Problem Solving, Analytical Thinking & Decision-Making

NATIONAL TACTICAL OFFICERS ASSOCIATION

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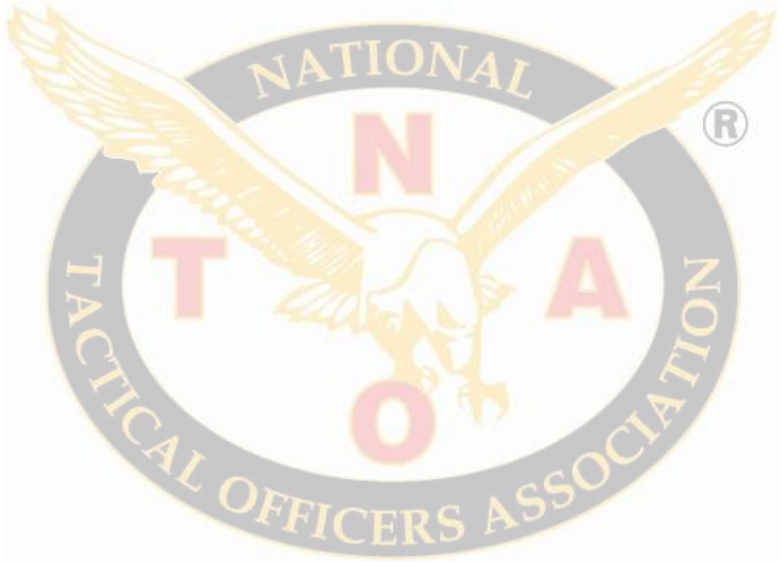
Performance Objectives

- Understand and utilize problem solving techniques to make better team decisions.
- Understand how problem solving can be utilized during operational planning.
- Apply techniques to assist decision-making during an on-going operation.

Performance Objectives

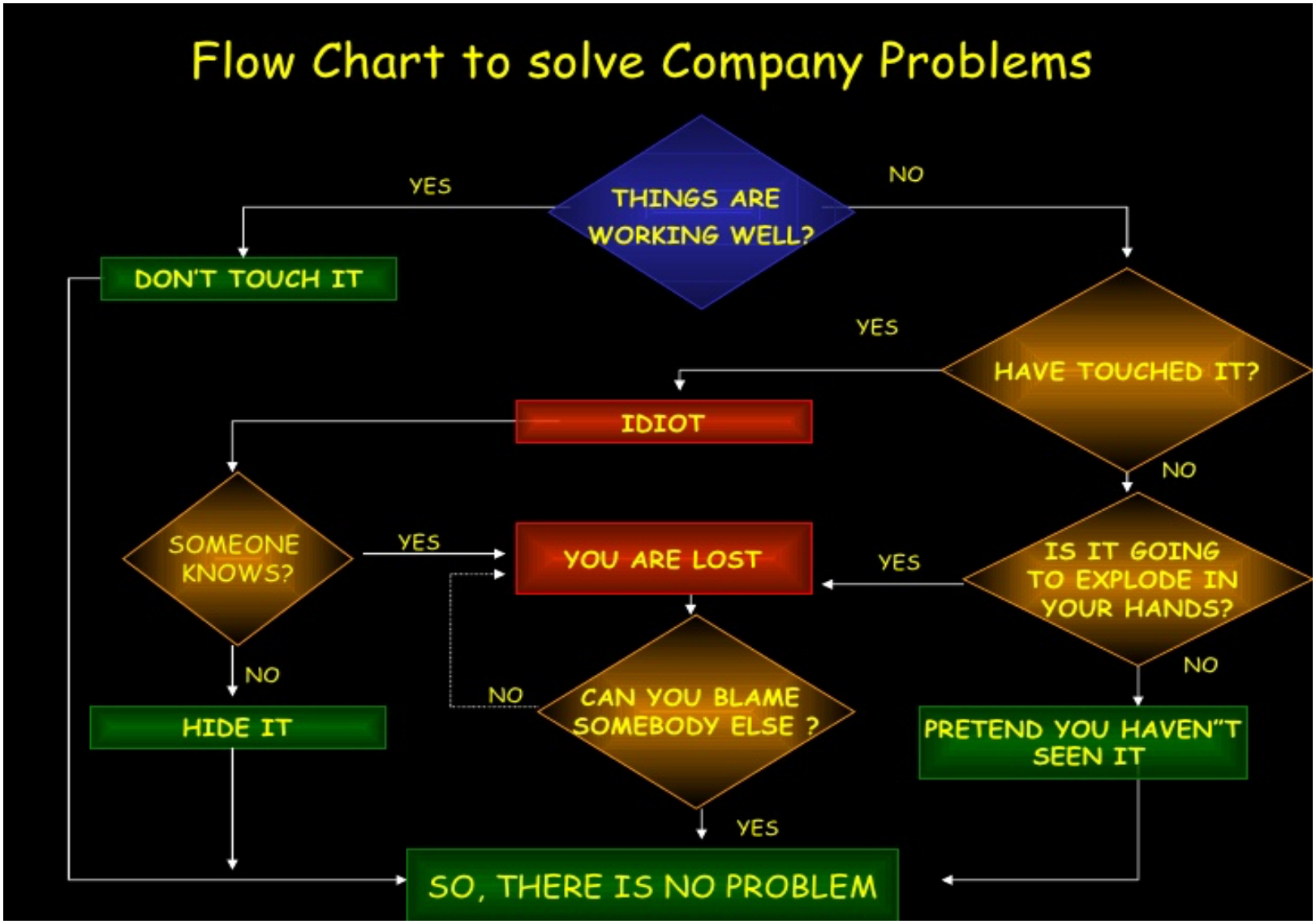
- Use techniques to develop checklists for different situations to enable consideration of alternatives.
- Apply methods to solve team issues.



Section One

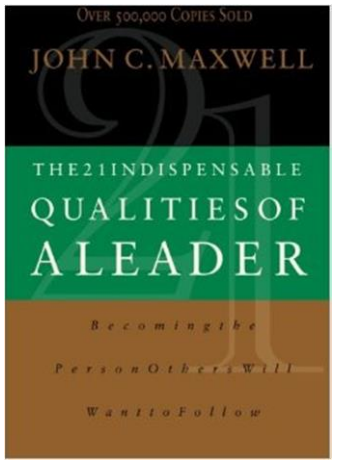
INTRODUCTION

It isn't. . .


Flow Chart to solve Company Problems
THINGS ARE WORKING WELL?
YES
NO
DON'T TOUCH IT
HAVE TOUCHED IT?
YES
NO
IDIOT
SOMEONE KNOWS?
YES
YOU ARE LOST
IS IT GOING TO EXPLODE IN YOUR HANDS?
YES
NO
NO
HIDE IT
NO
CAN YOU BLAME SOMEBODY ELSE ?
PRETEND YOU HAVEN"T SEEN IT
YES
SO, THERE IS NO PROBLEM

Problem Solving

- **John C. Maxwell on Problem Solving:**
  - Look for trouble
  - Develop a method (TEACH process)
    - Time (Spend time to discover the real issue)
    - Exposure (Find out what others have done)
    - Assistance (Have your team study all angles)
    - Creativity (Brainstorm multiple solutions)
    - Hit It (Implement the best solution)
  - Surround yourself with problem solvers



“When bad things happened, we just calmly laid out all the options, and failure was not one of them. We never panicked, and we never gave up on finding a solution”

Jerry Bostick
Apollo 13 Flight Controller

Problem Solving

- Leaders face problems/issues everyday.
- Being an effective problem solver is an important competency for a SWAT Commander. Being able to:
  - Define the problem or issue.
  - Generate alternatives.
  - Evaluate and select the proper alternatives.
  - Effectively implement the solution(s).

“Let’s Work the Problem People”

Section Two

DECISION-MAKING

Decision-Making

Best Problem Solvers:

- Research tells us that the best decision-makers are aware of processes related to problem solving.
- Review and reflect upon their decisions as well as review and reflect upon decisions made by other Commanders.
- Educate their intuition rather than simply through experience.

Decision-Making

Best Problem Solvers:

- Employ effective problem solving techniques.
- Develop their EQ in order to understand their emotional responses to situations (how stress impacts problem solving).
- Develop the decision-making during incomplete or ambiguous information.
- Physical and mental health.

Decision-Making

- Routine decisions require very little analysis.
- Complicated decisions require much more consideration.
  - Uncertainty
  - Complexity
  - High degree of risk/consequences
  - Alternatives
  - Adversary is involved.

Decision-Making

- Complicated decisions require:
  - Problem solving + decision-making strategies.
- Why decisions fail:
  - Best alternatives aren't clear at the onset.
  - Critical points aren't considered as part of the process.

Decision-Making

- Consider your tactical environment.
  - Your decisions affect other people.
  - Gain input from those that will implement your plan (Team Leaders).
  - Supporting agency.
  - Requesting community.
  - Abilene Paradox (Avoiding Groupthink).

“Failure is Not an Option”

Decision-Making

- Situational Awareness
  - Do you fully understand the root problem/issue?
  - ***5 Why Technique***
- Identifying your Alternatives
  - The broader your options explored, the better likelihood for a successful outcome.
  - ***Lotus Blossom Technique***

Decision-Making

- Evaluating your Alternatives
  - Analyzing your risk (consequences), then prioritize alternatives.
  - Consider any possible unintended consequences of each option.
- Choosing the best Tactical Option
  - If your choice is clear/obvious (easy).
  - If there are many competing options, apply additional tools (Decision Tree Method).

Decision-Making

- Evaluating your Tactical Plan
  - “Monday Morning Quarterbacking” vs. Making The Right Call.
  - Check your biases at the door.
  - Trust, but verify. Your decision is only as good as the information you’re basing it on.
  - Someone to help you. Trust your intuition. “Sanity Check.” Does this make sense?

Decision-Making

- Communicate
  - Once you've made your decision, effectively communicate it.
  - Get buy-in by involving others in implementing your plan (Team Leaders). Set objective (your decision) and delegate the execution to your subordinate leaders.

Decision-Making

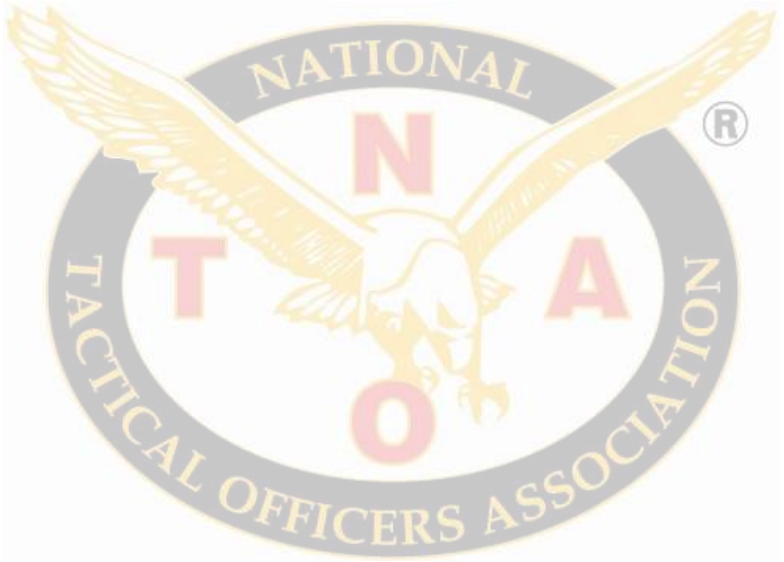
- What kind of decisions do you make in the course of your workday. . .
  - Administrative / In the office?
  - During planning?
  - During operations?
- What is at stake with each of these decisions?

Decision-Making

- What training have you received in regard to making decisions?
- Class Discussion: Decision-Making
  - What Process? What Information?
  - Intuitive or Instructive?

Philosophy of Decision-Making

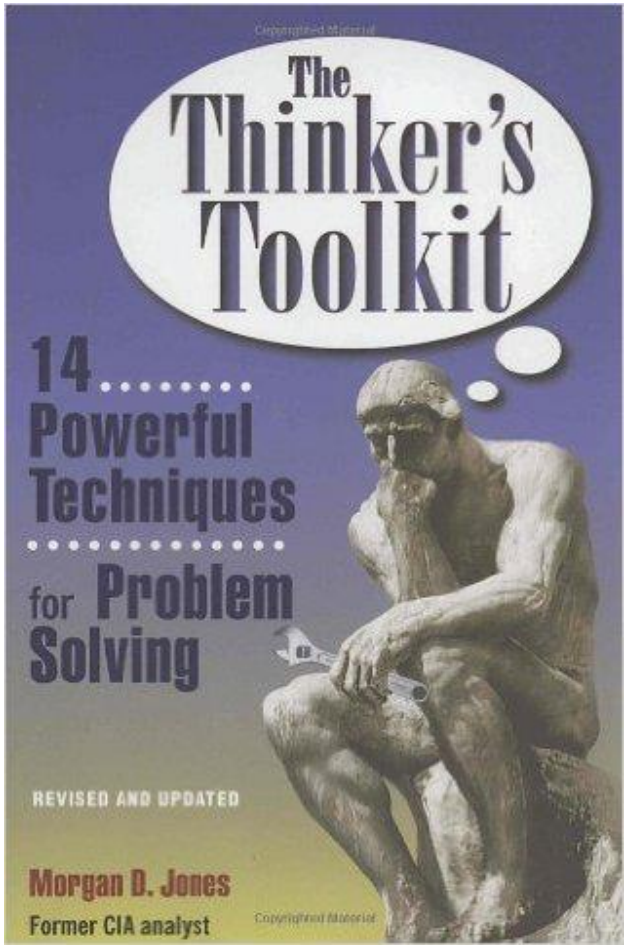
- What has impact on our decisions?
  - Office vs. operational decision differences.
  - Which has greater emotional impact? Why?
- What is the relationship between certainty and initiative during operational decisions? Why?

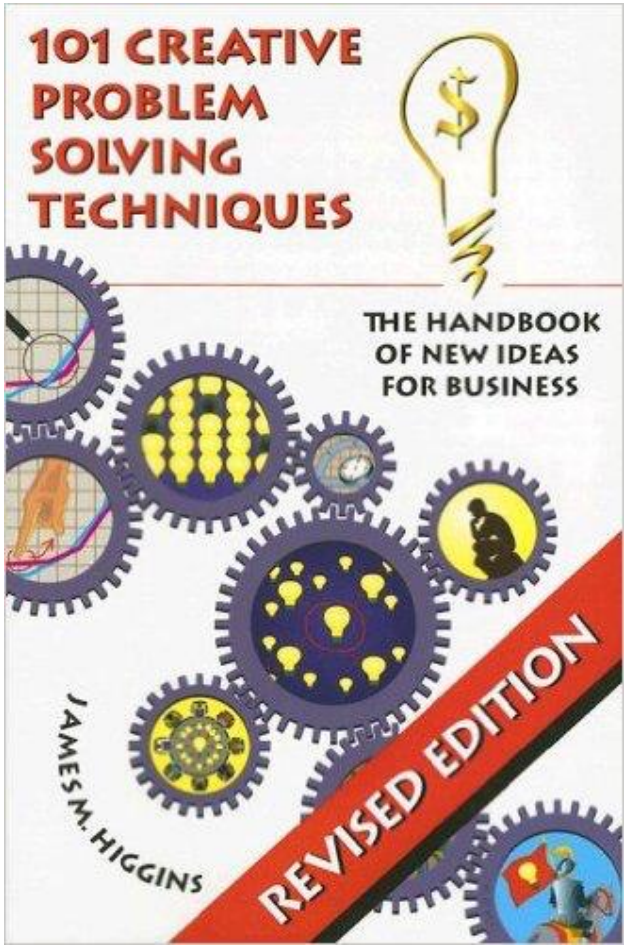


Section Three

HINDRANCES TO PROBLEM SOLVING TECHNIQUES

Reference Materials





Problem Solving

Historical Perspective

- Research what is out there to assist you!
- What normally precedes success?
- What is this process called?
- Do SWAT commanders use this process?

Problem Solving

Historical Perspective

- What tactical misjudgments have been made over the years, from which we have learned valuable lessons? (SWAT or Patrol)
  - Nationally?
  - Locally?
  - Personally?

Problem Solving

Negative Influences

- What can negatively impact our decision-making?
  - Emotions (Emotional Intelligence)
  - Mental Shortcuts (Good vs. Bad)
- How can these impact our planning and operational decisions?
- At this point…take 5 minutes and list some good and bad shortcuts based on your past experiences.

Problem Solving

Negative Influences

- Patterns
  - Situational Pattern – this pattern is formed as a result of a event that occurs or is formed from recognized past events.
  - Sequential Pattern – this pattern is formed from learned analysis of the results of previous actions.

Problem Solving

Negative Influences

- What sequential pattern occurred in your tactical experience?
  - Is the pattern important to you?
  - Why?
  - Can it be exploited? Think of how this applies.

Problem Solving

Negative Influences

- What happens when our mind is captured by a pattern?
  - What is the consequence of this?
    - Consider the aforementioned example, how can we be wrong about the sequence?
- What if we want to see a pattern where none exists?
  - What is the consequence of this?

Problem Solving

Negative Influencers

- Cause and Effect Pattern
  - Can you think of a Cause and Effect situation in a barricade operation?
  - During your incident, did your actions provide for a safe and successful resolution while identifying the cause and effect relationships of the incident?

Problem Solving

Negative Influencers

- Biases and Assumptions
  - Biases are unconscious beliefs that govern our behavior.
  - “It ain’t what you don’t know that will get you in trouble. It’s what you know for sure that just ain’t so.” Mark Twain
  - “We prefer to believe what we want to be true.” Sir Francis Bacon

Problem Solving

Negative Influencers

- Not all biases are bad.
  - We exist as a superior species because of these self protective biases.
- What are some good biases?
- What are some bad biases?
- Why can they be bad for problem solving?
  - How can this affect something as simple as an equipment purchase you are responsible for?
- Biases can be hidden, too.

Problem Solving

Negative Influencers

- Biases and Assumptions
  - Mindset. What are some tactical mindsets that have been challenged over the last decade?
  - Can biases, assumptions and mindset be changed?

Problem Solving

Negative Influencers

- Explanations
  - As humans, we need explanations for everything. It brings a sense of order as the human mind doesn't like disorder.
  - *Satisficing* refers to determining a satisfactory explanation. When we do this, we immediately cease to consider alternative explanations.
  - This too, is a principle cause of faulty analysis!
- You can't find good solutions to problems via faulty analysis!
- Overcome faulty info through proper attitude toward new information (new bias)!

Section Four

ANALYTICAL THINKING & INSIGHTS INTO PROBLEM SOLVING

Analytical Thinking

- Major Factors / Major Issues – provides us with direction for our thinking.
- Car Crash *(example)*
  - Factors (DUI, Reckless Driving, Speed, Mechanical Failure, etc.)
  - Issues (Who was driving each vehicle? How much did they drink? What they did with their vehicle that was reckless? etc.)

Analytical Thinking

- What are the major Factors that surround an unjustified shooting by a team member during a warrant service operation?
- How about the issues?
- By identifying the major factors and issues, it provides us direction for our thinking, but not as easy as it may seem.

Analytical Thinking

- Butterfly effect during examination of an incident.
  - Ancillary issues that cause you to act on something.
  - Always keep your notes during analysis!
- Two Fundamental modes of analysis:
  - Convergent and Divergent thinking.

Convergent and Divergent
THINKING

- Effective problem solving requires BOTH.
  - Divergent leads to alternatives. “Keeping an Open Mind.”
  - Convergent weeds out weaker alternatives. Moving toward one point.
- Difficult to do. We tend to focus on our point of view.
- “Paralysis by analysis” is an example of which type of thinking? Why?

Analytical Thinking

- Have you ever worked for a supervisor that always had an answer before looking into the issue? (Shoots from the Hip)
  - What type of thinking was he/she using?

“Co2 Problem”

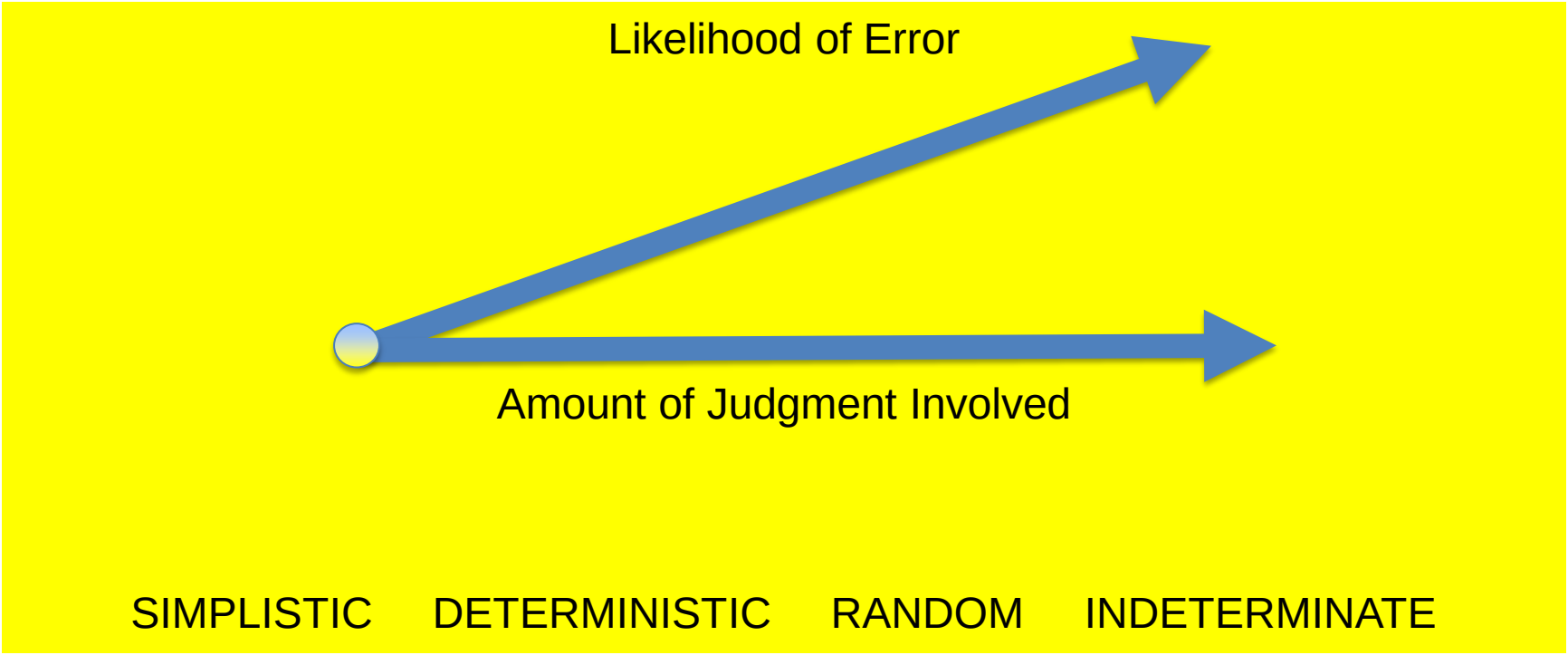
Taxonomy of Problem Types

- Simplistic (Who is your Chief?)
- Deterministic (What is the square root of 9?)
- Random (Who is going to be your next Chief? Only six candidates were interviewed.)

Taxonomy of Problem Types

- Indeterminate (What are the chances of an Israeli/Palestinian Peace Agreement?)

Taxonomy of Problem Types



Relate these to SWAT Issues

Sanity Check

- “Does this make sense?”
- If something doesn’t feel right, perhaps more analysis is necessary.
- Always end with a sanity check.

Section Five

PROBLEM SOLVING TECHNIQUES

Problem Solving Techniques

- Research and explore techniques that work for you.
- Techniques that will be presented:
  - 5 Why's Technique
  - Decision / Event Tree
  - Exploding Squares
  - Role Playing
  - Weighted Ranking
  - Hypothesis Testing

5 Why's Technique

- Used to uncover the core issue(s) of an event that occurred.
- Pick a simple event that ended in a sub-optimal outcome.
- Can be enhanced by using a tree.
  - Must develop each level fully before moving to next.
  - Each must be supported by evidence or that branch ends.

1. Why did coverage fail on side 1 level 1 opening 1?

Officer fell off of ladder.
2. Why did officer fall off of ladder?

5 Why's Example

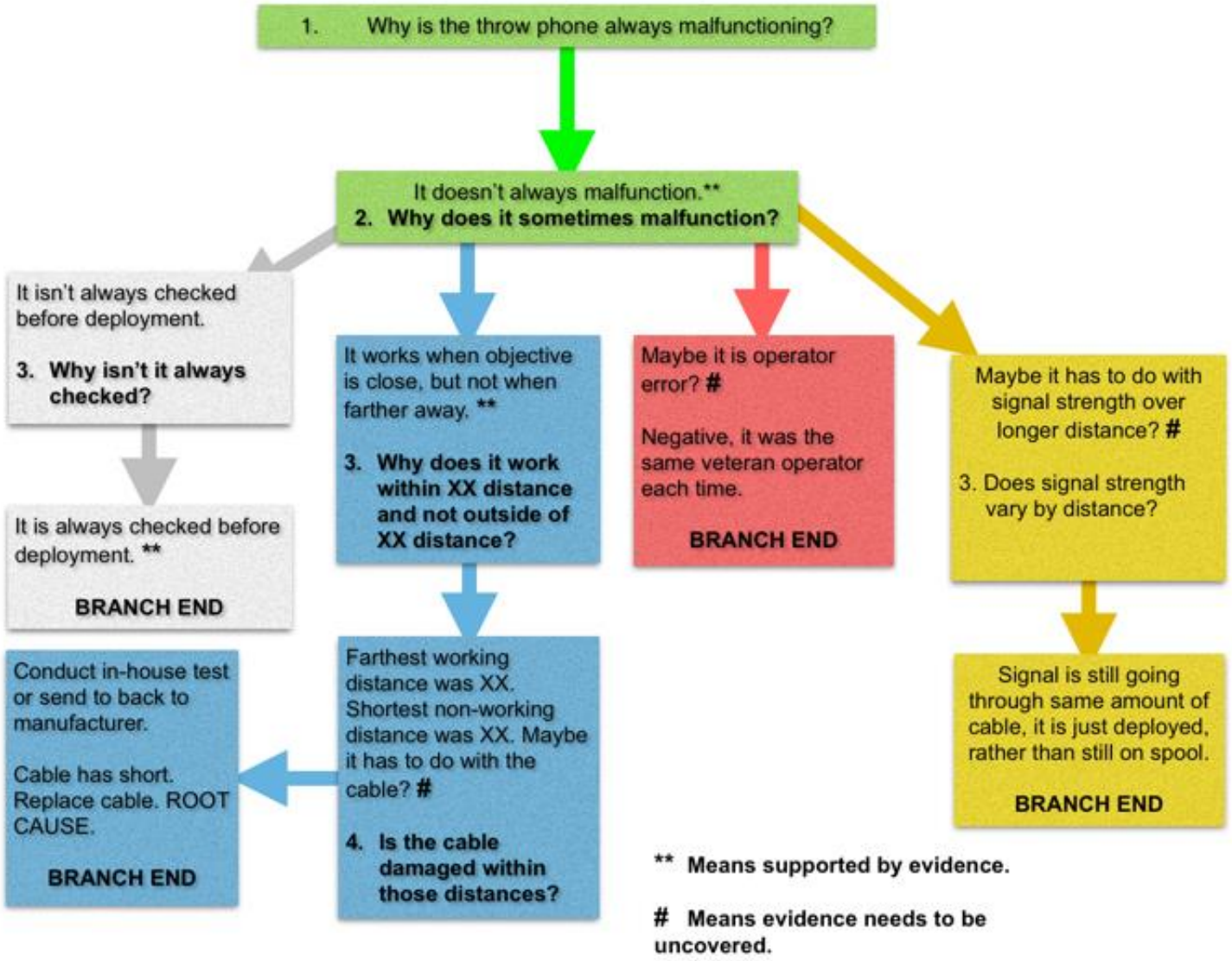
Ladder twisted.
3. Why did ladder twist?

Ladder was not set properly.
4. Why was ladder not set properly?

Setting officer failed to ensure points of contact.
5. Why did officer not ensure points of contact?

Ground was extremely uneven below window and this was not discovered during planning.

5 Why Example



Apply “5 Why’s Technique”

5 Why's Technique

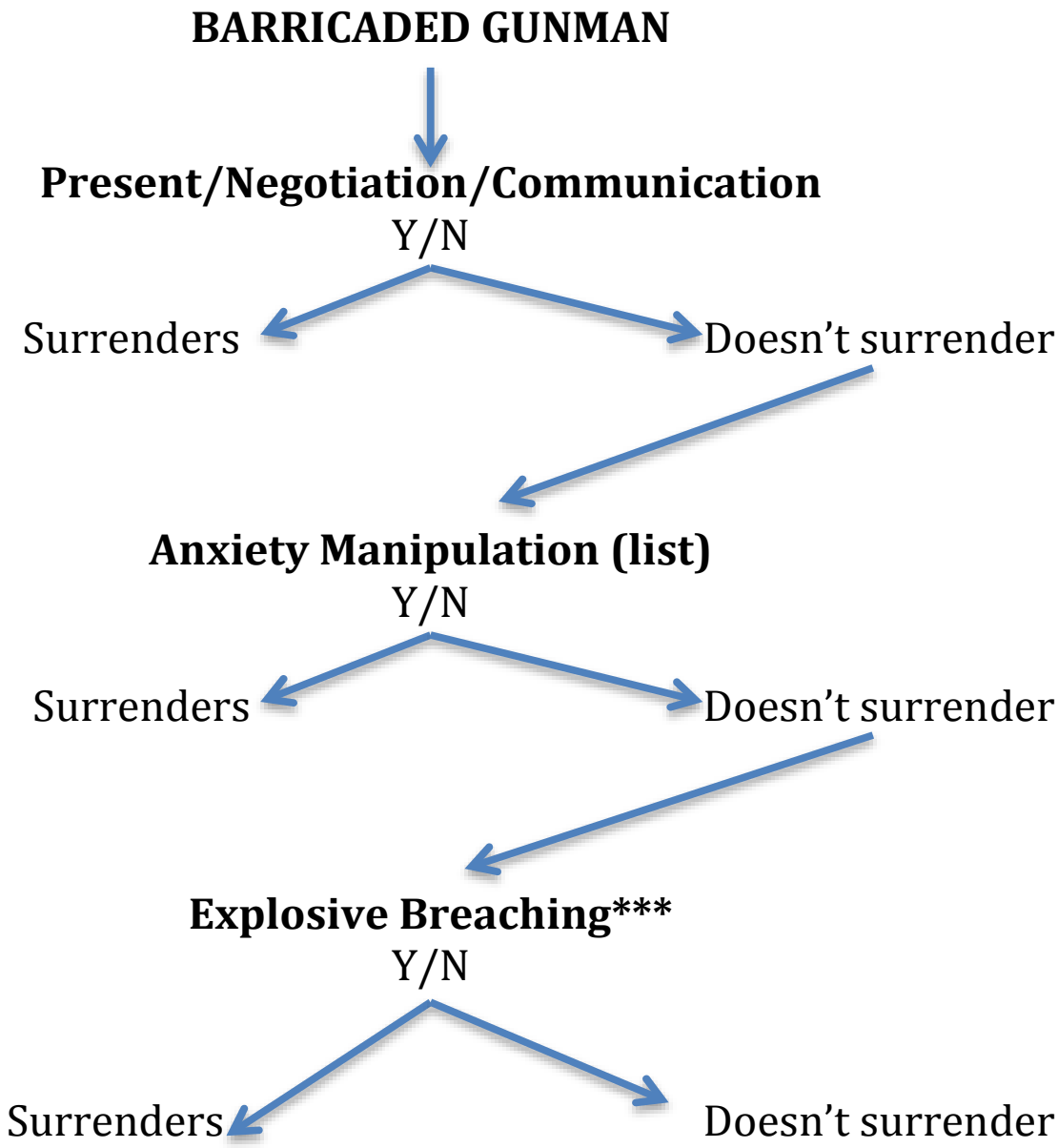
- What are some factors and issues?
- What biases and assumptions may have been present?
- Why did this occur? Apply the 5 Why's Technique.

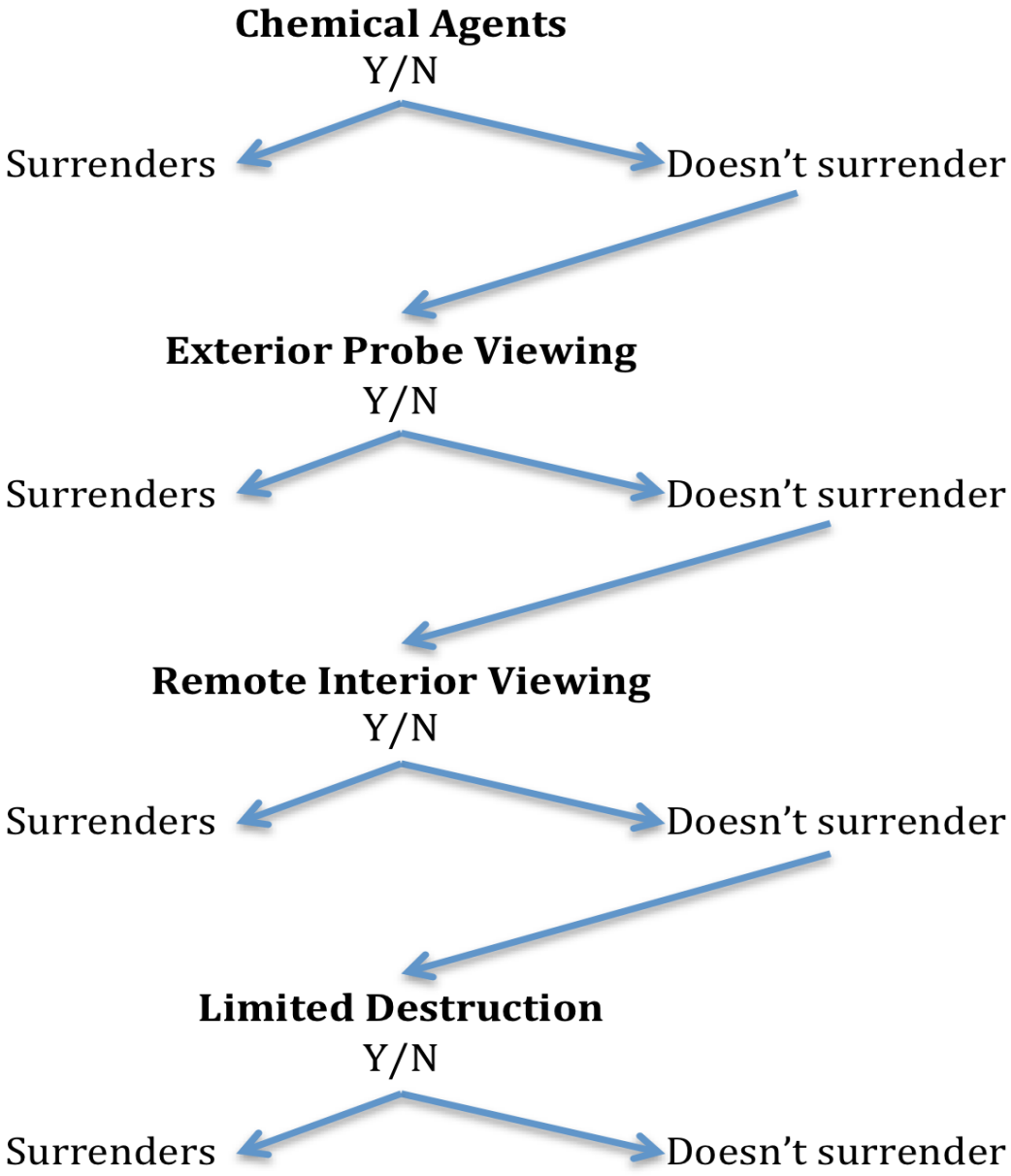
Decision / Event Tree

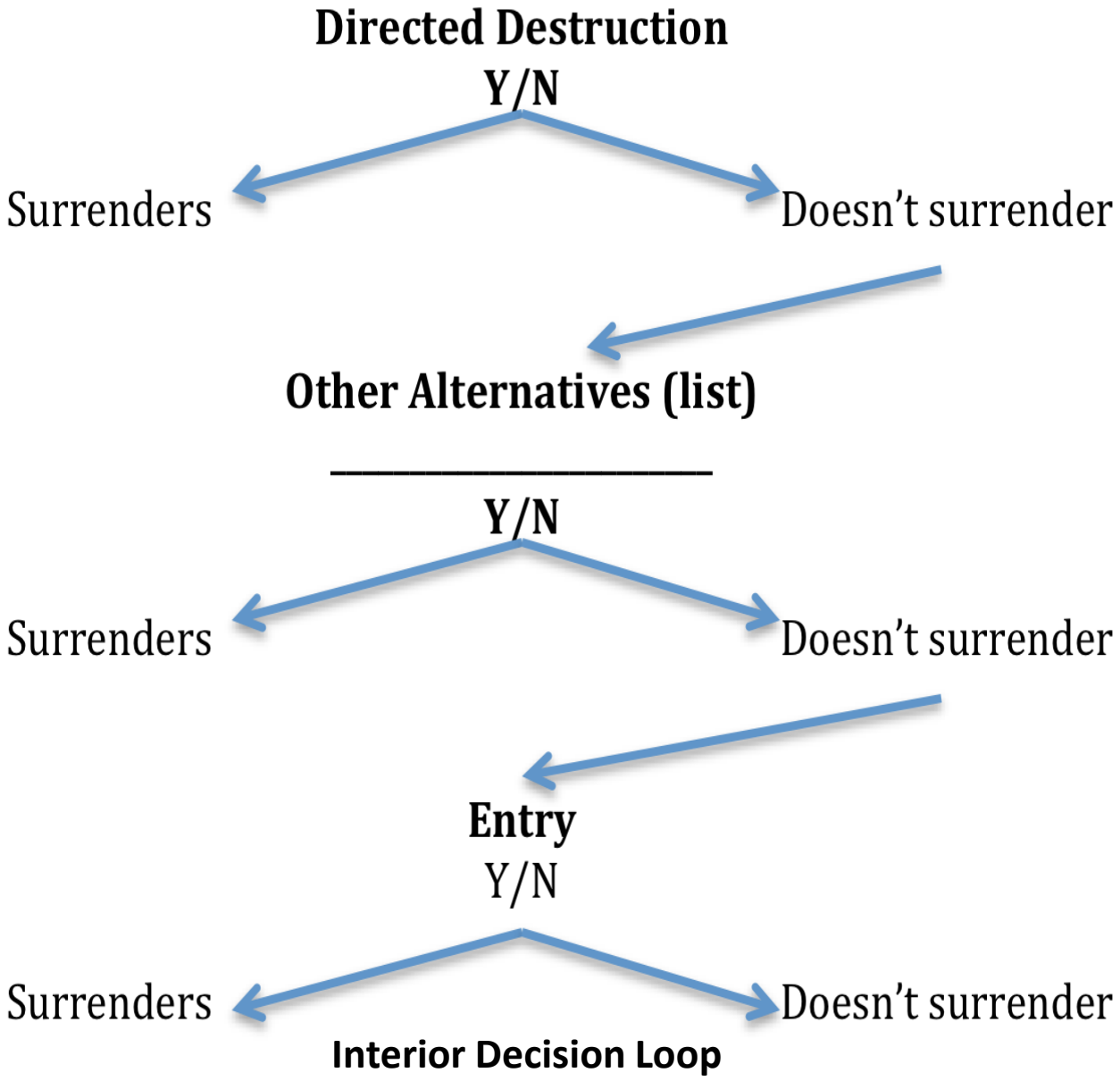
- Shows choices and outcomes.
- Helps you consider options, manage risk and deploy operational counteractions in a structured way.
- Can be used as a skeleton template with adjustments for each operation. No two operations are the same.
- “Always do a sanity check at the end.”

Decision / Event Tree

- Designed to examine mutually exclusive options to forecast outcomes.
- Think flowchart. . .
- Exercise – Work through tactical option process of a barricade.

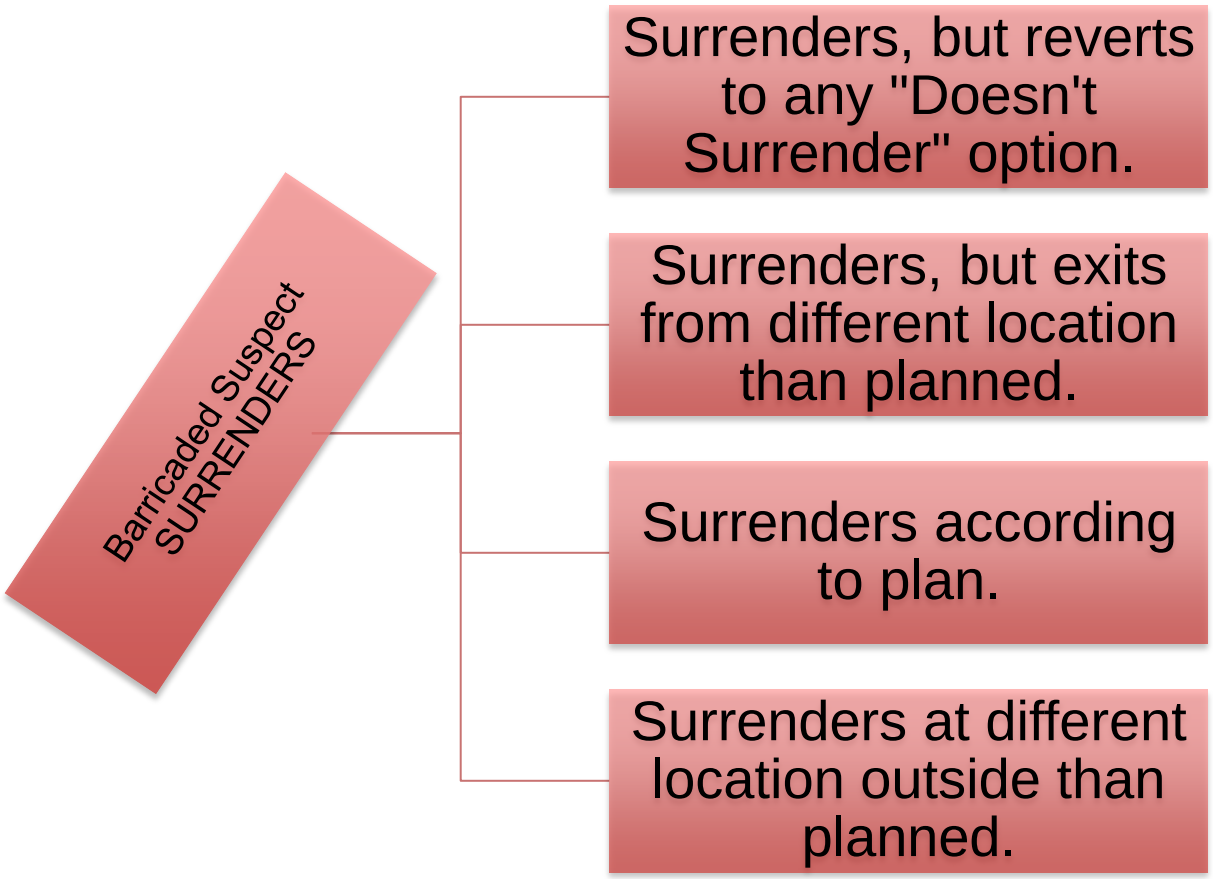

BARRICADED GUNMAN
Present/Negotiation/Communication
Y/N
Surrenders
Doesn't surrender
Anxiety Manipulation (list)
Y/N
Surrenders
Doesn't surrender
Explosive Breaching***
Y/N
Surrenders
Doesn't surrender


Chemical Agents
Y/N
Surrenders
Doesn't surrender
Exterior Probe Viewing
Y/N
Surrenders
Doesn't surrender
Remote Interior Viewing
Y/N
Surrenders
Doesn't surrender
Limited Destruction
Y/N
Surrenders
Doesn't surrender


Directed Destruction
Y/N
Surrenders
Doesn't surrender
Other Alternatives (list)
Y/N
Surrenders
Doesn't surrender
Entry
Y/N
Surrenders
Doesn't surrender
Interior Decision Loop

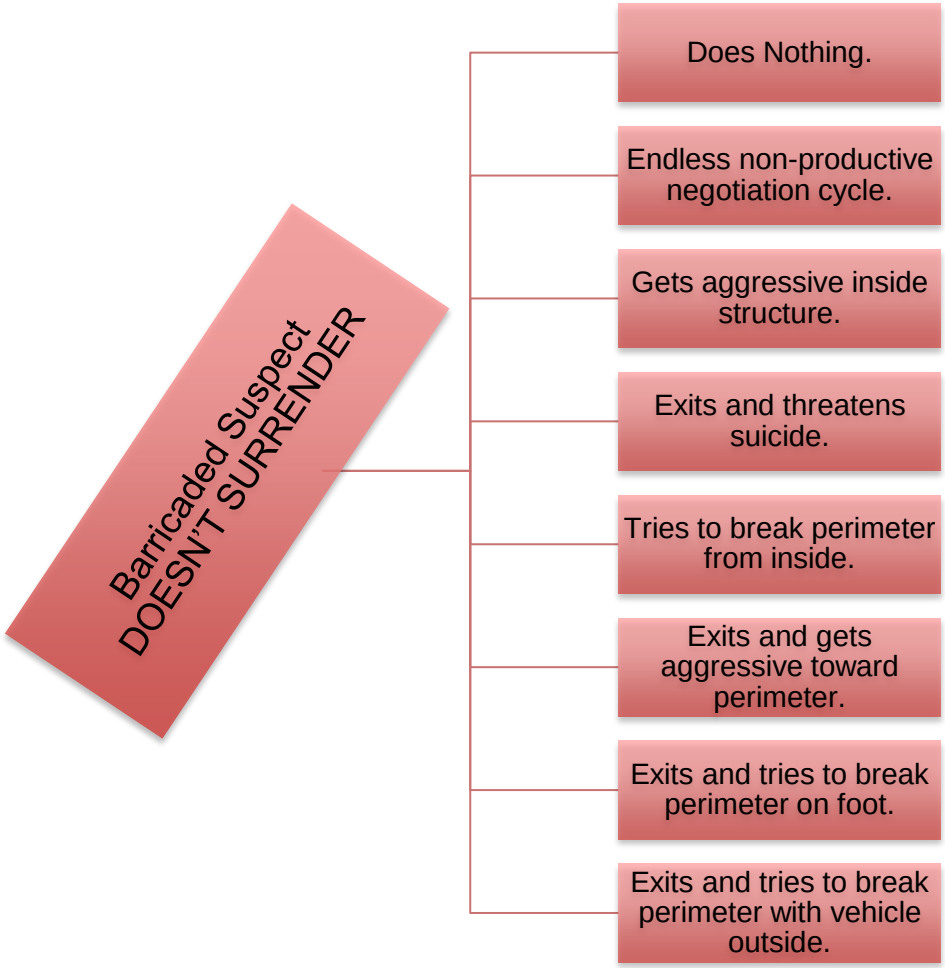
Decision / Event Tree

BARRICADED SUSPECT RESPONSE OPTIONS



Decision / Event Tree

BARRICADED SUSPECT RESPONSE OPTIONS



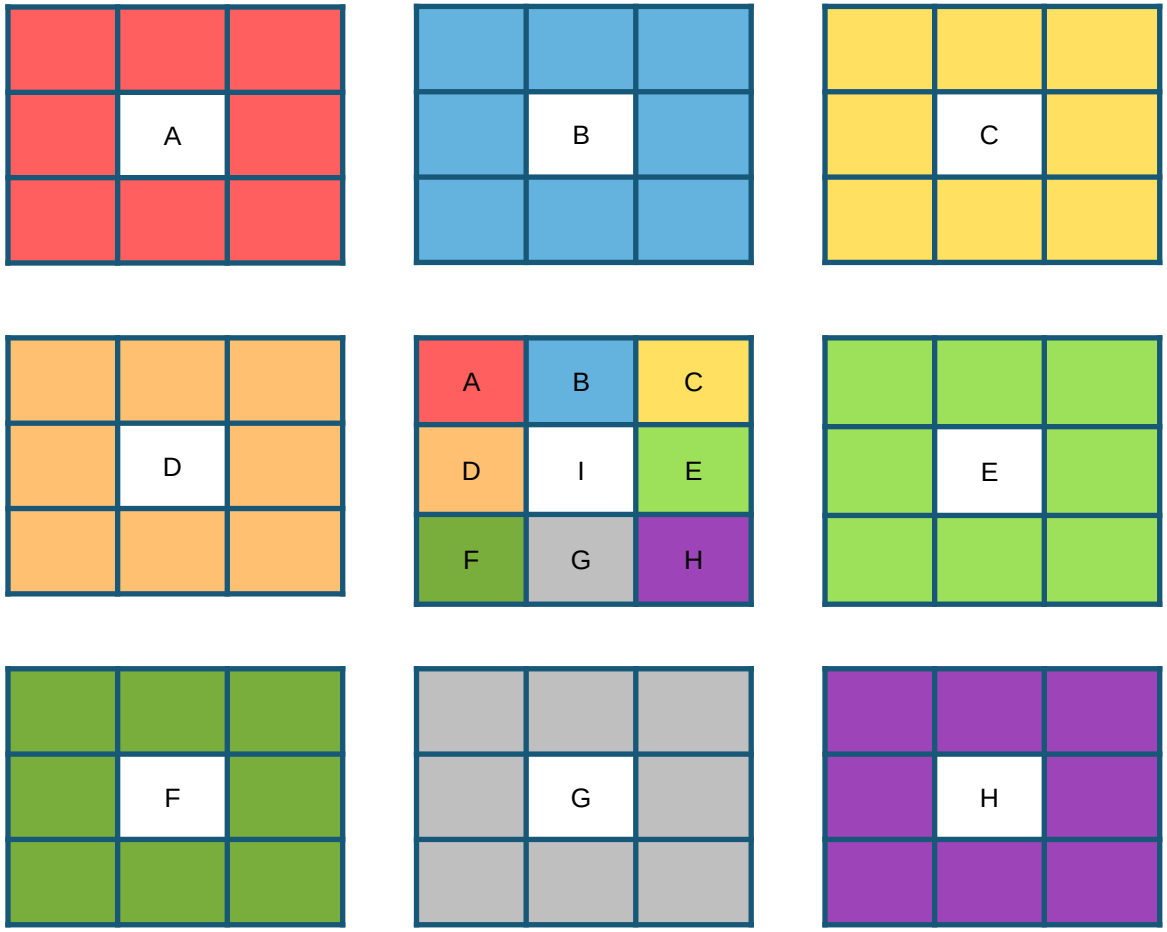
Exploding Squares

LOTUS BLOSSOM TECHNIQUE

- Business model to develop alternatives to problems.
- Also lends itself to developing checklists.
- After the first explosion is filled in, take one of the squares and make it the center of the next explosion and continue developing alternatives.

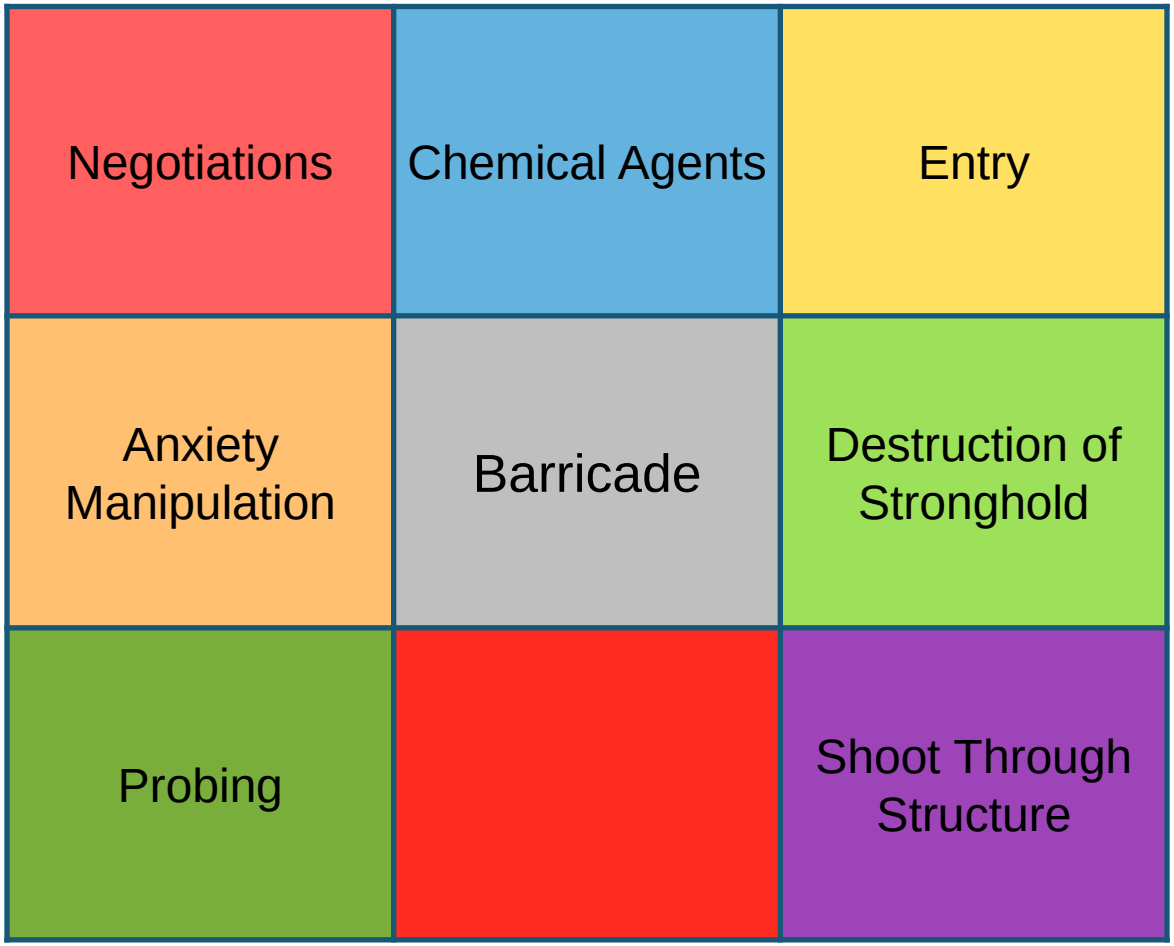
Exploding Squares

LOTUS BLOSSOM TECHNIQUE



Exploding Squares

LOTUS BLOSSOM TECHNIQUE



Exploding Squares

LOTUS BLOSSOM TECHNIQUE

Negotiator	Third Party Intermediary	Taped Message
Land Line	Negotiations	Cell Phone
Throw Phone	Telephone Device for the Deaf (TDD)	Texting

Exploding Squares

LOTUS BLOSSOM TECHNIQUE

Power Liquid Burner	CS or OC	Plan for Use
Warnings	Chemical Agents	Area Denial
Openings for Insertion	Tactical Considerations	Hard and Heavy

Exploding Squares

LOTUS BLOSSOM TECHNIQUE

Breach and Delay	Covert	Dynamic
Explosive Breach	Entry	Limited Penetration
Window Entry		

Exploding Squares

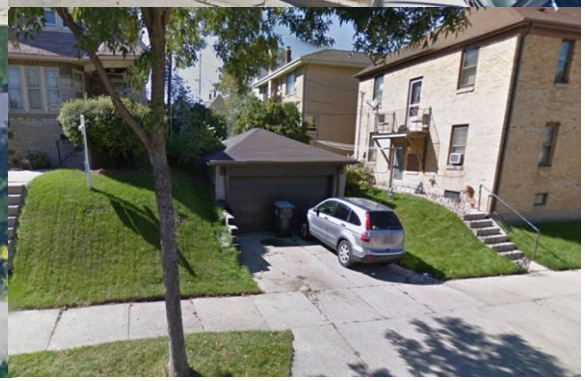
LOTUS BLOSSOM TECHNIQUE

- This can be used for administrative issues too.
- Exercise: Examine subject alternatives to insertion of chemical agents. Apply using Exploding Squares.

Role Playing

- Used by business to look at things as a consumer, manufacturer, salesman, etc.
- Looking at the problem from someone else's perspective.
- How can this be related to something that we do?
  - Operationally?
  - Administratively?


W Greenfield Ave



Weighted Ranking

- Optimizes the best choice among many options.
- Instinctive Ranking, Paired Ranking & Weighted Paired Ranking.
- Maybe the #1 choice will end up the same, but you are on firmer ground in your position because you eliminated biases as much as possible.

Weighted Ranking

- Great for equipment purchases.
  - If top choice is not available (budgetary reason) the middle choices are now equitably ranked.
- Where else can this method be used?

	Criteria						
Items to be Ranked	Durability 50%	Comfort 30%	Cost 20%	Total Votes	Final Ranking	Paired Ranking	Instinctive Ranking
Vertex	3 0.5 x 3 = 1.5	2 .3 x 2 = .6	2 0.2 x 2 = 0.4	1.5 + 0.6 + 0.4 = 2.0	5	2 Votes 4	3
5.11	0 0.5 x 0 = 0	0 0.3 x 0 = 0	3 0.2 x 3 = 6	0 + 0 + 0.6 = 0.6	6	0 Votes 6	6
Propper	1 0.5 x 1 = 0.5	1 0.3 x 1 = 0.3	4 0.2 x 4 = 0.8	0.5 + 0.9 + 0.8 = 2.2	4	1 Vote 5	5
Tru-Spec	2 0.5 x 2 = 1	3 0.3 x 3 = 0.9	5 0.2 x 5 = 1	1 + 0.9 + 1 = 2.9	3	3 Votes 3	4
Crye Precision	5 0.5 x 5 = 2.5	5 0.3 x 5 = 1.5	0 0.2 x 0 = 0	2.5 + 1.5 + 0 = 4.0	1	6 Votes 1	1
Arc'Teryx	4 0.5 x 4 = 2	4 0.3 x 4 = 1.2	1 0.2 x 1 = 0.2	2 + 1.2 + 0.2 = 3.4	2	4 Votes 2	2

Hypothesis Testing

- Developed by two CIA analysts.
- Actually ideal for testing direction of criminal investigations.
  - Are police ever wrong?
- Hypothesis – declarative statement that has not been established as true.
- We claim the truth of it through supportive evidence.

Hypothesis Testing

- Many hypothesis are believed to be true until proven false.
  - So, we disprove a hypothesis with evidence.
- When we find evidence we try to establish validity by answering four questions:
  - Who or what was the source?
  - How did the source obtain the information?
  - Is the source reliable?
  - Is the information plausible?

Hypothesis Testing

- Ranks competing hypothesis by the degree to which relevant evidence is inconsistent.
  - Has anyone gotten out of jail based upon inconsistent evidence?
- Favored hypothesis is the one with the least inconsistent evidence, not the one with the most consistent evidence.

Hypothesis Testing

- Refer to the charts to explain the negligent discharge example.

	Hypotheses					
Evidence	Negligent Discharge	Poor Threat Assessment	NFDD Affected Assessment	Speed of Movement Affected Assessment	Poor Illumination Affected Assessment	Subject was a Lethal Threat
Officer was stationary and issued verbal commands before engaging.	C	C	C	I	C	C
Weapon light was functioning properly.	C	C	C	C	I	C
NFDD deployed and deflagrated prior to officer going stationary.	C	C	I	C	C	C
Officer states he saw weapon in hand.	C	C	C	C	C	C
Officer states he fired on a direct threat.	I	C	C	C	C	C
No weapon found in bedroom.	C	C	C	C	C	I
Other officer at door did not fire.	C	C	C	C	C	I*

	Hypotheses					
Evidence	Negligent Discharge	Poor Threat Assessment	NFDD Affected Assessment	Speed of Movement Affected Assessment	Poor Illumination Affected Assessment	Subject was a Lethal Threat
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Weapon light was functioning properly.	C	C	C	C	I	C
NFDD deployed and deflagrated prior to officer going stationary.	C	C	I	C	C	C
Officer states he saw weapon in hand.	C	C	C	C	C	C
Officer states he fired on a direct threat.	I	C	C	C	C	C
No weapon found in bedroom.	C	C	C	C	C	I
Other officer at door did not fire.	C	C	C	C	C	I*

Section Six

GROUP EXERCISES

Group Exercises

Problem #1

Chemical agents have failed to dislodge a suspect the last four times it was utilized.

Group Exercises

Problem #2 (Two-Part)

How can we maximize our training hours each month? Prioritize your choices.

Group Exercises

Problem #3

Your team isn't being called when it should be.

- Identify Major Factors and Issues.
- Determine the root cause(s).

Group Exercises

Problem #4

How can we reduce the time period from notification of a warrant service to actual service (assume time to target site is always equal).

Group Exercises

Problem #5

Barricade on a house boat out on the river. Jet ski alongside.

- Analyze escape options and countermeasures.

Group Exercises

Problem #6

Team member missing callouts. Analyze possible root cause(s) and prepare for meeting with role play.

Group Exercises

Problem #7

Instructor choice or problem offered by class attendee.

Questions?