

Back to Basics

RISK PERCEPTION

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ROYAL
AERONAUTICAL
SOCIETY

Statistically, approximately 97 percent of unstable approaches continue to landing, despite policies and procedures that dictate otherwise. FSF, Rare Go Around



FUEL PRED			
AT	UTC	EFOB	
LFPG	1230	4.5	
LFBO	1320	2.0	
RTE	RSV/W	EFW/ZFWCG	
0.0	0.0	50.0/23.2	
ALTN	/TIME	FOB	
2.5	/0050	20.6/FF+PQ	
FINAL	/TIME	GW/CG	
1.0	/0030	70.6/25.6	
EXTRA	/TIME	MIN	DEST FOB
1.0	/0058		3.5

DEST	UTC	DIST	EFOB
LFBO32L	1320	347	2.0
DEST EFOB BELOW MIN			

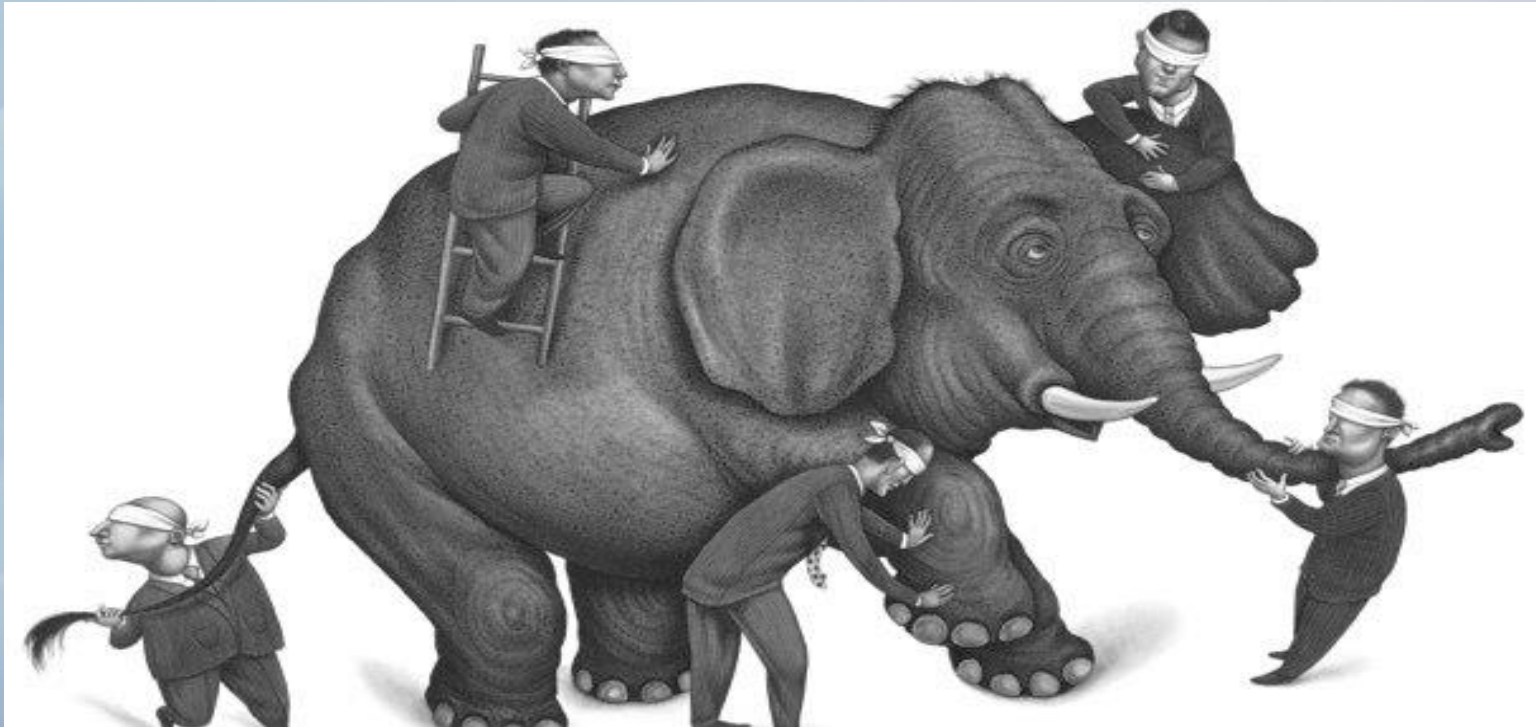
Flying on fumes, as pilots call it, may sound impossible in the modern age but running out of fuel still happens.

Every year dozens of small aircraft fall victim to wishful thinking by pilots who gamble on stretching range to the maximum. The Australian 2016

Back to Basics



- How we perceive situations
- Human Bias
- Task completion
- Gamification and behavioural change
- Finally how all the above add up to affect our understanding of the situation and decision making



We don't see things as they are, we see them as we are. Because the world can be viewed from many different points. And it does change according to who is watching it.

Anais Nin (Writer)

Framing Effect

Tversky and Kahneman(1981)

Only the framing changed

600 people expected
to die...

600 people expected
to die...

1/3 chance that
nobody will die.
2/3 chance that 600
people will die.

=

1/3 chance that 600
people will be saved.
2/3 chance that no
people will be saved.

78%

≠

28%

We will take great risks to avoid a loss. Reframing the same option as a loss changes the choices.

Tversky, A. & Kahneman, D., 1981, The framing of decisions and the psychology of choice. *Science*, 211, 453-458.

Self Completion



- Every individual has a self image, which they would like to protect.
- When an individual feels insecure regarding their status or profession they may make an effort to display symbols signaling their status.
- This may be because they do not feel that they are respected or at least recognized for who they feel they are.

Yellow Light Dilemma

- In 2012, over 2.5 million cars were involved in crashes at intersections with traffic signals. NHTSA, USA
- 85% Drivers could not identify the correct action to be taken.
- Studies have found that all forms of advance warning had a significant, and roughly equivalent, impact on the way drivers behaved at intersections.
- “Drivers in the DZ, who had received advanced warnings rarely exhibited unsafe behavior, such as speeding up,”
- warnings didn’t just affect driver behavior at intersections but seemed to
- lead to slower, safer driving in general.



Zeigarnic Effect



- Widely-cited results of a classic experiment by Zeigarnik (1927) claim that interrupted problems do indeed hold some special status in the memory.
- Unfinished tasks take on a Negative Perception.

Co-relation with Flying



- Decision, like Go Around and a Diversion are incomplete tasks,. Due to anxiety of completing the task, the Pilot is likely to take a greater risk and may decide to continue to land/hold rather than perform a Go-Around or a Diversion. (**Zeigarnic effect**,)
- Since there is a negative perception to the situation, the Pilot will take greater risk to avoid the loss. (**Framing Effect**)
- The Pilot has a self image formed due to expectations and peer pressure. The actions of an incomplete mission do not go with the image. (**Self Completion**)

Solutions

- Giving a positive connotation to the events will help overcome the shortcomings.
- The task should be redefined and deemed to be complete, with a safe landing or a go around/diversion.
- Return to the destination airport after a Go Around/Diversion should be termed a new task.
- Decisions like conducting a Go-Around maneuver or a Diversion should be a part of the duties and responsibility in-order to treat it as a normal situation.
- The Pilot therefore considers it a normal maneuver which does not affect his/her image.
- The Yellow light dilemma is solved by giving a warning before the decision point. The stabilization height can be lowered down to the minima, provided a check or a warning is given at a higher altitude

Behavioural Change



Speed Camera Lottery

Gamification

It is the use of:

- Game elements
- Game design techniques
- Non-game context



How does Gamification work?



Intrinsic Motivation

Walmart's Game-Based Training for Safety



AXONIFY CASE STUDY:

Walmart achieves unprecedented safety results by building employee knowledge and translating it into job action

HANDMADE

GAMIFICATION
as a groundbreaking elearning trend

WRITINGS



Walmart's Game-Based Training for Safety



- Recordable incidents decreased by 54%, morale elevated
- Injury expenses mitigated
- 96% of Behaviour observations have been positive, meaning employees are applying their knowledge on the job
- Voluntary participation on Axonify platform average 91%
- Knowledge levels on topics around safety increased by as much as 15%
- Employee confidence in the material increased by as much as 8%

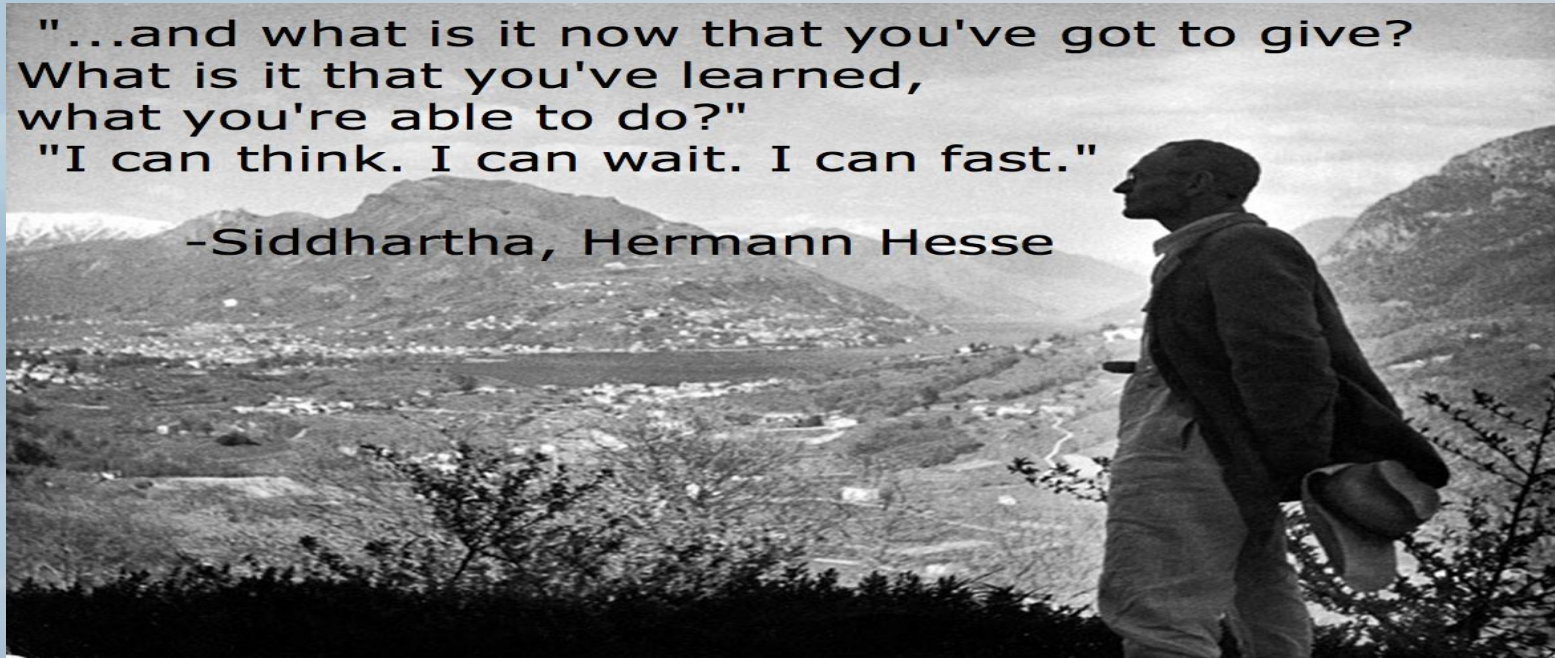
Summary

- We perceive risk as per how it is presented to us or our interpretation.
- Each individual has a self image which needs to be fulfilled. Segregation of the task with the self image will help in task completion.
- A positive outlook and behavior will make task completion easier.
- With the use of Gamification and motivating the individuals, we could see a behavioural change.

"...and what is it now that you've got to give?
What is it that you've learned,
what you're able to do?"

"I can think. I can wait. I can fast."

-Siddhartha, Hermann Hesse



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