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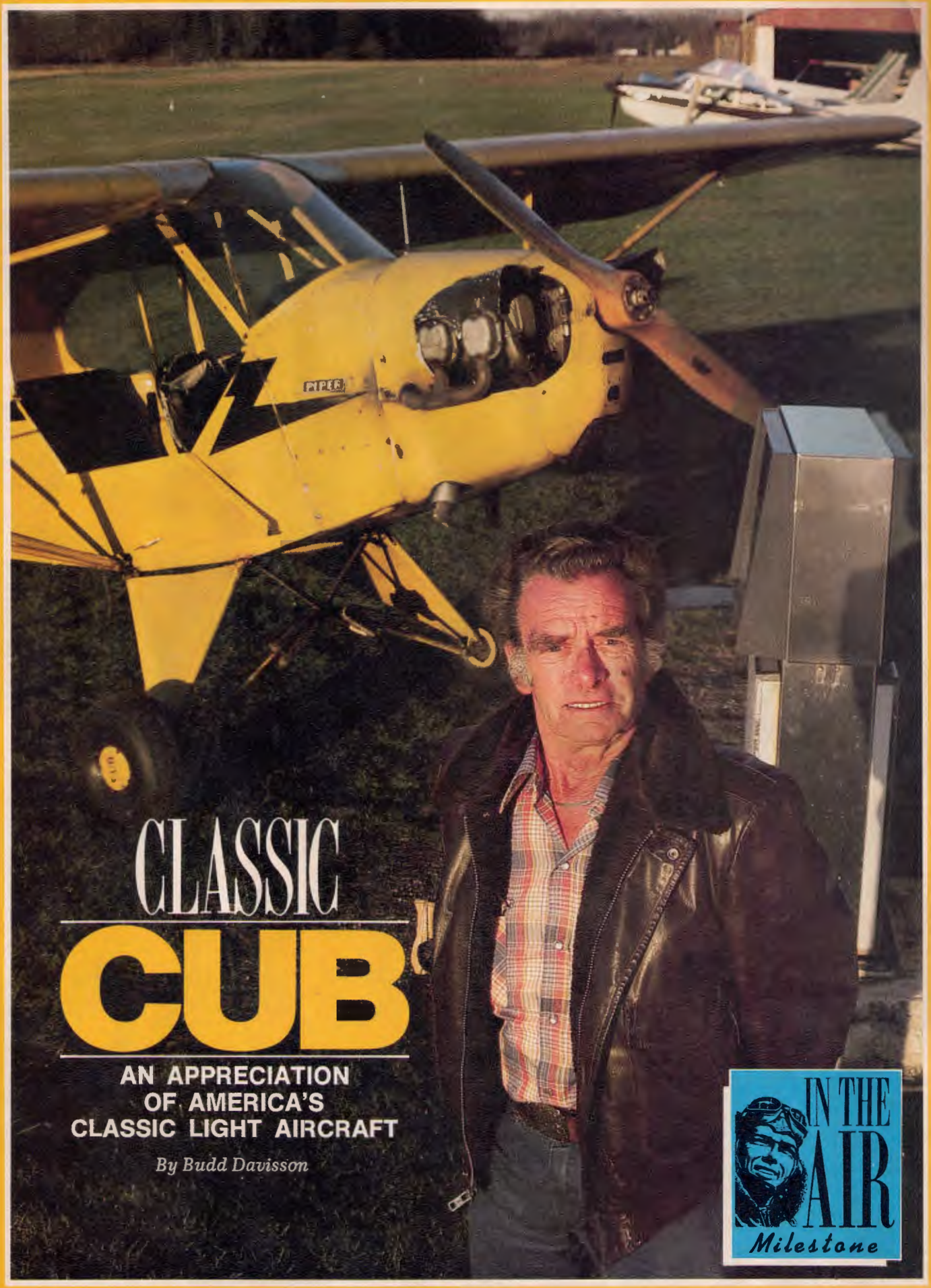

CLASSIC CUB

AN APPRECIATION OF AMERICA'S CLASSIC LIGHT AIRCRAFT

By Budd Davisson

IN THE AIR Milestone

It seems like the words "anniversary" and "milestone" have been frequently bantered about lately. So many men, machines and events have reached fractional multiples of the century mark that it's impossible to avoid commemorative articles, rituals and activities having to do with just about everything. We haven't escaped "anniversaryitis" in aviation either. Fifty years ago a lot was happening in the air and we're busy as hell celebrating this airplane and that record. But only some airplanes get a birthday cake. Those are the ones that earned the title "milestone" and they are mighty few in number, considering the hundreds of airplane types built. Also, there is always a certain amount of controversy surrounding exactly which airplanes are actually milestones. However, if any group of hangar-flying pilots is asked to name a milestone machine, the Piper J-3 is certain to be first choice.

Milestone status is not one conferred lighty. In fact, if you carefully analyze the Cub and try to apply the milestone defintion in detail, you begin to wonder if we didn't pick the wrong airplane. One of the basic requirements of "milestonedom" is that the machine must have contributed something entirely new in concept. A breakthrough, if you will. Wasn't the J-3 begat by the J-2, which came by way of the E-2 Taylor Cub (what happened to the J-1?)? In fact, the J-3 wasn't even the evolutionary high point of the design since it sired its own siblings in the form of PA-11s and Super Cubs (and Family Cruisers and J-4s, and . . .). So the J-3 fails on the "new concept" role.

Maybe it was technology that made the Cub a milestone airplane. Perhaps the Cub did for light aircraft what the VariEze did for homebuilts. But, it doesn't take a very close look to realize the steel tube and fabric innards of the Cub were anything but revolutionary. Tony Fokker pioneered steel tubing in the days of the Red Baron and airplane wings have always been wooden skeletons stitched into taut fabric shrouds. The Cub *does* have riveted aluminum built-up ribs, but that hardly qualifies as milestone innovation. So much for J-3 milestone achievements in technology!

Passenger comfort wasn't the Cub's ticket to the hall of fame either. In fact, you achieve acrobat status once you've mastered simply climbing into the cockpit. You definitely earn pretzel status by spending time scrunched up in the front seat with the chest-high control stick and close-to-the-hip rudder pedals. What is the factor that makes the J-3 such a milestone and so universally loved?

The J-3 is a milestone because it was the horse upon which general aviation rode into the modern age. Where the Aeronca C-3 first established the small engine, light plane training category, it was the J-3 Cub that made the concept work. It was the J-3 that brought safe and pleasurable flight to the masses and served as the training ground for many generations of pilots. The J-3 Cub was a milestone because its success identified and created a marketplace that made it possible for many other little airplanes to survive. The Cub was the datum point from which all others started and by which all others are measured. It's also a damned good flying airplane.

In selecting the J-3 Cub as our first milestone airplane, *Air Progress* exercised our own perverse nature in deciding to celebrate the airplane's 51st birthday! Everybody does even numbered birthdays, but who wants to run with the crowd? Ditto our approach to reporting about the airplane. Over the past year we've been beaten to death with historical nit-picking about the Cub and its history and there is absolutely nothing we can add to the flying folklore fodder mill. In fact, it would be very difficult to improve upon the excellent job done by a gang of writers in the July 1986 issue of *AOPA Pilot*. A competitor yes, but a fine job of historical research and reporting nonetheless.

SO, DROPPING THE NORMAL "HERE'S where it all began" approach, we decided to look at the Cub and see what the plane has become in the 1980s. We didn't have to look far for research material since our little home airport played host to the Cub in its many variations, from stock 1938 65 hp flivvers to a Reed clipped-wing version with a 100 hp Continental O-200 in the nose. We also had a "son of Cub" to play with, the PA-11. And then, we had our local curmudgeon, Pete Billow, who put a Cub in his flight school in 1948 and today is still yelling over his shoulder at those who came to learn the lore of the Cub. And that's where me begin our story . . . with an old-line flight instructor using old-line trainers.

Trinca Airport hides in the rural farm land of northwest New Jersey and is barely visible from the air . . . and all but impossible to find on the ground. This is where Pete Billow has instructed in Cubs for nearly four decades. A narrow, unmarked dirt road/driveway cuts off of a country road opposite an old dairy farm. A windsock is barely visible through the trees but, if you miss the dairy barn, you miss the airport.

Trinca is a tiny patch of ex-cornfield nestled on the other side of a high-banked railroad track and a sign admonishes you to leave your car on one side of the track and hike over to the aging (circa 1945) assemblage of tin hangars and the cinderblock office. As you crest the railroad grade and walk the few yards down onto the grass ramp area, leave behind your clean cut notions of what flying schools have become and bask in the primitive beauty of what they were. Asphalt has yet to discover Trinca and every day is Saturday afternoon circa 1948.

When Pete Billow opened his flying field, he was a skinny twenty-six-year-old. Today, thousands of Cub hours later ("I'm not really sure, 5000 is probably a minimum, 7000 hours is more likely"), Pete has mellowed a little, but only a little. The fact you are willing to pay for his airplane and

his time, doesn't necessarily mean you can expect to go flying. He will tolerate students only if they are willing to apply themselves to the task of learning what the Cub has to teach. He'll pick and choose his customers. "Yeah, I get lots of people up from 'down below,'" he says, referring to those doomed to live in metropolitan New Jersey. "Some, I'll work with, but a lot I won't."

It would be easy to misinterpret his reputation (which, locally, is closer to legend) as being hard nosed, opinionated and, on occasion downright cranky. Because of his nearly forty year love affair with Cubs, it would be easy to picture Pete as a reactionary stuck in a time warp. Catch him in the right mood and touch on his favorite subject, flight instructing, and you will find he really is hard-nosed and opinionated, but these traits are the result of a nearly obsessive desire to create good pilots.

"I hate to admit the fact, but I converted to C-150s for a couple years in the late 1960s," Pete states. "But, I wasn't satisfied with the type of pilot I was producing." Pete Billow loves to expound on the Cub's qualities as a trainer. "The Cub demands that you use rudder to do decent turns and because you are so far behind the center of gravity, you know when you aren't coordinating. In a newer trainer you don't have that sensation because you are sitting on the C.G. Also, newer airplanes complete a turn so fast you don't have a chance to change very much. A Cub takes so long to do everything, including turns, you can fine-tune the plane all day long until the seat of your pants tells you the ball is centered."

WHEN ASKED ABOUT BIGGER ENGINES in his favorite airplane Billow explains, "You don't need the horsepower in a trainer. A 65 hp Cub teaches you to fly the wing, not the throttle. On takeoff, if you change the airspeed just a few mph, you can feel the wing biting the wind and giving maximum lift. You can actually feel it happening." Billow, who gave up full-time aviation when he quit his job flying DC-3s for Allegheny in the early 1950s, has instructed on the same 2000 foot piece of grass for his entire flying career. Now retired, he's back to full-time aviating and says he knows the Cub's limitations.

"I fly students up through solo in the Cub and then let them build solo time before putting them in 172s. That way they have a solid basis to build on and, when they earn their ticket in the 172, they don't have to go through the dangerous transition most 152 pilots do. Most students learn in the two-seater, take two hours dual in the Skyhawk and then load it up with friends to go someplace, and that's the first time they fly that airplane at gross. It's not a good way of doing things."

When you fly with Pete Billow, you fly *like* Pete Billow or you don't fly his airplanes. Knowing this, it was with some trepidation that I set myself up for some dual time with the master. Yes, I had flown Cubs quite a few times but the check out had always been of the there-it-is-have-a-good-time variety. I had come to Pete to learn the nuances of the airplane. I wasn't certain my ego could take the beating.

The first thing I learned about Pete Billow is his reputation is earned, but usually exaggerated. Yes, he is opinionated but you would be too if you'd worked something for forty years and it worked just fine. Why mess with it? That's the way he his about flying Cubs. I put myself in student mode and, in so doing, he naturally slipped into his dedicated instructor mode and we got along fine: Like a firm father with a well-meaning but not too intelligent son. We walked around the airplane and he pointed out various items to watch for and intermingled the pre-flight with sage advice about Cubs in general.

"I like the 1946 models best because it was about the last of the breed and Piper had refined what is a very unrefined airplane," he advises. Pete doesn't feel the aluminum spars of the later airplanes are any better than the older wooden ones but he does like the wooden prop better than the aluminum version. He says it's a little "softer" and seems to smooth out the engine. Remember, this is coming from a man who can talk to the airplane so he may be hearing voices the average pilot is incapable of receiving.

If you are thinking about buying a Cub, Pete says the airplane has the same rust problems as with any fabric covered taildragger . . . the lower longerons and tailpost are always suspect. Also, the lift struts have an airworthiness directive which requires punching them at the lower end in a quarter inch grid pattern with a fabric tester. The problem is the moisture that can collect in that area and the resulting rust can make the struts paper thin. Another problem is the lower strut which folks are supposed to have replaced with units having rolled, and not cut threads. Many Cubs have had the forks replaced with beefier ones.

"Okay, put your right foot in the step, grab the tubing and lean over the front seat while trying to put your head in the far left corner of the windshield." I tried the method and found getting in the back seat (command position, if you can call it that in a J-3) isn't all that hard and the resulting seating position was much more comfortable than I remembered. I could, however, see how the over-six-foot crowd might be cramped. I've spent some time recently in the front of Cubs and I'd forgotten how much more room there is in the back than in the front. The front compresses anybody over about five foot eight down to that height.

Pete reached through the open door and switched the magneto "left" and stood astraddle of the right main gear while he flipped the prop through. Just that quickly the engine was running and he leaped into the front seat like he'd done it several times before!

This is how most of America learned to fly before the advent of the Cessna 150 series.

His first words as an instructor had to do with ignoring the brakes. I couldn't use them for turning, taxiing or stopping. Only for the run-up. His second set of words was about keeping the nose moving back and forth through "S" turns, sensible advice since the nose is several feet above the pilot's head and he can't see squat. After a quick run-up we were on the middle (the exact middle) of the runway and Pete gave some advice about takeoff.

"Let go of the stick all together, just keep your fingers loosely around it and don't try to pick up the tail. The tail will come up on its own and, when the airplane tells you it is ready to fly, just a litte back pressure will lift the Cub off."

I brought the power up and watched the edges of the runway coast lazily past in my peripheral vision. As advertised, the tail came up on its own and a few seconds later the airplane felt light and was skipping across the high points in the grass. A tiny amount of back pressure was added and we floated off the ground. "Hold the nose here and ignore the airspeed. Notice how the horizon cuts the nose and look at the bottom of the wings. That's your climb attitude," Pete said as he twisted around in the front seat. Communication was amazingly good considering the cacophony of noise that came from exhaust, wind noise through gaps, combined with screen door-clatter of the doors and windows moving about.

TO DEMONSTRATE THE DIFFERENCE BE-tween flying the wing and the throttle, Pete had me steepen the attitude (usual climb was 65 mph . . . I peeked!) and feel the change. He was right! The machine actually told me we were 5 mph slow and the words it used got stronger and stronger the more off-speed we got. There was a turbulent feeling to the airframe, possibly slipstream against the belly as angle of attack increased and I could feel the plane mushing slightly. To be sure it wasn't my imagination, I dropped the nose and the airplane felt like it suddenly developed "traction" as soon as we were within a few mph of normal climb. There is a very definite "bucket" effect where drag and lift change places, as the airplane is forced out of the bucket.

It was close to freezing out, so the Cub had the

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advantage of dense air to show its stuff and we were turning crosswind in nothing flat. Looking back at the runway as we turned, it was obvious I had drifted to the right and Pete made a face. That's sloppy flying which was something he pointed out to me repeatedly as I got off altitude on downwind . . . or as I'd drift off the centerline after takeoff, which I did almost every time. As sloppy as I was. Pete didn't make any attempt to degrade me. He just pointed out the fact and said it wasn't right. I was doing my own degrading!

Getting carb heat down on downwind made me question why the carb heat was clear down by my right foot instead of on the left side where the rest of the controls were located. Pete just shrugged his shoulders. After forty years, he didn't even notice. As I pulled the power off opposite the end of the runway, he said all landings were power-off. Repeat, all landings. Except the landings I misjudged and those were the ones where Pete smiled that knowing little "I told you so!" smile.

Pete doesn't teach wheel landings to his primary students and has his reasons. "It's a little tougher and doesn't serve any real purpose, since you can handle most reasonable crosswinds in a three-point. The Cub doesn't run out of rudder like most modern airplanes, so you can usually get down without a problem."

In the landing approach, Pete had me break the glide when ". . . you are the same height as my hangar." That's about 25 feet in the real world and higher than I would have guessed. But, again, he has reasons. As we came closer and I was bringing the nose up, Pete kept telling me to ". . . keep coming back, keep coming, if the stick isn't on the stop when you touch down, you'll touch the mains first." And he was right. On those approaches where I timed the flair exactly and had the stick in my lap, the landings were right on the money. Get just a little late with the stick and the mains would touch giving me a slight hop.

When a Cub touches down in grass, it makes the same move you and I make when we dive into bed and totally relax upon hitting the mattress. The Cub gives a nearly audible sigh and relaxes into the grass, slowing almost immediately. It slows so fast, in fact, that directional control isn't needed. Although a taildragger, in grass it is easy to see where the Cub earned a docile reputation.

Later in the flight, as I turned final, Pete threw me a curve ball. "Okay, let's make this one power-off and a wheel landing." Was this a "gotcha?" I wondered. I broke the glide just a tad lower and began trying to get the airplane level as the ground came up. Then, it became a game where I was using the fat tires as curb feelers looking for the ground. Considering the small amount of Cub time I had, I was surprised to see how the airplane fed everything into the stick, letting me know exactly what was going on. I lucked out and, as the mains touched, a little forward pressure was all that was needed to keep the Cub pinned to the grass. The voice in the front seat was saying ". . . keep the tail up, keep it up . . ." Which wasn't difficult at all. By the time the wind went out of the elevators and the tail touched, we were moving at a fast walk and we had absolutely no headwind component.

And so I survived trial by Cub as administrated by Pete Billow. And I enjoyed the experience. I came away wanting more because it all seemed so pure and basic. The man, the machine and the airport fit together perfectly and it is comfortable to know there is at least one place where time has stood still. It's nice to know simplicity does still exist.

With its historic past, a mint condition Cub can bring over $15,000 on today's market.

Watching Pete and a student slowly wander through the grass and take to the air for the millionth time in that airplane's life, it is obvious that, as a teaching tool, the Cub is ageless. Like any enthusiastic educator, the plane is still very capable of teaching what there is to know about translating the emotions of flight into fact. That's only one facet of the Cub in the 1980s.

The Cub has many faces and one of them wears clown make-up . . . the Reed clipped-wing conversion. In an upcoming issue we'll graduate to what is probably the best aerobatic buy and most fun airplane available. Watch for our report. **AP**