



*Why Do Good Pilots*

**MAKE BAD DECISIONS?**

Richard McSpadden | Senior Vice President | AOPA Air Safety Institute

THE

# MISSION OF AOPA



**83**

YEARS YOUNG

OUR

**VISION &  
PURPOSE**

HAVE NEVER WAVERED

WE ARE A

**COMMUNITY**

THAT SHARES A SINGLE  
AND POWERFUL

**PASSION**

AND EVERYTHING WE DO  
IS TO PROTECT THE

**FREEDOM TO FLY**



**YOU CAN FLY**  
AOPA FOUNDATION

AOPA created ***You Can Fly*** to get people flying and keep them flying!

- Rusty Pilots = 10,000+ back flying
- Flying Clubs = 197 up and flying
- High School Curriculum
  - 10K students; 44 states; \$1M scholarships

# Making general aviation safer one pilot at a time

# 2021

## SAFEST YEAR ON RECORD!

20% YEAR-OVER-YEAR IMPROVEMENT FROM 2020

# 8,600,000

TOTAL ASI PARTICIPATION



AOPA AIR SAFETY  
INSTITUTE

ACCIDENT CASE STUDIES

“EARLY ANALYSIS” VIDEOS

“THERE I WAS” PODCASTS

RESEARCH, ANALYSIS, & REPORTS

MONTHLY WEBINARS

CFI REFRESHER COURSE

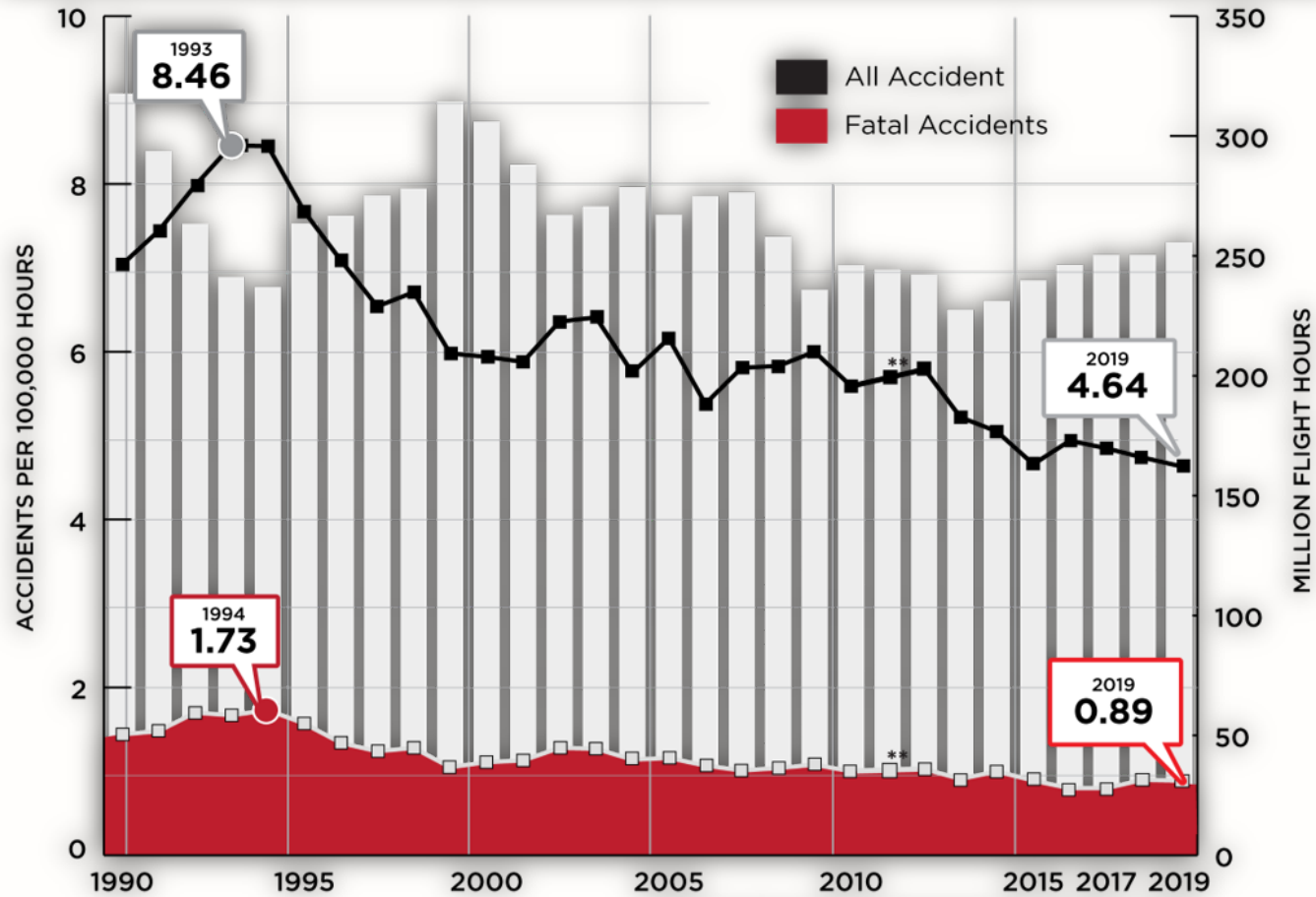
AND MUCH MORE!





# State of GA Safety

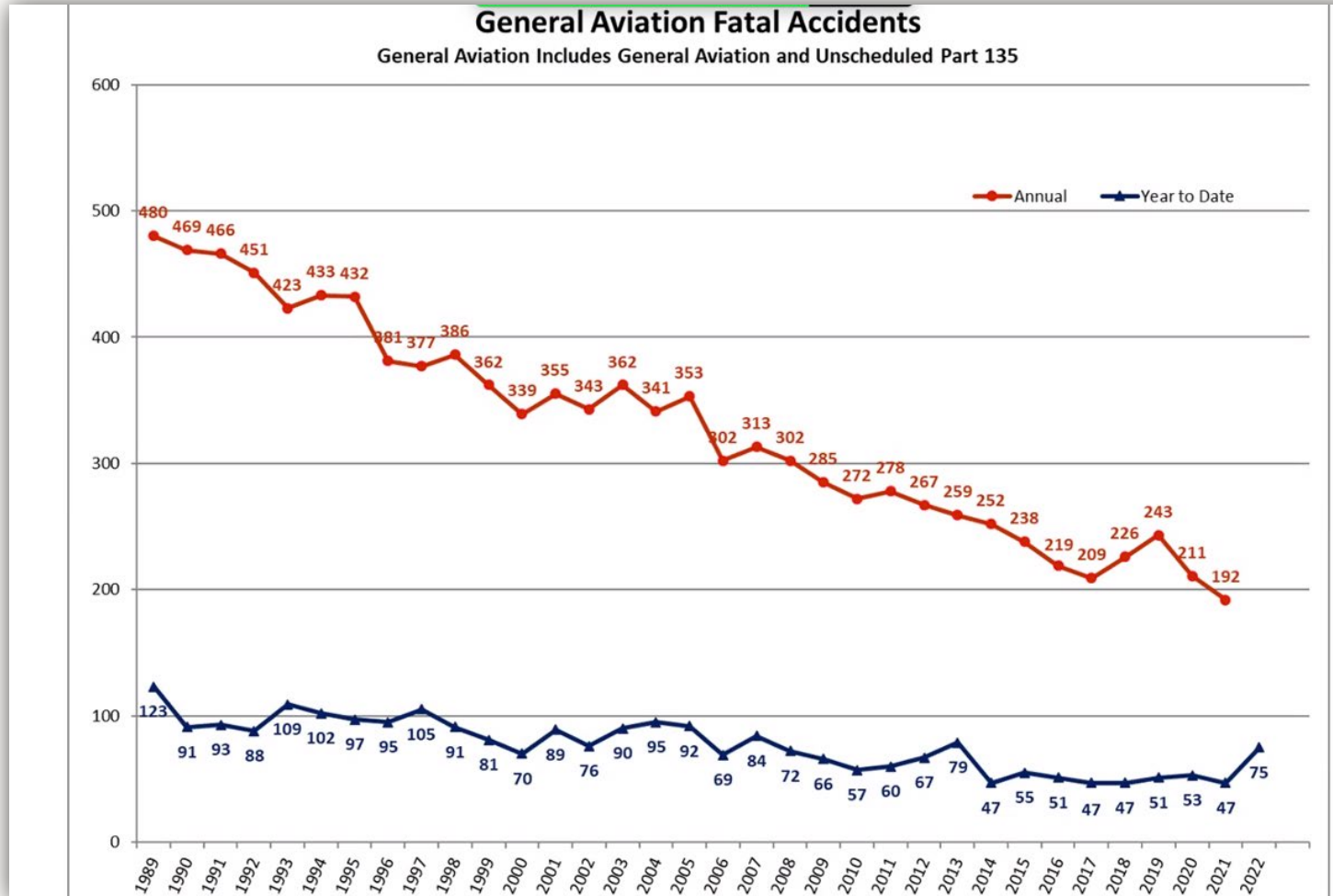
**Safety Performance GA Accident Rate**  
Accidents Per 100,000 Flight Hours, 1990-2019



\*\* 2011 Data missing, based on estimated data from year before and after

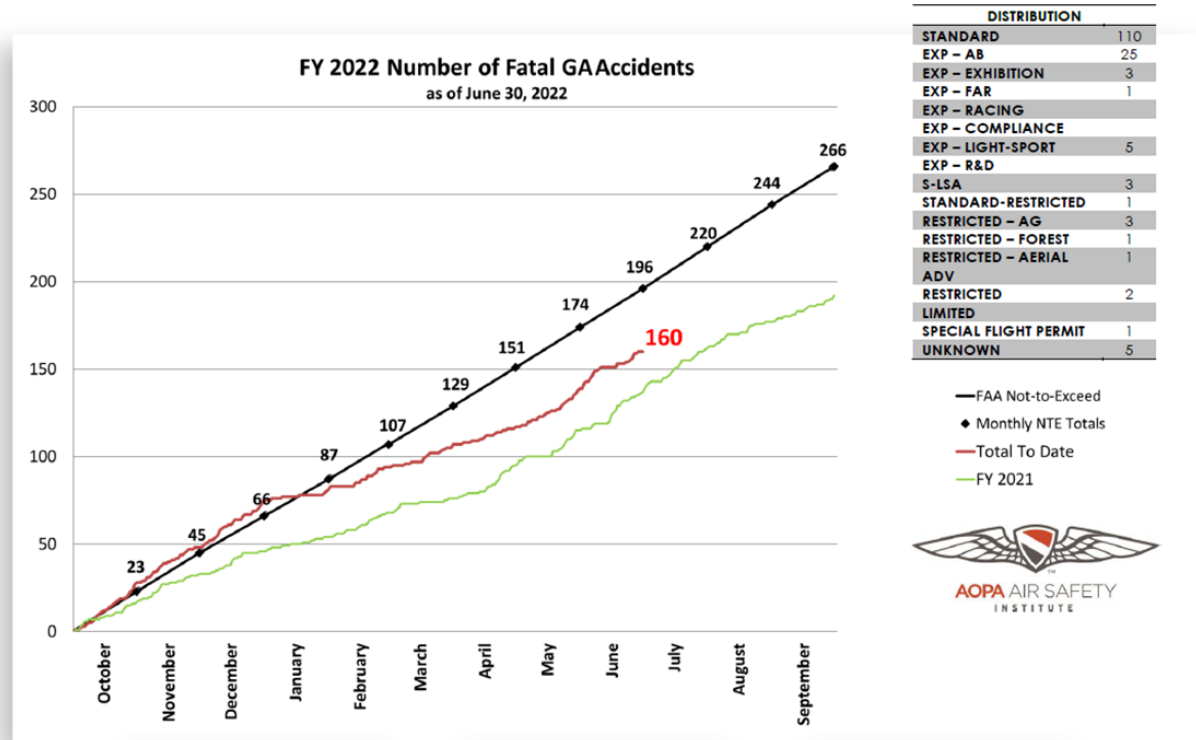
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# GA Safety Performance Since 1989



# GA Safety Performance to Date FY 2022

## GA Fatal Accident Dashboard



Over/Under for June  
**-1**

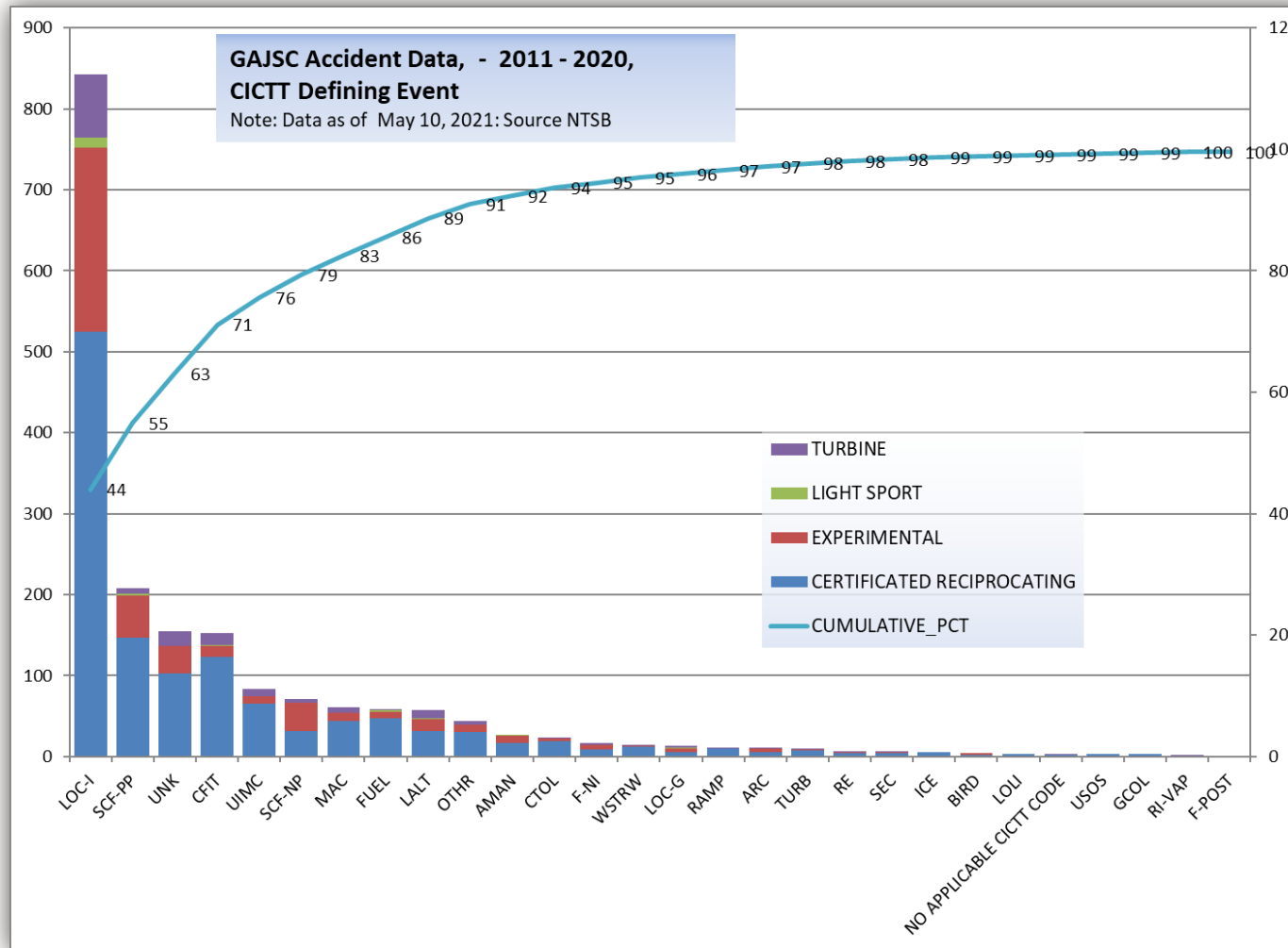
Over/Under for Year  
**-36**

Total to Date vs. FY2021  
**+23**

LIVE



# Top Accident Causes in GA





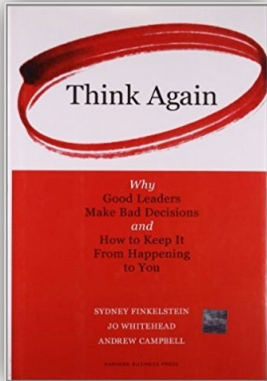


## For Today's Discussion

# Aeronautical Decision Making:

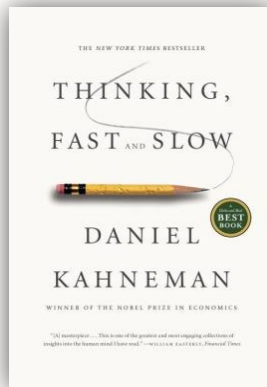
*Why do good pilots make bad decisions?*

# The Reality is



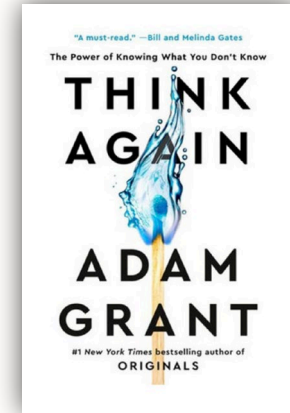
*“Important decisions made by intelligent, responsible people with the best information and intentions are sometimes hopelessly flawed.”*

“Think Again,” Campbell, Whitehead, Finkelstein; HBR, 2008



*“Many people are overconfident, prone to place too much faith in their intuition.”*

“Thinking, Fast and Slow,” Farrar, Straus and Giroux; 2011



*“Being good at thinking, can make you worse at rethinking”*

Adam Grant

## Tragedy in Florida

- Cessna 340 (Twin)
- 5 people aboard
- Out and back sightseeing
- Plane towed out due to low vis
- Crash immediately after takeoff
- No survivors

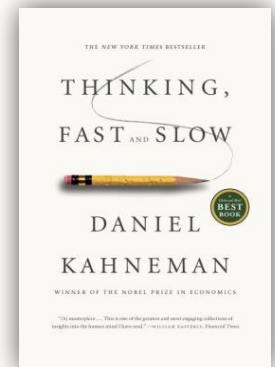
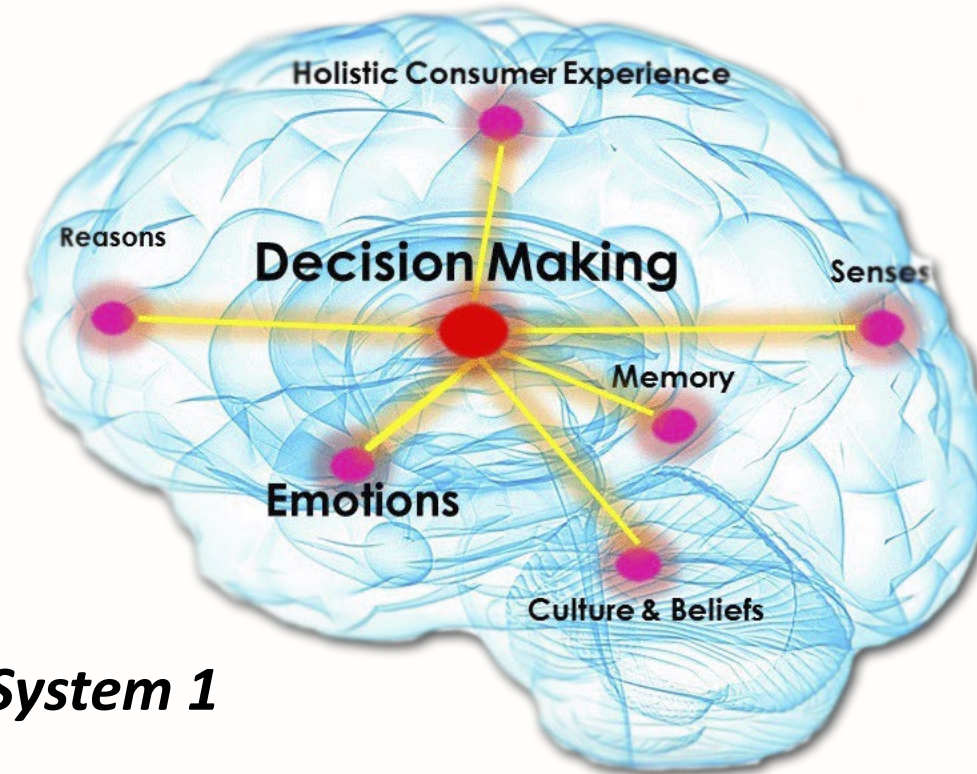


***Nagging question:***

***What induces a decision, so fraught with risk?***

# Understanding Human Decision Making

- Two “systems” operating our brains for decisions:
- **System 1**
  - Automatic, quick
  - Perception and reaction
  - *Rules most of what we do*
- **System 2**
  - Effortful mental activity
  - Complex choices
  - *Reluctant to engage and overrule System 1*





## Intuition

- A bat and ball cost \$1.10
- The bat costs one dollar more than the ball
- How much does the ball cost?



Answer: .10?

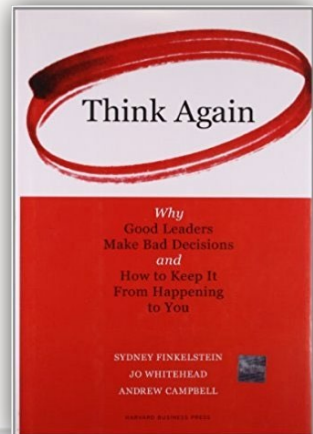
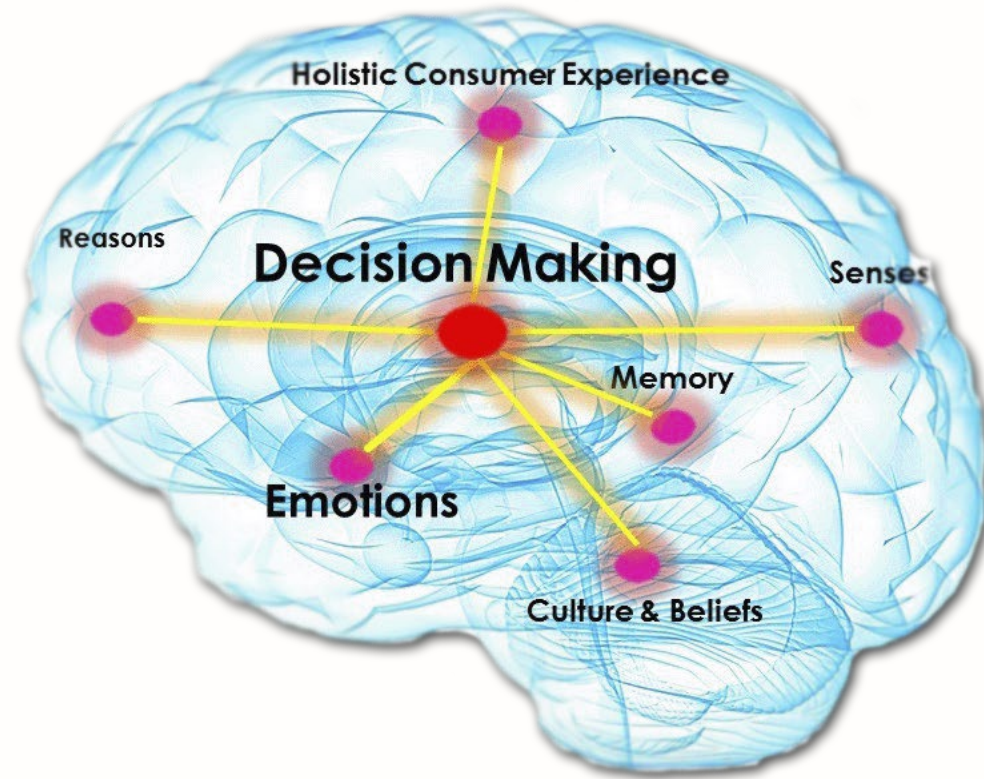
➤ Equation: ~~.10 + \$1.10 = \$1.20~~

✓ **.05      Equation: 05 + \$1.05 = \$1.10**



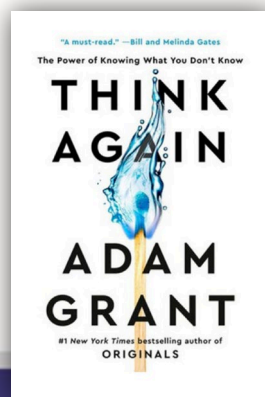
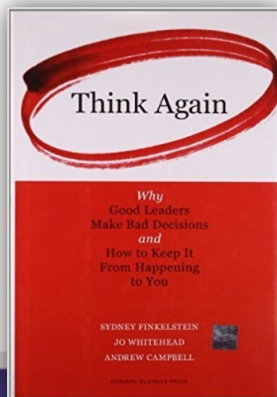
# Understanding Human Decision Making

- Decisions are made through two simultaneous processes:
  - Pattern Recognition
  - Emotional Tagging




# Understanding Human Decision Making

- Human brain doesn't naturally "consider all alternatives"
- We leap to conclusions based on experience and emotions
- We are heavily biased by subconscious inputs
- Reluctant to revisit initial assessment
- Quickly shift to execution mode



# Initial Decision is a Powerful Pull

- Two aircraft from MNE to H35
- Plan early diver option to AGO
- Weather worse than expected at TO
- Bypass divert option
- Enter IMC and continue
- Lead airplane impacted terrain



**National Transportation Safety Board  
Aviation Accident Preliminary Report**

<b>Location:</b>	Bonnerdale, AR	<b>Accident Number:</b>	CEN22FA058
<b>Date &amp; Time:</b>	December 3, 2021, 18:23 Local	<b>Registration:</b>	N182NS
<b>Aircraft:</b>	Cessna 182L	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

On December 3, 2021, about 1823 central standard time, a Cessna 182L, N182NS, was destroyed when it was involved in an accident near Bonnerdale, Arkansas. The non-instrument rated private pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations (CFR)* Part 91 personal flight.

The accident airplane was the lead airplane in a flight of two that departed Mendin, Louisiana (MNE), about 1738, destined for Clarksville, Arkansas (H35).

**Initial decision momentum**

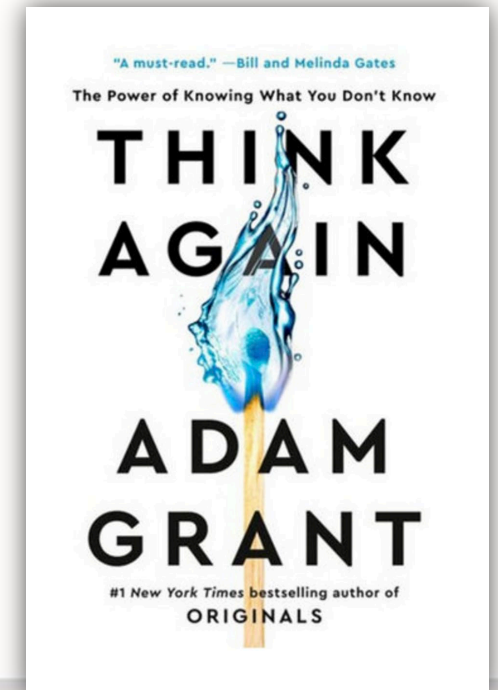
Plan established. Conditions worse than planned. Pilots pressed on.



# Bias, Bias, Bias

- “Plan Continuation Bias” results from:
  - “Confirmation”, and “desirability” biases
  - “I’m not biased”, bias
  - Over-estimating knowledge, skills, and experience
- To overcome biases – think, decide and plan like a *scientist*
  - Fly based on a hypothesis
  - Be willing to accept new, better, disproving data

“Being good at thinking,  
can make you worse at  
rethinking”  
Adam Grant



# Thunder in Idaho

- Experienced Pilot
- Experienced air show performer
- Known for his discipline
- High Density Altitude
- Misreads altimeter by some 800 ft.

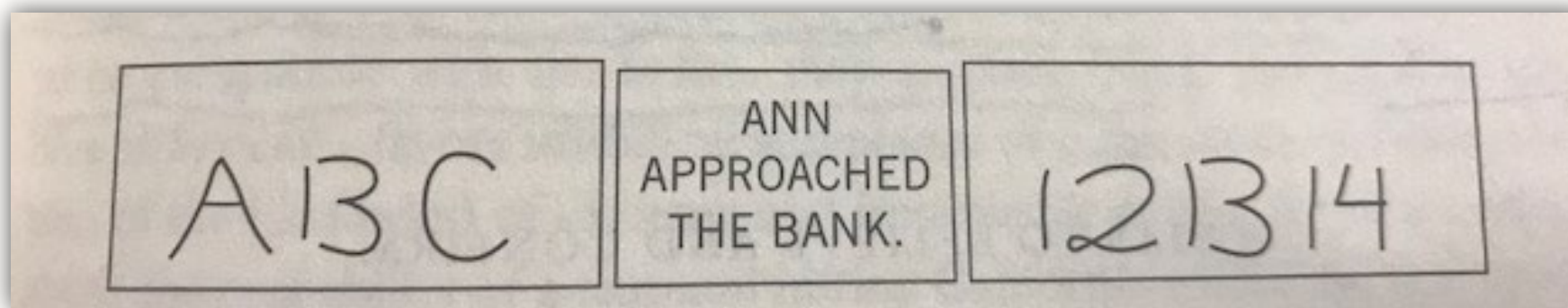
“Confirmation bias”?





# Intuition

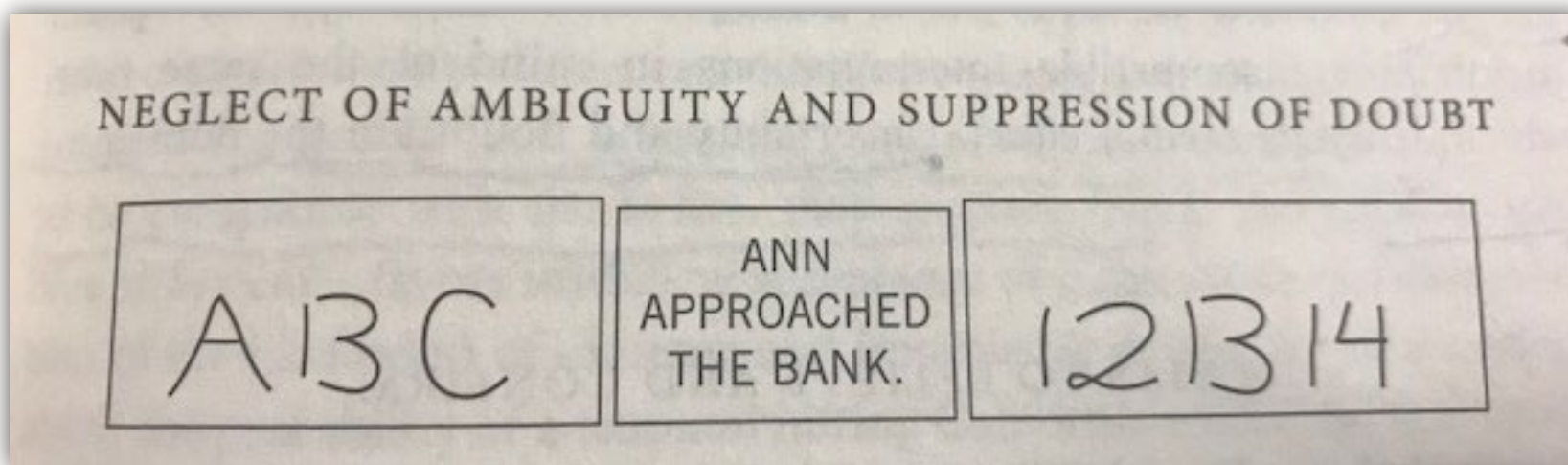
Write down what you see outside the boxes



Develop a mental picture of what Ann is doing

## Context and "Priming"

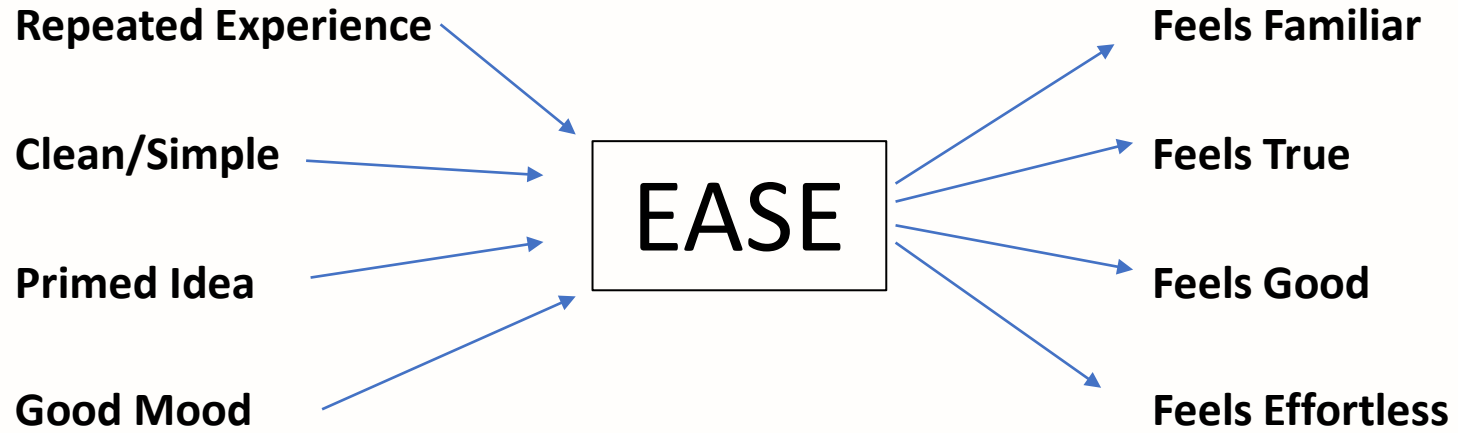
What were your answers? ABC, and 12 13 14?



Middle figure in both boxes is identical (B or 13?)

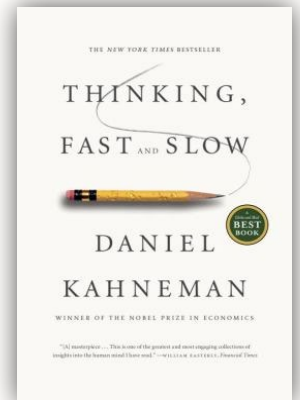
What was your mental picture of Ann?

# Cognitive Ease



Consequence: Casual and superficial thinking

Inconsistent with aviation!



# Mountain Heartbreak

- Experienced and new pilot
- Beautiful day
- Fun with friends
- Flat white conditions

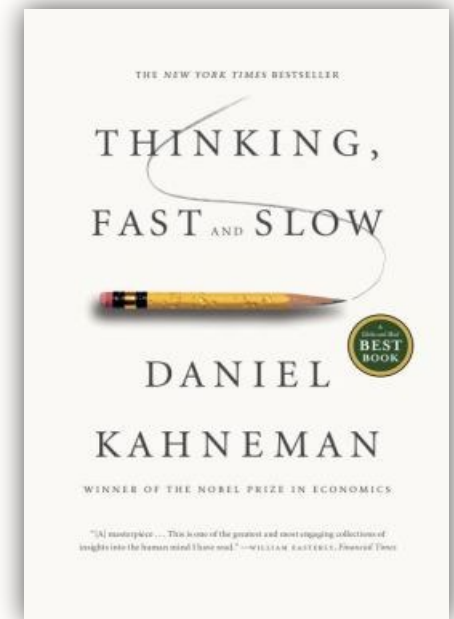
Cognitive ease??

- Repeated experience
- Good mood
- Impromptu decision



# Consequences of Decision Process

- "Intuition" - difficult to prevent
  - *Recognize where mistakes are likely*
- Tired and hungry – mind will take easy road
  - *Use SOPs*
- Cognitive ease can cause careless errors
  - *Force system 2*
- Overweight to reassuring evidence - Bias
  - *New element – reconsider all factors new element*
- We are heavily influenced by previous assessments
  - *Careful...is it really similar?*
- Emotional attachment and Self-interest
  - *Learn from airlines...set objective criteria*





NATIONAL ASSOCIATION OF FLIGHT INSTRUCTORS



*LIVE*