LUSCOMBE REPORT #4
BY
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"It's cannish out today," said my friend Pat. Pat was one of the occasional customers at the flight school I ran. Well, I say I ran it. I mean I answered the phone, booked flights, checked customers in and out, and matched students up with airplanes and instructors.

I also tried to keep track of how much fuel was in each airplane and, in my spare time, I called people on the phone to remind them that they had scheduled flying lessons.

Pat usually dropped by after his classes at the nearby college and lounged around the ready room, batting the breeze with whoever happened to be there. Once in a while he would venture into the air, usually in The Can, the school's primary trainer, a Luscombe 8-A.

When the Luscombe was being taxied, it made a rumbling sound like a 50-gallon drum being rolled down the street. The fuselage was roughly cone-shaped, perfect for amplifying the vibrations transmitted into the monocoque structure by the tiny tailwheel that bumped along about seven feet behind the pilot. It would have been completely out of character to call such a diminutive aircraft the "fifty-gallon drum." "The Can," or "The Mighty Can" fit the airplane's personality much better.

The Can's other name was Hal. Pat claimed that there was an advanced computer buried someplace inside the machine, but that someone named Dave, who had disappeared one day without ever paying his bill, had deactivated it.

Without its computer to guide it along the ground and through the atmosphere, the airplane was touchy and needed a steady hand – actually two steady hands and two wobbly feet – to keep its condition of motion roughly rectilinear.

I think somebody once called the Luscombe a "pilot's airplane," although I've never been too sure what that means. A DC-3, everybody agreed, was a pilot's airplane. It was big and friendly and easy to fly. The boss's Beech 18 was also called a pilot's airplane. It was big and unwieldy and would bite its own tail if a pilot ignored it for a nanosecond. Is an airplane a "pilot's airplane" because it is superbly designed to be easy to fly, thereby aiding the pilot in every way, or does a flying machine earn this designation because it takes a "real pilot" (some kind of superhuman hero) to keep it under control?

Truth to tell, it think "pilot's airplane" is one of those phrases that sound muy macho, but that don't really mean anything.

Anyway, Pat asked the line crew to trundle Hal out of the hangar. Hal was usually stored in the hangar because that's where he went to get plugged into his battery charger. Hal had one of those wind-driven generators between his main gear fittings, but this little device could not keep up with the drain on the battery caused by the tube-type radio that kept the pilot in contact with the control tower.

After you got somebody to flip the propeller to get Hal activated, you had to taxi out to a special place on the ramp where Hal's transmitting antenna was aligned with the ground controller's receiving dish, thereby facilitating two-way communication. If the Luscombe were sitting in a position that

put the Walter Wedell hangar between the two radios, the monitor in the office would receive both ends of the putative conversation, but the occupant of the airplane would never hear what ground control was trying to tell him.

Pat knew the routine. He had worked it out carefully with me and with the other Luscombe devotees who came and went around the flying school. The idea was to get the engine cranked, taxi out, get off the ground, fly a tight pattern or two, then land and taxi in before the engine-hour meter had a chance to register more than one or two tenths of an hour. Delays in establishing communications were a constant threat to this enterprise. Sometimes we'd even go so far as to radio the ground controller from one of the school's Cessnas and get taxi clearance for Hal before we cranked him up.

Although I have only anecdotal evidence to support me, I believe that the guys in the control tower often plotted to see whether they could get nascent Luscombe pilots to swap ends as they taxied across the approach end of runway 31. First they'd say, "Hold short of runway 31." Then, when the airplane had almost arrived at the hold-short point, they'd say, "Luscombe 937, expedite across runway 31." This would make it necessary for Hal's pilot to put on a sudden burst of throttle, just as the airplane reached minimum taxi speed.

Ideally, from the controllers' point of view, the student pilot, sitting in the left seat, would be taking his third or fourth lesson, and would therefore have just enough experience to know he was supposed to add a big handful of power, but not quite enough to realize what that was going to do to the directional control of the machine. Remember, the mythic Dave

had deactivated Hal's microprocessors, leaving the hapless pilot solely in charge of keeping the machine moving straight.

This might be a good time to mention that the right-seat pilot, also known as the "instructor," had stick and rudder controls within his grasp, but that brake pedals had been omitted from his array of tools. Don Luscombe, Hal's designer, had evidently decided that right-seat brakes would be superfluous, would increase the weight of the airplane, and would add to the cost of building the machines. In addition, I suspect that he may have hoped to stimulate business by increasing the number of his creations that got wrapped up into little Aluminum balls during taxi incidents.

Anyway, Pat was pretty much of a Luscombe ace. He flew from the left seat and never let the controllers rush him more than the engine-hour meter was already doing. When they heard Pat's voice on the frequency, they knew it was going to be redundant to tell him to "expedite," so that was never a problem for him.

Right down the road from the flight school there was an establishment known as "Aircraft Packaging." Here, aircraft destined for delivery overseas would be disassembled and crated up, to be loaded onto ships and conveyed to their new homes. The manufacturers hired low-time pilots to ferry these new flying machines from the factory to New Orleans for this purpose.

As a courtesy, pilots from our company would run the ferry pilots from Lakefront, our GA airport, over to Moissant, the airline airport, for their trip back home. Nobody got paid for these runs, and it became a matter of unofficial honor to

complete these trips in as little time as possible. Ideally, we'd take off on runway 26, which started right beside our ramp, and make a straight-out departure. That would pretty much get us aimed at Moissant's runway 23. We'd request a straight-in approach and land to the southwest, taking it on the roll to whatever gate served the flight the ferry pilot was trying to reach.

As soon as the passenger got clear of the door, we'd get clearance back to runway 5 and blast off for a straight shot at Lakefront's runway 8. With one eye on the runway and one on the engine-hour meter, we'd sometimes have to shut down the engine and coast into the ramp, in order to keep the time down to four tenths. Occasionally, if the meter had just turned over at the beginning of one of these flights, and was just about to click on another tenth of an hour when we got back, we could squeeze in the run in three tenths, an achievement followed by congratulations from the lounge lizards and bragging rights for the rest of the day for the pilot.

Once in a while, Hal would be the only plane available for one of these flights; and if Pat were around, he'd be dispatched as the pilot. Even though Pat had only a private certificate, it was okay, since it was a non-revenue flight.

With his "scramble the fire engines" approach to Can ops, Pat could often make the run in three tenths of an hour, with the ferry pilot sitting amazed in the right seat, clutching his brain bag to his chest, trying to keep it out of the way of the right control stick. The Can had a little shelf behind the pilots' seats, but it was too small to accommodate the average ferry pilot's map case.

Somebody had shown us how to do snap rolls in The Can, and we practiced these maneuvers when anybody had saved up enough money to take a flight out to the practice area. Hal would snap pretty well, but if you got him too slow, he'd fall into a spin of the vertical variety instead of recovering to level flight. While trying to deal with this problem one day, Pat discovered that, if you applied aileron contrary to the spin, the nose would come up and The Can would do a beautiful flat spin, coming down scarcely 500 feet per minute. Neutralizing the ailerons would, for some reason, make the nose drop back down into a normal spin, and recovery was very easy.

One day a fellow Luscombe expert appeared at the flight school and admired our mighty steed. He remarked that the machine had been snapped a lot, probably at too high a speed. When we asked him how he knew that (Doing aerobatics in the school's airplanes was a no-no.), he pointed out some irregularities in the fuselage skin, right behind the passenger compartment. He called these crinkles "snap ridges," and explained that they were the result of somebody having overstressed the airframe.

I had noticed these wrinkles before, but had always assumed that they had been caused by the many hard landings a training plane was subjected to as part of its normal job. We concluded that it didn't matter what caused the snap ridges. They were signs that the fuselage had been weakened, and we gave up high-stress maneuvers in the airplane. The guy showed us how you could put a coke can up on one end and stand on it and it would support your weight, but if somebody barely touched the can, just enough to start a little bit of bending, the

can would instantly collapse. Thus we learned that calling the airplane "The Can" was even more appropriate than we had known. The structural strength of Hal's fuselage was similar to that of a coke can with a man standing on top of it. Nobody knew how much the snap rolls and hard landings had compromised Hal's structural strength.

So it was that we were not too distressed when one of the landing gear legs collapsed one day, while one of the instructors was teaching touch-and-goes to one of his students. The Mighty Can was retired from service, and the boss replaced him with Hal II, an "E" model that had many advanced features, such as a generator and a starter.

Somebody had installed a new interior in the airplane, using corrugated Aluminum in place of the cloth headliner, making the cockpit look like the inside of an ice chest. The new bird had rear windows, gas tanks in the wings, and an 85-horse engine, a thirty-percent increase in power.

We ran the engine out to its recommended time-between-overhaul, and, instead of overhauling the 85-horse mill, the boss decided that a 100 horsepower Continental 0-200 engine would fit just fine onto the same engine mounts. Since all of the other training planes were Cessna 150s, we had an ample supply of these engines and parts for them. It was thought that the commonality of powerplants would save time, trouble, and money, in the long run.

We got a temporary permit to fly the thing, with an "Experimental" sticker on it for 25 hours, as I recall. Then this Can was issued a new airworthiness certificate, and we were back in business.

The “Supercan” now had eighteen percent more horsepower, almost twice as much as the original, 65 horsepower, model had had.

With the new engine, the Can accelerated and climbed like a scalded cat. Instructors liked it because it would get up off the ground before a student had time to lose directional control of the beast. The new engine was somewhat heavier than the old one, and we had to apply full-aft trim when approaching to land, accompanied by a hefty pull on the stick to flare it into three-point attitude. A tiny crank between the seats actuated the trim tab, and this device got a lot of use when students reached the takeoff and landing phase of training. Instructors used to brief students to mention it when they had lost feeling in their left arm. This was considered a good sign that the lesson should be ended.

The new supercan did not fly any faster, despite its increase in horsepower. Since the original design had been optimized for 65 horsepower, nobody expected it to go very fast, and Mr. Luscombe did not waste a lot of effort trying to streamline his design. As the airframe approached its design cruise speed of about 90 miles per hour, control cables, wing struts, bracing wires on the landing gear, door handles, and gas tank vents got very busy displacing air molecules, providing prodigious quantities of something called parasite drag. If you wanted to go a few knots faster you could, but it would be at the expense of a great deal more fuel consumed per hour, fuel that was wasted in hitting more molecules per second and hitting them harder, without producing anything useful, such as lift. We learned to suck the RPMs back to about 50%, which would make the

machine go about five knots slower, but would save close to 20% in fuel consumption.

The day arrived when the boss decided I should become a flight instructor. He offered me the use of the school's airplanes to get ready for my check ride, and I made liberal use of the Luscombe as I tried to develop my stick-and-rudder skills to check-ride tolerances.

The Can was a good teacher. For example, one hot afternoon I was trying to get him to do "eights on pylons," a beastly maneuver in which the ball must be kept absolutely centered, despite all kinds of forces that would try to make Hal slip and skid. I had been going round and round, trying to hold the wingtip above the target and the ball centered. The ball always seemed to be sneaking out to the right. I'd step on the ball to get it centered, whereupon the wingtip would go somewhere other than over the target.

In frustration, I decided that, just once, I wanted to see the ball go off to the left. I crammed in some right rudder and slewed the stick over to the left. I looked at the ball. It was in the center. I looked at the wingtip. It was hovering over the pylon as if it knew what it was doing. Hummm.

I returned to the airport and landed. I went inside and poured myself a cup of coffee. I stared at the wall and thought about torque and "P" factor and overbanking tendency and differential drag of the ailerons, and all of those other things I was supposed to be learning to teach to students. I had what we call in the teaching business, an insight. You have to hold right rudder and left stick in a right-hand turn, to keep the ball centered. When I thought about it, it made sense; but in

something like five-hundred hours of flying, I had never noticed this fact, and no instructor had ever explained it to me. I'd had to work it out for myself, with the help of a tiny geek of an airplane that had asked for the right combination of control forces.

Finally, I took the test and passed. I had earned my instructor rating. In the years that followed, I helped many students to train for their first solo flights in Hal. The general practice was to let a student do his first solo in The Can, then transfer him into the Cessnas for the remainder of private pilot training. Many times we heard from these fledgling pilots that they missed flying the Luscombe, with its sticks and quirky flying characteristics. In many ways, The Can was the ideal primary trainer. It forced the student to control it from the minute it rolled away from the chocks to the end of the trip, when it returned to its resting place on the ramp.

The Can was noisy. It was hot in the summer and cold in the winter. Most instructors tried to stay away from the machine. In fact, most instructors lacked the skill to fly it, much less stay far enough ahead of it to protect student pilots from disaster. Most of these "nosewheel only" instructors had bunches of ratings, and could instruct in multiengine airplanes and in instrument conditions. I had a simple commercial ticket with single-engine land privileges. My instructor ticket said, "airplane single-engine." That was it.

But my business card had the additional notation, "tailwheel specialist." It was a small drum, but I beat it loudly. Over the years, it attracted lots of attention, what advertising gurus say is the aim of all promotions. I got business from

people who needed my specialized skill, a skill that was fast disappearing from the scene, as general aviation morphed into nosewheel equipment. Old-timers laughed at me. That was okay. At least they knew who I was. Others sometimes looked at me out of the corners of their eyes, wondering what this was all about. That was okay too.

Time passed, and my boss sold the Supercan to a lady named Astrid. I taught her to fly the thing, and shortly after that, she and Hal left town. I never saw him again, although her dad, a famous science fiction writer, once designated a spaceship in one of his stories an "Astridluscombe."

Pat finished his training as an anthropologist and got a job flying seaplanes for the oil industry. He is now making his living tooling around the skies in Learjets, and would probably break his neck if he tried to return to his Cannish days without some remedial dual.

I am trying to develop a career with a word processor, but I try to keep my hand in with little bug-smashing airplanes, and I get an occasional ride in a taildragger. Those were the good old days, and these are the good new days. We will always be grateful for our association with the small airplane with the big personality. Here's hoping you're still making pilots out of airplane drivers, Hal. Here's hoping that Dave never shows up and reactivates your computer.