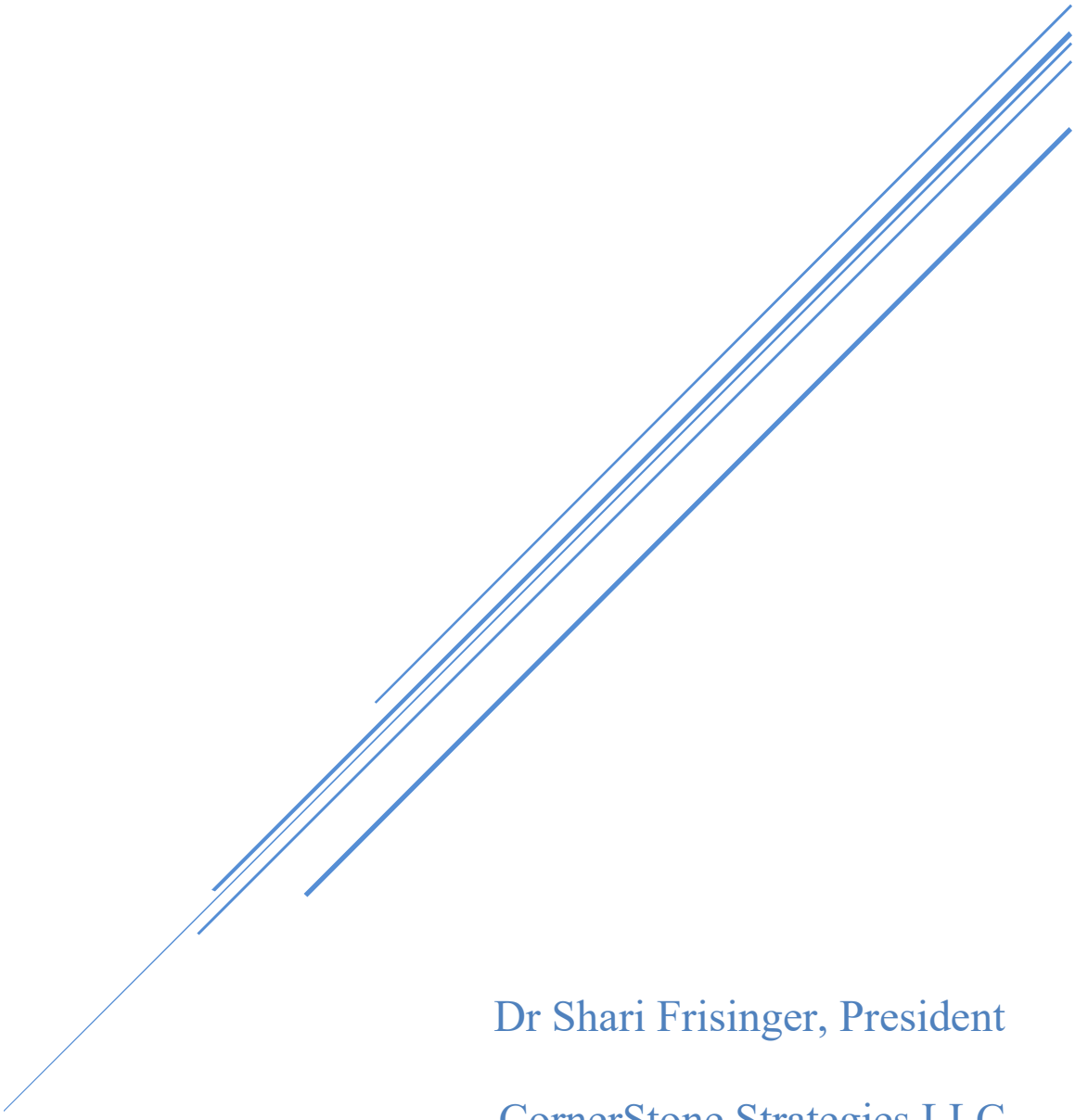
AVIATION CRISIS LEADERSHIP & EMOTIONAL INTELLIGENCE: WHAT IS THE LINK?

2013 Doctorate of Executive Leadership Dissertation Synopsis



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Introduction

Human error was a major contributing factor in 60-80% of aviation accidents, as reported in the January 2004 Federal Aviation Association (FAA) Advisory Circular. The technical portion of flying the aircraft contributed minimally to the challenges of responding to these accidents. The crew interactions fell short. This breakdown occurred in "poor decision making, ineffective communication, and inadequate leadership".

Importance of the Study

The ability to respond calmly in a crisis, and to lead others to safety, is imperative in today's aviation industry. The ability of crewmembers to project a calm and confident demeanor despite the circumstances has a great influence on how passengers and others react. In fact, safety can be compromised by unconsciously allowing emotional distractions to enter your thought process; specifically, aviation professionals need to be aware of how they are reacting to an incident or a sudden change in the environment. It is critical that leaders (in this study: the captain, first officer, and cabin crewmembers) maintain clear thinking and calm demeanors to help others cope with the stressful situation.

In emergencies, people turn to leaders for support and guidance. Aviation crewmembers who regulated their reactions and took control of the situation were more likely to emerge with fewer losses (both real and perceived). This ability to control impulses allows a person to think and respond objectively, and to work more cooperatively with other crewmembers. Their ability to handle the crisis with confidence, pragmatism, and rational and objective thinking had far-reaching effects. These actions were expertly demonstrated by Captain Al Haynes and Captain Sullenberger. As another example, the nation witnessed President Bush's unchanging face in the school classroom when told about the 9/11 tragedy. Conversely, Mayor Ray Nagin's emotionally driven and inappropriate rant immediately after Hurricane Katrina landed in New Orleans provided starkly opposing reactions.

By recognizing the specific elements that directly affect one's mental and emotional reactions, we can consciously work to improve these elements. In an industry where safety is foremost in the minds of the crew and passengers, the literal and figurative survival of all involved hinge on how crewmembers conduct themselves in the midst of any crisis. This research focused on the leader's emotional and cognitive skills in an accident or incident that could have resulted in personal injury, asset or property damage, or loss of life.

Research

For clarity, the definitions used in this study are:

> Crisis: An unexpected, emotional, and unplanned event that causes a spike in the levels of uncertainty and danger to the stability of the situation. In this research, a crisis is defined as either an accident or an incident.
>
> Decision-making: the level in which an individual used his or her emotions to create effective solutions, pragmatically deal with situations, and control impetuous reactions

Emotional Intelligence (EI): The ability to identify emotions and understand those emotions, both in oneself and in others, and to effectively manage those emotions. In this study, EI includes decision-making, problem solving and impulse control.

Flight attendant: An individual not flying the aircraft whose responsibilities included insuring the safety of the cabin and its occupants. In this study, the flight attendant is considered the cabin leader.

Interpersonal: the level in which an individual could have interacted with and related to others, commonly known as people skills

Pilot: The person responsible for flight safety, guaranteeing compliance with all regulations and the company operations manual. In this study, no difference was made between captain and first officer and both pilots are considered leaders on the flight.

Self-expression: the level in which an individual candidly expressed his or her emotions in a non-threatening manner and was not overly influenced by the emotions of others

Situational awareness: The ability to be conscious of surrounding environmental elements and to predict their effect on the current situation. This study expands this definition to include one's own thoughts, feelings and actions, along with the 'non-suspicious' behaviors of others.

Stress management: The level in which an individual can remain focused on the situation, change course direction with new evidence, and maintain a positive attitude.

Because of false assumptions and misrepresentations of emotional intelligence, a further explanation is warranted. EI is neither touchy-feely nor wimpy, nor is it an indication of weakness. EI is the ability to use appropriate emotions, as the situation warrants, to achieve intended results. EI is a mixture of self-awareness, self-expression and interpersonal relationships, and is measured through a self-assessment. This instrument "identifies the level of emotional and social functioning based on his/her responses" (MHS). Unlike IQ, a person can raise or improve their EI or EQ (emotional quotient) level. The validity and other information about the model I used is explained in more detail in the appendix.

On a side note: An individual can improve their EI/EQ level. It usually takes a conscious effort to raise your EI, and can be done on your own or with the help of a coach. The latter is generally more effective because of the objective, third-party perspective. A coach or consultant accustomed to working in this area is preferable.

A complete listing of references used in my study is available upon request.

Methodology

My dissertation, "Emotional Intelligence and a Leader's Capability in an Aviation Crisis: Is there a link?" surveyed Part 91 pilots and flight attendants who had experienced an accident/incident in the past ten years. This survey consisted of three elements:

1. An interview that focused on their communications, thought processes and actions during the incident. This also provided participant demographics.

2. A 12-question (5 point Likert scale) survey on their perception of how they handled the incident;

3. An emotional intelligence (EQi2) assessment. Each person received of their assessment results along with an option for a one-on one discussion of these results.

Samples of each are available upon request.

The model I used (the EQi2 model), assesses three common areas: awareness of one's emotional state, expression of those emotions, and working with others. This model also includes decision-making and stress-management categories, which affects an individual's ability to cope with challenges and adapt to an emergency. For example, frustration (emotions) could divert the pilot's focus in finding a solution, and create an atmosphere that intensifies the tenseness of the situation. See appendix for additional information.

Self-assessments are subject to the individual's perspective of their own actions. Some people may have exaggerated how well they did, and others believed they were not doing as well as they could have done. The latter occurred more frequently, and was supported by the pilots in my study.

Results

Thirty-two crewmembers participated: 19 pilots and 13 flight attendants with both male and female pilots and flight attendants. All responses appear in the four charts at the end of this narrative. Forty-one incidents were reported with no fatalities. Half of the events occurred within the past 5 years. I was fortunate enough to survey two pilots four days after their incident occurred. There was no discernable difference between male and female responses, either in the pilots or in the flight attendants. There was also no noteworthy variance in any of the other variables: military, prior commercial, emergency training.

Five themes emerged from the open-ended interviews and all of them were in some way associated with emotional intelligence: Training recall, Crew communication, Crew collaboration, Crew-passenger familiarity and Situational awareness.

Based on their emotional intelligence assessment results as a group, the overall pilot scores in my study were:

- ✈ Lower in self-awareness. This can cause the pilot not to realize how often he/she over- or under-reacts, and how their reactions affect others.
- ✈ Lower in emotional expression, including empathy. Others can see this person as cold, uncaring and not able to relate to others.
- ✈ Higher in stress tolerance, opting to proactively handle the situation and calmly facing the difficult situation without emotionally over-reacting
- ✈ Higher in problem solving. They rely on their methodical and systematic abilities when troubleshooting unusual circumstances.

Additional pilot observations from my dissertation:

- ✈ They prefer to work alone or make decisions without asking for help, advice or opinions from others.
- ✈ They are tenacious when faced with a problem and diligently working to resolve it.
- ✈ The higher their ability to interact well with others, the lower their chance of 'freezing' or over-reacting.

The flight attendants in my study scored:

- ✈ Lower in problem solving. They can be overwhelmed by what needs to be done, as they see the situation as one entity and not separate tasks that build upon each other.
- ✈ Lower in impulse control. Others can see this person as impulsive, impatient or over-reacting.
- ✈ Higher in interpersonal relationships, which suggests others will more quickly and easily trust them.
- ✈ Higher in empathy. They are seen as caring and compassionate, and take the mental and emotional states of others into consideration before taking action.

Several participants, both pilots and flight attendants, mentioned if they would have over-reacted, they believe the passengers would have done the same. From my survey:

a) A pilot, when 'hearing' the tenseness in the flight attendant's voice, immediately offered help and did not ask any additional questions or provide solutions. This allowed the flight attendant to do her job without the distractions of explaining the 'what' and 'why' of her actions.
b) Another pilot quickly realized he was on the verge of over-reacting. Once he reined in his thoughts, he was able to take control of the situation.
c) One flight attendant was so consumed with diagnosing a health issue that tunnel vision disabled her ability to consider non-common alternatives.
d) A pilot, too, became consumed with the incident he experienced that he felt the need to talk to everyone else involved. He continued to re-visit and re-analyze the situation, looking for what he could have missed and how the situation could have turned out differently.

Decision-making

An unexpected result from this study occurred in the decision-making component (problem solving, reality testing and impulse control). Self-assessments are subject to the individual's perspective of their own actions. Some people will exaggerate how well they are doing, and others believe they are not doing as well as they could have (Stein, p 235). The latter occurs more frequently, and was supported by the pilots in my study.

The pilots' result showed the more satisfied they were with how they responded to and resolved the situation, the lower they scored in the EQi2 decision-making category. It appeared the more time they had to reflect upon their thought processes and their responses, the more they realized there were other influencing factors. This caused them to analyze further other alternatives and facts they may have initially missed. In other words "the more you know the more you realize what you don't know" applies here. The results from the flight attendants' were completely opposite from the pilots'. The more satisfied the flight attendants were with their response to the crisis, the higher their decision-making scores.

In an effort to explain this outcome, I referred to pilot and flight attendant job descriptions in NBAA's Management Guide. The flight attendants' primary responsibility is within the cabin 'walls'. Their focus is geared to the safety of the passengers, whether it be handling a medical emergency, adapting for a mechanical failure or preparing for another type of disaster. The pilots have overall responsibility for the flight; their decision-making components can be more complex and involving a variety of other people (crewmembers, passengers, command center, maintenance personnel, schedulers/dispatchers and others). Their focus is on determining the root cause and taking appropriate action.

Themes

The two most relevant themes that emerged from my interviews are tied to at least three of the five EQi2 components (listed in *italics*):

1. Crew Communication and Collaboration
   Sharing perceptions and open discussions about the situation including options, ramifications and causes was the most predominant theme. This type of conversation requires a high degree of critical thinking (*decision-making component*), relating to others (*interpersonal*) and accurately conveying one's thoughts, feelings and concerns (*self-expression*). Included in this is maintaining control of one's thoughts and the ability to accept alternatives to emerge safely from the emergency (*stress management*).
2. Situational Awareness of Behaviors
   Noticing the reactions of other crew members and passengers (*interpersonal*) and acting accordingly avoided making it worse (*stress management*). Knowing how you come across to others (*self-perception),* especially in times of stress (*stress management*) is an asset in maintaining trust and successfully working through the event (*interpersonal*). It also contributes to the overall experience and how you reacted is what is remembered. Responding calmly and confidently in the midst of the incident are a reflection of *self-perception, self-expression, decision-making* and *stress management*.

This research validates that conveying one's thoughts and feelings in a genuine, sincere and non-judgmental manner puts others at ease. It is also the proper mindset to think clearly for the best problem solving and decision implementation.

What does that mean to flight departments?

It is not enough to target and perfect 'technical' competencies - those reviewed and practiced in recurrent training. The behavioral skills that need to be practiced and improved serve as the foundation for a safety culture and a high performing crew. It is taking situation awareness one-step further to encompass self-awareness, awareness of others and recognizing or noticing what is happening in the area. It is the noticing of odd, unusual or out of the ordinary behaviors either in yourself or others. In addition, it is identifying those behaviors, and feeling comfortable about addressing them in a professional and sincere manner. Realizing the domino effect your decisions and actions have on others can shift the "Swiss cheese holes" enough to stop or prevent incidents, accidents or other unwanted consequences.

Although many aviation professionals discount emotions and work to "compartmentalize" their lives, my study showed the ability to read the feelings of others and act accordingly was a valuable skill to have and use.

Turning the above pilot and flight attendant results into possible actions in a flight department environment:

- Lower in self-awareness. Do your pilots know when they are rambling (talking), upset or frustrated? Do you personally notice what annoys you or makes you happy? Are you aware of the impact it has on them? Do they use 'negative' emotions to maintain their control of the situation? Do they flirt, joke around too much or make light of situations inappropriately? "He knows I'm just kidding" or "She knows I don't mean it" are excuses and should not be tolerated. Are you aware of the impact decisions and events have on you? The ability to understand yourself and your 'why' will ensure a safe flight department and experience for your passengers.
- Lower in emotional expression. How comfortable are they in telling others how they feel? It doesn't have to be dramatic or over-the-top? A simple "I'm frustrated today" or "I am excited about …" will suffice. People will work with others willingly when they know where individuals are coming from and their rationale. Also, when a crew member talks, do you give them your undivided attention, or do you check emails or look for someone or something? Do you tell them you are interested while you are otherwise preoccupied?
- Higher in stress tolerance. Many in today's workforce consider a strong ability to withstand stress to be positive. In and of itself it is not. Staying too calm under pressure can leave others to believe you do not understand the severity or the urgency of the situation. They may not realize how much work they are taking on and how it is affecting them and others. Are they more irritable, fatigued or mentally slower than normal? Their decisions may create additional stress – are they aware of that on themselves and on others?
- Higher in problem solving. Another area that initially appears to be beneficial; however depending on the level this can be a determinant. If given a choice, do your flight department members present solutions that lack consideration for others? Even Shackleton, in leading a crew trying to be the first to cross the Antarctic, recognized the necessity of how his men would react to his decisions. Do they see only one path to the sole solution and force that solution, even when immediate action is not necessary? Effective problem solving assimilates the data within the required timeframe while working within emotional disciplines of everyone involved.
- Prefer to work alone and tenacious. Are your pilots hesitant to ask others for their view or do they not think to ask? Do they only ask a more senior person? Mechanics and schedulers/dispatchers can fall into this behavior. This study has shown that the higher the ability to interact with others lowers the chance of the individual freezing or over-reacting in an unstable situation.

These results are from the flight attendants:

- Lower in problem solving. How flustered or overwhelmed does an individual become when presented with multiple options or complex situations? Are they a detail person or do they become paralyzed when the solution takes numerous steps? Are they able to separate the critical from the non-essential data? Can they generate new alternatives, that is other that what has already been tried?
- Lower in impulse control. This can be characterized by quick, possibly explosive, reactions. Do they misinterpret behaviors? Are they looking to extract themselves quickly from the situation? Does the

individual become impatient easily? Do they make impulse purchases, or buy the first item they see? This attribute ties to problem solving and making quick, albeit not necessarily the best, decisions.

- ✈ Higher in interpersonal relationships. This, like the others, is beneficial to a point. The higher in interpersonal relationships, the more they can be seen (especially by others that scored lower) as spending too much time in the social arena, and not focusing on the 'nuts and bolts' of their job. Their actions can be interpreted as flirting, goofing off or procrastinating. This element is closely linked to empathy in that scoring too high, they don't want to hurt the other person's feelings by stating their opinion or making an unpopular decision.
- ✈ Higher in empathy. Individuals who score higher in the ability to identify and act appropriately upon what others may be feeling helps calm the environment and changes the ambiance to a collaborative one. These flight attendants were able to relate to their passengers and handle the emergency more quickly. However, scoring too high can place an inordinate amount of emphasis on the other person's feelings and decisions can be skewed.

Much like "opposites attract", working with someone that scores opposite of you can benefit the situation <EX>, or it can exacerbate the situation. If a pilot is low in emotional expression or interpersonal relationships, they can retreat further when under stress, which can frustrate or alienate other crewmembers. An individual scoring higher in the interpersonal realm can talk to the other crewmembers and passengers while the pilot flies the plane and communicates in the cockpit. A person higher in stress tolerance can give the impression that they are not engaged and actively seeking a solution.

My research has validated that communicating clearly and non-judgmentally in a crisis or volatile situation is imperative. Taking this one step further, the ability to express one's concerns and thinking, and talking through their options – listening and engaging in an honest discussion with respect for crew is imperative to assure a safe landing or resolution. This discussion must include keeping others informed and explaining the situation while working as a team, discussing options and comparing notes.

Conclusion

This research gives a starting point into the skillset needed to handle an emergency, a crisis or even a sudden change in the environment. Emotions are prevalent in our daily lives; they drive our behaviors, even when we believe we are compartmentalizing. The mind can only hold one thought – one stream of consciousness – at a time. Anxiety, concern or worry about family, financial matters or job security can draw much needed mental resources from safe actions. This preoccupation can affect your problem-solving abilities and decision-making skills. Look at many major accidents and you will find this to be a major cause: the Colgan captain's monologue was on *his* prior flights, *his* actions and *his* plans; Captain Sullenberger's attention was on landing the plane safely, not strictly on finding a solid surface. You may have experienced or seen a crew member take shortcuts or not reviewing the checklist or taking their time to complete pre-flight tasks properly and thoroughly because they were focused on getting home.

Does your SMS and/or CRM cover 'mental resource management'? That is, does it include the cognitive and behavioral aspects of safety? Does your culture promote free and genuine dialogue between management and

crew, and among all crewmembers? Would your flight department members agree? Ask them – and watch how they respond.

Continuing my research

The EQi2 is a snapshot (as most other assessments are), the closer to the incident this assessment is taken, the more accurate the correlation can be. In order to get a more expansive view, I am continuing my research and am asking you for help. The criteria for continuing my study are any non-commercial and non-military professional pilot or flight attendant who has experienced an accident or an incident within the past year (I am compressing the timeframe). The quicker the crewmember contacts me, the better. The research consists of an interview, a 12-question Likert scale capability survey and the EQi2 assessment. All responses will be confidential and information will be de-identified. In return, I will provide the participant their EQi2 results with an option to review it – a $450 value – simply for helping me in my research.

Additional resources

The high level of interest my research has generated has been refreshing. Based on my readers' desire to learn more and improve themselves and their organizations, I have created follow up white papers to accompany this white paper and my articles. Contact me if you would like more information on my articles or my newsletter.

About Dr Shari Frisinger

Since 2000, Dr. Shari Frisinger, a behavior analyst, has specialized in exploring the 'why' behind behaviors, and in mitigating the risks associated with unprofessional or unwanted behaviors. Merging emotional intelligence and communication styles, she presents thought-provoking ideas that provokes (at times, contentious) discussions in the aviation industry. Not one to follow the 'status quo', she challenges many aspects of aviation behaviors, including crew communications and interactions, compartmentalizing and the traditional views held by many in the industry.

She earned her Doctorate in Executive Leadership as a follow up to her Masters from Embry-Riddle. Her on-going research continues to contest accepted behaviors and standard rationale. Her unique perspective has been published in several magazines, including Director of Maintenance and FlightSafety Foundation's AeroSafety World. Dr. Shari is an NBAA PDP provider, a member of Aviation Psychology Association, and teach leadership courses at The University of Charleston, School of Leadership and Embry-Riddle Aeronautical University. She has presented at numerous aviation conferences, including NBAA and WATS.

Send your thoughts, comments or questions to Shari@CornerStoneStrategiesLLC.com. If you are interested in receiving future white papers, articles or newsletters, email Shari@CornerStoneStrategiesLLC.com , visit www.ShariFrisinger.com or call 281.992.4136.

Appendix

The EQI2 Instrument

The instrument I used, MHS's EQi2, is based on R. Bar'on's dissertation and has been administered to over 4000 people to validate the results, and includes checks and balances to ensure accuracy. Since the initial assessment (EQi) was released in 1997, over 1 million people in 66 countries, using 45 different languages have taken this assessment.

All participants were told to check the Normative Region: US/Canada and Normative Type: Professional/Overall. That ensured that all results were compared with the same category of location and type.

I specifically chose this because it includes the decision-making and stress tolerance aspects, which are important areas in the aviation industry.

Charting the statistics

The EQi2 has 21 scores (total EI plus each category and each element). The EQi2 assessment is broken down into five categories, with three elements in each category: (see appendix)

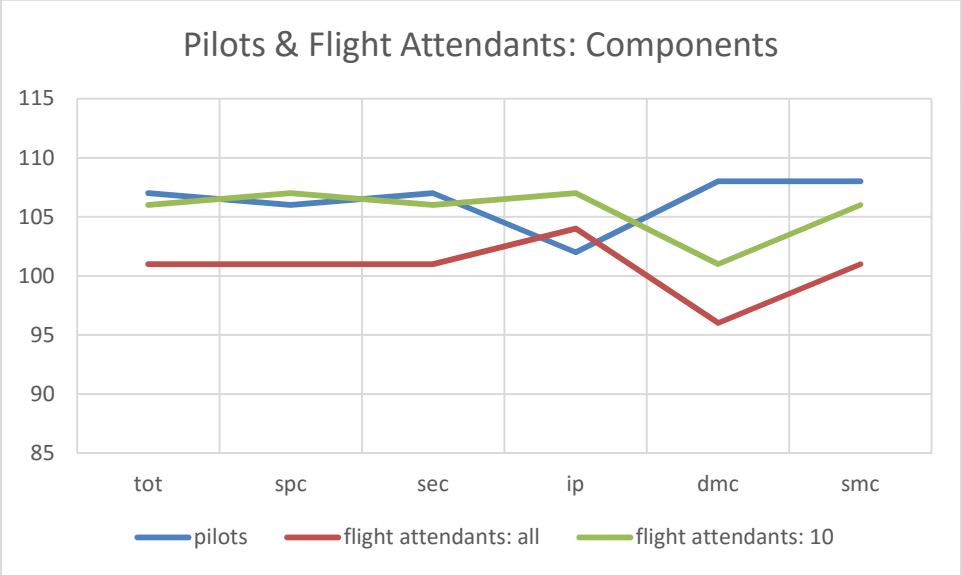
- Self-Perception: The level at which an individual is connected to what they are feeling, and confident in their thoughts and actions.
- Self-Expression: The level in which an individual candidly expresses their emotions in a non-threatening manner and is not overly influenced by the emotions of others.
- Interpersonal: The level in which an individual interacts with and relates to others, commonly known as people skills.
- Decision Making: The level in which an individual uses their emotions to create effective solutions, pragmatically deal with situations, and control impetuous reactions.
- Stress Management: The level in which an individual can remain focused on the situation, change course direction with new evidence, and maintain a positive attitude.

The vertical axis is the score for each of the components; the horizontal axis lists each EI category separately, where the first column is Total EI (tot). The table below shows the abbreviations used in the subsequent charts:

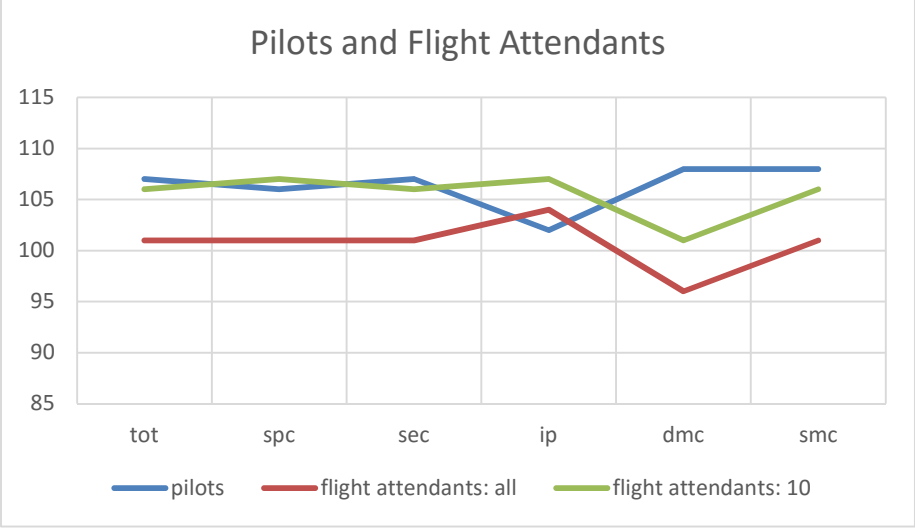
Self-Perception	SPC	self-regard - self-actualization - emotional self-awareness
Self-Expression	SEC	emotional expression – assertiveness - independence
Interpersonal	IPC	interpersonal relations – empathy - social responsibility

Decision Making	DMC	problem solving - reality testing - impulse control
Stress Management	SMC	flexibility - stress tolerance - optimism

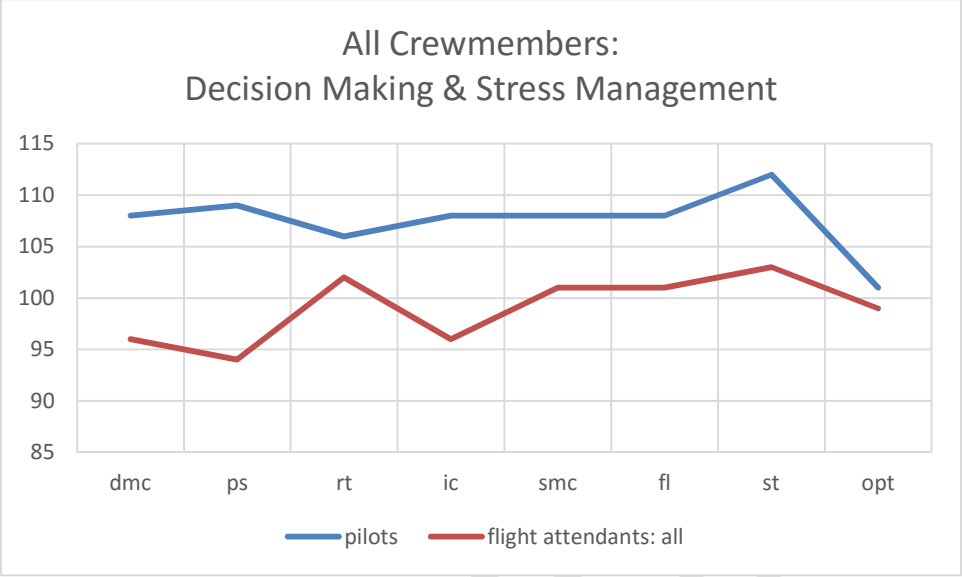
The charts below depicts the 14 total flight attendants (red), 19 pilots (blue) and the 10 highest flight attendants (green) for each category (six total). Four flight attendants scored below 90 for their total EI; I separated them from the rest to show the wide difference.

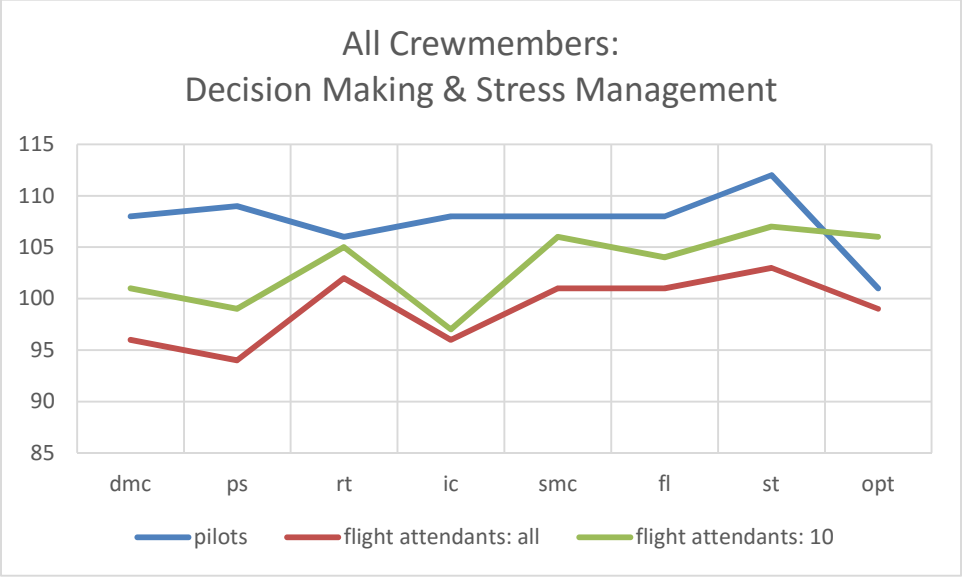


Using the flight attendants without the outliers, the pilots scored higher in every category except self-perception and interpersonal. Using all flight attendants, the pilots scored higher in every category except interpersonal.

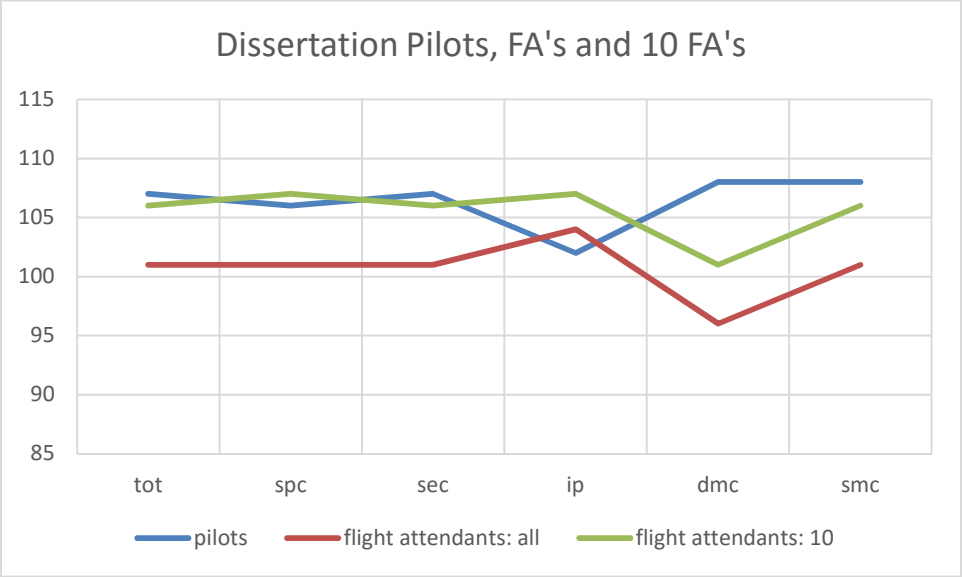


The differences between pilots and the upper scoring flight attendants is greatest in impulse control (ic); however the flight attendants scored higher in optimism (opt). They were fairly equal in reality testing (rt) and stress management (smc).





Pilots scored higher than flight attendants in every area, most notably in the problem solving (ps) and impulse control (ic) areas. They were fairly even in the optimism (opt) area.



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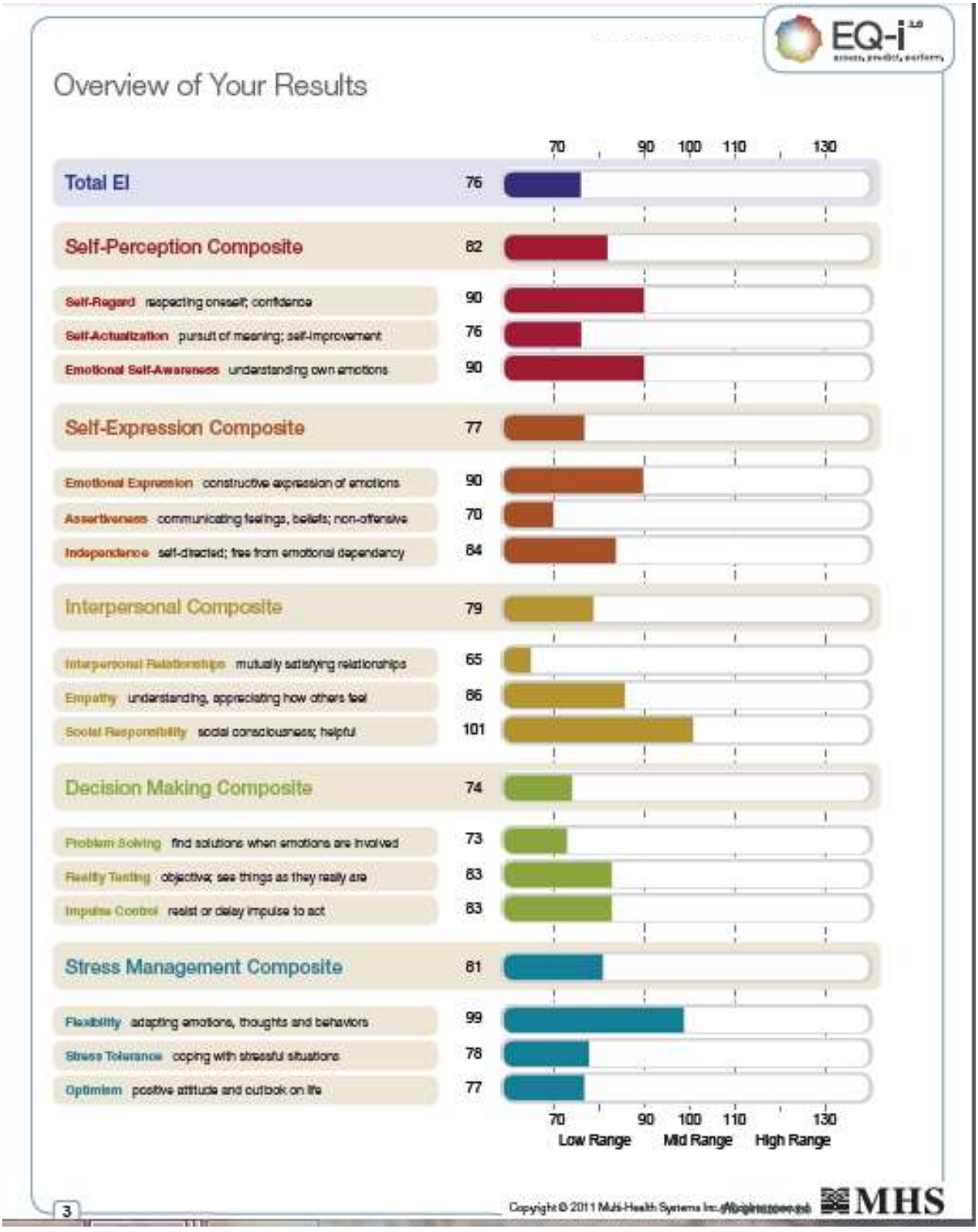
EQ-i 2.0
Overview of Your Results
70 90 100 110 130
Total EI 76
Self-Perception Composite 82
Self-Regard respecting oneself; confidence 90
Self-Actualization pursuit of meaning; self-improvement 76
Emotional Self-Awareness understanding own emotions 90
Self-Expression Composite 77
Emotional Expression constructive expression of emotions 90
Assertiveness communicating feelings, beliefs; non-offensive 70
Independence self-directed; free from emotional dependency 84
Interpersonal Composite 79
Interpersonal Relationships mutually satisfying relationships 65
Empathy understanding, appreciating how others feel 86
Social Responsibility social consciousness; helpful 101
Decision Making Composite 74
Problem Solving find solutions when emotions are involved 73
Reality Testing objective; see things as they really are 83
Impulse Control resist or delay impulse to act 83
Stress Management Composite 81
Flexibility adapting emotions, thoughts and behaviors 99
Stress Tolerance coping with stressful situations 78
Optimism positive attitude and outlook on life 77
70 90 100 110 130
Low Range Mid Range High Range
3
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