

Procedural Noncompliance: Why Pilots Don't Always Play By The Book

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Procedural noncompliance has been cited as a factor in numerous aircraft accidents. When procedural deviations occur in the cockpit or in the maintenance hangar, they can have catastrophic consequences. This discussion will primarily focus on flight operations. [Click here](#) for my paper that is specific to aircraft maintenance operations.

The recent crash of an Execuflight Hawker HS125-700A (9 fatalities) is used as an example (see the NTSB presentations at the end of this paper for additional information). The aircraft crashed during a nonprecision instrument approach to landing in Akron, Ohio. Among other things, there were many procedural deviations that occurred throughout the flight. These included (per the NTSB report):

En Route

- First officer was flying pilot on revenue flight, contrary to informal practice.
- Captain briefed approach, contrary to standard operating procedures.
- Approach briefing incomplete, and approach checklist not performed.

Localizer Approach Prior to FAF

- First officer slowed airplane and placed it in danger of a stall. Captain failed to take control.
- First officer improperly configured airplane by selecting flaps 45°.
- Landing checklist never completed.

Localizer Approach

- Speed decayed below approach speed.
- Captain did not call out “minimums.”
- Airplane descended below minimum descent altitude without runway in sight.
- First officer attempted to arrest descent, airplane entered an aerodynamic stall.

Pilots’ Recent Employment

- Both pilots had been terminated by their most recent employer.
- Captain failed to attend training.
- First officer had significant training difficulties.
- Execuflight was aware of first officer’s performance issues.

Preflight Planning

- Execuflight pilots conducted their own flight planning.
- Alternate airport required but not filed.
- Weight and balance incorrectly calculated.
- Execuflight failed to ensure accuracy.

Standard Operating Procedures (SOPs)

- SOPs are basic element of safe aviation operations.
- Flight crew failed to comply with numerous SOPs.
- Execuflight did not identify operational errors.

Crew Resource Management

- Both crewmembers completed Execuflight's CRM training program.
- Poor CRM exhibited during accident flight.
- Execuflight CRM testing was not conducted appropriately.

The NTSB Execuflight presentations should be consulted for additional details. Although this example highlights a Part 135 (charter) operation, the basic principles can apply to any type of flight operation, from business aircraft operators to major airlines.

Why Does Procedural Noncompliance Happen?

Procedural noncompliance is a manifestation of many issues. Compared to airline operations, many Part 135 charter operators tend to run in a bit less safety-structured environment. But Part 135 operators, by virtue of their complex operating environment, should pay more—rather than less—attention to safety. Some unique aspects of the Part 135 environment include:

- **On-demand operations** (harder to plan ahead).
- **Pilots are responsible for all preflight planning** (very few have the luxury of a dispatcher).
- **Dynamic flight plans** (can change at the last moment due to passenger needs).
- **Contracted training** (less standardization).
- **Many Part 135 operators use contract pilots** (standardization is difficult when pilots are flying for a number of different operators). Crew pairing can be unpredictable.
- **More passenger pressure to complete a flight.** Part 135 pilots tend to be more face-to-face with passengers as opposed to airline pilots who are behind locked and reinforced cockpit doors. Charter passengers are paying a substantial amount of money for a private

charter and they believe the pilots will get them to their destination, regardless of—for instance—unexpected bad weather or unplanned maintenance issues.

In the case of Execuflight, the links in the chain were connected in such a way that the pilots, on that day, were the enablers of an accident that was waiting to happen. The holes in the Swiss Cheese model lined up. As is often the case, there were latent threats that were inherent in the system. These latent threats included inadequate oversight by the FAA, inadequate pilot recruiting and training, and a general lax oversight of safety at Execuflight. These latent threats allowed the pilots to fly the trip together that day and commit a series of errors that culminated in a preventable crash that took the lives of 7 passengers and both pilots.

The crash illuminated a number of issues related to procedural noncompliance. Latent threats set the accident precedents, but the pilots were the ones that enabled the accident to occur on the day of the accident. Instead of being the final safety nets to avoid such an accident, they instead were the “trigger pullers”. So why, on that day, did the pilots deviate so extensively from procedures? Here is a non-exhaustive bullet list (in no particular order) of reasons why the crew may have deviated from standard procedures:

- **Lack of, or poor, training.** The NTSB cited deficient training as a contributing factor in the Execuflight accident.
- **High risk-taking propensity.** Some pilots have an innate risk-taking propensity.
- **Macho.** Though to a lesser degree than decades ago, the macho type still exists in the cockpit. They believe that “it won’t happen to me.” They may feel that “SOPs are for weak pilots.”

- **Rushed.** Procedural deviations are more likely when pilots are rushed, particularly during the approach and landing phase. These types of deviations are usually checklist-related, such as intentionally—or non-intentionally—skipping items, or reciting checklists from memory.
- **Pressure.** Similar to above.
- **Complacency.** “I’ve done this a thousand times before and have had the same predictable, successful outcome.” Skipping checklists, and/or not operating per company SOPs and getting away with it for years, only serves to reinforce the normalization of deviance.
- **Fatigue.** Fatigue is an insidious threat and can affect a pilot’s performance in many ways. A fatigued Pilot may try to take the least path of resistance in terms of structured procedures—leading to skipped checklists and/or noncompliance with SOPs—such as required callouts during an approach. The NTSB cited fatigue as a contributing factor in the Execufight accident.
- **Perceived importance.** Some pilots feel that checklists and SOPs are not important, or perhaps they have a better way of doing things.
- **Apathy.** The pilot just doesn’t care. This can lead to a bad attitude;
- **Bad attitude.** Bad attitudes can be due to work and/or personal issues. For example, if a pilot is not very happy with his/her employ, this may lead to a poor attitude, which can translate into less concern for safety.
- **CRM.** Part 135 operators are required to have a formal Crew Resource Management (CRM) training program. Unfortunately, this often winds up being a “check the box” event, completed on a computer, or in some cases, delivered by a company instructor. In

either case, the training may not be very effective, or, if the training is effective, there may be a lack of interest by the pilots (which may be due to some of the issues mentioned above). Over the years, it has been shown repeatedly that basic CRM principles were not being applied in the events leading up to many accidents. This appears to have been the case in the Execuflight accident, as cited in the NTSB report.

What Can Be Done?

In order to reduce the likelihood of procedural violations, an operator has to understand the genesis of the problem. As discussed earlier, the operator itself could be complicit (such as not addressing latent conditions that could turn into accidents). Or, the problem could be with individual pilots. Or, as elucidated in the Execuflight accident, a combination of both.

From the operator perspective, take a serious look at your protection versus production scales. Your scale may be weighted too heavily on the production side (safety may be insufficient or underweighted). For many operators, this type of safety culture is strictly reactive (we'll only fix it if it breaks). This type of corporate philosophy sets up those latent conditions that eventually filter down to, and affect, the pilots. As far as conducting internal audits to look for these things, keep in mind that being honest and objective through your own lens may be difficult, which is why an external, unbiased audit of your operation is a good idea.

Although a Safety Management System (SMS) is not currently required for Part 135 (or Part 91) operators, it would behoove operators to consider the benefits of an SMS. This was also pointed out by the NTSB in its recommendations postulated from the Execuflight accident. While there is never a magic bullet when it comes to safety, an effective SMS is an ideal way to centralize and fortify the operator's safety processes.

In terms of SOPs themselves, some operators simply have inadequate SOPs. This can range from not having SOPs at all, to SOPs that are incorrect or outdated, to SOPs that have literally been cut and pasted from another operator without modification. Obviously, all of these circumstances can be very problematic. For specific guidance on how to develop effective SOPs, the FAA has an Advisory Circular just for that (see FAA Advisory Circular 120-71A). It is imperative that a company have good SOPs as a *starting point* to help mitigate deviations and noncompliance.

From the pilot perspective—and this assumes that the company has a good safety culture and effective SOPs—there has to be a good understanding of why pilots tend to deviate from procedures. Procedures can be learned in training, but ultimately, adherence or non-adherence to procedures becomes part of the integrity of the pilots themselves. Obviously, training is much easier to quantify than pilot integrity. Yet integrity is where the pilots become the last line of defense to either prevent—or cause—the accident they never intended to have.

Dr. Bob Baron is the President and Chief Consultant of The Aviation Consulting Group, Inc., in Myrtle Beach, SC. He conducts extensive training, research, and program implementation in Human Factors, SMS, CRM, and LOSA. He consults with, and provides training to, hundreds of aviation organizations on a worldwide basis.

Sensitive and knowledgeable about various cultures, Dr. Baron uses his 30+ years of academic and practical experience to assist aviation organizations in their pursuit of safety and quality excellence. He has extensive experience working with developing nations and island countries. He also provides training and consulting to some of the largest airlines and aircraft manufacturers in the world, as well as civil aviation authorities and accident investigation bureaus.

Bob was an adjunct assistant professor at Embry-Riddle Aeronautical University from 2009-2012. He taught the Graduate Capstone Project and Research Methods for Aviation/Aerospace

courses. He was also a full-time faculty member at Everglades University from 2004-2011, where he taught Safety Management and Human Factors courses at the Graduate and Undergraduate levels.

Bob has also served as a consulting editor for the FAA's International Journal of Applied Aviation Studies (IJAAS) and currently serves on the editorial board for the Journal of Airport Management (JAM) and the Journal of Aviation/Aerospace Education and Research (JAAER).

Bob is typed in Learjets (LRJET series) and Citations (CE500 series), and was a Part 135 contract Learjet captain and check airman for numerous operators in the south Florida area from 1996-2004. He was also a simulator and ground instructor for the Lear 35a at Pan Am Intl. Flight Academy in Miami and FlightSafety in West Palm Beach during that same period of time.

Dr. Baron's full bio can be viewed at www.tacgworldwide.com/About-TACG/Bob-Baron-Bio

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**Crash During Nonprecision Instrument Approach to Landing, Execufight Flight1526,
British Aerospace HS 125-700A, N237WR, Akron, Ohio, November 10, 2015**

PRESENTATIONS

[Abstract](#)

[Opening Statement](#) - Chairman Christopher A. Hart

[Crash During Nonprecision Instrument Approach, Execufight Hawker 700A Akron, Ohio
November 10, 2015](#) - Jim Silliman, Investigator-in-Charge

[Operational Issues](#) - Captain David Lawrence, Operations Investigator

[Company Organizational Issues](#) - Sathya Silva, PhD, Human Performance

[Crash During Nonprecision Instrument Approach](#) - Bill Tuccio, PhD, Cockpit Voice Recorder

[Closing Statement](#) - Chairman Christopher A. Hart

ADDITIONAL RESOURCES

[FAA Advisory Circular 120-71A](#) (Standard Operating Procedures for Flight Deck Crewmembers)

[NTSB Most Wanted: Strengthen Procedural Compliance](#)

[NTSB Presentation on SOPs](#)

NTSB Procedural Compliance Video

