

Upon close examination, Ford realized that Mazda's manufacturing focus was to actively manage the gap between the outer diameter of the valves within the

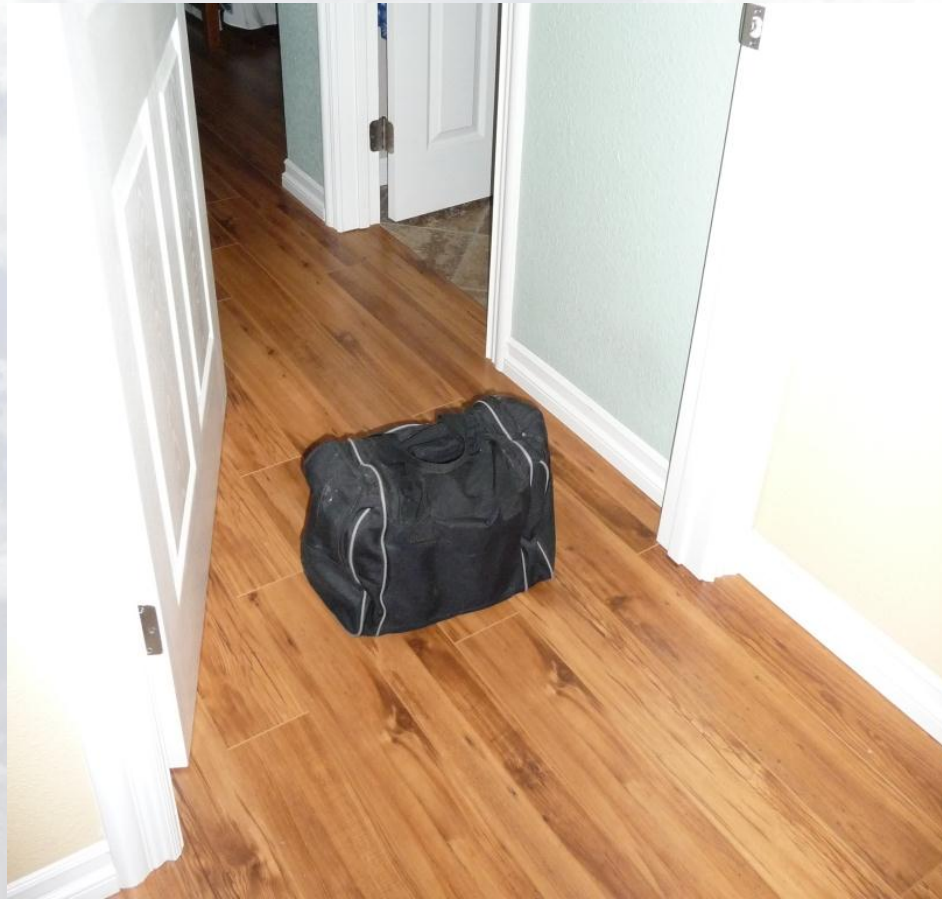


transmissions and the corresponding diameter of the valve bore.

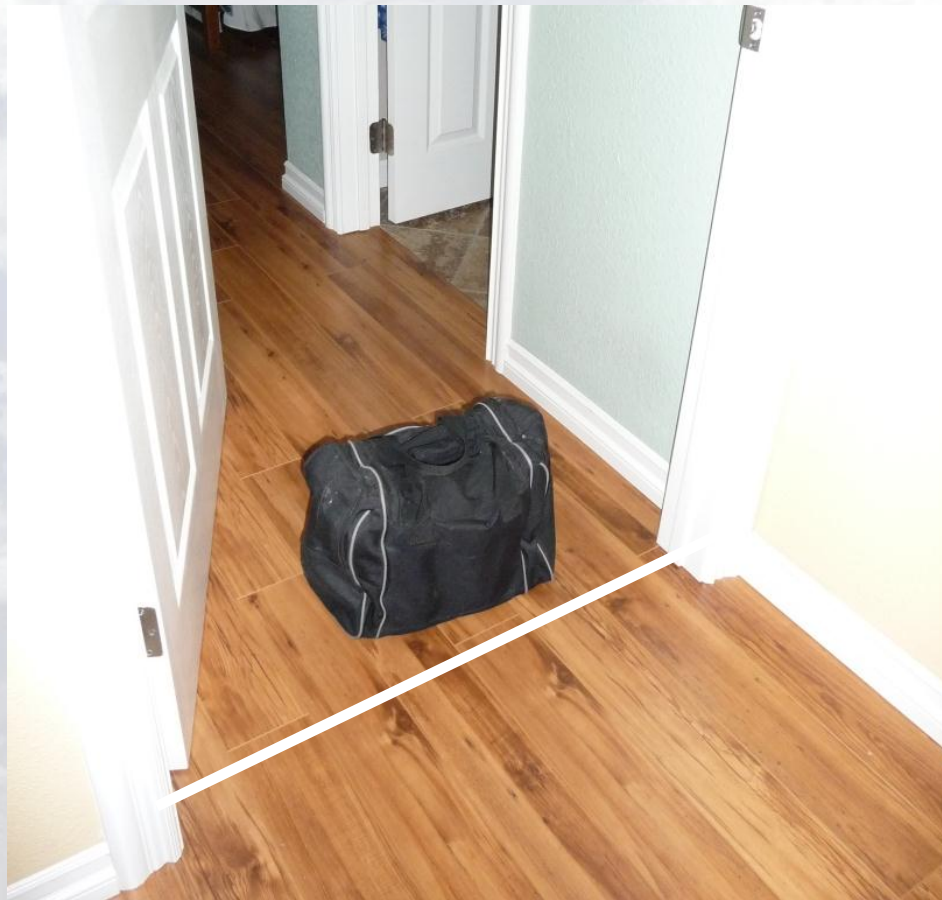
# Interactions, not Actions

In doing so, Mazda's efforts realized the existence of an ideal gap, resulting from ideal ("target") values for both the bore and valve diameters, with an awareness that variation in gap size matters.

# On Bowling Balls



# On Bowling Balls





# Examples of Action Management

**BORE DIAMETER**



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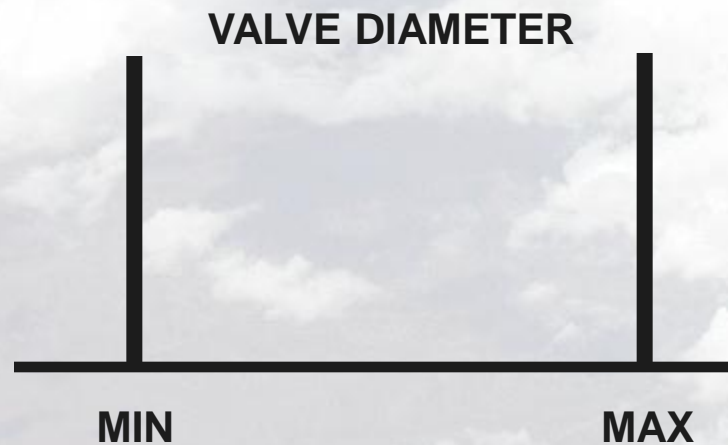
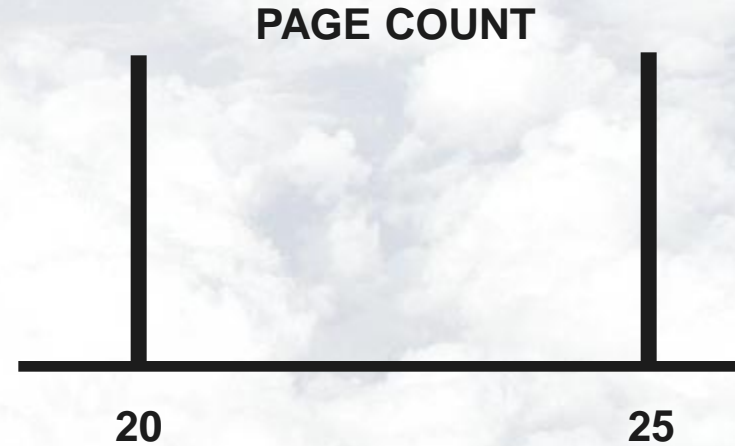
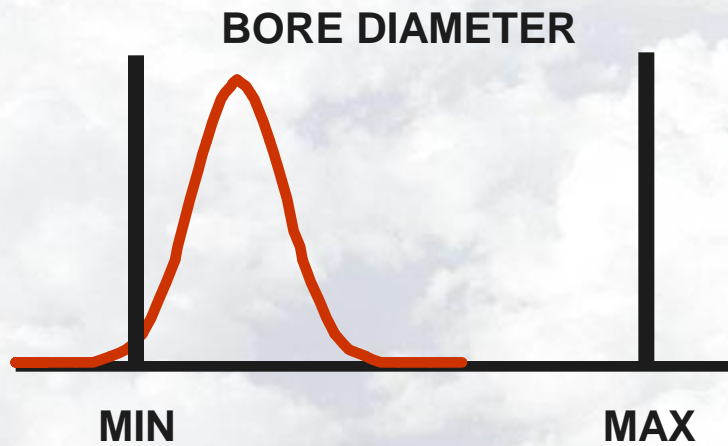
**VALVE DIAMETER**



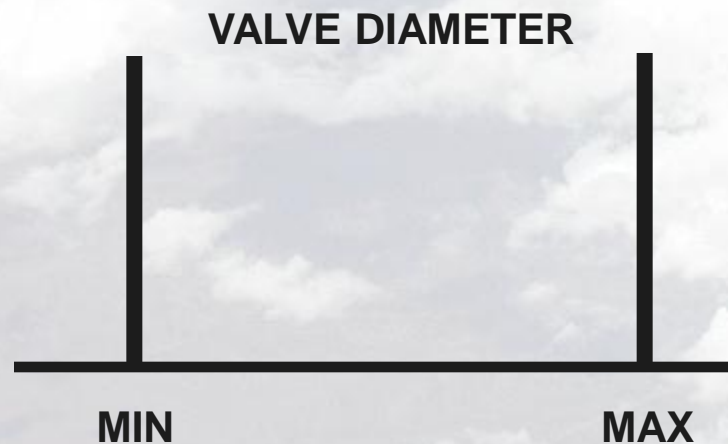
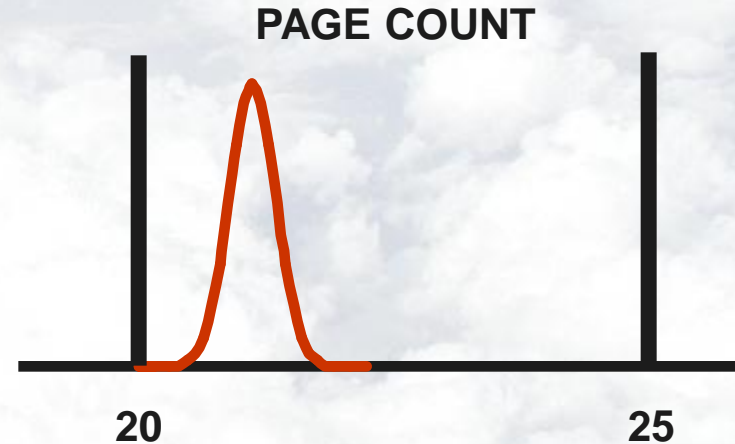
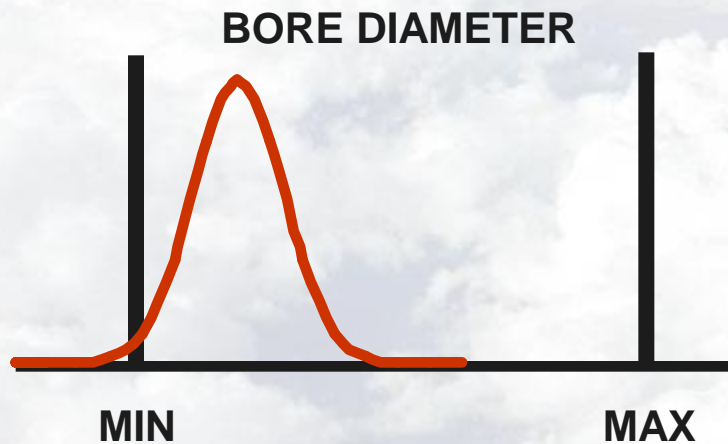
**DISTANCE FROM THE DOOR**



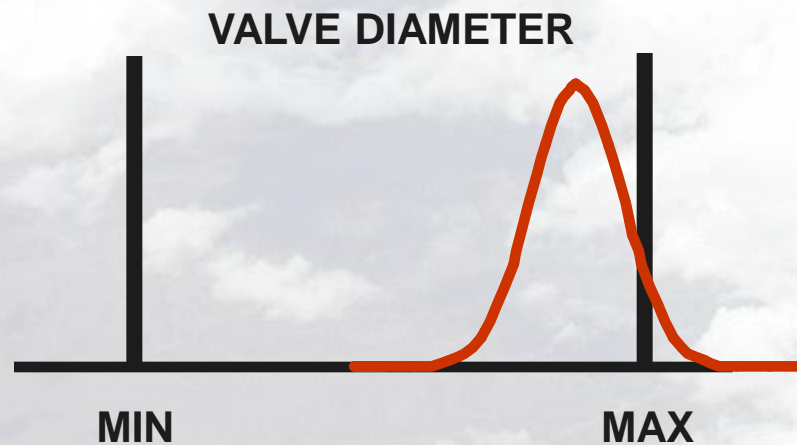
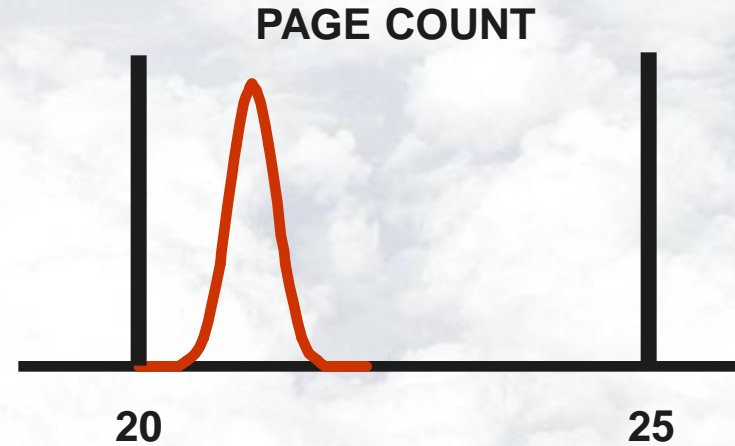
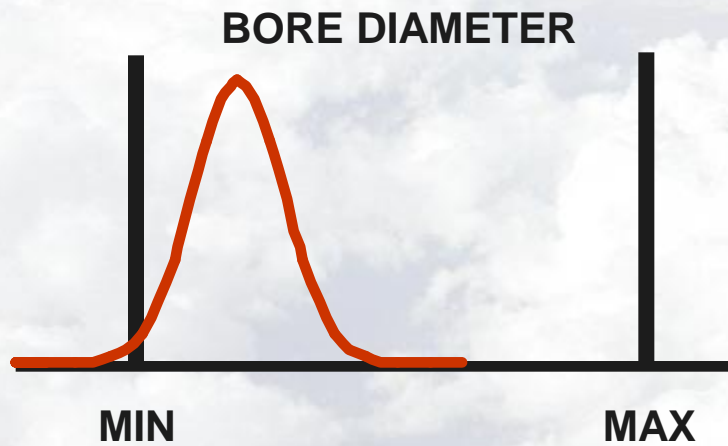
# Examples of Action Management



# Examples of Action Management



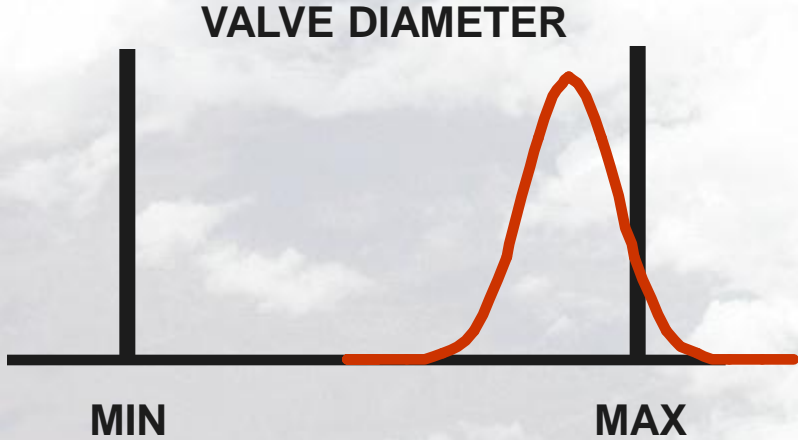
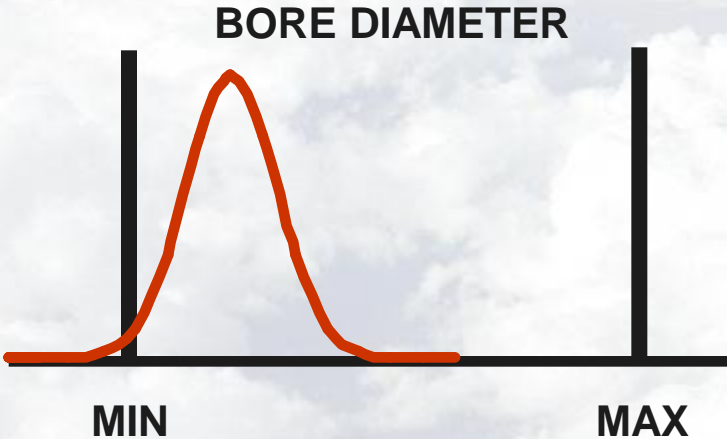
# Examples of Action Management



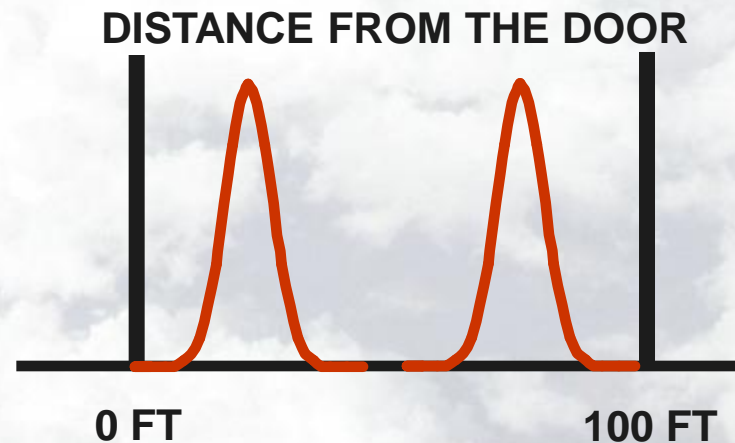
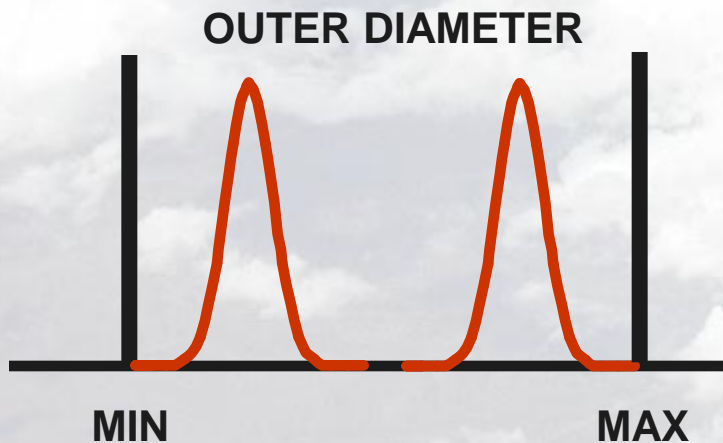
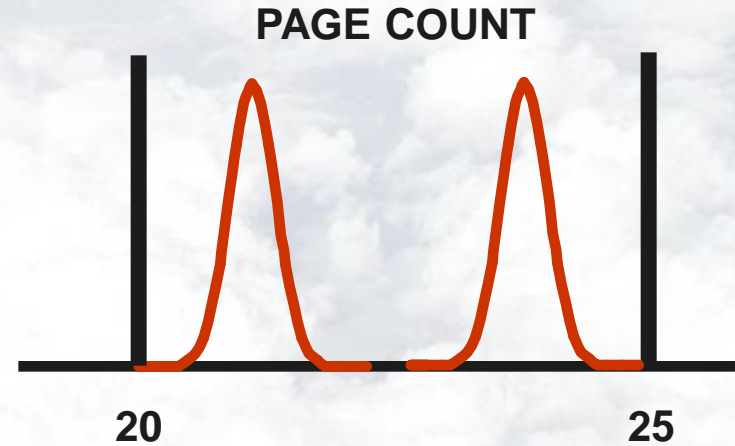
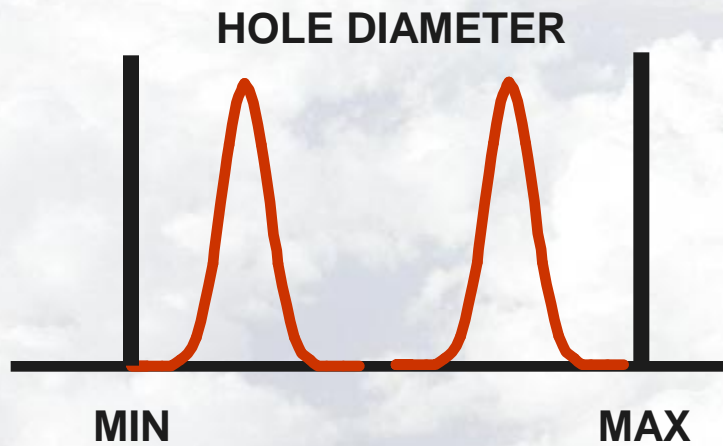




# Examples of Action Management

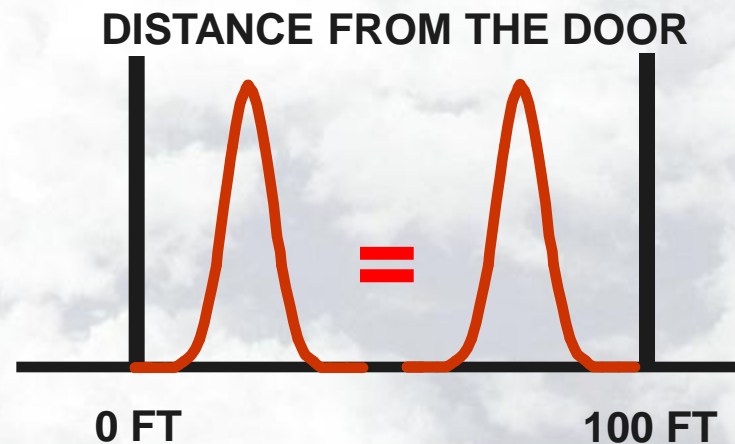
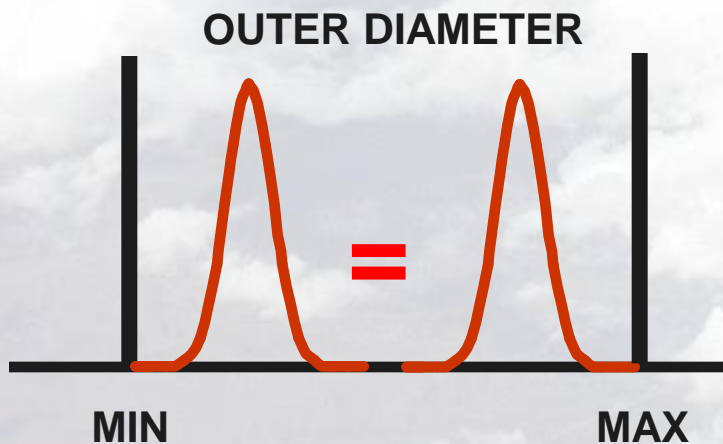
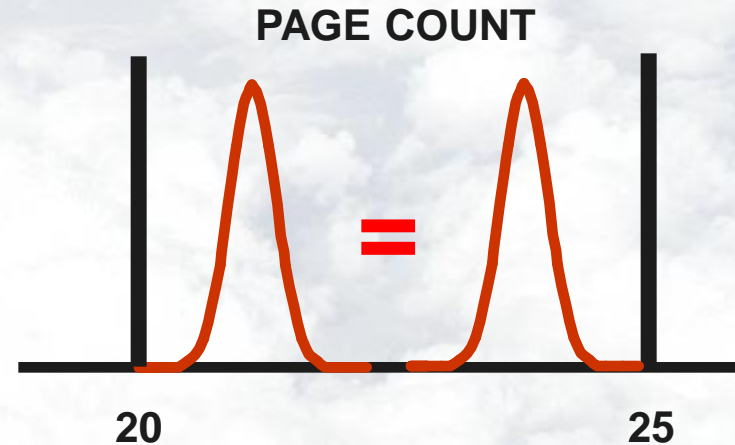
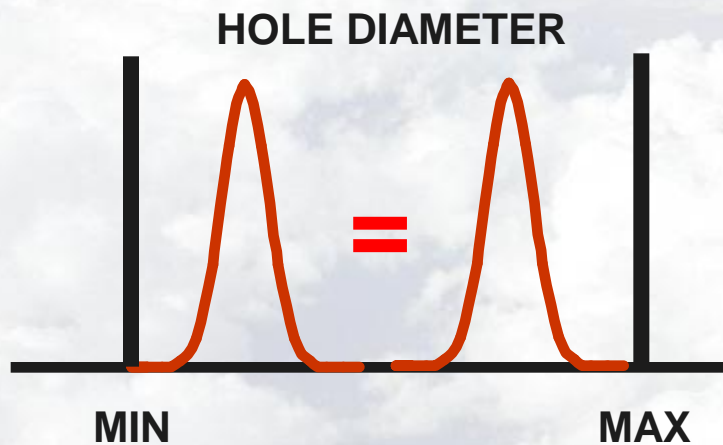


# Macro System Model Action Management



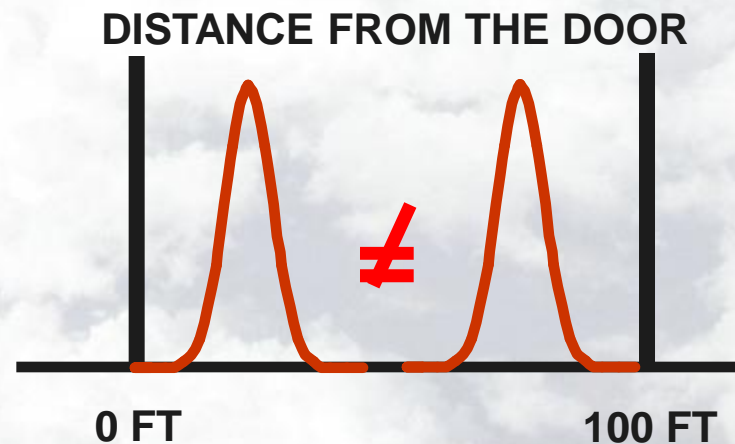
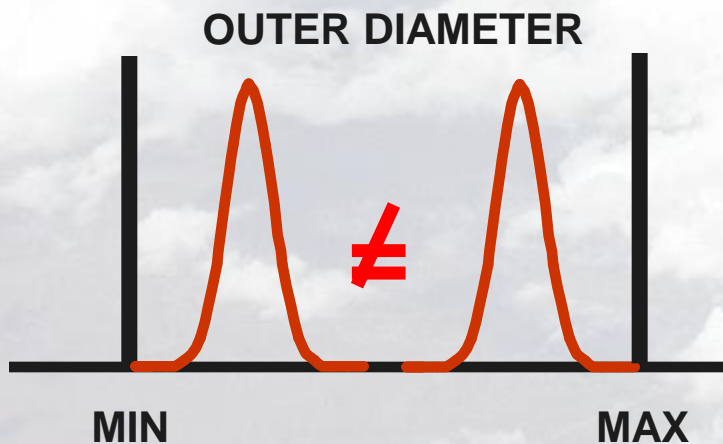
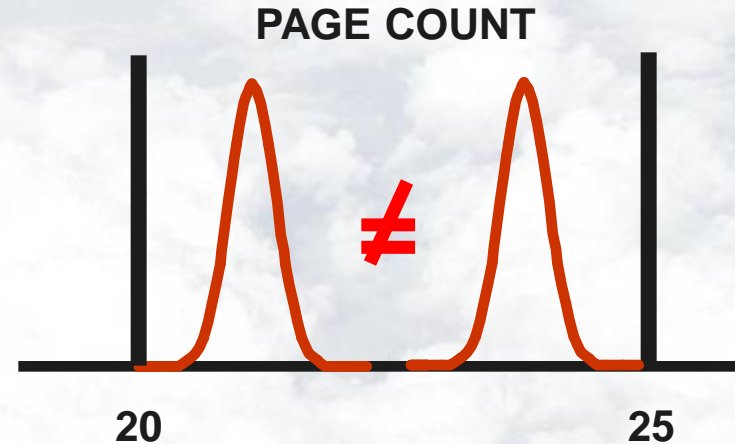
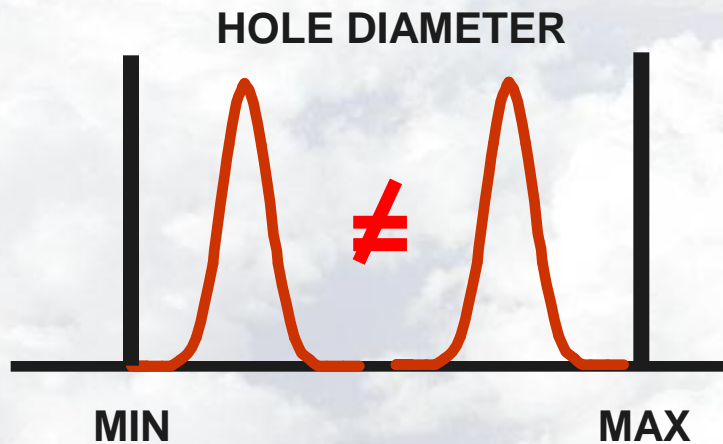


# Macro System Model Action Management

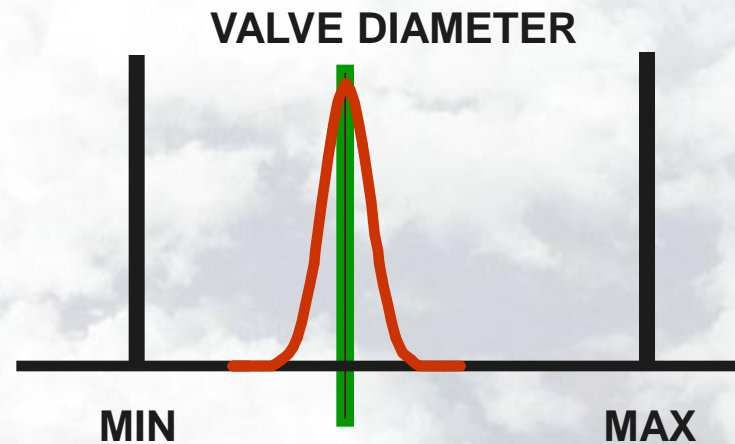
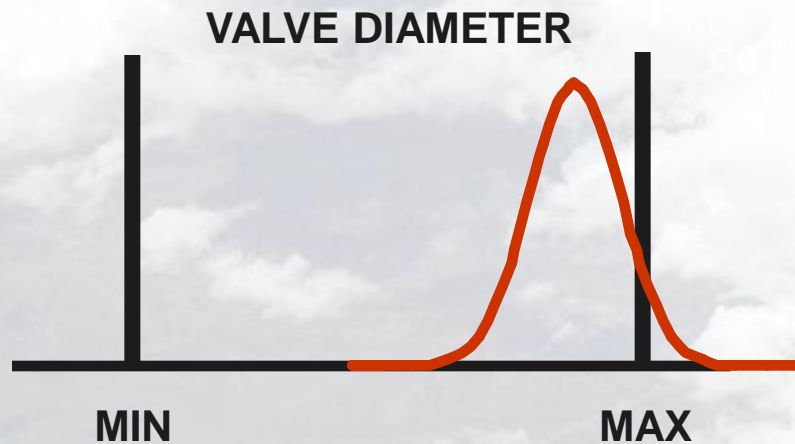
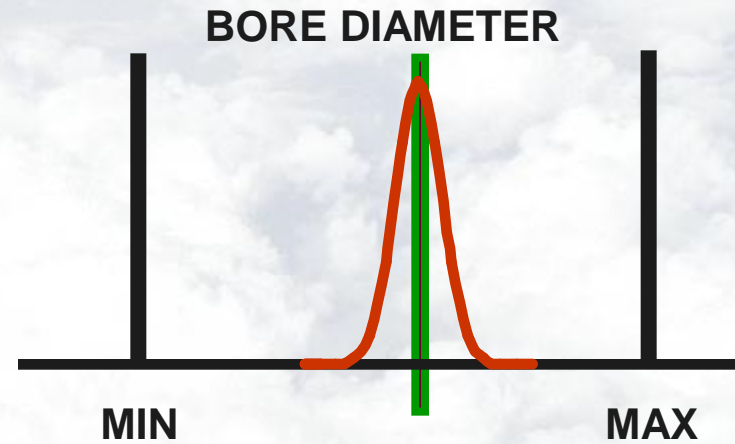
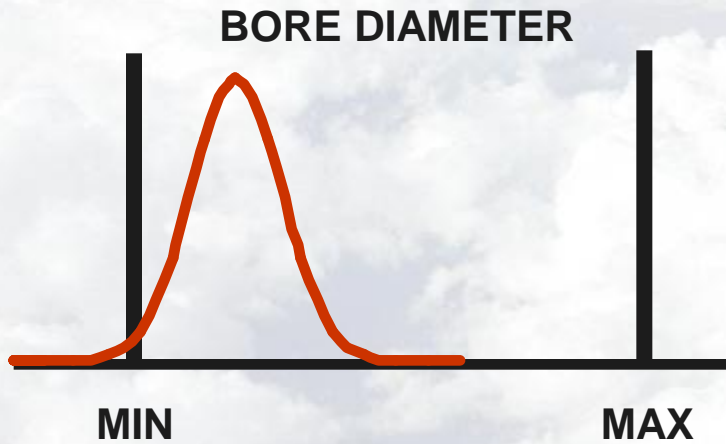




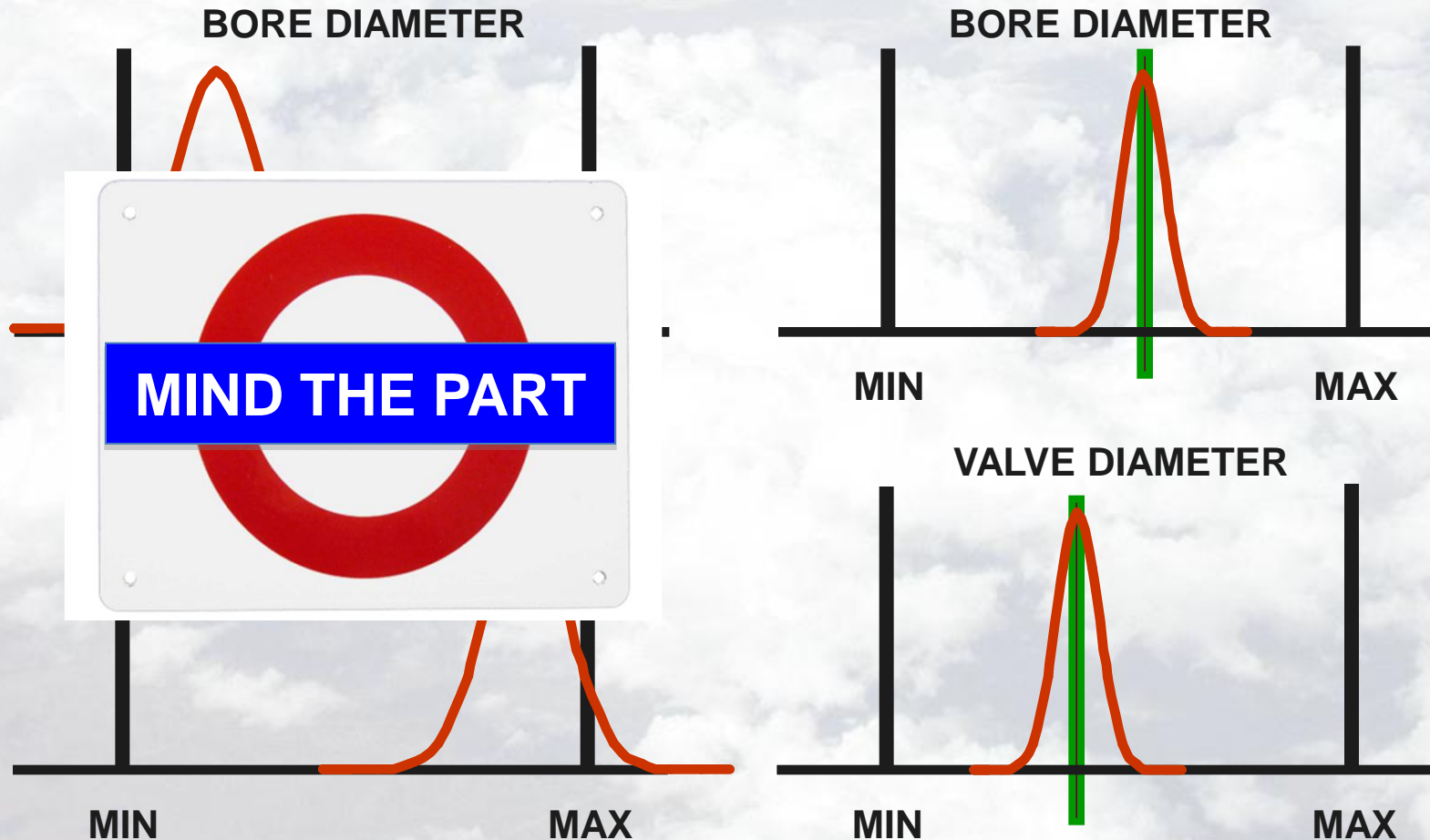
# Micro System Model Action Management



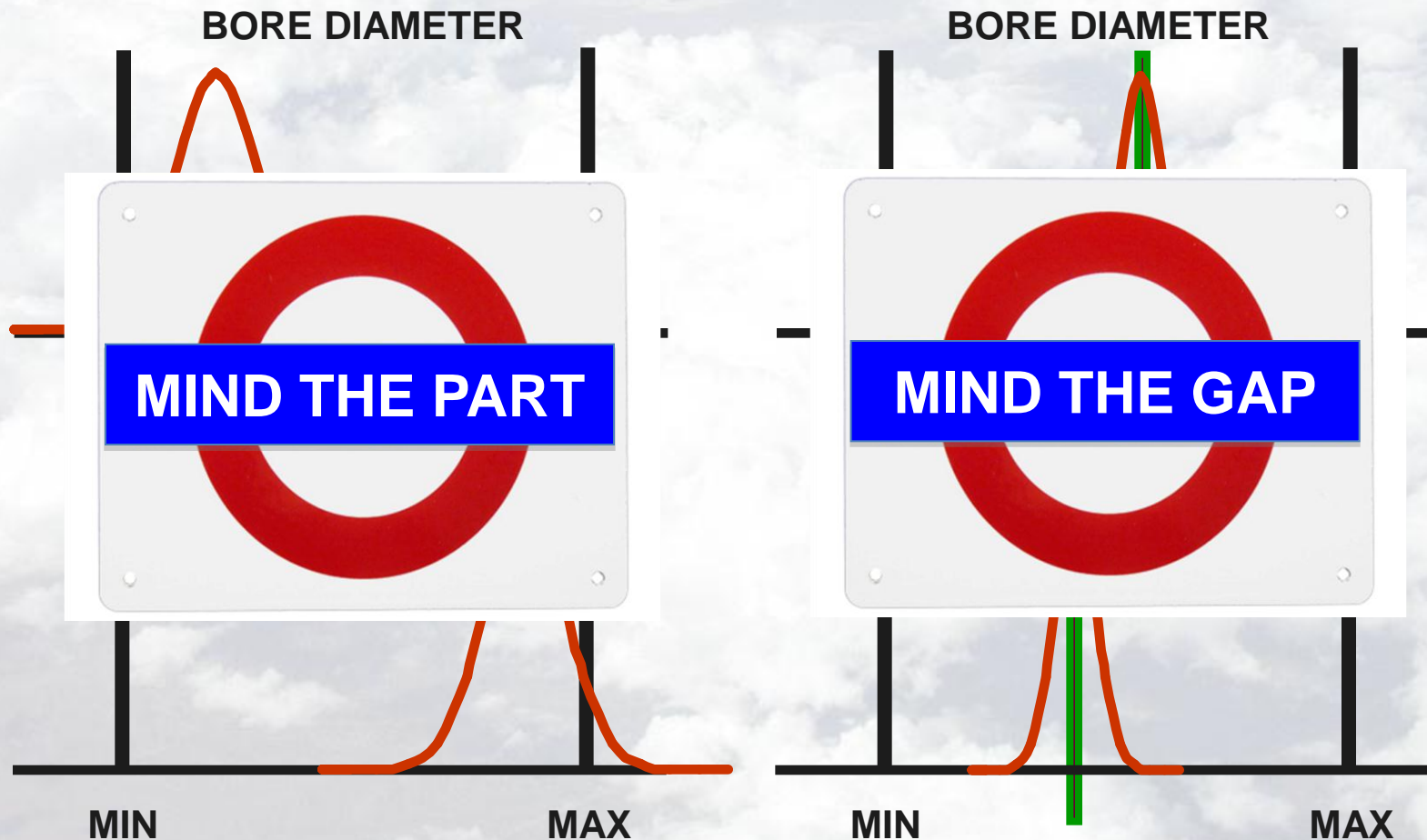
# Resource Management Contrast



# Resource Management Contrast



# Resource Management Contrast

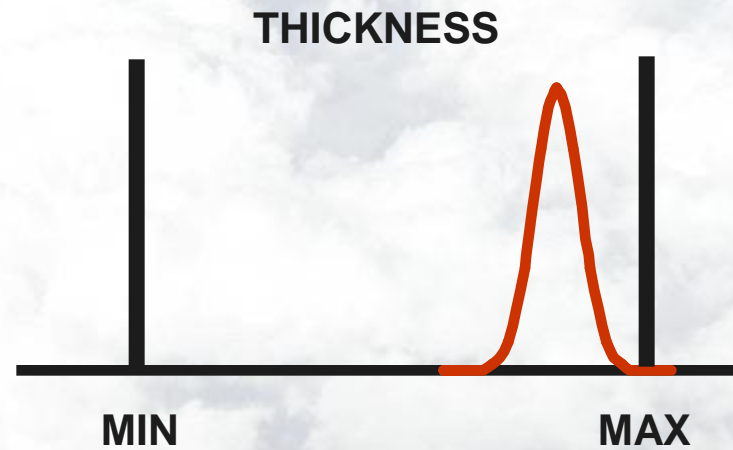




# Isogrids

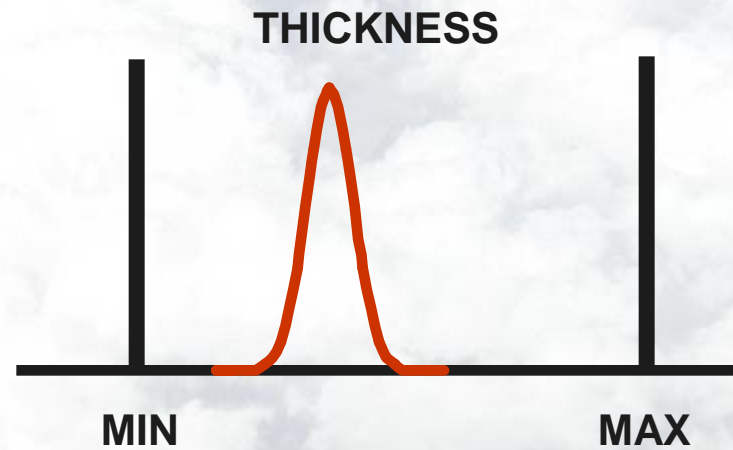


# Isogrids

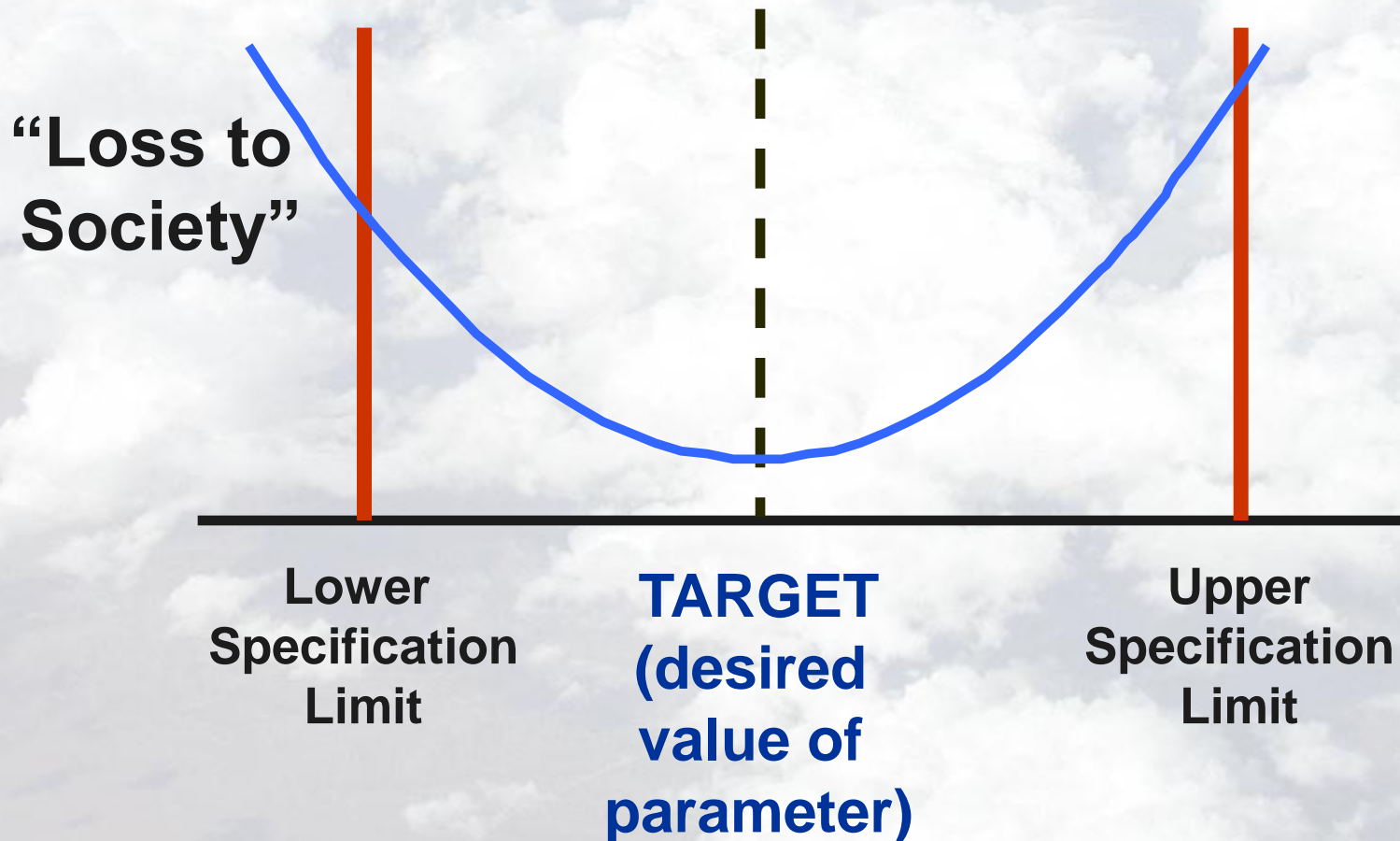




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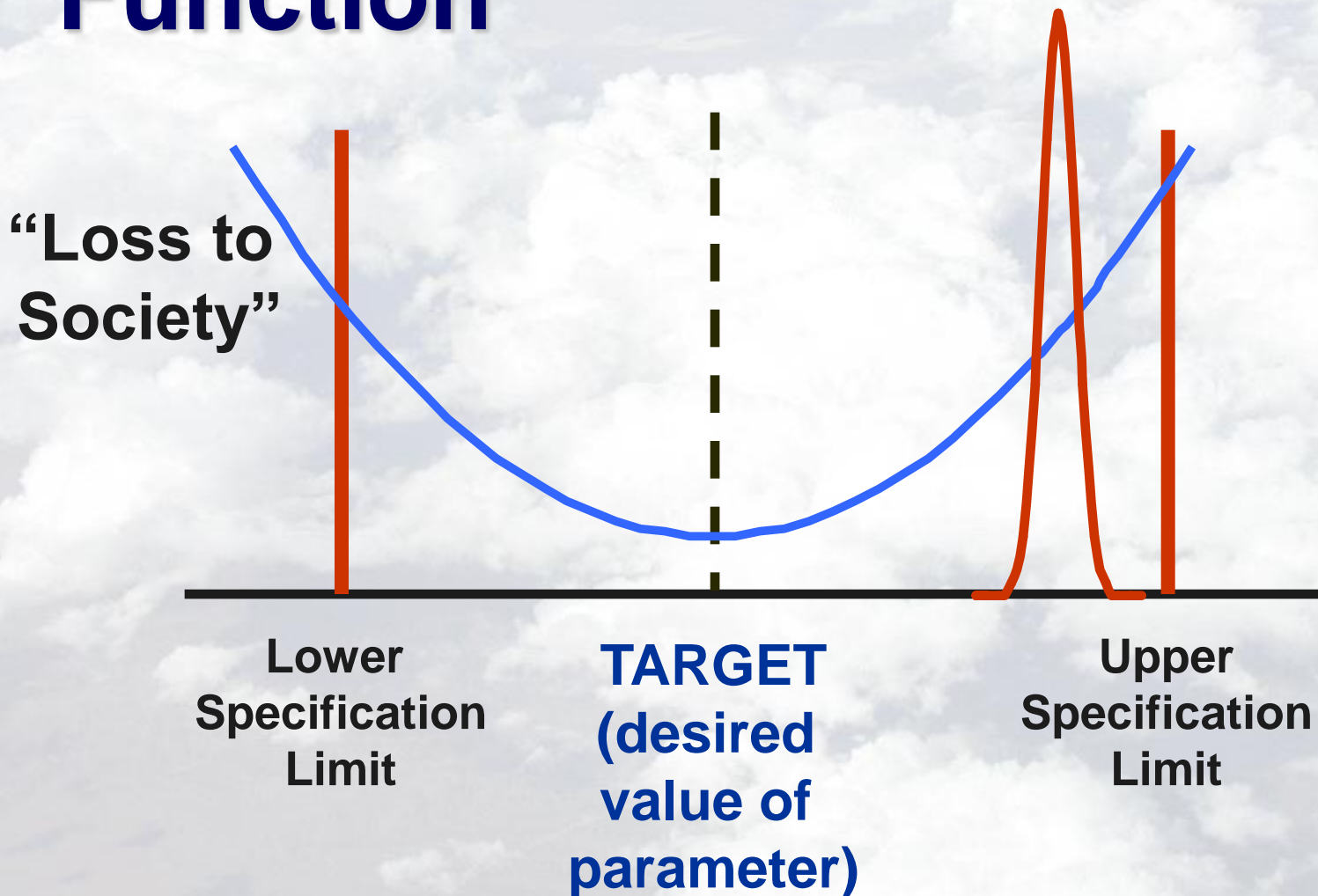


# Taguchi's Quality Loss Function

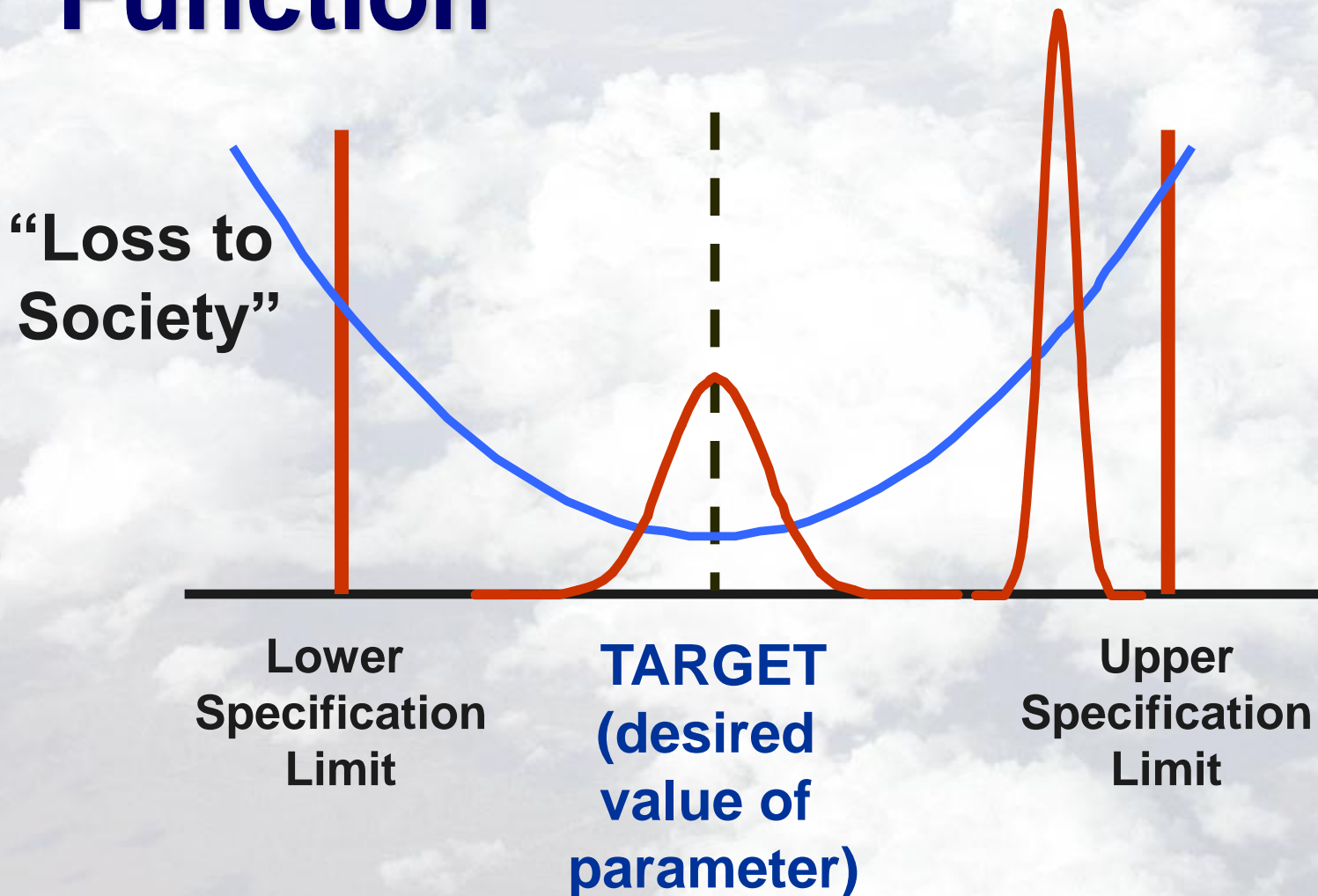




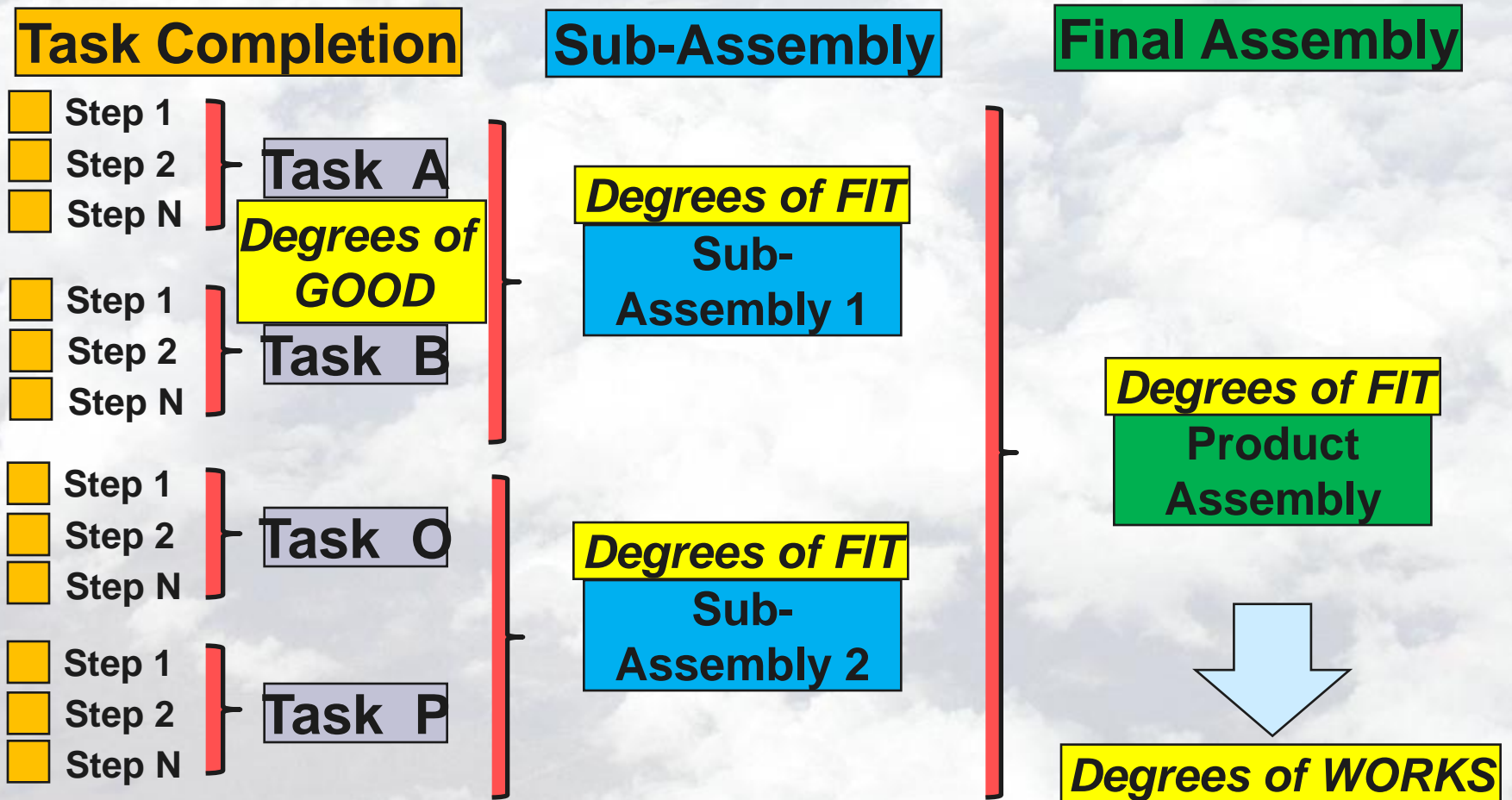
# Taguchi's Quality Loss Function



# Taguchi's Quality Loss Function



# Micro System Model



# Modes of Thinking



# Modes of Thinking

- Categories
- Continuum



# Modes of Thinking

- Categories
  - Absolutes
- Continuum
  - Relative



# Modes of Thinking

- Categories
  - Absolutes
  - Discrete
- Continuum
  - Relative
  - Wholeness



# Modes of Thinking

- Categories

- Absolutes
- Discrete
- Good vs. Bad, Smart vs. Dumb

- Continuum

- Relative
- Wholeness
- Better/Faster/Cheaper/Smarter/etc.





# Modes of Thinking

## ■ Categories

- Absolutes
- Discrete
- Good vs. Bad, Smart vs. Dumb
- How many students at UCLA? How many faculty?



## ■ Continuum

- Relative
- Wholeness
- Better/Faster/Cheaper/Smarter/etc.
- Students are different, faculty are different





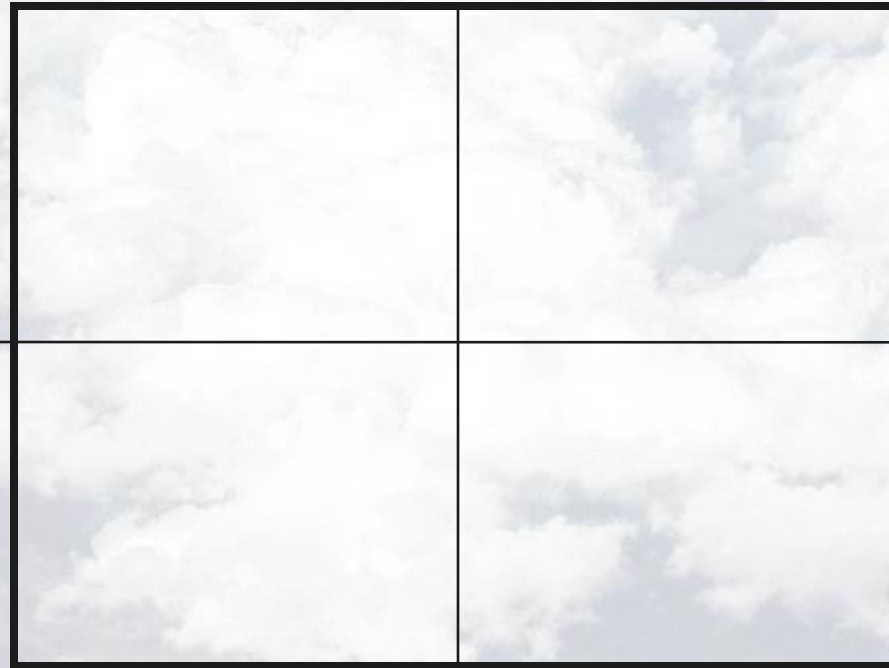
# **Purposeful Resource Management**

# Resource Management

**A  
C  
t  
i  
v  
i  
t  
y**

*Proactive*

*Reactive*



*“Mine”*

*“Ours”*

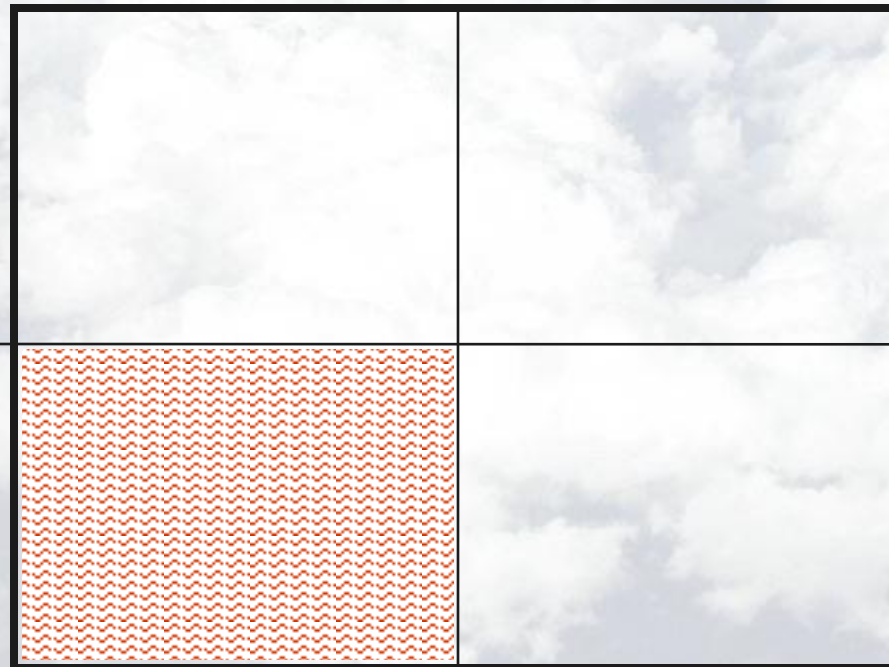
**Ownership**

# Resource Management

**A  
C  
t  
i  
v  
i  
t  
y**

*Proactive*

*Reactive*



*"Mine"*

*"Ours"*

**Ownership**

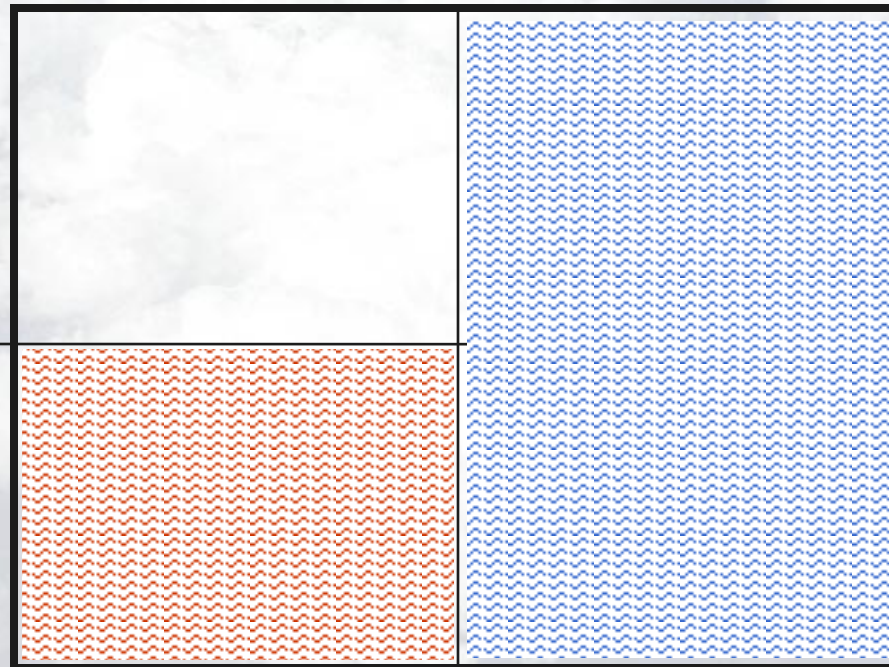


# Resource Management

**A  
C  
t  
i  
v  
i  
t  
y**

*Proactive*

*Reactive*



*"Mine"*

*"Ours"*

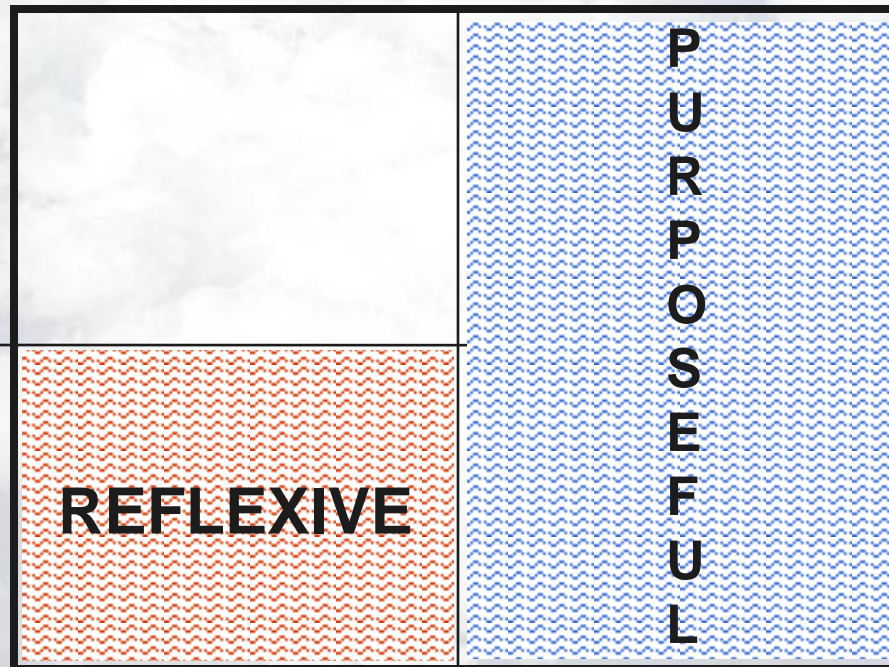
**Ownership**

# Resource Management

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*Proactive*

*Reactive*



*“Mine”*

*“Ours”*

**Ownership**

# Opportunities to Act

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(differences that make a difference)

- Category Thinking vs. Continuum Thinking



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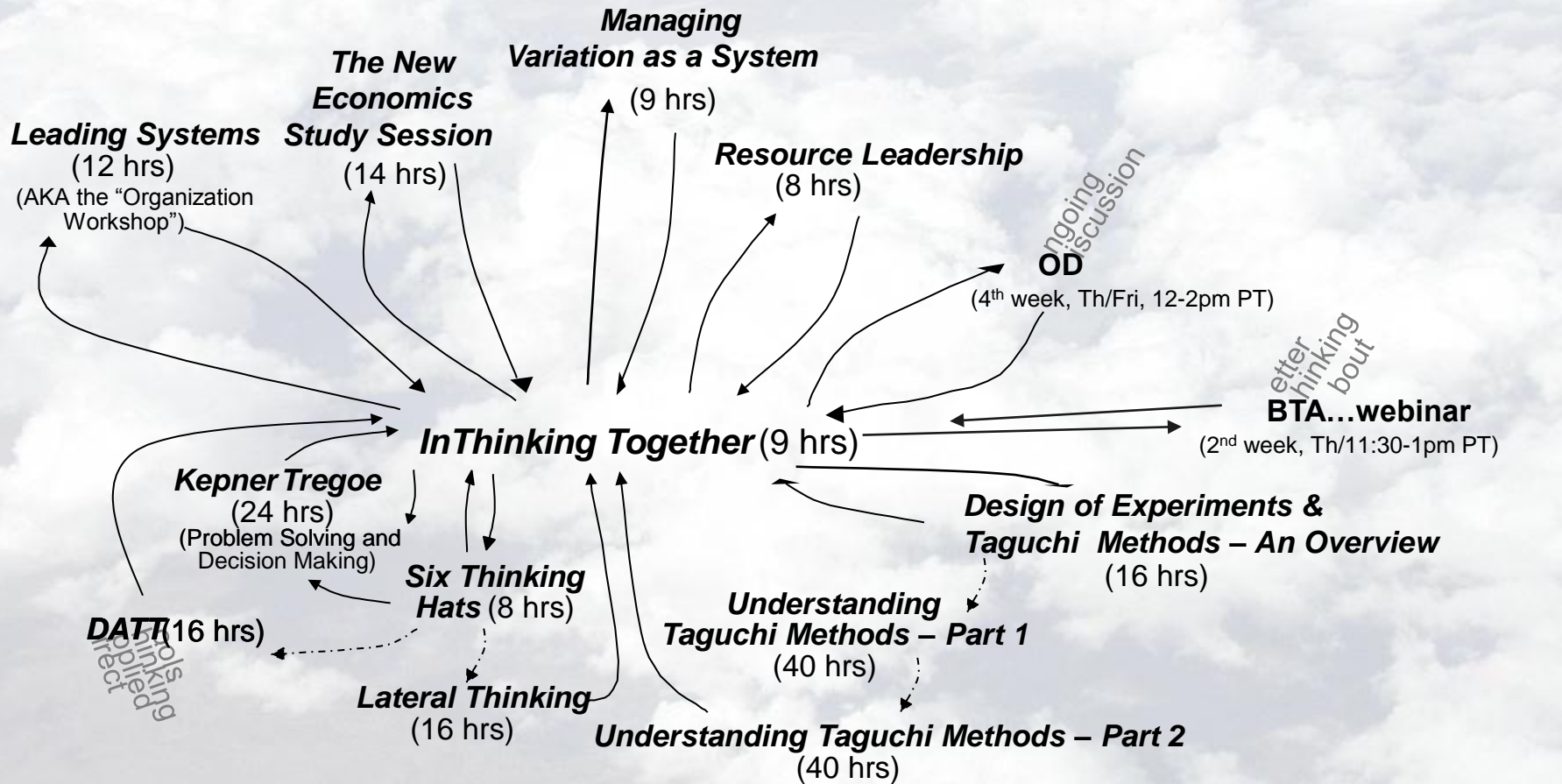
- Category Thinking vs. Continuum Thinking
- Macro Systems vs. Micro Systems
- Attention to “Good” elements
- Manage interactions, not actions



# Opportunities to Think



# An InThinking Roadmap AKA The Hotel California

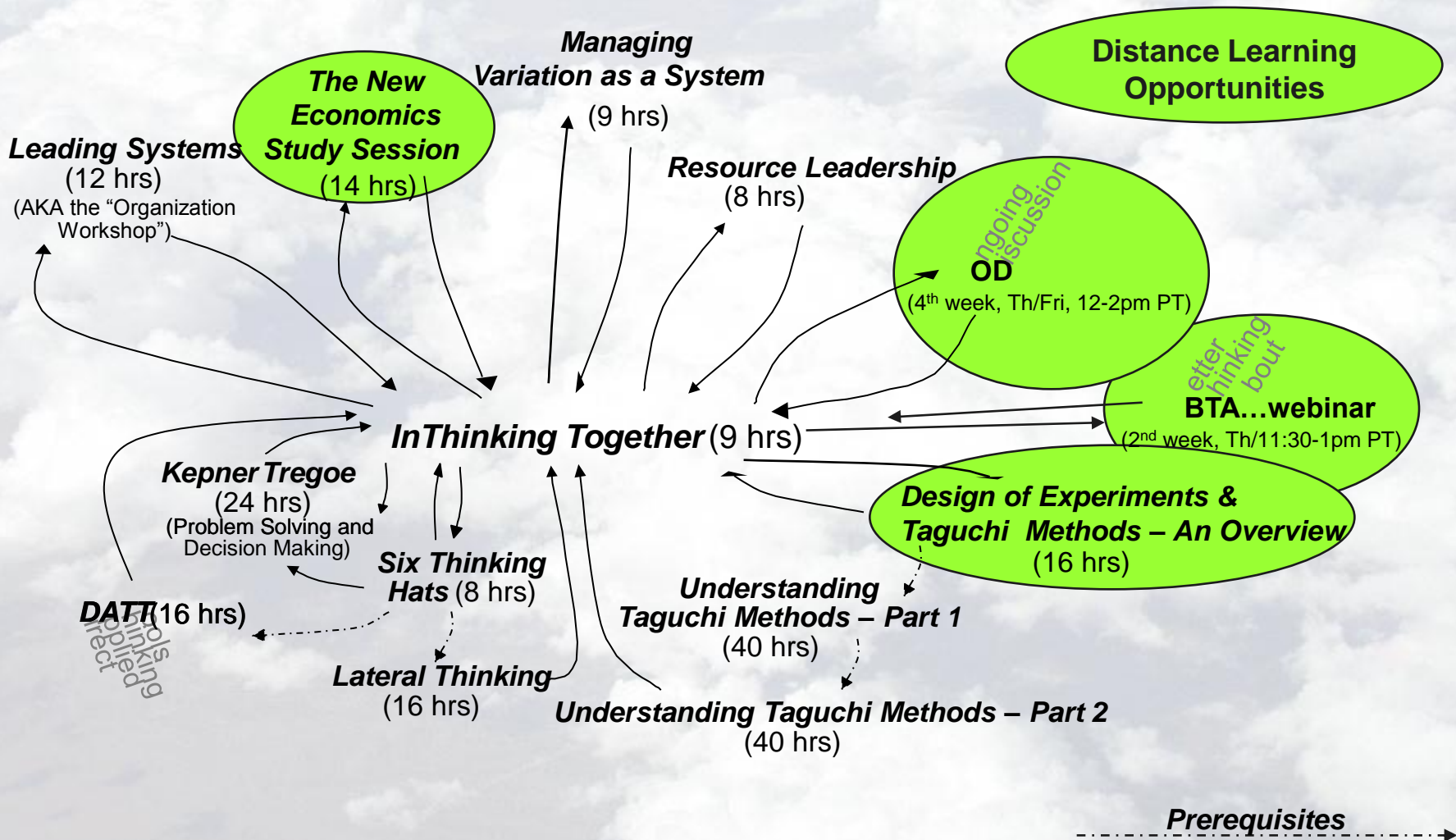


Prerequisites →

# An InThinking Roadmap



*TARGET AUDIENCES: Members of management, individual contributors, suppliers, and customers who are providing leadership in InThinking activities. Family members, "members of the community" and students are welcome to attend. "Members of the community" are citizens who are involved full or part time, or in a volunteer capacity, in community related work. Examples include hospital employees, teachers, religious leaders, scouting leaders, and youth sports volunteers.*

# An InThinking Roadmap AKA The Hotel California





# Monthly Announcements



Aerojet Rocketdyne

April 2014

## Better Thinking About...Webinar Announcement

[Join Our Mailing List!](#)


**In This Issue**

- [Meeting Notice Service](#)
- [International Participants](#)
- [Future BTA Webinars](#)
- [Future OD Conference Calls](#)
- [InThinking Together Seminar](#)
- [The New Economics Study Session](#)
- [Additional Reading](#)

**Aim and Stats**

Good afternoon from the Los Angeles campus of [Aerojet Rocketdyne](#), located in Canoga Park, California, on the western end of the [San Fernando Valley](#).

In our third session of 2014, Elaine Johnson, from Lake Oswego, Oregon, will present on Thursday, April 10th, from 11:30-1pm PT, on a new focus area, "Better Thinking About How Literature Speaks to Business."



Elaine's aim for this presentation is to show that literature can help business succeed. Literature lets business leaders enter the minds of a multitude of characters to penetrate their thinking, experience their



# Monthly Announcements



April 2014

## Better Thinking About...Web Announcement

[Join Our Mailing List!](#)

Good afternoon from the Los Angeles campus of [Aerojet](#) located in Canoga Park, California, on the western end of [Fernando Valley](#).

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March 2014

## Ongoing Discussion Announcement

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[Welcome First-Timers](#)

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[The New Economics Study Session](#)

[Aim and Stats](#)

Aerojet Rocketdyne's InThinking Network welcomes Julie Goodfellow, from Abergavenny, Wales and Hugh McAllister, from Henderson, Nevada, to lead our third Ongoing Discussion conference call of 2014 on March 27th and 28th and also our 171st session since we began in January 2000). As for a topic, Julie and Hugh have selected "From My Seat in the Stadium Continued...", in their first time with us as Thought Leaders.

**(Please note: daylight saving time is in force in the USA)**



Hugh has been a friend and thinking partner since 2008, when he worked in Los Angeles and joined the team for the In2:InThinking Network's

# ***On Baseball, Bowling Balls, and Teamwork***

**Presented by Bill Bellows**

Associate Fellow

InThinking Network, Aerojet Rocketdyne

Email: [william.bellows@rocket.com](mailto:william.bellows@rocket.com), Cell: 818-519-8209

President

In2:InThinking Network

Email: [bill@in2in.org](mailto:bill@in2in.org)

**In2:InThinking Network 2014 Forum**

**June 21, 2014**