

UP

One Man's Journey to Feminism

Peter W. Pruyn

he / him / his*

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Cover photo: 7,500 feet over Galveston Bay early on a Saturday morning. ©2020 Peter W. Pruyne.

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Content warning:
Contains descriptions of physical and emotional violence

* Pronounced “prine”. He/him/his: This is the set of pronouns I ask others to use when referring to me. People who identify as transgender or gender nonconforming may use pronouns that do not conform to binary male/female gender categorizations, such as “they, them, theirs.”



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Figure 29: The Pacific Ocean from the Pacific Coast Highway somewhere in northern California on the drive from Nevada.

6: Long Beach

Age 31-33
(1998-2000)

*“You know who I respect, fashion-wise? The Greeks.
Where can you go wrong with sheets and sandals?”*
— Captain Michael Rosolina

Med Fly

You’ve probably never heard of the Mediterranean fruit fly, but most California produce farmers have. Mediterranean fruit flies can be devastating to produce crops because the female lays her eggs in the fruit, thereby giving the larva a ready food source when they hatch.

Farmers use pesticides to control the insect, but in Southern California almost everyone has a fruit tree in their backyard. The question is how to control the insect in these populated areas in the event that someone brings a Med-fly-infested pineapple back from Hawaii.

At first, the government tried spraying pesticides over Los Angeles at night by helicopter. Despite reassurances that the chemicals were harmless to humans, the government would nevertheless alert each neighborhood on what night spraying would occur and ask residents to keep themselves and their pets inside for the night. It was then discovered that the pesticide damaged paint on cars. When some of the helicopters got shot at, the USDA decided they needed another plan.

Enter the Sterile Insect Release Technique. Here’s how it works.

In locations where the Med fly is endemic, such as Hawaii, Guatemala and Mexico, the USDA raises millions and millions of fruit flies and then irradiates them in the pupa stage. The pupae are then loaded into refrigerated boxes and shipped by air to LAX where they are transported to a special USDA facility at Los Alamitos National Guard Base in Seal Beach. There, dozens of USDA workers oversee the hatching of the pupae. The flies are then carefully load into 3’ x 3’ x 3’ aluminum boxes, approximately 6 million flies per box. Still refrigerated to keep the flies lethargic so they don’t crawl out, the boxes are then loaded into the back of a specialized fleet of aircraft. Each aircraft typically flies two, two-and-a-half hour flights each day over the L.A. basin and sometimes portions of San Diego at an average altitude of about 2,000 feet. Guided by a heads-up agricultural GPS navigation system, throughout the flight the irradiated flies are gradually dispersed through two holes in the bottom of the fuselage.

By dropping a total of approximately 60 million sterilized flies over L.A. daily, the probability is very high that any natural fly introduced into the environment will mate only with a sterile fly, thereby producing no offspring.

And, no, I’m not making this up.

I was a Med fly pilot.



Figure 30: Top: Me sitting in the cockpit of one of the Beech 18s we flew in the Med Fly Project. Officially, these are Hamilton Westwind IIIs, a turbo-prop conversion of the original 1940s-era radial-engine aircraft. Below is a view of the 3-foot-square aluminum box of 6-7 million fruit flies loaded in the back of one of the planes. The machine the box is resting on is both a refrigeration unit to keep the flies lethargic as well as an auger system to push the flies gradually out of the bottom of the plane through the two square chutes visible protruding downward out the bottom of the fuselage.

Captain Dave Gwinn and CRM

One requirement of being a licensed commercial pilot is rigorous on-going professional education and re-currency training. This gives rise to a cottage industry of training materials for pilots on every possible topic. Meanwhile, a large percentage of pilots are on the ADD/dyslexia spectrum (or, as one pilot I knew liked to quip, “Five out of three pilots are dyslexic.”) As a result, a popular sub-genre of training materials is video or audio-based to better hold such an audience’s attention.

In an age of audio cassettes, one such well-respected product is *The Pilot’s Audio Update*. Pilots who subscribe receive a new white audio cassette in the mail each month with expert commentaries on a wide variety of aviation-related topics.

My favorite commentator on the *Audio Update* is a senior TWA captain named Dave Gwinn. Recognized as a world expert on interpreting weather radar and a widely sought-after conference speaker, the first thing that struck me about Dave’s segments was his voice. It was the quintessential airline captain’s: low, slow and gravel-y. Dave spoke with a combination of authority and nonchalance that you’d want to hear if you were an airline passenger woken-up in the middle of the night somewhere out over the Atlantic by a safety-related announcement that began “Ladies and gentleman, this is the Captain.” In his tone was the implicit message, “Whatever the problem is, we’ve got this, and it’s going to be O.K.”

When I saw that the February, 1996 edition of the *Update* included a segment by Dave entitled “CRM”, I was eager to listen.²⁴ CRM stands for Cockpit Resource Management, the term researchers developed to describe what was once called “crew coordination training” or, in plain language: practices that promote healthy teamwork and good decision-making in the cockpit.²⁵ CRM grew out of the analysis of a long line of fatal airline accidents caused primarily by captains failing to incorporate input from other crew members, in other words: failing to utilize all available resources in the cockpit to make sound decisions. The worst accident in aviation history occurred when the Chief Pilot of a fully-loaded KLM 747 collided on take-off with a fully-loaded Pan Am 747 taxiing in dense fog at Tenerife, Canary Islands in 1977. The accident would likely have been prevented if the captain had solicited input from his lower-seniority copilot to confirm whether the control tower had cleared them for take-off yet or not. Here was a real-world example of the tragic consequences of someone in power failing to cultivate the ‘loyal opposition’ that Colonel Sample had spoken to me about so many years ago at Cornell.

Anything Dave Gwinn had to say about CRM, I wanted to hear.

Dave began his segment by reviewing the origins and basic practices of CRM. He characterized it as “a communication concept.... Everyone is to know what everyone else is thinking, planning, and expecting.” Dave summarized effective CRM as focusing on three elements: situational awareness, risk assessment, and sharing the mental model of whatever task the crew is currently working on. To illustrate poor CRM, he offered the example of the following exchange between two crew members: one pilot saying, “I was afraid of something like that” and the other pilot responding with “Afraid of what?!” Dave observed that such a disconnect occurred because the first pilot “was not sharing generously.” A crew that is out-of-sync will be handicapped when confronted by the unexpected.

Halfway through this typically cogent commentary, Dave then took a surprising turn that I will never forget:

Within the last 15 years, we’ve acquired a large population of female
airline pilots, and quite a few are captains now.

²⁴ Gwinn, Dave. “CRM”, *The Pilot’s Audio Update* (Belvoir Media Group, January, 1995). Used with permission.

²⁵ Subsequent versions of CRM have used the name *Crew* Resource Management to be inclusive of crew members outside of the cockpit such as flight attendants and ground crew.

That was unexpected. Where is he going with this?

There really are communications differences between the male and female humans, or we wouldn't have books like *Men are from Mars and Women are from Venus* and *Genderspeak*, both of which I've recently read.

There are so many layers of jaw-dropping in these two short sentences that I barely know where to begin. It's not just the fact that he is about to launch publically into a topic that many men are terrified of, not just that he has referenced two of the most widely read gender-related books of the day, but that he valued the subject enough to actually read them and then casually shares this fact with his overwhelmingly male audience as if it were an everyday thing. Well, it's not. The image of a tall, lanky, white-haired captain in full uniform sitting in an airport lounge glued to the pages of either of these two books in 1996 instead of the latest issue of *Aviation Week* is outright remarkable. What is inspiring to me about that image is that it represents an older male with enough power to get away with not reading those books choosing to do so because he cares. He cares about doing the very best he can in his work, and he cares about supporting others in doing the same, male and female. Dave was relentless in his professionalism.

But he was only just getting started.

Men are often still hunters, still silently and rigidly focused on a goal or mission, very competitive as a way of life. Many men find satisfaction in solving problems, completing missions, and driving down the football field of life—without any assistance or dependence upon others.

However this relates to the man you're envisioning, none of those characteristics would work really well communicating as a team in a cockpit. The self-reliance and confidence is an asset in any cockpit, but *sharing information* is the essence of Cockpit Resource Management.

To be sure, there are times when the command pilot must grab the rings²⁶, make instant decisions with full confidence in his or her ability and reject outside input as a distraction to act immediately and successfully. But those time-compressed instances are rare. A well-run cockpit is a socially interactive environment.

Wow. Did I just hear an alpha male call-out the Brotherhood on what it could do better? *Wow.*

Women on the other hand, as the authors and researchers tell us, are masters at networking, sharing information and acquiring information

I can't believe he's 'going there'.

They'll often express a wish as a question which readily includes the audience. "Would you like to stop and get a cup of coffee?"

I'd be apt to respond, "Nnnn-no, if I'd wanted a cup of coffee, I'd 'ave suggested that m'self."

After a moment's thought: "Did *you* want a cup of coffee?" "Why didn't you say so?"

She did! She wanted me to share it with her.

Beyond these skills of situational awareness and risk assessment, women have especially well-honed intuition and sensitivity that is a genuine asset in aviation communications.

²⁶ Take the controls.

One can discuss all of these gender differences and communication characteristics with little emotional response to the academics of it. Try to bring it into a cockpit, and you'll meet resistance with some kind of pride-founded reaction.

How right he is about that. It's fair to say that pilots, as a group, have an above-average emotional need to feel in control. Telling them to revise something as basic as how to talk and listen is a challenge. And, yes, perhaps the Captain is painting both men and women with broad brush strokes here, but his words remain pioneering for his day.

But Dave's summary zinger was yet-to-come:

Much of Cockpit Resource Management comes very close to ... teaching men to communicate with the positive and team-building networking, sharing of information, and acquiring information with the social inclusion that women do by their very nature.

There it is, in one sentence. My favorite part is his considered pause after "very close to"; he knows he's about to say something that most of his male peers—and perhaps even he—finds hard to admit. These words are made all the more remarkable when you consider that an often-quoted motto of 'Old School' authoritarian Captains was "The captain's always right—even when he's wrong."

To add credibility to his claim, he follows it with a concrete example involving a crew-training session he oversaw that involved a senior male captain, a male copilot, and a rookie female flight engineer. During the check-ride, he observed the female flight engineer do things such as holding out the checklist in the Captain's peripheral vision so he would be reminded to call for it, and prompting the Captain to complete a checklist when he was distracted. He continued:

Now at other times, she had no hesitation in pointing out and calling out requirements of her job. But it amazed me how simply and with social sensitivity she could back-up others. In fact, they thought it was their idea. She was on top of *everything* and never with an aggressiveness that anyone could resent. I recall smiling and thinking, "She's in-charge of this check-ride, and no one knows it." Most importantly, no one felt ordered or dominated or inadequate in the very successful social skill the lady had. She kept a team together and functioning smoothly.

So accept or reject that concept as you choose. I think a husband and wife pilot team need to be aware of the different communication skills that we each employ naturally.

I am prompted to reflect on my own professional experience with women in aviation to-date. In the late 1990s, there were no female pilots at either Yute Air or the Med Fly Project. Upper management of Yute Air openly disparaged whatever few female hires they'd had in the past. There was one female pilot at Grand Canyon Air. When she was on the ground, she was relegated to working behind the counter of the gift shop rather than be allowed in the hangar with the other male pilots because the owner felt "it wasn't appropriate" for women to be in the hangar.

Dave's commentary is the only time I'd ever heard a male pilot even attempt to discuss the topic of gender dynamics in the cockpit, let-alone the limitations of hyper-masculinity. His words remain singular and his example deeply inspiring to me.

Little did I know what seeds he had planted in my psyche that day.

The Highly Sensitive Person

I'm strolling through downtown Long Beach and come across my favorite kind of store: a small bookshop. I walk in. Other than the owner, it's fairly empty. Not looking for anything in particular, I stroll around the tables of books, passing several vertical rotating displays.

Then a strange thing happens. As I walk by one of the circular stands of books, it's as if my mind takes a picture of the covers of the books. Walking a few feet further, only then does my brain take-in the title of one of the books in this image in my mind: *The Highly Sensitive Person*. I cock my head to the side with curiosity and walk back to the rack. I take the small, subtly pastel-colored book off the rack and begin to skim through it.

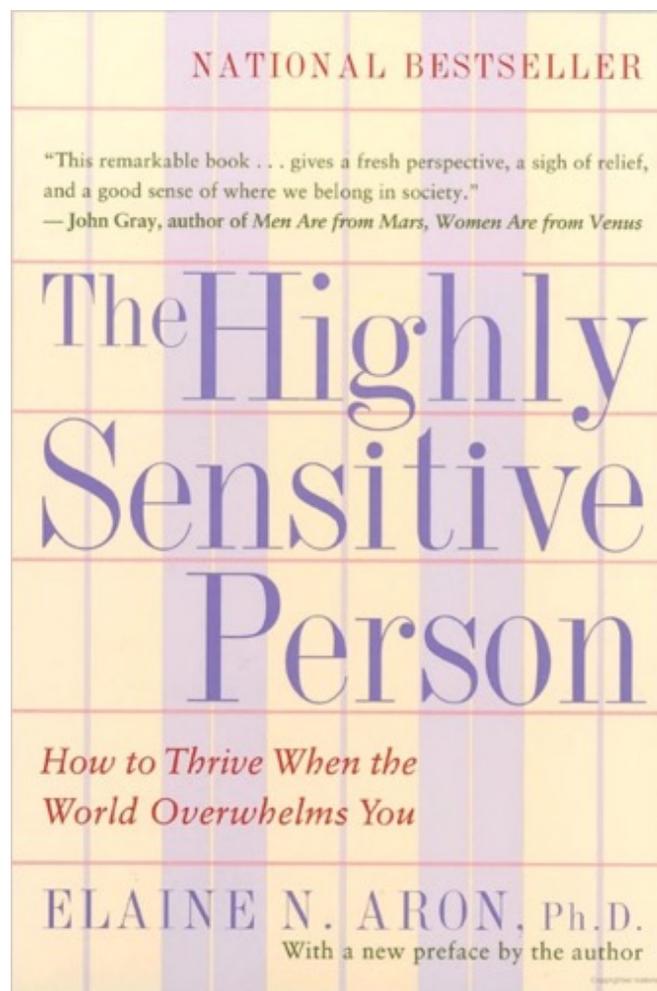


Figure 31: Cover of the book *The Highly Sensitive Person* that caught my eye.²⁷

²⁷ Aron, Elaine. *The Highly Sensitive Person: How to Thrive When the World Overwhelms You* (Broadway Books, 1997). Cover image used with permission of Kensington Books.

I look at the table of contents and read the chapter headings. In the introduction I come to a page with a true/false quiz entitled, “Are you a highly sensitive person?” I begin to read the questions. They cover diverse topics such as: awareness of details in one’s surroundings, the ability to read other people’s feelings and needs, sensitivity to stimulants such as caffeine, performance anxiety, and need for alone time. (The full quiz is available here: <https://hsperson.com/test/highly-sensitive-test/>).²⁸ In my head, I’m answering almost all of the questions *true*. While I’m definitely feeling a sense of resonance with the quiz so far, at this point I’m still regarding it as some kind of novelty personality quiz.

By the end of the quiz I’ve answered all of the questions *true* except one. With heightened curiosity, I continue to skim the book.

Then I come to a text box that asks a question I’ve never considered before: Can you recall a time in your life when your sensitivity may have saved someone’s life? I shrug and start to turn the page—and then suddenly I remember the incident in nursery school. I get goosebumps. As someone who almost never impulse-buys, by the time I’ve done skimming, I know I have to buy this book.

Imagine every parameter of the human animal existing on a bell-shaped curve across the species: height, weight, skin pigment, body mass index, bone marrow density, etc. Now consider applying this principle specifically to sensory acuity and processing. On the spectrum of hearing, for example, on one extreme are those with particularly acute hearing, perhaps having perfect pitch, the ability to name the musical pitch of any tone one hears. On the other extreme would be those who are deaf. It stands to reason, then, that across all of the five senses there will be a certain percentage of people whose sensory perception is more acute than average. The notion of sensitivity in *The Highly Sensitive Person* (HSP) is about the deeper processing of sensory stimuli, as well as emotional and relational awareness.

A goal of Aron’s book is to offer validation for those who identify in this way. This is important because social systems and objects in society are typically designed based on averages. When deciding how wide to make a seat on a public bus, for example, those on the extremes are left out. Similarly, the average HSP’s acute sensory reaction to stimuli—that others may not even notice—can often leave them feeling judged as “weak”. This judgment often becomes internalized, leading to low self-esteem. Aron makes the point that the word “sensitive” has two distinct meanings. The most common is “weak”, as in being very sensitive to pain. But the other meaning is “acutely aware.”

Aron is quick to reassure that this is not about creating another kind of elitism. It’s about giving HSPs permission to value themselves as they are and their contributions, even when society may not.

A wave of memories and social situations from my life floods my mind. Like the incident from nursery school, suddenly they make sense in a way they hadn’t before. I’m not better than other people, but nor am I worse. I simply exist in the world at a high-granularity of detail, and this, in turn, often leads to memories of high detail and a heightened emotional experience—both positive and negative. To borrow a Star Trek metaphor, my sensors are set on high gain.²⁹

No single book has ever left me feeling more validated.

²⁸ For more recent concepts in characterizing HSPs, see <http://hsperson.com/faq/evidence-for-does/>. For more of the research behind these findings, see http://hsperson.com/pdf/Authors_note_HSPbk_Preface.pdf

²⁹ When I ran across this quote from George Eliot’s *Middlemarch* many years later, I couldn’t help but think she must have been an HSP: “If we had a keen vision and feeling of all ordinary human life, it would be like hearing the grass grow and the squirrel’s heart-beat, and we should die of that roar which lies on the other side of silence.”

Memory: The Hug

My family and I are having dinner in the dining room. I am in my mid-twenties, visiting home from graduate school. My parents are sitting in their usual seats at opposite ends of our long dining room table with me in the middle, my father to my left, my mother to my right. My sister has moved away, her chair opposite me, empty.

*Earlier that week, my mother had brought home a book that teachers at her school were given called *Driven to Distraction*. It was about something called *Attention Deficit Disorder*, an issue teachers were being asked to learn about to help students who were often distracted. When my mother reads it, she becomes convinced that my father has ADD.*

Growing up in the 1940s, my father had always struggled in school. He repeated his senior year of high school and later dropped out of college after six months. (When he came home from college and told his mother, she burst into tears.) He's always been highly creative but easily distracted. Meanwhile, back then, if you were dyslexic, you weren't "disabled", you were just stupid.

My mother decided to take a chance. Not knowing what his reaction would be, she showed him the book and encouraged him to read it. Taking the book, he skimmed the table of contents, flipped through some of the chapters, read some of the bullet lists, text boxes, and quotes in the text, put the book down, and came to dinner.

Now, part-way through dinner, he alludes to having gotten something out of the book and wants to share a passage that he read with my mother and me. He gets up to get the book from the living room, comes back and sits down, and reads the following passage aloud to us:

I don't think I've ever really been happy. For as long as I can remember, there's always been a sadness tugging at me.

I stop eating.

My father reading something this personal is unprecedented, let alone at the dinner table. I am riveted.

He continues:

Sometimes I forget about it. I guess that's when you could say I was happy. But the minute I start to think, then the bad feeling comes back. It isn't despair. I've never attempted suicide or anything like that. It's just that I've never felt good, about myself or about life or about the future.

With that last sentence, his eyes begin to water, and his face is turning red.

It's all been an uphill battle. I guess I always thought that's just what life was— one long series of disappointments interrupted by moments of hope.³⁰

Half-way through the last sentence, his voice cracks. He chokes back tears and puts the book down on the table. Trembling, he leans forward slightly, puts both hands over his face, and begins to sob.

I am frozen, my jaw hanging part-way open. I can only remember two other times when I've seen my father cry. I am speechless.

I briefly look to my right at my mother. She is sitting very still looking at my father with a look of concern. I look back at my father. He is still sobbing in his hands.

³⁰ Hallowell, Edward and Ratey, John. *Driven to Distraction: Recognizing and Coping with Attention Deficit Disorder from Childhood through Adulthood* (Touchstone Books, 1992), p. 158.

*On impulse, I get up out of my chair, walk over to him, bend down slightly, put my arms around his shoulders and head, and hold his convulsing frame against my chest.
Feeling my touch from behind, he takes his hands from his face and embraces me.*

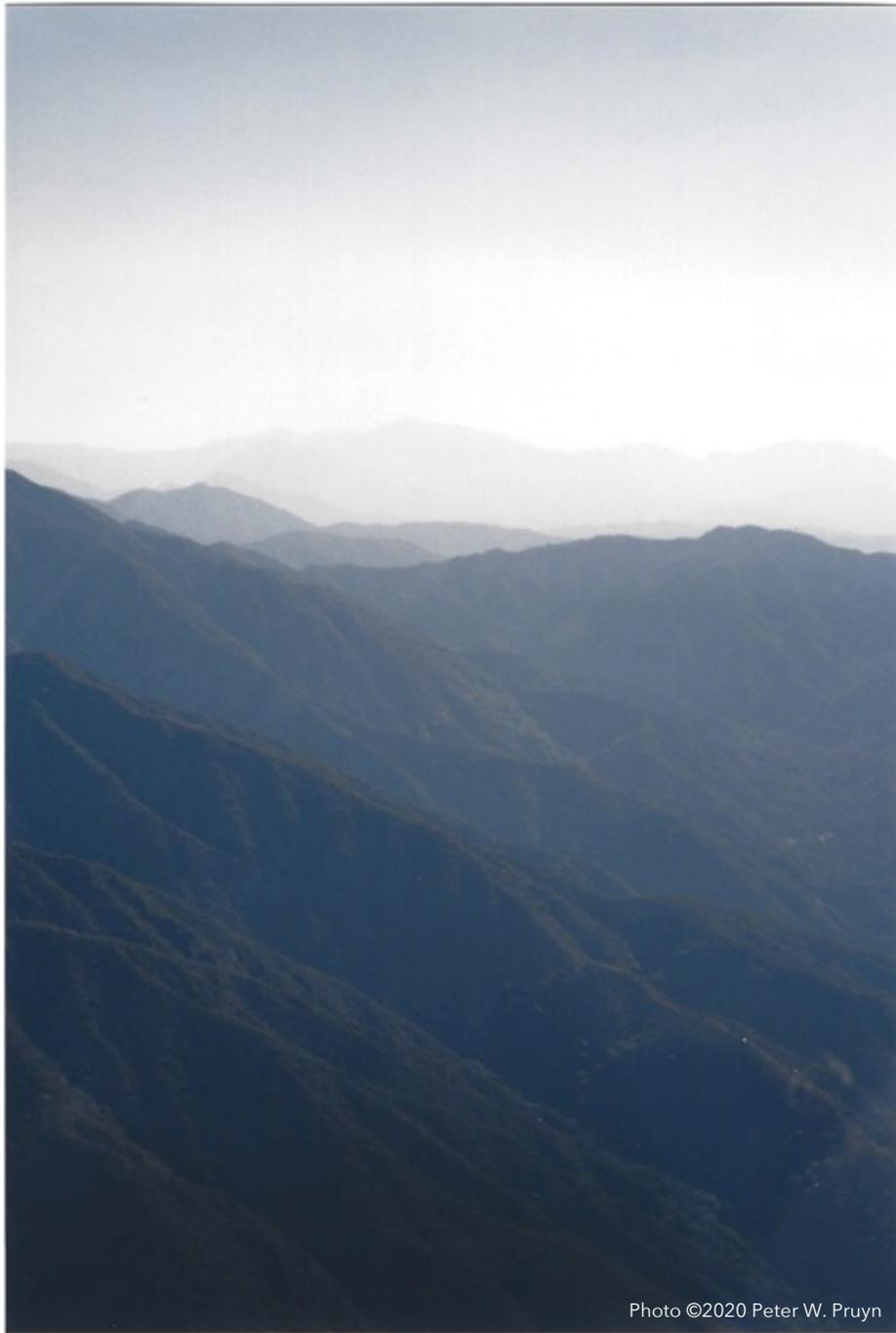


Photo ©2020 Peter W. Pruy

Figure 32: The foothills just north of San Bernardino. In this view we're flying east-bound at 3,500 feet.

The Dragon

Climbing back into my copilot's seat after verifying that we've run out of fuel, I notice it a split-second too late. As I lower my left foot down past the central control pedestal to sit down, my pant cuff catches the right engine's fuel condition lever and pulls it past its safety catch half an inch. The airplane yaws violently to the right, and I feel my face flush. Michael, my friend who is flying captain with me today, does the same.

Without thinking about it, I push the condition lever back to its Low Idle position, look at Michael in horror, and shout, "I'm sorry!" I can't believe what I've just done! I've either shut down the right engine completely or have created a situation in which it is not producing full power. After only a few flights in our BE-90 King Air as a copilot and still a little green to turbine engines, I'm not sure what I've done.

As I finally make it into my seat, Michael disengages the autopilot and struggles to maintain straight and level flight with both hands while still tracking our GPS course. The autopilot-disconnect warning alarm goes off, and Michael gesticulates to my headset, which I still haven't put back on. Without my headset on, all Michael would have perceived from my last sentence was my lips moving—but he still knows what I said. He needs my help, I think to myself, and I need to put on the headset so I can give it. All I can think about is trying to help him to make amends for my clumsiness.

As Michael keeps on the controls, we start a slow right turn back to base. He says, "I want the Emergency Shut-Down Checklist." So this is it: I will finally have to read an Emergency Checklist in-flight for real. I look up in the headliner where we keep the checklist—and it's not there. I look on the control pedestal where it might have been resting. It's not there, either. Not happy to be reporting bad news, I say, "I can't find the checklist." Michael doesn't respond. He's too busy trying to maintain straight-and-level flight while at the same time trying to figure out what's going on. He sees the propeller on the right engine still turning and sees normal oil and fuel readings on the gauges. He is thinking that if the engine had actually been shut-down, loss of oil pressure should have feathered the propeller blades by now. Imagine twisting each of the blades of a pin-wheel ninety degrees so that they were all facing knife-edge; if you now blew on it from the front, it would no longer turn. In the same way, the propeller blades on these engines are designed to go to feather position automatically when the engine is shut-down in order to produce minimum drag in the slipstream. The right engine's torque is reading low, yet the blades haven't feathered.

Ambiguity, the archenemy of understanding and control, overwhelms us.

Doing my best to maintain 'a calm sense of urgency,' I continue to search for the errant checklist. How far could it have gotten? It must have been shoved somewhere as a result of the violent side-motion from before. I check under my seat and Michael's seat—and finally find it. It must have slid off the control pedestal. I turn to the Emergency Procedures section and look for the Engine Shut-Down Checklist.

With the propeller un-feathered, it is acting like a big disk of drag out on the wing. We are losing altitude. Starting at 2,100 feet, we are now down to 1,600 feet and still descending over the densely populated suburbs of Los Angeles.

What exactly did I do?

Michael decides that although he is not sure of the engine's condition, he will go through the shut-down checklist to put the engine in a known condition and go from there. He pulls the engine's fuel condition lever to cut-off, manually feathers the propeller, and asks me to read the Shut-down checklist. I read out the Command items for him to respond to. Michael, still holding the controls while at the same time trying to comprehend what has happened, tries to respond to each Command checklist item from memory. After a few items, he reminds me to read the checklist in Command-Response-Response format. This means he wants me to read him both the Command and his required

Response so that he is prompted to perform the correct action. He will then echo the Response back to me to confirm that he has done the right thing. I continue.

Michael's attention is still more focused on what is going on, though, compounded by the weight of responsibility. There is a perceptible delay in my reading the items and his response. I know how that feels. Your brain is saturated and has little surplus attention to carry on conversation. I call for the propeller on the operating engine to be full forward. He touches the lever, which is only at 1900 RPM, and says, "Full Forward." I know this is wrong. I say, "Do you want the propeller lever full forward?" He pauses, does a double-take on the propeller lever, grimaces for his mistake, and shoves it full forward. Our rate of descent has stabilized, and we climb back up to 2,100 feet.

With the engine now secured, we are going to see if we can restart it. Our home field is just seven miles to the south now, and we are still heading towards it.

Michael says, "Read me the Air-Restart Checklist." I again look over the checklist headings—and don't see it. I look again. I still don't find it. I just can't believe it. I'm sure it's there; the Caravan I flew at Yute Air had such a checklist and that also has a PT-6 engine. It must be here. It takes all my willpower to force my eye to move at an excruciatingly slow pace over each of the Emergency Checklist headings. It's just not there. I share the bad news.

"There ... is no Air-Start Checklist." Michael pauses to take in the sentence.

"Are you sure?", Michael says in disbelief.

"It's not here." I know that if he didn't have his hands full, he would take the checklist from me to make sure himself. That's what I'd do. Finally I say, "Why don't we just restart the thing? I mean, there's nothing wrong with it." At least I think so.

"All right. We're going to restart it. Take the controls." I put my hand on the yoke, and as Michael releases pressure on the controls to give them to me, I underestimate the amount of rudder needed to maintain straight and level flight with only one engine operating. The airplane wobbles severely.

"You got it?!", Michael asks, reaching back for the controls. "Yeah," I say. I haven't had my formal King Air training yet. The first time I've held the King Air in single-engine configuration is when it's for real. Not good.

Michael takes the checklist and begins to go through a normal restart procedure. "Ignition, N1 indication, oil pressure, fuel pressure, no fuel flow" Michael reaches for the right fuel condition lever and brings it back up to Low Idle. Checking the fuel flow gauge, he says, "Fuel is flowing," and then looks back to the Internal Turbine Temperature (ITT) gauge for the starting temperature. He counts the expected seconds to light-off of the fuel inside the engine: "1 ... 2 ... 3 ... light-off." I look outside at the engine to watch it start. Just as Michael announces light-off, however, three-foot-long plumes of bright orange flame shoot out from the twin exhaust stacks of the engine. As if coming from two flaming nostrils, the twin braids of jagged fire lick around the rear of the nacelle in the slipstream.

My first thought is, "The engine's on fire. That's bad." But then something about the nature of the flame catches my eye. It's only coming out of the exhaust stack holes from inside the engine and not from the nacelle or anywhere outside the engine. Perhaps it's just some kind of residual fuel left in the engine that's igniting and not the engine itself. Meanwhile, Michael is completely focused on the ITT gauge to ensure that we don't have a hot-start.

I say, "There's fire coming out of the engine."

"What?!?" But just before Michael looks up to see out my window, the flames flicker out just as quickly as they came. My die-hard faith in the PT-6, Ol' Reliable, the engine I would have trusted to take me solo around the world if I had to, has been shattered. No longer flying with a friend to be trusted, I feel betrayed.

Now looking out my window for the fire, Michael misses the starting ITT, so we don't know for certain if we've had a normal starting temperature or not. N1 (a measure of how fast the engine

is running) is a normal 52%, however, so he disengages the starter. Other indications are also normal. Michael takes the flight controls back from me and brings the right propeller lever out of feather. The blades slowly begin to speed up outside my window and finally return to their normal blur with a surge. Michael asks me to match both propellers back to 1900 RPM.

With all indications normal, we call up Approach Control and head for home.

Moral #1: Stow your checklist securely. When you're really going to need it, you're going to need it *now*.

Moral #2: Know your Emergency Checklists. There's no excuse for a pilot not knowing which checklists are there and which are not.

Moral #3: In a two-crew cockpit, the so-called Pilot Not Flying (in this case, me) should read emergency checklists in a Command-Response-Response format. In the heat of the moment, this will prompt the Pilot Flying (in this case, Michael) with what he should be doing at each step. Furthermore, the Pilot Not Flying should fully expect the Pilot Flying to have their attention saturated by the stress of the moment and expect to do extra prompting as necessary, to the point of even doing some items themselves.

Moral #4: When a crew member gets in and out of their seat, the other crew member should guard the control levers with their hand. (Wearing bicycle clips on your pant leg might also help)

Moral #5: The ultimate responsibility for how well I am trained lies with me. When my captain, my friend, desperately needed my help to analyze an ambiguous situation, I felt useless. If I ever again feel that my training is lacking, it is up to me—not my captain, not my company, not the FAA—to say something. And as far as an event to bring out our glaring training deficiencies, as Michael said later, "It's the best thing that's ever happened to me."



Figure 33: On the left: The view out the copilot’s window of the right engine nacelle and exhaust pipe of a BE-90 King Air. In this photo—taken on an uneventful day—we are flying west just approaching the intersection of the 405 Freeway and Redondo Beach Blvd. The white plume visible on the shoreline above is El Segundo. The lighter area up the coast from that extending inland is LAX. On the right: How a pant cuff can easily slip over the right engine fuel condition level when the copilot gets into their seat, pulling it to the side and back as they sit down. At the bottom of the photo is the LCD screen of the GPS computer we navigated by when dropping flies.



Figure 34: Me in front of one of the King Airs. The white horizontal bar in front of the windshield showed us whether we were left or right of course when dropping flies.

The incident with Michael underscored lapses in training for our pilots. With Michael's encouragement, I approached management with the idea of conducting a pilot survey as I had done at Yute Air. They agreed. Similar to Yute, the survey results showed a strong yearning among pilots for standardized training, particularly in the more complex King Air aircraft. In response, again with management's support, I helped organize our first BE-90 King Air ground school. In collaboration with senior instructors, I conducted crew training in a Cockpit Procedures Trainer (a real King Air cockpit that had been removed from an aircraft) and a classroom session on human factors. Over the years, captains I flew with taught me things about working as a crew that I thought were important to pass on to my copilots after I became captain. For the ground school I made the following handout as a compilation of those insights.

We Are a Crew

We are a crew. You are here to back me up. I am here to back you up.

Every flight contains lessons. The lessons in each flight may not be planned or obvious, but they are there if you make the effort to look for them. If you don't feel that you are learning anything, pick my brain. Ask questions. That's what I'm here for.

I will never use fear as a teaching tool in the cockpit. Your self-esteem is safe here.³¹

When we take the flight controls from the other person we will say, "My controls," and the other person will respond with "Your controls." When we make a left turn, the pilot on the left will say, "Clear left." When we make a right turn, the pilot on the right will say, "Clear right." When one of us is preoccupied with something inside the cockpit and can't look outside, we will say, "I'm inside."³²

Normal checklists will be read in a Command-Response format. Emergency checklists will be read in a Command-Response-Response format.³³

We aspire to create an atmosphere that is not only tolerant of, but actively encourages, divergent points of view. We have two altimeters in the cockpit. Having two gives us redundancy as well as tells us our maximum potential error. If you do not speak up, you are acting like a second instrument with a yellow sticky note covering it up. Why have it?

Your job is to minimize the number of mistakes I make. You do that by 'calling it like you see it.'³⁴ If approach tells us to fly 090°, and I fly 190°, say, "I think they said fly 090°." If I'm about to taxi into the fuel truck, step on the brakes. If we're about to fly into a flock of seagulls, take the yoke from me and take us clear of them.³⁵ If you're ever sitting there and find yourself thinking, "Hmm, I wonder ... if he really meant to do that?", that is your cue to communicate.

If I ever do something that makes you uncomfortable, say so. If you keep your concern to yourself, you deny both of us an opportunity to learn. As two individuals we will have different comfort levels. We aspire to reach a happy medium between the two.³⁶ This can only be achieved by taking the time to share them.

For the first 500 hours of most of our careers we were in single-pilot cockpits. This fosters self-reliance. That hinders the transition to a crew cockpit. We will resist the temptation to do everything ourselves. We will be humble enough to ask the other pilot for help. At any one moment

³¹ Captain Dave Gwinn, "CRM", *The Pilot's Audio Update*, Belvoir Media Group, January, 1995.

³² Captain Mark Farrell.

³³ Captain Michael Rosolina.

³⁴ Captain Michael Stoltzfus.

³⁵ Captain Joe Greer.

³⁶ Captain Ben Rael.

what needs to be done next should be done by the crew member who is in the best position to do it. For example, the Pilot Flying should normally not have to unfold an aeronautical chart to find the right section.

You will remind me of many things: “Three hundred to go”, “Needle is alive”, “We’re cleared to land on 4 Right.” When you remind me of these things, I will respond with either “Roger” or “Thank you.” When I reply with “Roger”, I am saying, “I knew that, and your backup is appreciated.” When I reply with “*Thank you*” I’m saying, “You got me! I hadn’t caught that, and I should have. You just saved me from making a mistake.” When you get four *Thank you’s* in a row, you know that I have been distracted and that you have been truly needed.³⁷

When we didn’t get much sleep last night, we say to the other person, “I didn’t get much sleep last night.” When we’re having a bad day, we say to the other person, “I’m having a bad day.” If we’re not sure of something, we say, “I’m not sure.” These things happen to all of us. A heads-up to the other person is only fair.

All human beings want to feel appreciated. When one of us does something that the other appreciates, no matter how small, we say so.

We are a crew.

³⁷ Captain Dave Gwinn, *The Pilot’s Audio Update*, Belvoir Media Group, February, 1995.

Long Beach Sunset

After a successful first ground school, we had planned to repeat the ground school for each subsequent group of new-hire pilots. At this point, I had successfully earned my Airline Transport Certificate. Meanwhile, I was also gradually becoming aware that simply being a pilot, while it had been an amazing experience on multiple levels, did not feel like it would be wholly fulfilling for me as a life-long profession. Just as I was realizing this, management's commitment to running another ground school began to wane. After the ground school had been scheduled and canceled no less than five times, I decided it was time to move on.

It was time to take a step closer to working at NASA.

But before I did that, there was one more itch I needed to scratch.



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Figure 35: Dusk at Lower Otay Reservoir on a visit to San Diego.

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