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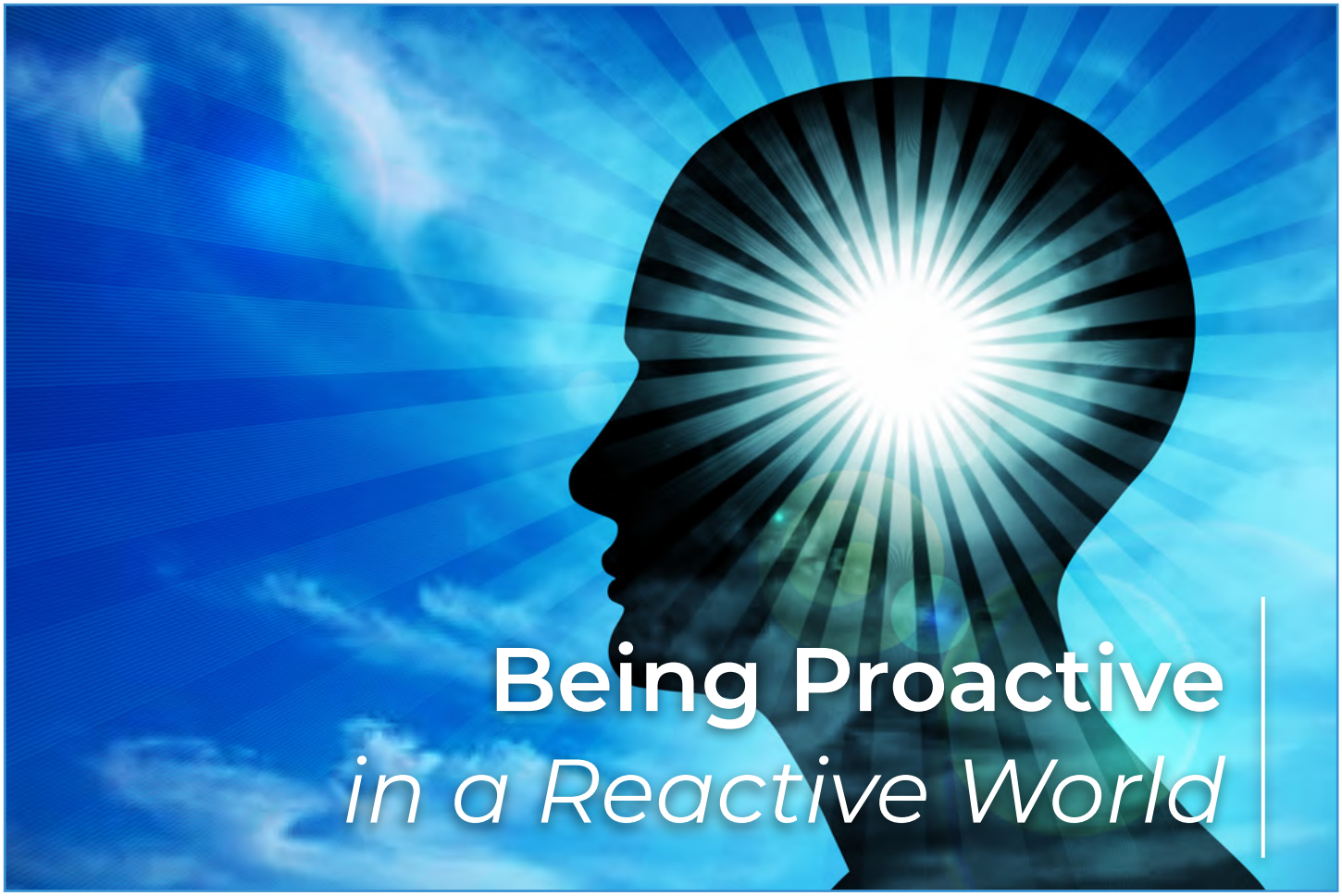

How stopping internal mind hijacking averts disastrous consequences

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Flight Engineer to Maintenance:	*This is United two thirty-two. We blew number two engine and we've lost all hydraulics and we are only able to control, ah, level flight with the, ah, asymmetrical power settings. We have very little rudder or elevator.*
First Officer:	*Very little elevator. [It's] hard or sluggish. Ah, Al, do you want me to slew this elevator.*
Captain:	*Yeah, whatever you can.*
Maintenance:	*Your, ah, system one and system three are they operating normally?*
Flight Engineer:	*Negative. All hydraulics are lost. All hydraulic systems are lost. The only thing we have is the ……*

Jumpseat Captain:	*Tell me what you want and I'll help you.*
Captain:	*Right throttle. Close one, put two up. What we need is elevator control. And I don't know how to get it.*
Flight Engineer:	*Roger, we need any help we can get from SAM [San Francisco aero maintenance] as far as what to do with this. We don't have anything. We don't know what to do. We're having a hard time controlling it. We're descending. We're down to seventeen thousand feet. We have …. Ah hardly any control whatsoever…**

United Airlines 232

On July 19, 1989, United Airlines Flight 232 with Captain Al Haynes at the helm was en route from Denver to Philadelphia. Approximately 65 minutes into the flight, the number two engine failed and the fan rotor assembly disintegrated. The crew found themselves in the unenviable position of having all three redundant hydraulic lines severed by the fan fragments. To complicate matters, the crew was unable to make left turns … the aircraft would only turn right.

This level of true intense stress, luckily, does not happen on a regular basis. We typically deal with "hurry up and wait", an unresponsive crew member or a schedule disruption-or-change type of pressure. Yet our brains do not make a distinction between this literal life-or-death situation and our own everyday hassles.

To fully comprehend how remarkable this landing was, we need to first look at how our mind perceives and interprets our environment:

Using 'filters' to avoid becoming overwhelmed from the onslaught of information, our subconscious "sees" the current situation from a perspective of what it knows and has seen before. It then makes an assessment – a quick analysis based on these small pieces of information – on what action to take. This activity usually occurs quite quickly and without a conscious analysis.

Memories about similar situations pass through our emotional brain, specifically an almond shaped organ called an amygdala. This organ contains every one of our emotional experiences and is more tuned in to emotional stimuli, especially fear. Even though our body matures, our amygdala does not … Think of your amygdala acting as a perpetual two-year old that doesn't get their own way.

One key question our amygdala asks is "Am I in danger?" This part of our brain does not categorize the level of danger we face. If the answer is "yes we are faced with a threat and are in danger", our self-preservation instincts kick into gear: our focus narrows and our only thoughts are getting us out of this threatening situation – alive. When in this type of situation, our mind reverts to a primitive "fight or flight" reaction. It alerts the rest of our body to prepare to stay and fight … or to take flight. Adrenaline pulses through our veins, and cortisol and norepinephrine surge through our brain. As fear overtakes our rationality, our heart pumps faster, major muscle groups get primed to fight or to flee. Our reactivity is heightened, perhaps even exaggerated, and our senses are more alert to incoming threats and searching for opportunities to escape.

Even though we are not in the exact fight-or-flight situations our ancestors faced, our body has not progressed past these primitive responses. Lashing out at team members, irrational decision-making and knee-jerk reactions are examples of how your emotions can hijack your actions.

Which of these have you experienced?

- You feel you are being attacked and have to defend
  - Your reputation
  - Your flight department as a whole
  - Your Director, Chief Pilot or another crew/team member
  - Your job
  - Your actions
  - Your decisions
- You have missed a deadline, or have to rush to complete a task on time
- You had an argument, or a heated discussion, with your boss / coworker / friend / spouse …..
- You leave work late and are fighting traffic
- You find yourself putting off
  - An uncomfortable or awkward conversation
  - Responding to an email you've seen
  - Making a difficult phone call or appointment
  - Sharing a decision you've made, or even making a difficult decision

Our negative emotions and catastrophic thinking very easily and quickly take over. It can be difficult to stop this downward spiral reactivity. We have a choice, but in our own agitated and fearful state, our logical brain struggles to step in and take non-reactionary action. It is an extremely conscious choice to remain calm, take control and think strategically. This applies equally to handling 'real' emergencies such as the one Captain Haynes experienced, or dealing with an overwhelming or challenging situation.

To remain confident and poised in stressful situations requires a high degree of Emotional Intelligence [EI] in two areas:

1. Managing one's own behaviors:

Being conscious of your emotional triggers and counteracting them in a positive manner. Understanding your emotional outbursts is good; managing those reactions is more arduous. The acts of counting to 10 and taking deep breaths do have validity; much like pulling out the checklist during an emergency procedure – these activities focus your attention on a specific action and allow your rational mind to regain control. These activities stop you from being self-consumed and feeling like a victim of circumstances.

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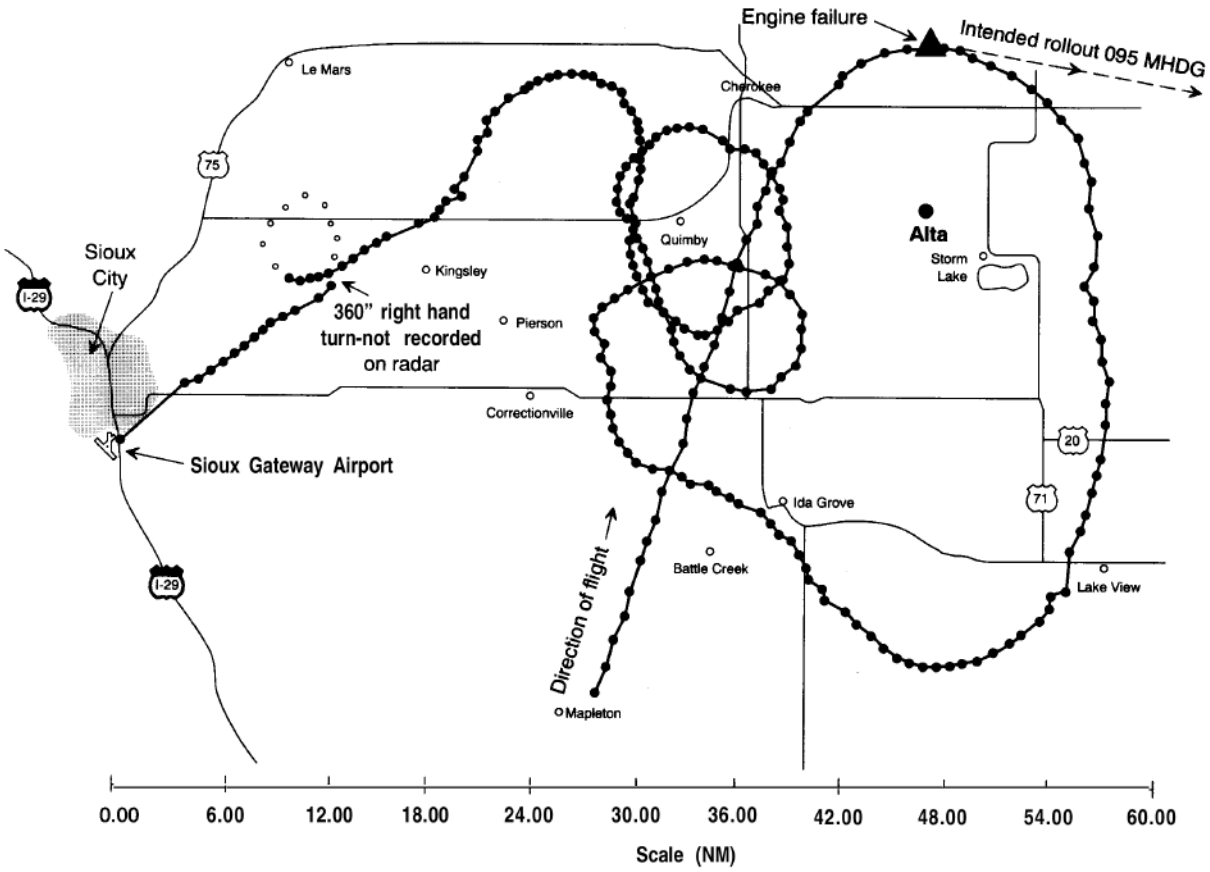
Here are a few ways Captain Haynes retained his professional demeanor:

a. He acknowledged and explored the awkwardness of the situation. This eliminated the 'solo uncertainty' level, taking the focus off of himself and onto what he deemed important.
   i. Captain to cockpit crew members: I wish we had a little better control of the elevator. They told us the autopilot would do this, but it sure as hell won't. Try yours again.
   II. Captain to cockpit crew members: Can't think of anything that we [haven't] done … There really isn't a procedure for this.
   III. Captain to cockpit crew members: Anybody have any ideas about [what to do about the landing gear]? He's [the Engineer] is talking to SAM. How do we get the gear down?

b. He concentrated on what he could do, not on what was out of his control. Captain Haynes could not turn the aircraft left, so he made a series of right turns.
   i. Captain: As soon as it [power] starts to come back … Okay, come back …
   Jumpseat Captain: Powers' comin' back in …
   Captain: Bring [turn] it to the right with the right one. You got to go left. We just keep turnin' right. Still turnin' right …
   Jumpseat captain: That's what I'm trying to do ..
   Captain: Two thirty-two, we're just gonna have to keep turning right. There's not much we can do about turning left. We'll try to come back around to the heading …
   ii. Jumpseat Training pilot: You lost the engine, huh?
   Captain: Yeah, well, yeah. It blew. We couldn't do anything about it. We shut it down.
   iii. Captain: United two thirty-two, we're gonna have to continue one more right turn. We got the elevators pretty much under control within three or four hundred feet but we still can't do much with the steering.



c. **He took control of his self-talk**. Leader's emotions are contagious and set the stage, or form the culture, of the team's dynamics. The Captain verbalized his thinking so the rest of the crew could understand his thought process and follow his clear instructions. This also served to reassure the crew that he was proactively looking for solutions and not rehashing and lamenting about their situation. Even in unsettling and uncomfortable situations, he keenly thought through alternatives:

i. Captain to cockpit crew members: Come on back, come on back, come on back…as soon as that [is] vertical go for it, go for it. Watch that vertical speed the second it starts to move. Come back, come back, come back. Go for it. If we can get this under control elevator-wise we can work on steering later.

ii. Captain to cockpit crew members: We have almost no control of the airplane
Captain to the flight attendant: It's gonna be tough, gonna be rough…Yeah. Well, we're gonna have the gear down…And if we can keep the airplane on the ground and stop standing up, give us a second or two before you evacuate… 'Brace' will be the signal; it'll be over the PA system – 'Brace, brace, brace.' …That will be to brace for landing.

2. Minimizing the emotional reactivity of others.

We talk to stabilize our own emotions because we mirror the emotions of others – when someone is sad and depressed, we can succumb to those emotions. When someone is excited and exuberant, we easily get caught up in those emotions. The stronger emotions take over. Trusting one another is crucial in a high-performing team; each member contributes to the safe environment with freedom of expressing their thoughts and emotions without anyone overreacting. The Captain asked the crew for their ideas and suggestions, and the crew took the initiative to offer suggestions without fear of condemnation or ridicule. He listened to crew members and took their suggestions seriously and he even followed their instructions.

These elements of EI are critical to weather crisis storms:

a. Transparency – authentic openness and displaying trustworthiness

i. Captain: We don't have any controls
First Officer: You want to go forward on it, Al
Captain: Now go forward …. Now let it come back.
Got to lead … got to lead it…

ii. His introduction to Denny Fitch, the UA training pilot who sat in the jumpseat for most of the flight, set the tone for that interaction:
Captain: My name's Al Haynes.
Jumpseat captain: Hi, Al. Denny Fitch.
Captain: How do you do, Denny?
Jumpseat captain: I'll tell you what. We'll have a beer when this is all done.
Captain: Well, I don't drink, but I'll sure as hell have one. Little right turns, little right turns…

We mirror the emotions of others and succumb to those emotions … the stronger ones take over.

b. Adaptability – flexibly adapting to changing situation or overcoming obstacles … not losing focus or energy

i. Captain: OK. We're tryin' to go straight. We're not havin' much luck.
Jumpseat captain: All right, I got you one seven hundred on the squawk, so they can track ya [on radar]
First officer: He's got us on radar.
Captain: As soon as the nose starts up we have to push forward on the yoke.
Jumpseat captain: We got nothing on number two, number two [engine]?
Captain: No, no, we got it shut down…. the stronger ones.

ii. Captain: Okay. United two thirty-two, we're startin' to turn back to the airport. Since we have no hydraulics braking [it's] gonna really be a problem. Would suggest the equipment be toward the far end of the runway. I think under the circumstances, regardless of the condition of the airplane when we stop, we're going to evacuate. So you might notify the ground crew that we're gonna do that.

There are times when his frustration is obvious:

c. Captain to cockpit crew: I wish they'd unlock that damn door pull the circuit breaker on that door. Just unlock it, will ya?

d. Captain asking Flight Engineer what SAM said. Flight Engineer: He hasn't said anything.
Captain: OK well forget them. Tell 'em you're leaving the air, and you're gonna come back up here and help us .. and screw 'em. Ease her down just a little bit.

Yet he still manages to retain his sense of humor:

a. Captain to cockpit crew: We kinda got level flight back again … [laughs] We didn't do this thing on my last [performance check in a simulator]. [Laughter]

b. When they have the airport in sight, about 18 miles southeast of their position:
Captain: Forward, make a left turn, left…
Jumpseat captain: No left at all.
Captain: No left at all?
Jumpseat captain: I'll give you some
Captain: Back, back back back … forward forward forward … won't this be a fun landing? Back … [sound of laughter]

c. When they were two minutes from landing:
Sioux City Approach: …You're cleared to land on any runway…
Captain: [Laughter] Roger. [Laughter]. You want to be particular and make it a runway, huh?

Leader's emotions are contagious and set the stage, or form the culture, of the team's dynamics

The outcome of a lack of EI can include mismanagement, ineffective leadership, crew confusion, delayed responses and disastrous outcomes. A leader with high EI doesn't treat people as robots or subordinates; they are treated as valued crew members. As such, the leader works with them, not merely dictating orders. The result of a leader with a high level of EI is demonstrated by Captain Al Haynes on that fateful July day.

Emotions serve a purpose – they alert us to pleasant situations … and ones that require our attention. They can cause us to think and take appropriate action. Our emotions choose our path – one of confidence, calmness and composure or one of reactivity, chaos and confusion.

Training and experience certainly played a part in this success story. Because the leader sets the tone for team performance, Captain Haynes' cool headedness, his encouragement of the high level of crew interactions and keeping the crew focused on flying and landing the plane safely, 174 passengers and 10 crew members survived the accident and only 112 people perished.

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*NOTE: This analysis, based solely on the ASN CVR transcript, is from a human behavior / emotional intelligence perspective and is not intended to assign blame on any one particular person or company. Because it was taken from the written transcript, no inferences can be made by voice tone, loudness or terseness from any crew member or command center.

Much like when CRM was first introduced, this illustrates another CRM dimension that has been shown to improve performance.

About the Researcher

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