



A professional Gulfstream G150 crew flies into Austin International Airport (KAUS), Texas

Professionalism and Safety

Aspire to be the aviator everyone thinks you are

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We in the aviation community take as an article of faith that those who occupy the seats in an airplane cockpit for a living are, in every sense of the word, professionals. Whether you wear the epaulettes of a commercial flight crew or the coat and tie of a private operator, there is no doubt in your mind that you are a professional.

But what does the word really mean? What are the requirements for entry into this lofty club of gravity defiers? Is there a litmus test of some sort? We are, of course, entering the “touchy feely” region of aviation here. But I think the effort will be worth it because coming to grips with the meaning of professionalism can provide us a way of establishing a level of safety amongst aviation practitioners. It will also provide a way for us to detect those who fall short.

What's in a Word?

Many pilots like to equate the job of flying people from Point A to Point B with that of driving a cab. The last time I had to interview for a job I told the person on the other side of the table that I knew my place in the food chain. I said, tongue in cheek, “I am little more than a limo driver.” She was alarmed and quickly corrected me. “Oh, no! You are much more than that. You are more like a doctor.”

I got the job and for the next few years she would sneak up on me in the cockpit and watch in amazement at our crew coordination before making flight management system inputs, briefing instrument approaches or calling out traffic. One day she caught me in the right seat answering a radio call, changing the altitude selector and

initiating a course change. Each sequential step included a hand gesture that allowed the other pilot a chance to check and approve my actions. The boss tapped me on the shoulder, “You are more like a surgeon.”

Surgeon. Now that is a word that immediately evokes the thought of “professional.” But what does that word mean, really? Looking it up doesn’t help much. Professional comes from the Latin word *profiteri*, which means to publically declare. English dictionaries are a little more useful when defining it. Merriam-Webster’s, for example, states:

professional (noun)

a: of, relating to, or characteristic of a profession

b: engaged in one of the learned professions

c: characterized by or conforming to

the technical or ethical standards of a profession

(d): exhibiting a courteous, conscientious and generally businesslike manner in the workplace

Putting the dictionaries aside, I decided to take a page from a surgeon who wrote a book looking to aviation for lessons of his own. Dr. Atul Gawande, author of *The Checklist Manifesto: How to Get Things Right*, defines professionalism in terms that should ring true for we aviators:

"All learned occupations have a definition of professionalism, a code of conduct. It is where they spell out their ideals and duties. The codes are sometimes stated, sometimes just understood. But they all have at least three common elements. First is an expectation of selflessness: that we who accept responsibility for others — whether we are doctors, lawyers, teachers, public authorities, soldiers or pilots — will place the needs and concerns of those who depend on us above our own. Second is an expectation of skill: that we will aim for excellence in our knowledge and expertise. Third is an expectation of trustworthiness: that we will be responsible in our personal behavior toward our charges."

But Dr. Gawande notes that we aviators have a fourth element that is absent from many professions: discipline. We are expected to be disciplined when following prudent procedure and in our dealings with others. These four elements — selflessness, skill, trustworthiness and discipline — provide us with a roadmap to follow to enter into our profession. But, more importantly, they offer a way to detect when professionalism decays to "occupationalism," as we've seen in far too many recent accidents.

Selflessness

The romantic view of the pilot profession usually starts with the dashing young aviator in an open cockpit, white scarf in the wind, looking down on the world without a care. In the days before data link, transponders, air traffic control and two-way radios, flying airplanes was truly an act of individualism. But even in the earliest days of powered flight, an aircraft crash could involve collateral damage. On Sept. 17, 1908, U.S. Army Lt. Thomas Selfridge was the first airplane passenger to die

in a crash, with pilot Orville Wright at the controls.

As aircraft became faster and larger, statistics grew to include three categories of aircraft crash casualties: crew, passengers and ground personnel. No pilots can ever feel their actions impact only themselves. The very act of piloting an airplane must be selfless.

Try to imagine if a transcript of the cockpit recording of your most recent flight became the most read news in the aviation world for a week. How would your professionalism have stood under the microscope of public scrutiny? Your professionalism will be measured not only in the skill you displayed for the

to fly their aircraft on a day that demanded a high level of performance.

The captain's training records show multiple failed attempts to upgrade his pilot certificate, including failing the commercial and airline transport pilot check-rides. One of his certificates included a circling approach restriction to visual meteorological conditions only. He took three additional simulator training sessions prior to his most recent Learjet qualification check-ride in 2016, including two where he was deemed "not yet proficient" in circle-to-land maneuvers. Since then, he had satisfactorily passed three checks that included circle-to-land maneuvers.

The first officer required four additional simulator training sessions and also received a "not yet proficient — additional training required" grade for the circle-to-land maneuver. He quali-

Cockpit Voice Recorder from N452DA



NTSB

intended maneuver, but also in your language and your tone of voice in a playback of the Cockpit Voice Recorder (CVR).

Skill

A tragic case study of professionalism was provided by the pilots of a Learjet 35A (N452DA) on May 15, 2017. They died when attempting to fly a "circling approach" into Teterboro Airport (KTEB), New Jersey. (See "Teterboro Crash Facts," *Cause & Circumstance*, April 2018, page 36). Although the NTSB investigation is not yet complete, the publicly released pilot records and CVR transcript reveal a distinct lack of professionalism. Both pilots were clearly lacking in the skill necessary

fied for his operator's lowest duty position assignment, "SIC-0," which restricted him to second-in-command duties as the pilot not flying (PNF) only. The company was planning to upgrade him to "SIC-1" later in the month, which would have allowed him to act as pilot flying (PF) on empty legs when authorized by a check airman or management pilot.

Of course, the act of failing check rides and requiring additional training doesn't automatically remove a pilot from the ranks of professionals. What we do for a living isn't easy and the road to success can be paved with failures that are destined to become learning exercises. But each of these failures, if not adequately corrected, becomes a personal limitation a pilot must heed. A pilot who cannot reliably fly an instrument landing system (ILS) approach to minimums, for example, should never attempt such an approach in an airplane outside of the training environment. To do otherwise could put lives at risk. In the case of N452DA,

both pilots exceeded their own limitations with a tragic result.

Trustworthiness

The flying public assumes that every component of aviation exists in an envelope of safety. Everything from the people who design and build the aircraft to the aviators at the controls are believed to exist with one primary condition: Safety comes first. The aircraft is certified with specific limitations to prevent it being operated in conditions it cannot handle. The operator is also constrained to ensure the public's safety. But the final component in this public trust rests with the pilots at the controls. It is up to these aviators to operate within these limitations and a third, more important limitation: that of their own capabilities. The pilots of N452DA failed to do so.

Despite company rules, the captain allowed the first officer to fly the leg into KTEB. The gusty winds that day would have challenged even the most highly experienced pilots, but the captain did not avail himself of several opportunities to increase his situational awareness. He attempted to get an Automatic Terminal Information Service (ATIS) report for the airport but was distracted by the need to closely monitor the first officer, who was having difficulty maintaining their assigned altitude.

Cockpit-1: "Information Zulu. Who the [expletive] knows what's going on [in] Teterboro."

Cockpit-1: "Don't have time to listen to it."

Cockpit-2: "No worries."

The captain did not hear the winds or learn that the approach in use at Teterboro was the ILS Runway 6 circle to Runway 1, until on the ILS approach. He missed other clues from aircraft on his frequency that were getting and acknowledging the approach clearance. Once established on the localizer, he finally understood after he was issued the same clearance:

New York Approach Control: "Learjet four five two delta alpha is eight miles from VINGS cross VINGS at two thousand feet, cleared I-L-S runway six, circle runway one."

Two miles later:

Cockpit-1: "We're circling runway one. So circling minimums . . . is seven hundred and sixty."

for the novice first officer and was probably beyond the captain's skill level as well. The crew made a difficult approach even more so because they appeared to misunderstand the purpose of the maneuver.

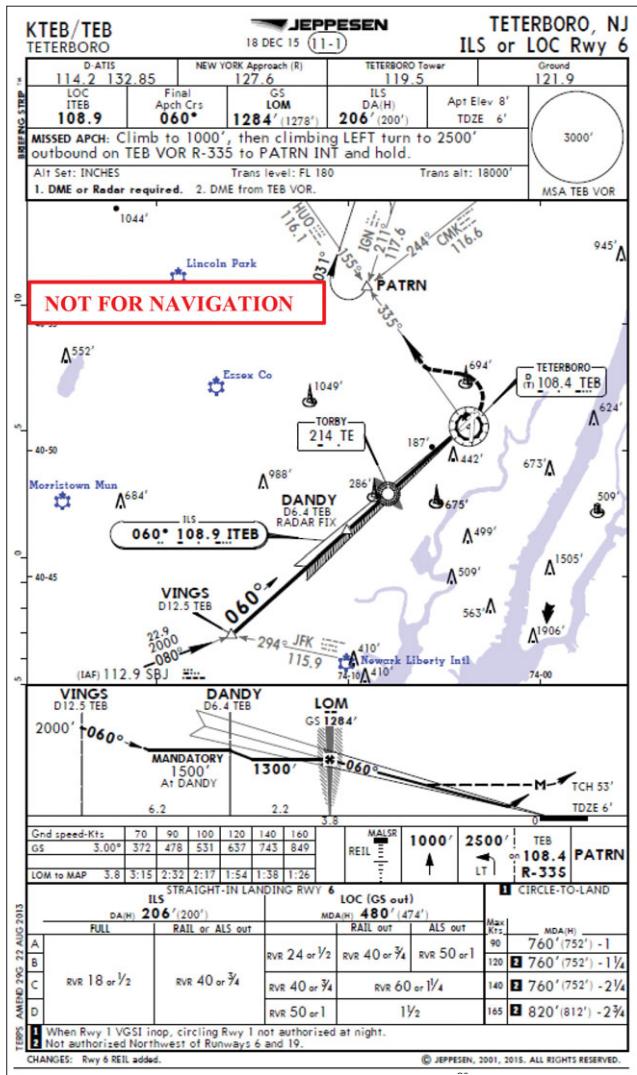
The Teterboro ILS Runway 6 circle 1 is a demanding approach that can be made more so by a common misunder-

standing of the "circle" terminology. Teterboro does not have an instrument approach to Runway 1 because it would interfere with the flight patterns at nearby Newark International Airport (KEWR), New Jersey. The ILS Runway 6 circle 1 offers pilots a quick way to align with the landing runway while giving Teterboro tower a way to quickly sequence a high volume of traffic.

An experienced Teterboro pilot begins the maneuver at TORBY, which is 3.8 nm from Runway 6. This is well outside the circling approach radii listed in the U.S. Standard for Terminal Instrument Procedures (TERPS) prior to Change 21. For the Category D Learjet, the radii as designed would have been 2.3 nm. (Under newer criteria, the radii would have been expanded to 3.7 nm.)

This technique is contrary to the way almost all pilots are trained. They are conditioned to always circle at the MDA and within the maximum circling area. (That's what they do on every check ride.) But the ILS Runway 6 circle to Runway 1 is not an instrument approach clearance requiring these altitude minimums and radii maximums. It is simply an instruction to maneuver from one runway to the other. Experienced instrument pilots will routinely circle as high as normal traffic pattern altitude and displace their aircraft as far as would be used in a normal downwind, so as to create as familiar a visual picture as possible. "TEB's 'Non-Circling, Circling Approach,' September 2017, page 28). It wasn't an appropriate approach

B61N



Teterboro ILS or LOC Rwy 6

Cockpit-2: "Oh [expletive]."

Cockpit-1: "Yeah."

Most pilots with experience at Teterboro understand that the ILS Runway 6 circle to Runway 1 is extremely demanding, especially with an overshooting wind (see "TEB's 'Non-Circling, Circling Approach,'" September 2017, page 28). It wasn't an appropriate approach

Safety

approaches.

While the point at which circling will be initiated is up to the pilot, approach control and tower often give pilots additional clues, as was the case with N452DA:

New York Approach Control: "Learjet two delta alpha, contact Teterboro tower one one niner point five. Be sure you cross DANDY fifteen hundred feet, circle at TORBY."

N452DA: "Alright DANDY at two hundred feet, circle at TORBY. Nineteen five. Four five two delta alpha."

New York Approach Control: "Uh Dandy at fifteen hundred feet two delta alpha."

N452DA: "DANDY at fifteen. Four

one."

The captain was reminded to change frequencies about 2 min. later; he made the change but didn't check in until tower called. At that point he was busy coaching the first officer, who was having trim and pitch control issues in the gusty winds. Once he ensured the first officer was holding the Minimum Descent Altitude (MDA) of 760 ft., he answered tower's call.

Teterboro Tower: "November four five two delta alpha, Teterboro tower."

N452DA: "Yeah we're up for the circling uh one two delta alpha."

Teterboro Tower: "Roger Lear four five two delta alpha. Wind three six zero at one six gusting three two. Run-

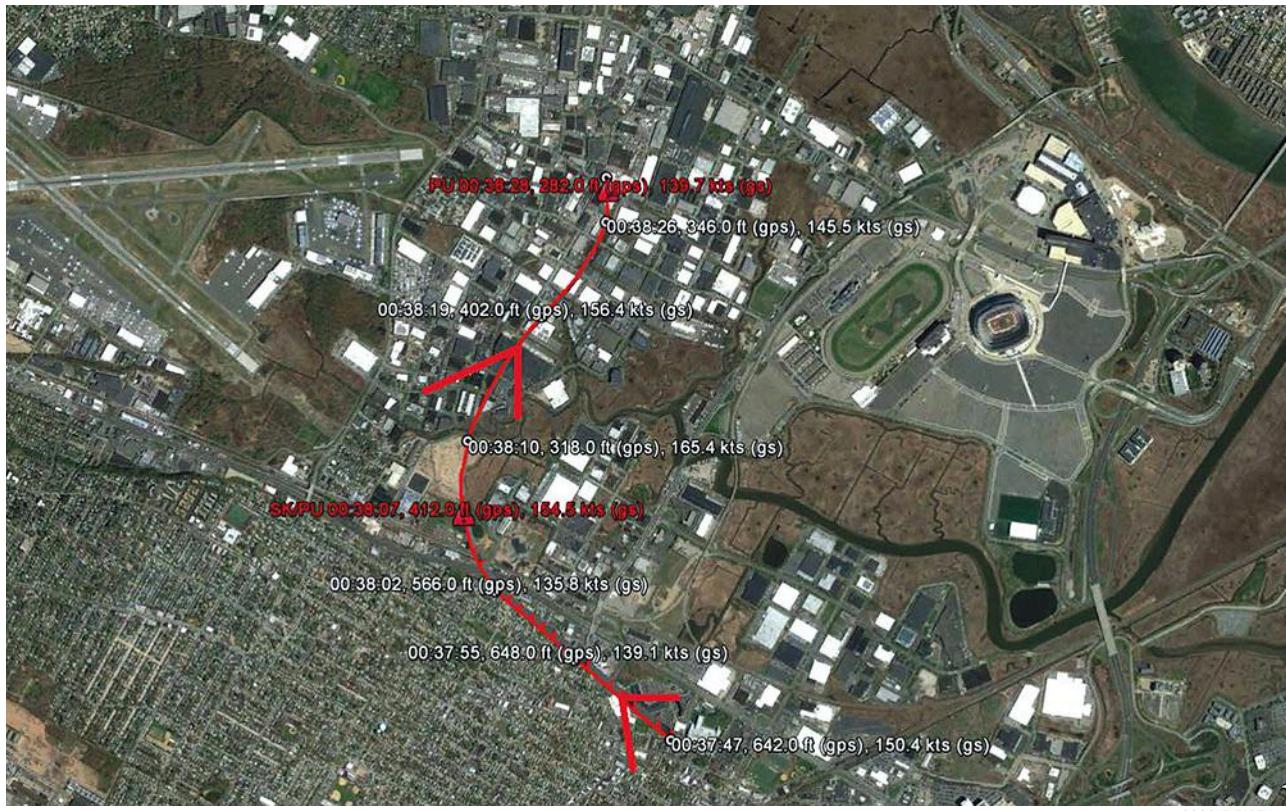
Cockpit-2: "There ya go."

Cockpit-1: "Hand on the [expletive]"
Teterboro Tower: "[Delta alpha] you gonna start that turn?"

N452DA: "Yeah sir we're doing it right now four [sixty] delta alpha."

Discipline

They began their turn about a mile from Runway 6 and would have been hard pressed to make the turn to final on Runway 1 on a calm wind day. With an overshooting wind gusting to 32 kt., the turn to final would not have been possible at normal bank angles. The best decision at this point was to go around, just as a previous aircraft had done.



five two delta alpha."

The captain became distracted and forgot to change frequencies, which would have allowed him to hear another situational awareness clue from an aircraft breaking off the approach.

New York Approach Control: "Gotham eight thirty two New York Approach roger. And uh expect resequence the I-L-S six circle one. What happened [unintelligible]?"

Gotham 832 Radio Transmission: "Yeah just the winds weren't favorable at that time so [unintelligible] another

way one, continue, traffic holding in position."

At the point where they should have been turning to base, the captain was busy coaching the first officer.

Cockpit-1: "Watch your airspeed. Hand on the [EXPLETIVE] throttle."

Cockpit-1: "kay we're gonna circle for runway one."

Cockpit-2: "OK."

Cockpit-1: "So we're kinda on a downwind."

Cockpit-1: "So, go 'head."

Cockpit-1: "Break off the autopilot."

Novice pilots may see a go-around as evidence of a personal shortcoming and something to be avoided at all cost. But a professional pilot has the flight discipline to realize that no matter the cause, a go-around is just another maneuver needed to keep things safe.

While in the turn the captain again asked the first officer to watch his airspeed. The first officer responded with "your flight controls" but the captain did not acknowledge. The Enhanced Ground Proximity Warning System (EGPWS) announced they were at 500 ft. (160 ft.

Safety

low), to which the captain said, "Disregard." After the EGPWS alerted "Sink rate, pull up" the first officer repeated his request to relinquish the aircraft.

Cockpit-2: "I'm gonna give ya your controls, OK?"

Cockpit-1: "Alright, my controls."

Sixteen seconds later the aircraft impacted the ground about a half of a mile from the end of Runway 1. Both pilots were killed; there were no ground fatalities. The NTSB has not yet determined a probable cause for this accident, but the available evidence indicates both pilots were placed in a situation well above their stick and rudder skill levels, as well as their knowledge and expertise.

For many, being handed the keys to a Learjet would be seen as winning the aviation lottery. Winners or not, it is up to pilots as professionals to turn down a flight (or airplane) beyond their capabilities. To do anything less would be a betrayal of the trust placed on them by the operator, their passengers and their loved ones. The crew of N452DA fell short of all four facets of professionalism that day, and that fact was obvious to their passengers. Two passengers were originally scheduled to fly from Hanscom Field (KBED), Bedford, Massachusetts, to Philadelphia International Airport (KPHL), and on to Teterboro. But the landing in Philadelphia scared the passengers so much, they elected to drive the rest of the way instead. It was a fateful decision, and yet another clue the crew had missed that they were in over their heads.

Understanding the Professionalism and Safety Relationship

Most professionals can spot unprofessional behavior in others without the need for any kind of test at all: We know it when we see it. But we are reluctant to do or say anything because even the worst of this behavior rarely results in a loss of life or property. But year after year, we see a few deadly examples where it does. It may be helpful to replace our binary measure of professionalism with the four components provided to us by Dr. Gawande: selflessness, skill, trustworthiness and discipline.

If you've ever flown with a pilot who says, "it's just a job" or in some way diminishes the importance of what he or she is doing, you have your first warning sign of unprofessional behavior. There was a push at a major air carrier two

years ago to pay pilots for study time. In other words, if they weren't "on the clock," they didn't need to study. The rule failed but the idea persists. Truly professional pilots realize that what they are doing for a living requires a devotion to the craft that goes beyond merely filling the requirements of a job. We sometimes fail to recognize this kind of professionalism for what it is. It is a selflessness that forces us to put in the extra hours and to weigh our decisions more carefully, because there are lives at stake other than our own.

Hollywood would have you believe that a pilot's skill is part of a genetic code, of

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that "stuff of righteousness" Tom Wolfe wrote about in *The Right Stuff*. But we know that skill is learned in classrooms and simulators, and honed in cockpits. We believe some pilots are naturals, but the act of flying is hardly natural. You may fly with a pilot who is poorly qualified and will be the weakest link when something goes wrong. That pilot may simply need more simulator training, some ground school, or perhaps tightly controlled "seasoning." Or it could be the pilot shouldn't be in the cockpit at all. We walk a fine line when facing this problem; but face it we must. Doing so could have saved two lives on May 15, 2017.

But we need to look within as well as without. How confident are we in our own skills? If a circling approach automatically raises your heart rate and forces out a string of expletives, perhaps you need more training before attempting anything in an airplane where lives are at risk. The same holds true if you once had the skill but are no longer

proficient. The flying public, your peers and innocents on the ground are trusting that you are fully qualified and proficient when you operate aircraft.

Finally, even if you have the right intentions and qualifications, and believe you are doing things as safely as needed, are you behaving as safely as possible? Do you have the discipline to pull out the checklist every single flight? Are you observing traffic pattern speed limits even when the chance of being caught speeding is nil? Is your oxygen mask morphing itself into its holder because it hasn't left that case since it was installed? Was your mandatory rest period spent on a crew room Barcalounger to avoid the cost of a hotel room?

If we care to be honest with ourselves and others, it becomes abundantly clear that not all of us who fly airplanes for a living are "professionals" as we hope that word should be defined. Some of us have become "occupationalists" and that should alarm anyone who flies for a living. Indeed, it should alarm anyone who flies as crew or passenger. I am often accused of taking this idea to an evangelical extreme. So, let's finish with that idea.

While speaking to a safety forum a few years ago, I described the pilots of another ill-fated business jet as having been completely unprofessional. I was followed by a retired member of the NTSB who noted that every widow, widower or family member of a deceased pilot he met thought their loved one was the best pilot who ever flew an airplane. I realized immediately that had to be true, but it bothered me enough so that I thought about it for a long time. These families believed their loved ones were the best, no doubt, because the pilot they had lost believed that, too. I think my family would express similar sentiments about me and that's when the idea came to me: It is up to us aviators to become the professionals everyone we love believes us to be.

It is up to each of us to dedicate more effort, study and devotion to our chosen profession than those in occupations where the stakes are much lower. If your position pays you by the hour, you must force yourself to ignore the fact you are "off the clock" when it comes to personal study time as well as any additional training. Just as a competent doctor will spend countless hours studying medical journals and attending specialist conferences, we aviators must go above and beyond the strict outlines of our jobs. We aren't working at jobs, after all. We are professionals. **BCA**