# School for perfection

Richard Bach

I had flown west for a long time. West through the night, then south, then sort of southwest, I guess, not caring. You don’t care too much about maps and headings when you’ve just lost a student. You go off by yourself, after midnight, and think about it. It had been an unavoidable accident; one of those rare times when fog forms right out of mid-air and in five minutes the visibility goes from ten miles down to zero. There had been no airport nearby; he couldn’t land. Unavoidable. By sunup, the country around me was strange and mountainous. I must have flown quite a bit farther than I thought, and the fuel gage pointers were both bouncing on E. Lost, with the sun barely up, it was pure luck that I saw a green-painted Piper Cub rocking its wings to me, turning to land on a tiny grass strip at the base of a mountain. It touched the ground, rolled for a moment, then abruptly disappeared into a wall of solid rock! The place was empty and still as a frontier wilderness, and for a moment I thought that I had imagined the Cub.

Still, that little strip was the only possible place to land an airplane. I was glad I had taken one of the 150s, instead of the big Comanche or the Bonanza. I dragged up to the field, full flaps and power, facing right into that granite wall. It was the shortest landing I could make, but it wasn’t short enough. Power off, flaps up, brakes on, we were still rolling at twenty knots when I knew we were going to hit the wall. But there was no impact. The wall disappeared, and the 150 rolled to a stop inside a huge stone cavern. It must have been a mile long, that place, with a great long runway. Airplanes of all types and sizes were parked about, each painted in dappled green camouflage. The Cub that had landed was just shutting down its engine, and a tall, black-clad fellow stepped from the front seat and motioned me to park alongside.

Under the circumstances, I could only do as he asked. As I stopped, another figure emerged from the back seat of the Cub. That one was dressed in gray; he couldn’t have been more than eighteen years old, and he watched me with mild disapproval.

When my engine stopped, the man in black spoke in a low, even tone that could only have been the voice of an airline captain. “It must not be much fun, losing a student,” he said, “but it shouldn’t make you forget your own flying. We had to make three passes in front of you before you finally saw us.” He turned to the youth. “Did you watch his landing, Mr. O’Neill?”

The boy stiffened. “Yes, sir. About four knots fast, touched down seventy feet long, six feet left of centerline …”

“We’ll analyze later. Meet me in the projection room in an hour.”

The youngster stiffened again, inclined his head slightly, and left.

The man escorted me to an elevator and pressed a button marked Level Seven. “Drake’s been wanting to see you for some time,” he said, “but you haven’t been quite ready to meet him until now.”

“Drake? You mean Drake the …”

He smiled, in spite of himself. “Of course,” he said, “Drake the Outlaw.”

In a moment, the door hissed open, and we walked a long, wide passageway, carpeted and quiet, tastefully decorated in detail diagrams and paintings of aircraft in flight.

So he really exists, I thought. So there really is such a man as the Outlaw. When you operate a flying school, you hear all kinds of strange things, and from here and there, I had heard of this man Drake and his band of flyers. For these people, the story went, flight had become a true and deep religion, and their god was the sky itself. For them, it was said, nothing mattered but reaching out and touching the perfection that is the sky. But the only evidence of Drake’s existence was a few handwritten pages, an account of meeting the man, found in the wreck of an airplane that did not survive a forced landing. It had been printed once in a magazine, as a curiosity, and then forgotten.

We entered a wide, paneled room, so simply furnished that it was elegant. There was an original Amendola painting of a C3R Stearman framed on one wall; on the other was a fine-detail cutaway of an A-65 engine. My guide disappeared, and I couldn’t help but examine the C3R. There was no flaw anywhere in it. The fasteners were there on the cowl, the rib-stitching of the wings, the reflections in the polished fabric. The Stearman fairly vibrated on the wall, caught in the instant of flare, just above the grass.

If only reality could be as perfect as that painting, I thought. I had been to so many seminars, heard so many panel discussions affirm in parrot voices, “We’re only human, after all. We can never be perfect …”

For a second I wished that this Drake could live up to his legend, say some magic word, tell me …

“We can be perfect, my friend.”

He was about six feet tall, dressed in black, with the lean, angled face that independence gives to men. He could have been forty years old or sixty, it was impossible to tell.

“The Outlaw himself,” I said, surprised. “And you read minds, as well as fly airplanes.”

“Not at all. But I think you might be tired of excuses for failure. Failure,” he said, “has no excuse.”

It was as if I had been climbing up through clouds all my life, and in this moment had broken out on top. If he could only back up those words.

Yet suddenly I was very tired, and threw the full weight of my depression at him. “I’d like to believe in your perfection, Drake. But until you show me the perfect flight school, the perfect staff of instructors, with no failures and no excuses, I can’t believe a word you say.”

It was my last hope in the world, a test for this leader of these very special outlaws. If he was silent now, if he apologized for his words, I’d sell my flying school cold, take the Super Cub back to Nicaragua for a living.

Drake’s answer was a half-second smile. “Follow me,” he said.

He led the way into a long hall, lined in glowing aviation art and pedestals mounting bits and pieces of world-famous airplanes. Then we turned down a narrow corridor and abruptly into cool air and sunlight, at the brink of a steep, grassy slope. The grass fell away some fifty feet, and where it merged with level ground was a huge fluffy square of what looked like feathers, a hundred yards on a side and perhaps ten feet deep.

A man, gray-haired, dressed in black, stood by the feather pile and called up the slope. “All right, Mister Terrell, whenever you’re ready. No hurry. Take your time.”

Mister Terrell was a boy of fourteen or so, and he stood to our left, on the edge of the slope. Resting on his shoulders was a great frail set of snow-linen wings, thirty feet from tip to tip and casting a transparent shadow on the grass. He took a breath in readiness, reached forward, and gripped the adhesive-taped bar of the main wing beam. Then all at once he ran forward, tilted the wings upward, and lifted free of the hillside. He flew for perhaps twelve seconds, swinging his body as a gymnast would, in slow feet-together motions that balanced the white wings smoothly down through the air.

At no time was he more than ten feet above the slope, and he dropped free of the wings a second before his feet touched the feathers. It was all slow and graceful and free, a kind of dream turned into white linen and green grass.

Voices drifted up, tiny, from the meadow. “Just sit there for a while, Stan. Take your time. Remember what it felt like. Remember it through, and when you’re ready, we’ll take the wings up and fly again.”

“I’m ready now, sir.”

“No. Live it through again. You’re at the top of the hill. You reach up to the spar. You run forward three steps …”

Drake turned and led the way into another long corridor, into a different part of his domain. “You ask about a flight school,” he said. “Young Mister Terrell is just beginning to fly, but he has spent a year and a half studying the wind and the sky, and the dynamics of unpowered flight. He has built forty gliders. Wingspans from eight inches up to the one you just saw—thirty-one feet. He made his own wind tunnel and he has worked with the full-size tunnel on Level Three.”

“At that rate,” I said, “it’s going to take him a lifetime to learn to fly.”

Drake looked at me, and raised his eyebrows. “Of course it will,” he said.



We turned now and then, through a maze of halls and corridors. “Most of the students choose to spend about ten hours a day around the airplanes. The rest of the time they give to other work, their own studies. Terrell is building an engine of his own design, for instance, learning casting and machining down in the shops.”

“Oh come on,” I said. “This is all very nice, but it’s just not …”

“Practical?” Drake said. “Were you going to say that it isn’t practical? Think, before you say it. Think that the most practical way to bring a pilot to perfection is to reach him when he is caught with the idea of pure flight, before he decides that a pilot is a systems operator, pushing buttons and pulling levers that keep some strange machine in the air.”

“But … bird wings …”

“Without the bird wings, there can be no perfection. Imagine a pilot who has not only studied Otto Lilienthal but who has been Otto Lilienthal, holding his bird wings and leaping from his hill. Then imagine the same pilot, not only studying the Wrights, but building and flying his own powered biplane glider; a pilot who keeps within him the same spark that fired Orville and Wilbur at Kitty Hawk. After a while, he might be a pretty good pilot, don’t you think?”

“Then you are taking your students, firsthand, through the whole … history …”

“Exactly,” he said. “And the next step from the Wrights might be …?” he waited for me to fill in the blank.

“A … a … Jenny?”

We turned the corridor into the sunlight again, at the edge of a broad, flat field, furrowed with the mark of many tailskids. A JN-4 teetered there, painted olive drab and camouflaged as the airplanes in the main cavern had been. The OX5 engine pushed a big wooden propeller around with the sound of a giant, gentle sewing machine whisking a needle through deep velvet.

A black-clad instructor stood by the rear cockpit.

“She’ll fly a little lighter, Mister Blaine,” he said, over the sewing-machine sound, “and she’ll lift off a little quicker, without my weight. Three landings, then bring her back here.”

In a moment, the Jenny was trundling out into the wind, moving faster, tailskid lifting just clear of the grass and holding there, at last the whole delicate machine rising slowly, so that I could see pure sky under its wheels.

The instructor joined us, and inclined his head in that curious salute. “Drake,” he said.

“Yes, sir,” Drake said. “Young Tom doing all right?”

“Quite all right. Tom is a good pilot—might even be an instructor, one day.”

I could restrain myself no longer. “The boy’s a bit young for that old airplane, isn’t he? I mean, what if the engine stops now?”

The instructor looked at me, puzzled. “Pardon me? I don’t understand your question.”

“If the engine stops!” I said. “That’s an old engine! It can quit in flight, you know.”

“Well of course it can quit!” The man looked to Drake, as if he wasn’t sure that I was real.

The outlaw leader spoke patiently, explaining. “Tom Blaine overhauled that OX5 himself, he machined parts for it. He can diagram the engine blindfolded. He knows where it’s weak, he knows what kind of failures to expect. But most of all, he knows about forced landings. He began to learn forced landings with his first glide down Lilienthal Hill.”

It was as if a light had been turned on; I was beginning to understand. “And from here,” I said slowly, “your students go on into barnstorming and racing and military flying, right on through the history of flight.”

“Exactly. Along the way, they fly gliders, sailplanes, homebuilts, seaplanes, dusters, helicopters, fighters, transports, turboprops, pure jets. When they’re ready, they go out into the world—any kind of flying you can name. Then, when they’ve finished flying on the outside, they can choose to return here as instructors. They take one student, and begin to pass along what they’ve learned.”

“One student!” I had to laugh. “Drake, it’s clear that you’ve never had to operate a flight school under pressure, where the stakes are high!”

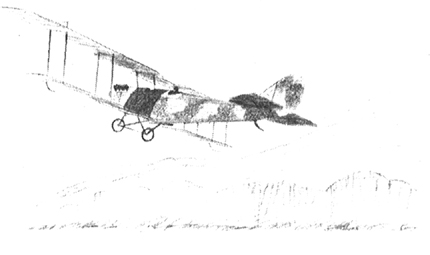
“In your flying school,” he said mildly, “what are the stakes?”

“Survival! If I don’t keep turning out pilots and bringing in new students, I’m through, I’m out of business!”

“Our stakes are a little different,” he said. “It’s up to us to keep flight alive in a world of airplane-drivers—the people who come out of your school, concerned only with moving straight and level from airport to airport. We’re trying to keep a few real pilots left in the air. There’s not too many left who don’t carry that book of excuses, those ‘Twelve Golden Rules,’ next to their heart.”

I couldn’t have heard him right. Was Drake attacking the Golden Rules, distilled from so much experience?

“Your Golden Rules are all don’ts and nevers,” he said, knowing my thought. “Ninety percent of the accidents happen in these conditions, so you must avoid the conditions. The one last logical step they didn’t print is ‘One hundred percent of the accidents are caused by flying, so for complete safety, you must stay on the ground.’ It was Golden Rule number eight, by the way, that killed your student.”



I was thunderstruck. “It was an unavoidable accident! The temperature-dewpoint came together without being forecast, the fog just formed around him in five minutes. He couldn’t reach an airport!”

“And rule eight told him never to land away from an airport. In his last five minutes of visibility, he flew over eight hundred thirty-seven landing places—smooth fields and level pastures—but they were not ‘designated airports, with known current runway maintenance’ so he didn’t even think about landing, did he?”

It was quiet for a long time. “No,” I said, “he didn’t.”

We were back in his office before he spoke again.

“We have two things here that you don’t have in your school. We have perfection. We have time.”

“And machine shops. And bird wings …”

“All the effects of time, my friend. The live history, the motivated students, the instructors … they’re all here because we decided to take time to give a pilot skill and understanding, instead of listing rules.

“You talk about your ‘crisis in flight instructing’ on the outside, you’re going through a frenzy of renewing all your instructors’ licenses. But every bit of it is wasted unless the instructor is given time with his student. A man learns to fly on the ground, remember. He just puts that learning into practice when he steps into an airplane.”

“But the tricks, the bits of experience …”

“Certainly. Prop-stopped forced landings, downwind takeoffs, control-jam flying, zero-G stalls, full-blackout night landings, off-airport landings, low-level cross-countries, formation flying, pride, instrument flying and no-instrument flying, low-altitude turn-arounds, flat turns, spins, skill. None of it taught. Not because your instructors don’t know how to fly, but because they don’t have time to teach it all. You think it’s more important to have that scrap of paper, that flying license, than it is to know your airplane. We don’t agree.”

I threw the last of my resistance at him, as hard as I could. “Drake, you live in a cave, you’ve got nothing to do with reality. I can only pay my instructors for the hours they fly, and they can’t afford to spend nonflying time talking with their students on the ground. If I’m going to survive, I’ve got to keep my planes and instructors in the air. We’ve got to put the students right through, give ’em forty hours and a copy of the ‘Twelve Golden Rules,’ get ’em ready for the flight check, and then start all over again with the next bunch. In a system like this, you’re bound to have accidents now and then!”

I listened to myself, and all at once I was filled with loathing. It wasn’t somebody else saying those words, fighting to defend failures, that was me, that was my own voice. My student’s death wasn’t unavoidable; I had murdered him.

Drake said not a word. It was as if he had refused to hear me. He lifted a tiny glider from his desk and launched it carefully into the air. It turned one full circle to the left and slid to a stop precisely in the center of a small white X painted on the floor.

“You might be just about ready to admit,” he said at last, “that if your system involves accidents, then the solution is not to find excuses for the accidents. The solution.” he said, “is to change the system.”

I stayed a week at the cave, and I saw that Drake had not missed a single avenue that would bring perfection in flight. Instructors and students held a very formal relation, on the ground, in the air, in the shops and special-study areas. An incredible respect for the men and women who were instructors, almost a worship of them, filled Drake’s domain. Drake himself called his instructors “sir,” and the flying records of each one of them was printed and open to the students.

Sunday afternoon was a four-hour air show, with formation flying demonstrations of student-built airplanes, and a low-level aerobatic show by one of the best-known air-show pilots in the Southwest. Drake’s influence and ideas ran deeper than I had dreamed … I began to wonder about a few other excellent pilots I knew; ag pilots, mountain pilots, airline captains who flew sport planes in their spare time. Could it be that they had some tie with Drake, with this school?

I asked, but Drake was enigmatic. “When you believe in something as true as the sky,” he said, “you’re bound to find a few friends.”

The man operates an incredible flying school, and when it was time to leave, I frankly told him so. But one thought persisted. “How can you afford it, Drake? This didn’t all come out of thin air. Where do you get your money?”

“The students pay for their training,” he said, as if that explained everything.

I must have stared at him rather dumbly.

“Oh. Not at the start. Not one student ever had a penny to his name, at the start. They just wanted to fly, more than anything else in the world. But every student pays what he thinks his training has been worth. Most give about ten percent of their income to the school, as long as they live. Some give more, some less. It averages about ten percent.

“And ten percent from a thousand bush pilots, a thousand military pilots, a thousand airline captains … it keeps us in gas and oil.” Again, that half-second smile flashed across his face. “And it keeps them in the knowledge that there will be other pilots coming along that know more about flying than how to steer an airplane.”

Heading north and east, flying back onto my map, I couldn’t get his words out of my mind. To teach more about flying than how to steer an airplane; to take time with the students; to offer them the priceless thing that is the ability to fly.

I can change my school, I thought. I can choose my students carefully, instead of taking everyone that walks in the door. I can ask them to pay what the instruction is worth. I can pay my instructors four times what I’m paying them now; make instruction a profession instead of an odd job. Some extra training aids, perhaps—an engine dismantled, a cutaway airframe. My instructors’ experience written for their students to read. Pride. Some firsthand history, some aerobatics, some soaring. Skill. Not the scrap of paper, but understanding.

I shut down the engine at the gas pump, still thinking. Choose the student, and give him time.

My chief instructor caught me before I was out of the airplane.

“You’re back! We searched a solid week, looking for you from here to Cheyenne! We thought you were dead!”

“Not dead. Not dead at all. Just coming alive,” I said. And beginning a tradition, I added, “Sir.”