

Lessons from Miracle on the Hudson

Crisis Communications and Management Skills

LG Darmstadt

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The Origin of this Presentation ...

- ▶ Interview w/ Capt. Sullenberger – Toastmasters 2010
- ▶ Clearly Project Management and Crisis Communication “Life Lessons”
- ▶ Sully was later an International Speaker for PMI (PMI Leadership – 2015)
- ▶ My general interest in Risk/Crisis Management

Origins continued ...

- ▶ Did detailed analysis of the 3 ½ minute flight
 - Found fascinating communication patterns.
- ▶ Ultimately one of the greatest “success stories” of a life-threatening crisis situation

What we'll cover

- ▶ The actual event (recording!)
- ▶ Aspects of Success:
 - Team Cohesiveness & Effective Communications
 - Past Experience, Intuition
 - Risk Management
- ▶ How does this apply to you?
 - My job is not an airline pilot but... crises will occur!
- ▶ Miscellaneous Fun Facts
- ▶ Insights from a Commercial Pilot
 - (experienced in accident investigations)
- ▶ References / Recommended Reading

The Movie...

- ▶ Movie – *Sully*
- ▶ Hollywood did not consult w/ me. :}
- ▶ If you've seen the movie, tell me at the end – what you learned that was “new”



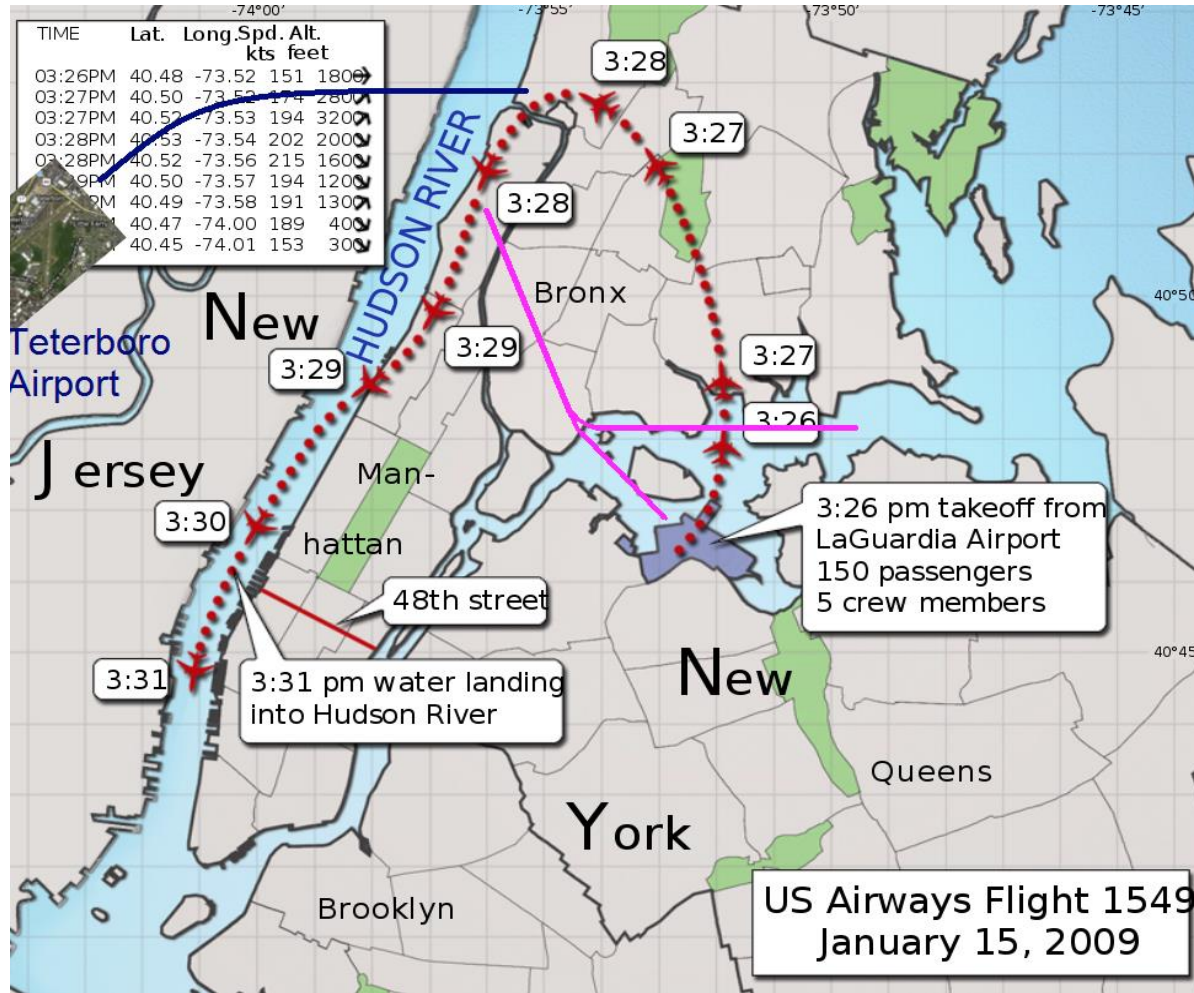
Setting the Stage...

- ▶ Date of event: January 15th 2009, Flight “Cactus” 1546, Airbus 320, 155 on board
- ▶ Left LaGuardia → Charlotte, NC
- ▶ Captain Chesley Sullenberger (or Capt. Sully)
 - Then – US Airways pilot since 1980
 - Was Air Force fighter pilot, & a “glider” pilot
 - Had key knowledge: “engineering” facts of plane (Airbus) , and boat traffic on Hudson
 - Note: 1st Officer Jeffrey Skiles, had never worked together before

Setting the Stage cont...

- ▶ Flight left LaGuardia at 3:26 PM
- ▶ Birds hit both engines (3 mins into flight), almost total engine failure
- ▶ Jet was at “low” speed & altitude, adding to problem of getting to a runway
- ▶ From “bird strike” to landing – 208 secs, 3.5 mins
- ▶ Event took place over densely populated area

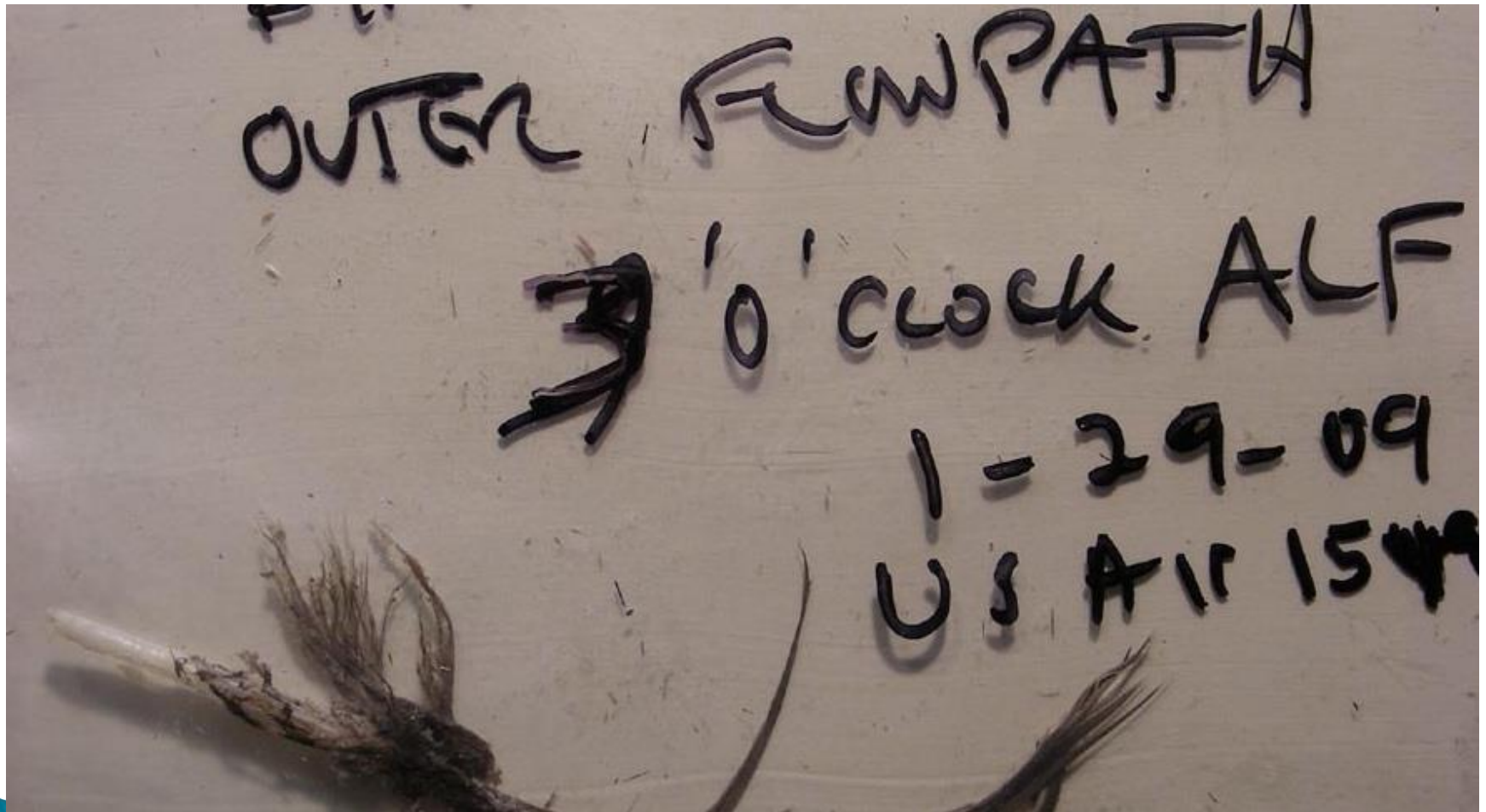
Flight Path (red dotted line)



Plane in Hudson, Waiting for Rescue



The “smoking gun” or “smoking feather”



Video of Flight Path on Hudson

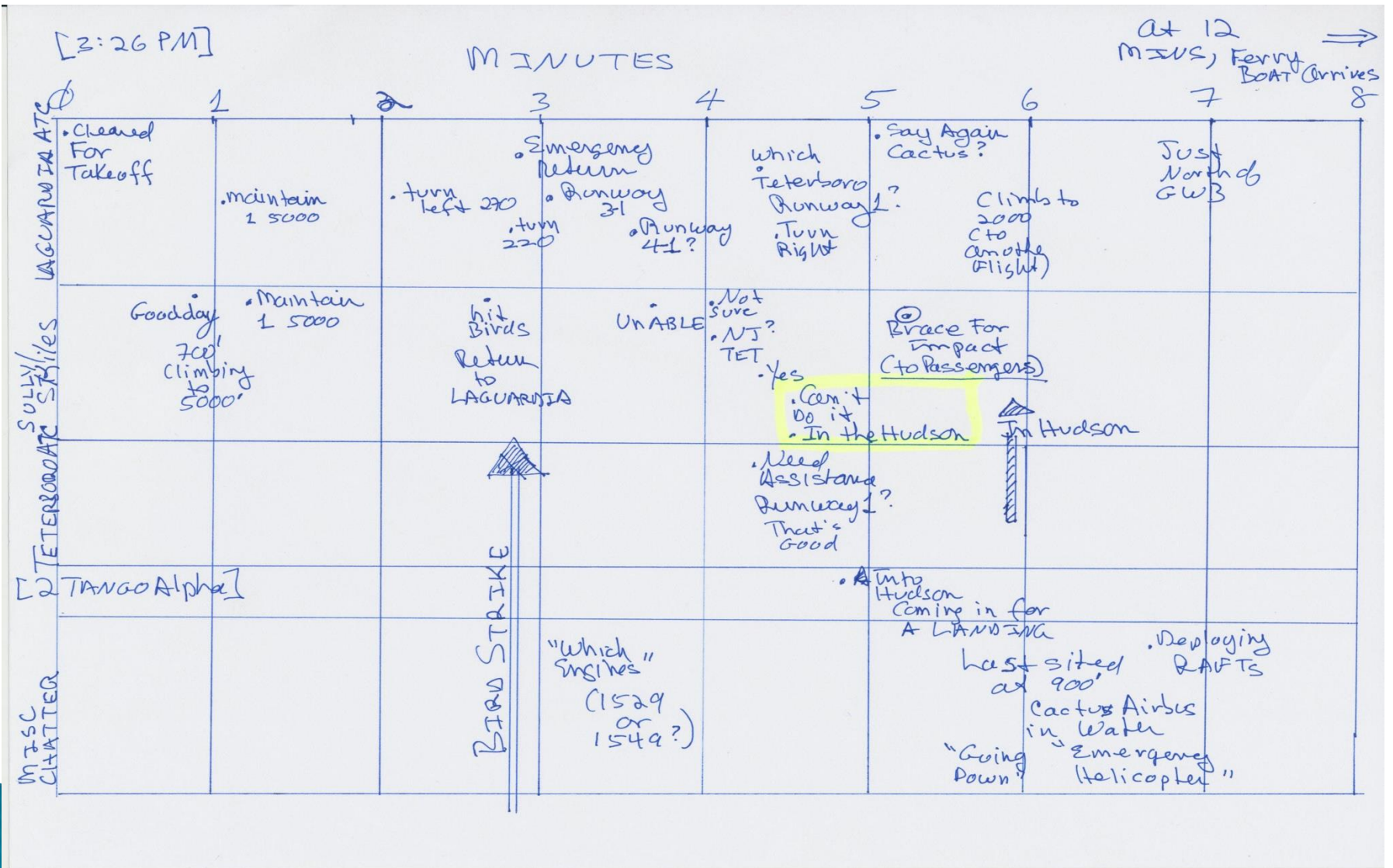
- ▶ My video – starting at George Washington Bridge, and ending at the Air/Space museum (USS Intrepid)
- ▶ *(Ignore the NCL ship ...)*



Explanation – on *Cactus*

- ▶ Throughout the recording you'll hear the flight referred to as “Cactus”. Originally – the ‘call sign’ for US Airways, left over from the merger w/ American West

Timeline + Communications



Timeline of an Audio recording

- ▶ Communications of the following:
 - LaGuardia ATC (air traffic control), Sully, Skiles
 - Teterboro ATC, TRACON (Long Island)
 - A private plane (2 Tango Alpha)
 - Miscellaneous chatter (many different sources)
 - On video – bird strike @ 3 min
 - ATC staff STILL NEED to direct/land OTHER planes
 - *“Abeam the USS Intrepid”*
 - *“They are deploying their rafts” (meaning?)*
 - *TRACON = Terminal Radar Approach Control(Patrick Harten)

Audio + Video

- ▶ <http://youtu.be/GChobnO5YU4>
- ▶ <https://www.youtube.com/watch?v=GChobnO5YU4>

Communication Patterns

- ▶ **Calm delivery**
- ▶ Only most essential facts, no extraneous information
 - Key to focus during a Crisis
- ▶ Sully – stopped talking to air traffic controllers
- ▶ The controller (at TRACON) assumed plane had crashed, no more audio & plane was not on radar
- ▶ Confusion on flight # (1529, 1539 vs **1549**)
- ▶ Others – who could observe, provided key information
 - Location “abeam the Intrepid”
 - Take insight for all angles
- ▶ In an urgent situation, you are **ONLY** obligated to pay attention to crisis & communicate **ONLY AS** needed
 - Not necessary to be talkative and polite

Communication Patterns, cont.

- ▶ While in a Crisis, must sometimes also deal with “keep the lights on” operations
 - Air traffic controllers were *still* guiding other flights (landing and departing)
 - Though LaGuardia stopped all departures for a while, some planes still coming in for landing
 - **Your thoughts or similar past experiences as a PM?**

What Sully knew...

- ▶ **Instinctively**, he felt the plane would not clear bridges/structures to return to an airport
- ▶ He **“knew”** the Airbus could “float” better than many other plane models
- ▶ He **“knew”** there would be nearby ferries to come to the aid of the plane for rescue
- ▶ He **“knew”** how to fly gliders, which is what that plane essentially became
- ▶ He **“knew”** minimal Hudson boat traffic, not at rush-hour

What was not known

- ▶ No simulation training for this type of landing
- ▶ Local rescue agencies (FDNY, Coast Guard, etc.) had no guide (or standardized procedures) for doing airplane rescues in the Hudson

Crisis Management Gems:

Interview w/ Capt. Sully

- ▶ Be prepared ‘ahead’ of a crisis (IE risk management planning, roles and responsibilities)
- ▶ Have access to continuous improvement training/exposure to best practice “skills”
- ▶ Past experiences and Training can help apply to known & unknown “future crises”
- ▶ It takes a “team” to best respond to a crisis
 - Sully would always conduct “pre-trip” meetings, helps to create a cohesive team

Gems, cont.:

- ▶ Common Vocabulary and Core Experience
- ▶ Formalized processes of reporting precursory incidents (identifying predictive patterns)
- ▶ Question: What project patterns have you seen that told you “trouble up ahead” ?
- ▶ Looking for Root Causes / Mindfulness
 - How did this occur?
 - Do analysis *without blame*

Brief Discussion – Intuition

- ▶ *Really – what is it?*
- ▶ Perception of any situation is seen through a “personal lens” of 100’s of similar experiences
- ▶ Also as the brain processes the “new” situation and starts to get a “picture”, our reactive responses kick in (emotions, what are the next steps, ...)
- ▶ Sully as a glider pilot ...

Quotes from Int'l Journal of Project Management

- ▶ “Intuitions are rapid, affectively charged, holistic judgments arrived at without the apparent intrusion of rational thought.”

Intuition, cont.

- ▶ How did Sully have this?
 - Notes from Tres Roeder book – A Sixth Sense for Project Management
 - At point of bird strike – Sully ...”felt, heard and smelled the evidence...”
 - His thought processes (within seconds):
 - Immediately turnaround and land at LGA?
 - No –> path over densely populated areas
 - Make it to another airport?
 - No –> not up high enough
 - Restart Engines?
 - Yes –> but did not work
 - Process of elimination – Land on the Hudson (also given his knowledge and past experiences)

Review of Another Aviation Incident

- ▶ Less than a month after this “miracle”, A Continental flight crashed after leaving Newark, no survivors
- ▶ By accident, auto-pilot was left on by captain
- ▶ Indicators for icing conditions may have been “masked”

Review of Another Aviation Incident (cont.)

- ▶ Lesson learned:
 - We can't run projects on "auto-pilot"
- ▶ Always do adequate analysis of all aspects of an on-going project
- ▶ Never assume "all is OK"

Was the Best Decision Made?

- ▶ Intense studies and flight simulations were done by the NTSB*
- ▶ Out of 15 simulations only 8 were successful (in returning to LGA or onto TEB)
- ▶ NTSB (May 2010) – Hudson landing was validated as best option
- ▶ Movie may have “overplayed” this analysis, and the combativeness of the review board*

*NTSB = National Transportation and Safety Board

Always one 'best' decision?

- ▶ We make countless decisions in a day ...
 - Some are “big” with long-term impacts
- ▶ There isn't always one best solution or direction (Capt. Sully briefly considered an airport landing)
- ▶ Always bring all your knowledge, (experience, intuition, “gut feel”) + team input to situations

Always one 'best' decision?, cont.

- ▶ As you “can”, monitor the results of your decision
 - Get input from others
 - Your team, vendors, customers, sponsors, auxiliary groups in your company
- ▶ And define ‘alternate course’ when possible

A perspective from “inside” – Commercial Airline Pilot

- ▶ Steven Green (was American Airlines captain)
- ▶ 34 years commercial flight experience
- ▶ Has done numerous crash investigations
- ▶ Has developed:
 - Pilot training/CRM programs
 - Accident studies for NASA and FAA (focused on airframe icing)

What is CRM?

- ▶ Crew resource management or cockpit resource management is a set of training procedures for use in environments where human error can have devastating effects.
- ▶ Used primarily for improving aviation safety, CRM focuses on *interpersonal communication, leadership, and decision making* in the cockpit of an airliner.

CRM cont.,

- ▶ Originated from an NTSB* Crash (1978, ultimately a distracted airline captain)
- ▶ Used by NASA and similar practices in the medical fields
- ▶ Foster a climate/culture with “freedom” to respectively question authority
 - Even if issues are detected by “junior team members”
 - Hurricane of 1938 Example ...

* National and Transportation Safety Board

Insights

- ▶ Sully made his decisions in lightning fast time
- ▶ Not on flight recorder – automated “Caution and Warning System”
 - “Too low – Flaps... Terrain, Terrain!!”
- ▶ These warnings had to be dismissed
- ▶ Distractions can degrade our ability to focus

Quotes from Steven Green

- ▶ “... he had to go from a normal day to "I'm-gonna-sink-a-20 million dollar airplane-in-a-river-and-I-sure-hope-that's-the-best-choice-for-everyone-on-board" in about a minute or less.”

Quotes cont.,

- ▶ "Little or in some cases *no situational communications* between Captain and first officer – 1st officer would “jump” to next step in his role, such as getting out emergency checklist.
- ▶ But due to time constraints typical checklist processes – not fully followed. Captain and 1st officer were running on intuition and visual observation”

Key Communications Point!

- ▶ Minimum necessary communications:

Flight crew's communications to ATC's and cabin crew.

Critical roles ...

- ▶ Captain was primary communication point to ATC, flying the plane, and determining landing location.
- ▶ 1st officer performed checklist duties and as needed, answered questions from Captain.
- ▶ Both performed their duties as specified in their roles.

Have we done this in our professional roles?

- ▶ *But of course...*
- ▶ How many times have you asked a team member to do something – they had already done?
 - In part – since they knew their job and when to do their job
- ▶ Or you yourself – moved ahead in anticipation of a task needing to be done?

Key take-aways ...

- ▶ Need to define roles/responsibilities ahead of a crisis
- ▶ Know your "role" and perform your specific duties
- ▶ Team cohesiveness is key to handling a crisis situation
- ▶ Sparse/minimal communication – "just the facts" is all that is necessary
- ▶ Take "stock" of your talents – how can you be helpful in a crisis?
- ▶ After a crisis –
 - Conduct an analysis in a non-judgmental approach

Briefly – Harvard Business Review study

- ▶ Detailed description of event ...
- ▶ After bird strike, “training kicked in”
- ▶ Core rule:
 - “Aviate, navigate, communicate”
- ▶ Mentions error in call sign – “1539”
- ▶ No time ... did “calculations in my head”
- ▶ TRACON – providing multiple options
 - Important to handle project crisis
- ▶ Sully got off the plane last
 - Be “present” with your project start to finish

Miscellaneous Facts

- ▶ US Airways discontinued flight # (1549) after 1 / 15 / 2009 (since involved in accident)
- ▶ At least 2 passengers (who had never met before) ended up marrying, due to meeting at various passenger reunions
- ▶ Shortly before the bird strike, Sully said “what a beautiful morning it was”
- ▶ Air temp: 21 (F), Hudson River – 40 (F)
- ▶ Sullenberger Aviation Museum
 - *It has the plane!*

Not Covered here but recommend...

- ▶ Book Series ---- *Lessons from History* (great case histories on how they apply to project management)
- ▶ These included in depth studies of events such as the sinking of the Titanic, The Great Escape (in Germany, WWII), Churchill's management style.
- ▶ Author: Mark Kozak-Holland
 - <https://lessons-from-history.com/page/mark-kozak-holland>

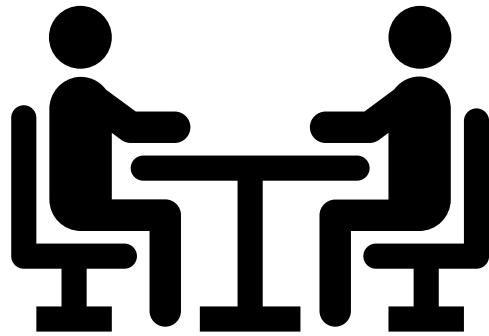
References

- ▶ "Crisis Leadership: A Leader's Highest Duty", by Craig Harrison, Toastmasters, Dec. 2010 (interview w/ Capt. Sullenberger)
- ▶ "A Sixth Sense for Project Management", by Tres Roeder (2011) (has case study of this flight)
- ▶ Excerpts from "A Sixth Sense for Project Management" @ PMI:
 - <https://www.pmi.org/learning/library/sixth-sense-project-management-6664>
- ▶ "Miracle on the Hudson – Wikipedia:
 - http://en.wikipedia.org/wiki/Miracle_on_the_Hudson
- ▶ Description of CRM – Wikipedia:
 - http://en.wikipedia.org/wiki/Crew_resource_management
- ▶ Harvard Business Review:
 - <http://hbr.org/product/miracle-on-the-hudson-a-landing-u-s-airways-flight/an/HKS713-PDF-ENG>

The Movie ...

- ▶ See it if you haven't...
- ▶ Fairly accurate to what occurred
 - *You hear the automated warning text, not on the flight recorder...*
 - *The cockpit relationship and “steps” – very accurate*
 - *They did not show the mix-up of 1529, 1539 vs 1549*
- ▶ Who else but Tom Hanks as Sully?

Questions and your thoughts ...



Kathleen Langone – Bio

- ▶ Project manager for 25 years, (software, medical, academic, commercial)
- ▶ Education: BA in Geology, MS in Computer Science
- ▶ Wrote Crisis Response Course – due in 2024
- ▶ Consultant to Emergency Management Agencies
- ▶ Numerous Speaking Engagements
- ▶ Published in magazines, newspapers & book coming out in 2025
- ▶ Multiple TV and Radio interviews
- ▶ Podcast series: People Hidden in History

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- ▶ Would welcome your feedback!