

## Training for Emergencies

- Need for some uniformity of training across airlines. Concern is especially about variability in amount of training for emergencies. Not enough training in general for emergencies.
  - What are the criteria for training for success.
  - Try a “hypertext” approach to simulator scenario construction.
  - Test of durability and generality of training effects.
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- Good project. Please distribute findings after project is complete.
  - Are airlines using instructional systems design principles in training pilots?
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- How are check airmen/instructors chosen? What tools are provided to improve the educators/trainers?
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- Is training tailored, not only to an FAA standard, but to the type of operation being flown? For example, flight crews that fly short stage lengths spend more time in the terminal (high workload) environment, and generally have more proficient flying skills. These skills allow them to divert more attention to abnormal/emergencies. Pilots that fly wide body aircraft, sometimes require trips to simulator to maintain landing currency, and have diminished flying skills. Abnormal and emergencies can cause significant degradation of flying abilities, as their scan requires much more attention.
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- Have industry economic pressures led any air carriers to seek contract training for crews? If so, what is the outlook for maintenance of standards as well as the air carrier control of curriculum and standardization between disparate fleets. Is there evidence of private industry attempts to market such resources to the industry as a cost saving alternative?
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- For emergency training, do we ever train beyond the checklists (i.e. “unannounced” emergencies where whole crews (flight and cabin) must problem solve)?
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- UNFAIR. This is my feeling. For sure I am wrong and it is not the intent, but its my feeling. We started the Symposium with “The scope of the problems”. I do not think there is any problem. There is a situation susceptible to being improved. We are good, but can be better. With the other presentations we concluded that there are some close departments which do not communicate well. Almost none of the incidents/accidents had “facing the procedure in the cockpit” failures. Most of them were related to “facing the situation”. Now, at the end, training is covered and it is covered from a

different perspective than the others. It is the “star” of the study. And it seems to be the solution of everything, no being guilty of anything. Even more, no new ideas or innovations are proposed, just possible failures of “traditional, procedure orientated, crew only, training”. UNFAIR AND NOT IN THE RIGHT DIRECTION (in my opinion). Immanuel said training is the first candidate for cutting costs. I would say training is as well the first candidate to look for solutions in a problem not completely identified.

- Flight attendant emergency procedures training facilities should be encouraged to incorporate workload and stress management training into their programs. Flight attendants are now being expected to deal with a number of scenarios without direct involvement and/or assistance from flight deck crewmembers. As a result, workloads and stress levels can be expected to increase and a basic knowledge of how to recognize and manage stress levels and workloads while responding to emergency and/or abnormal situations would be very valuable.
- Will you look into training at manufacturers or third party training centers? There might be issues of either:
  - Very low skill level as “cost” of training may drive operation. (3<sup>rd</sup> party doesn’t profit from a well trained crew)
  - Old retired pilots make up trainers, lots of life experience but not proficient with new systems TCAS, EGPWS, or never actually flown glass, FMC flight decks.
- After listening to Chris and Ben I realize our airline is training is below par! We certify our pilots, not train them. Many times, we train 2 Captains together during a proficiency check. This means we must rush through a lot of events. This “rushing” transfers, adversely so, to line flying and the handling of abnormal. Our crews make bad decisions because they rush through actions. We have several incidents of this from the line. Our training department is bottom line orientated. Training with minimum cost and speed to get the pilot out of training and back on line. They (the directors) don’t seem open to any outside ideas concerning altering training. We crank out 20-40 new pilots a month.
- There is a tradition at my airline where 1 pilot from each new hire class passes a book to another member of the next new hire class. This book has the name of all check airmen and what they ask/and or what is given during their simulators. It is basically knowing the answers before getting the test. This is a common knowledge issue to new hires, the company, and the training center. These practices should not be allowed or tolerated!
- Training Footprint Issue:

- Requirement driven simulator periods for 121 training can cause jam packed intense environments. Results cause a lack of fullness in situational awareness of each event. Repositioning the simulator to complete the requirements in the time allotted creates an artificial environment, but necessary because of the time criticality.
  - We train for the event, not the situation.
  - How many times does the management of the issue at hand take a back seat to the actual performance of the required event.
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- The FAA should make greater use of simulator for ATC training and the EAS project should give attention to controller training which is still operating in the dark ages.
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- There is too much emphasis on training to pass the checkride. More realism in recurrent training is needed - interruptions of procedures via ATC cues, etc.
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- There is a need to practice in the simulator more realistic situations (real time, multiple failures) versus canned program check requirements.
  - There is also a need to consider other low fidelity (classroom) methods to train emergency and abnormal responses
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- Training on the human performance issues – stress reactions (flight or fight, rushing, overload) is very important, especially at the beginning of training (initial new hire classes).
  - Selection and training of instructors – often the pilots have no education or background as instructors and are expected to learn on the job.
  - Training for the unexpected: Based on my own experience of a complex, catastrophic emergency, I believe that thorough system training with emphasis on why each checklist in the QRH existed (or was included in QRH) that I received combined with years of experience made a difference in getting the aircraft off the ground. Flying the airplane was often the priority. There was no time for pulling out the checklist, therefore, “knowing” the systems and checklists resulted in doing what needed to be done without referring to the written QRH.
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- The characteristic to train for the event that needs to be checked in training mode versus making sure the student understands the situation and learns from the event. Effectively using the decision making process – particularly by the captain, by buying time in an emergency, if that option is available, to utilize all resources and proper decision making instead of rush to a (bad) decision.
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- It is just as important to train the “how” of running a QRH, as well as the “what”.

- “LOFTs are too tightly scripted” was a comment, great observations overall, additionally, crew members lose training when they get “gouge” on the event. LOFTs should be changed frequently, or left to the instructors discretion. Oh yeah, Train for situations, not procedures.

Ways to augment training:

- verbal practice of emergency procedure during low workload portions of the flight.
  - individual (thought) practice where the pilot thinks of what steps to do in various emergencies.
  - brief an emergency procedure as part of preflight brief.
  - distribution of scenarios to pilots for them to ponder during low workload phases of flight.
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- Outside “checkers” concept fails most of the time since they often don’t know the operator’s philosophy, procedures, and training program and may fail an airmen who fully needs all the training objectives and would have “passed” a check under those circumstances.
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- How effective is simulator training for abnormal situations? How do you know?
  - I like the approach taken by Reed and Berman – how is the difference in training practices evaluated for effectiveness?
  - What is expected time period for retention of skills?
  - Are there any companies that provide competency based training, other than procedure or situation or problem driven training? This relates to understanding skill and knowledge requirements for abnormal and emergency situations.