

# **How we decide**

**Brain wiring 101.**

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**Fire Chief (ret.)**

**Situational Awareness Matters!**

# Definition of a decision:

A choice made from at least  
two or more alternatives.

Sort of...

# Effortful Decisions

Conscious Decision Making

# Automatic Decisions

Unconscious Decision Making

**Education and training  
develops both  
decision making abilities.**

**Two types of memory**

Classroom Education

Cognitive Memory

# Hands-on Training

**Muscle Memory**

# Long Term Memory





Fact

The capacity of long-term memory:

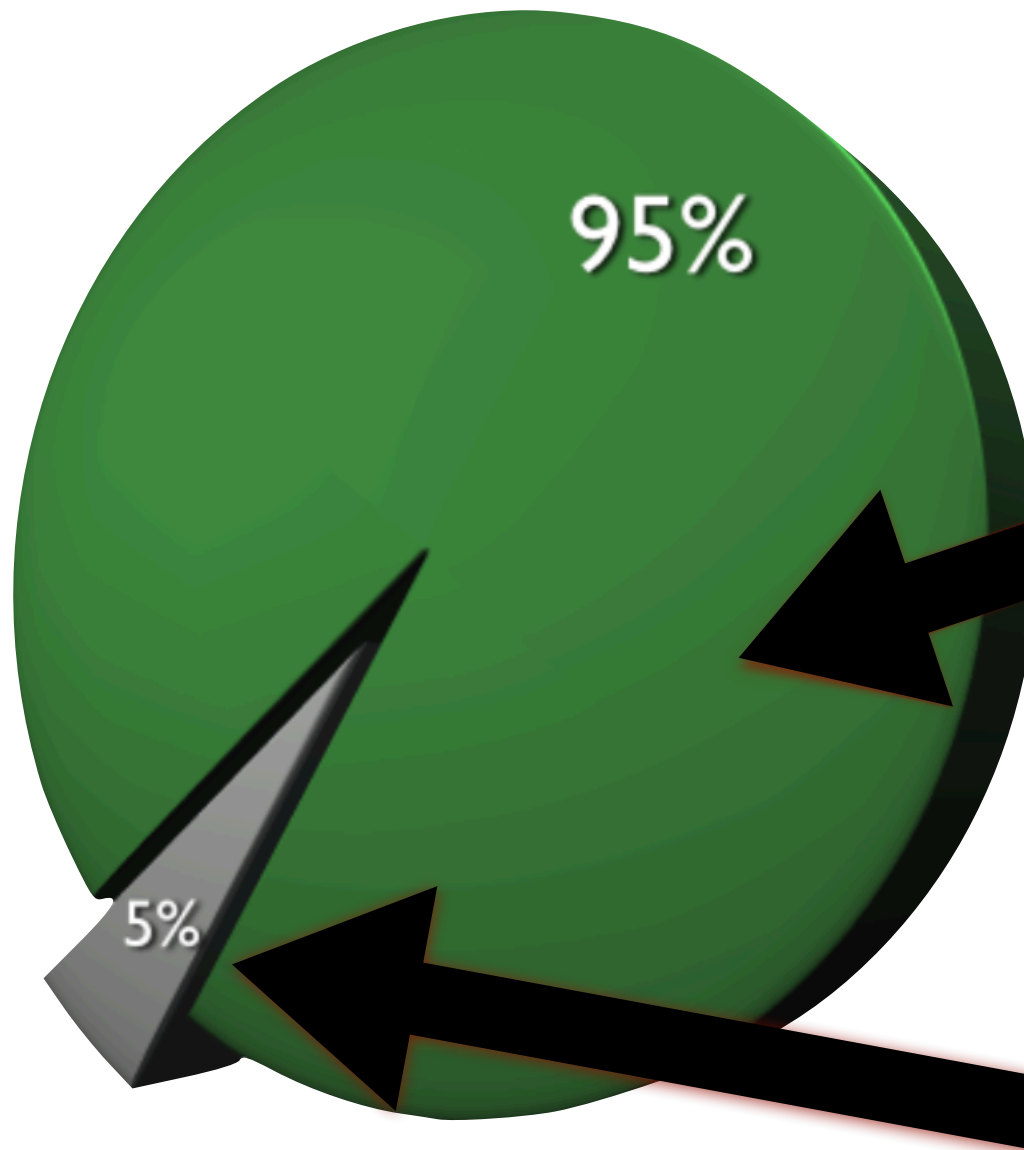
10 times all the information  
on the Internet.



Fact

You can only consciously access:

5% of your long-term  
memory data base.



**Unconscious  
Decisions**

**“Automatic”**

**Conscious  
Decisions**

**“Effortful”**

# Memory Recall

Can trigger  
the 6th sense.

# Intuition

Knowing...

Without knowing...

How you  
know.

How do we know...

If we don't know...

How we  
know?

Hair stands up on the  
back of your neck.

Voices in your  
head talk to you.

Impending feeling  
of doom.

# Gut Feeling



# **Your Emotion-Based Red Flag Warning System**

*Intuition*

**How to improve:**

**Memory**

**Recall**

**Physical performance**

**Decision making**

# Context-dependent Decision Making

The background of the slide is white with a network of black, jagged lines resembling cracks in a surface. In the center, the word "STRESS" is written in large, bold, red, 3D block letters. The letters have a slight shadow and are positioned so that the cracks appear to pass through them.

# **STRESS**

**Inoculation**

Repetition

Repetition

Repetition

# Repetition programs the brain



Automatic actions:

Subconscious  
decision making.

# Repetition programs the brain



Performing UNDESIRABLE  
actions automatically:

Subconscious  
decision making.

# You are a...

Stress can trigger automatic  
(subconscious) decision making.



**An example of how:**  
**Training Routines**  
**+ Muscle Memory**  
**+ Stress**

**Can trigger an automatic  
(subconscious) decision.**



# Multi-Sensory Stimulation



**Learning from failure  
and consequence.**

**I've learned more from the  
mistakes I've made in life than  
the things I've done right.**

Replicate the decision making of LODD events in training exercises.

When an officer says:  
*“This doesn’t feel right!”*

You are developing intuition.  
Their brain is learning what NOT to do.

# Decision Making Research Project

I surveyed firefighters and fire officers  
about their situational awareness and  
decision making training.

The results were very telling.



**What % of the respondents  
had received more  
than 2 hours of  
situational awareness training  
in their tenure on the fire  
department?**

**5%**





Patient Assessment Decisions

Scene Safe.

BSI.

(Body Substance Isolation)

**What % of EMTs were  
taught to say “Scene Safe”  
prior to beginning their  
patient assessment?**

**98%**

**What % of EMTs have  
practiced how to make sure  
a scene is safe prior to starting  
a patient assessment?**

**7%**

**Most were police officers or had a police officer  
on their department who taught this.**

**If you arrived at a structure fire**

**and do nothing but watch...**

**You will likely observe 2 things:**

# Flashover

**Situational Awareness Matters! [www. SAMatters.com](http://www.SAMatters.com)**

# Collapse

**Situational Awareness Matters! [www. SAMatters.com](http://www.SAMatters.com)**



Every building on fire should  
be assessed for the potential  
to flashover and/or collapse  
as part of an officer's  
“Go” or “No Go”  
decision making process.

Concerns for flashover should be on every crew member's mind as part of the “Go” or “No Go” decision making process at every structure fire.

What % of officers admitted  
having thoughts or concerns  
about **flashover** prior to  
making a decision to enter  
a pre-fabricated burn building?

**3%**

Does not include training in a flashover simulator.

The thought of a collapse occurring should be on every crew member's mind as part of their “Go” or “No Go” decision making at every structure fire.

What % of officers admitted  
having thoughts or concerns  
about **collapse** prior to  
making a decision to enter  
a pre-fabricated burn building?

**9%**

5% of the concerns were based on the  
deteriorated condition of the burn building.

**Thoughts & concerns about  
flashover and collapse...**

**Should be part of the  
decision making script  
programmed into the  
mind of the firefighters  
during training.**

# Size-up

**[barring obstructions]**

**A 360 size-up should be completed prior to making a decision to enter a structure on fire.**



What % of officers playing the  
role of first-arriving admitted  
to completing a  
360 size-up for  
EVERY evolution at a  
pre-fabricated burn building?

**11%**

What % of officers playing the  
role of first-arriving admitted  
to completing a  
360 size-up on EVERY  
evolution when using the fire  
station for evolutions?

**< 1%**

# Hose line selection

**The decision for hose line selection should be made after completing an assessment of fire conditions.**

**What % of fire officers  
admitted that during live burn  
evolutions the hose line selection  
was made prior to the start of  
the training evolution?**

**96%**

**What % of fire officers  
admitted that prior to live burn  
evolutions starting the attack  
lines were already laid  
out on the ground?**

**(Pulling the line was not part of the evolution)**

**94%**

# Go or No Go

**“No go” should  
always be an tactical  
decision option.**



**What % of fire officers  
admitted that during live burn  
evolutions they practiced  
No-Go decision making?**

**<1%**

**Not just discussed no-go. But actually did not  
make entry into the burn building.**

**What % of fire officers  
admitted the decision  
to “go” was a given  
(no-go was never considered)?**

**99%**

**Including the “go” decision being made by the  
instructor (not the company officer).**

**Training the process of  
decision making**

**Using the  
Socratic Method of Teaching**



**Tactical decisions  
should be based on  
quantity and quality  
of staffing.**

# Staffing during live burn scenarios.

**What % of fire officers  
admitted the size of the crews  
during training was based on  
how many were available at the  
training session, not the realistic  
numbers at emergency responses?**

**81%**

**The number of firefighters assigned to a task during training should match the number of firefighters who will be performing the task at real incidents.**



# Ventilation

# Is this a learned behavior?

# Vertical ventilation prop

**What % of firefighters  
admitted to practicing  
vertical ventilation on a  
prop while not wearing full  
turnout gear and an SCBA?**

**86%**

**What % of firefighters  
admitted to making a no-go  
decision while practicing  
vertical ventilation on a prop?**

**0%**

**Not just discussed no-go.  
But actually did not go on the roof prop.**



**While on a roof  
a crew should  
“sound the roof”  
to ensure structural integrity.**

**What % of firefighters  
admitted to learning how to  
“sound the roof” as part of their  
basic firefighter training?**

**100%**





**Fire conditions and  
building construction  
should be assessed as part of  
the decision to go (or not-go)  
to the roof.**

**What % of firefighters  
admitted to assessing building  
construction and fire conditions  
as part of their go or not-go to  
the roof decision while  
using a roof prop?**

**0%**



# How do we explain this?

Bravado?

Robotic Action?

Following Orders?

Habits?

Culture?

Complacency?

Decision Making Training?

Or lack of



**“Engine 2 is at the front door,  
we have heavy, thick, black,  
hot smoke banked all the way  
down to the floor with zero visibility.”**

**Is this Go?**

**Or No Go?**

# Blind search



**What % of firefighters  
admitted to participating in  
blind-search drills as part  
of their training regimen.**

**100%**

**What % of firefighters  
admitted to practicing  
no-go decisions  
during blinded evolutions?**

**< 1%**

**What % of firefighters  
admitted they have practiced  
how to make a decision to  
abandon a search and leave the  
victim behind because conditions  
were rapidly deteriorating?**

**< 1%**

Is it possible to  
teach responders  
how to be better  
decision makers?

YES!

Every hands-on training  
evolution should teaching  
and practicing:

Cognitive (thinking skills)

and

Kinesthetic (movement skills)

and

Decision making skills.

Step 1: Size-up

Step 2: Think

Step 3: Decide

Step 4: Predict

Step 5: Act

AT&T Wi-Fi

7:28 PM

100%

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**Helping you see the bad things coming...**  
**in time to avoid bad outcomes.**