



## Emotionally Enabled

**'Emotional Intelligence' means being aware of an entire crew's mental state, not just your own.**

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We watched in astonishment when Chesley Sullenberger in early 2009 skillfully piloted US Airways Flight 1549 to a safe landing in the Hudson River, and listened in horror a month later when we heard of Colgan Air Flight 3407 crashing into a Buffalo, New York, U.S., suburb.

Among the factors that caused one perfectly good aircraft to fall out of the sky, killing 50 people, while another very crippled aircraft made a safe water landing that resulted in only a few minor injuries, technical flying skills obviously play a major role. However, success or failure to a large degree can be linked to the captain's ability to control his own emotions in order to think clearly, while being aware of the crew's emotional and mental states. When the role pilots play in aircraft incidents and accidents is considered, the initial focus of the U.S. National Transportation Safety Board (NTSB) and many analysts is on the technical abilities of the pilots: When was their last recurrent training? How many flight hours did they have in the aircraft type? How many total hours of flight experience?<sup>1</sup>

But some time ago it was realized that technical skills are not the only desirable traits a captain should have. Many years ago, airlines implemented cockpit resource management (CRM) techniques to enhance crew coordination. This new concept was partially based on a U.S. National Aeronautics and Space Administration investigation that discovered a common theme in many accidents — failure of leadership and ineffective crew interaction.

CRM focused on how the crew interacted in the cockpit, not necessarily on acceptable or appropriate cockpit behaviors. During the first decade of CRM use, it morphed into crew resource management, to include helping all crewmembers work more effectively as a team, improving situational awareness and providing techniques to break the error chain.

CRM has become a training mainstay. To date, CRM has included only the technical skills and thinking abilities — analytical, conceptual and problem solving. However, research beginning in the 1980s demonstrated that emotions greatly influence a person's cognitive abilities.

To be effective, the next level of CRM needs to include more of the "people" side — self-confidence, teamwork, cooperation, empathy and flexibility in thoughts and actions. A major factor in maintaining the safety of the crew and passengers is the

combination of the leader's objective thought process and his or her emotional awareness.

The word "emotion" may conjure up negative elements that tend to degrade safety: anger, fear, crying, shouting and other unhelpful behaviors, but everyone every day experiences more subtle varieties of emotion.<sup>2</sup> In the cockpit this might include satisfaction for having achieved a smooth landing, pride in maneuvering around turbulence, excitement in getting desirable days off, irritation when plans don't work out, and sometimes annoyance with others.

Regardless of the situation, there always exists some degree of emotional response, and emotions are simply another type of information that must be considered in making effective decisions, especially in a team environment.

A high degree of situational awareness relies on a person being attentive to the environment. Internal situational awareness consists of understanding one's own emotions and emotional triggers. External situational awareness involves insights into team members' moods and unspoken communication, and appropriately addressing them.

The cornerstones of emotional intelligence (EI) are consciousness of one's thoughts and moods, of how the behaviors resulting from those impact and influence others, and of the moods and behaviors of others.<sup>3</sup> People with a high level of EI recognize and control their own emotional outbursts, step back from the heat of any situation, analyze it objectively and take the appropriate action that produces the most desirable results.

A person's perception of reality shapes emotions and feelings, and these drive thoughts and behaviors. Status quo is maintained until new strong feelings are experienced. Simply being unhappy in a job is usually not enough to warrant a change. Getting passed over for a promotion, accompanied by the belief that the decision was wrong, usually sparks anger and an active job pursuit.

The amygdala is the part of the brain that controls a person's level of emotional reactivity. It never matures, and, if left unchecked, it can bring chaos to a life. To compound the problem, the human brain instinctively cannot distinguish between a real threat and an imagined one.

Sitting in a theater, watching a panoramic or 3-D movie, the sudden loud sound of an airplane approaching will make most people reflexively duck. Intellectually, they know the airplane is not real, but the emotional brain hears the loud sound and tells the body it needs to avoid getting hit. When a situation changes, the emotional brain determines if the stimulus causing the change is a threat. If a threat is sensed, awareness becomes heightened and physiological changes take place to cope with this new danger. Adrenaline is released to pump the heart faster and prime the muscles for action. If the situation is later deemed to not be a threat, logic and objectivity take over again, but it takes four hours for the adrenaline to dissipate from the body. Today's fears, threats and dangers are not unlike those of prehistoric man. A flight department manager who needs to justify the expenses of his department can experience the same "fight or flight" reaction that the caveman did when faced with a saber-toothed tiger. A similar reaction occurs when people feel their reputation or credibility is threatened. Fear and stress envelop thinking and people over-focus on a narrow selection of solutions, disregarding alternative

approaches.

When people allow their stressed brains to overtake thoughts, the perspective narrows and the main focus becomes escaping from the situation. Unable to think of alternatives, they don't see the "big picture" or question assumptions. At this level of thought, perception of the complexity of the situation becomes paralyzing, and the focus is on current limitations. Remember the last time you became angry during an argument? It probably wasn't until later, after you could see the situation without emotion, that you thought of several obvious points that could have helped your case. These become apparent because your rational mind was back in control. Your primary focus, in the midst of that argument, was to defend yourself. Success is more assured when this emotionally downward-spiraling thinking is halted and the problem is addressed more creatively.

The captain in the Colgan Air 3407 accident chose the "flight" reaction; he chose to avoid a developing situation.<sup>4</sup> When the first officer brought up the icing conditions — "I've never seen icing conditions. I've never deiced. I've never seen any, ... I've never experienced any of that" — the captain's response was, "Yeah, uh, I spent the first three months in, uh, Charleston, West Virginia and, uh, flew but I — first couple of times I saw the amount of ice that that Saab would pick up and keep on truckin' ... I'm a Florida man ... ." Then he added, "There wasn't — we never had to make decisions that I wouldn't have been able to make but ... now I'm more comfortable." The captain was still unaware of what was rapidly developing around him, chatting while the aircraft's airspeed rapidly decayed. His failure to quiet his instinctive emotions narrowed his perception to the point that airspeed, one of the most basic elements of flying an airplane, no longer had his attention.

There were few instances when the captain referred to the first officer's health. He did not ask how she felt about her ability to perform her flight duties, even though she sneezed twice and six minutes later, she mentioned her ears. Basic understanding of CRM and crew performance should have tipped off the captain that the first officer was not feeling well that day and her performance could be negatively impacted. A person with higher EI could have recognized that, and probably would have been empathic to her condition and her inability to actively participate as a viable crewmember.

The captain told stories for most of the flight. At one point, he rambled for over three minutes while the first officer only said 34 words, most of which were "yeah" and "uh-huh." Research on how the mind processes information has revealed that people can only consciously execute one task at a time, and unconsciously perform one additional task. When driving in heavy traffic or merging onto a freeway, are you able to continue your conversation? Your mind moves from the conversation you were having to looking at traffic, calculating vehicle speeds and analyzing the best opportunity to speed up and merge. Your automatic mind does not have the ability to safely handle non-routine driving tasks.

A classic example is United Airlines Flight 173, a McDonnell Douglas DC-8, which in 1978 was destroyed when it crashed during an approach to Portland (Oregon, U.S.) International Airport.<sup>5</sup> The captain's intense preoccupation with arranging for a safe emergency landing prohibited him from considering other anomalies. His concentration was so focused on the emergency landing checklist that he did not modify his plans when the first officer and flight engineer twice warned him about their airplane's dwindling fuel supply. Ten people were killed when the aircraft

crashed into a wooded area due to fuel exhaustion.

The NTSB said, "The probable cause of the accident was the failure of the captain to monitor properly the aircraft's fuel state and to properly respond to the low fuel state and the crewmembers' advisories regarding fuel state. ... His inattention resulted from preoccupation with a landing gear malfunction and preparations for a possible landing emergency."

This accident was one of the key events driving the adoption of CRM in airline training.

Contrast the reactions and situational awareness of the Colgan and United crews to those of the captain of the US Airways A320 that landed in the Hudson River. Sullenberger kept his emotions under control and remained focused on doing his job — to safely land the plane.

The captain's words "my airplane" when he took over the controls after the bird strike could have been trigger words, words to focus on, snapping his rational brain into action and putting him into a safety frame of mind. He repeated the commands from the first officer, indicating that during those critical seconds there was no room for any misunderstanding. This flight crew's emotional intelligence was as good as it gets, which enabled their processing information quickly and using every resource available to them at the time.

The captain of United Airlines Flight 232, a McDonnell Douglas DC-10 that in 1989 attempted to land in Sioux City, Iowa, U.S., with catastrophic hydraulic and flight control systems failures, could have reacted to his challenges by becoming indecisive, shutting out the crew or dictating orders to them.<sup>6</sup> If he had responded in any of these ways, the captain would have reflected the emotional pressures he was experiencing, and, as a result, his crew would have had his pressures added to their own. Instead, he worked as part of the crew, alternating between giving direction and explaining his actions and taking input from anyone in the cockpit, including a training pilot. Emotions are contagious, and the strongest expressed emotion will be felt unconsciously by others and mimicked. In this case, the captain's calm demeanor was mirrored by the crew and they were able to contain their emotional reactivity.

Aviation history is overflowing with accidents due to pilot error. Many of them could have been avoided if the crews were more aware of their own emotional reactivity and those of the others. Captains infected with "captainitis" are so absorbed in their own world that they lose their situational awareness. The captain in Colgan Air 3407 was self-absorbed, talking about himself for nearly 20 minutes of the last 40 minutes of the flight, missing a number of clues that eventually led to the crash; on the other hand, the captain of US Airways 1549 maintained his composure throughout his short flight and focused on every element of the emergency.

Why is EI relevant? The Center for Creative Leadership found that the leading causes of failure among business executives are inadequate abilities to work well with others, either in their direct reports or in a team environment. Another study of several hundred executives revealed a direct correlation between superior performance and executives' ability to accurately assess themselves.

What actions demonstrate an increased level of EI?

- When crewmembers voice their concerns in a calm, firm manner, giving evidence to back up those concerns;
- When leaders acknowledge the atmosphere and question crewmembers in a non-defensive manner to determine the causes of the uneasiness; and,
- In a crisis or stress situation, when leaders maintain their composure and communicate more frequently and more calmly with the crew. There are several techniques that can raise your level of EI:
- Be aware of the thoughts going through your mind. Are they stuck in the past and wallowing in problems, or are they focused on the future and actively looking for solutions? Once we choose negative thoughts, they can very easily spiral downward, the cycle descending into hopelessness.
- Acknowledge your emotions. Remember they are neither good nor bad, they are what they are. Next, identify these emotions: Angry? Irritated? Defensive? Disappointed? Guilty? Frantic? Miserable? Naming your emotions makes them less abstract and helps release their influence on you. It becomes easier to detach yourself and think objectively.
- Look back over your previous reactions. How could you have made a better choice? What information and alternatives are clear now that weren't at that time? As we frantically search for quick solutions to rectify the situation, we automatically use the techniques that we have used before, whether they are the best choice or not. Our mind is not free to explore new alternatives.
- Put yourself in the other person's position. How would you react if you were on the receiving end of your emotions? The other person's brain will send him through the same fight/flight/freeze reaction that yours is experiencing. Imagine both people fighting for their pride or their reputation — chances are slim that the discussion will end well.

Leaders need a considerable amount of cognition.<sup>7</sup> The ability of the leader to broaden his or her focus from technical and task-related activities to include an awareness of the moods of the crew is critical to success. It would benefit all parties to know which skills in specific circumstances are most appropriate. A leader's behaviors directly affect the team's disposition, and the team's disposition drives performance. When the leader can analyze and manage his or her own emotional reactivity, the team members can more easily manage their own emotions. How well the leader performs this can have a direct effect on the safety and morale of the crew.

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