

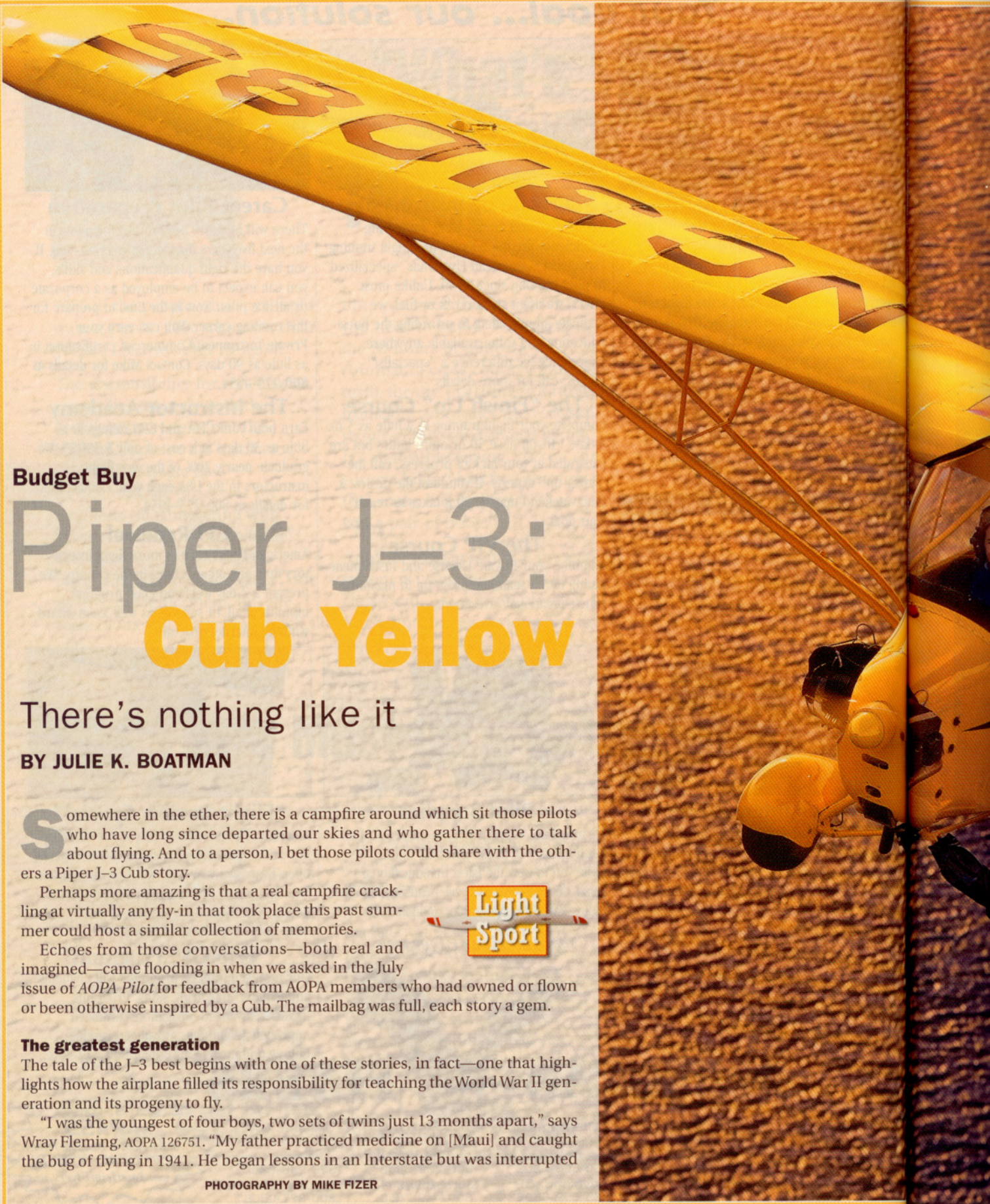
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**Light  
Sport**

who had owned or flown  
all each story a gem





**Budget Buy**

# Piper J-3: Cub Yellow

There's nothing like it

BY JULIE K. BOATMAN

**S**omewhere in the ether, there is a campfire around which sit those pilots who have long since departed our skies and who gather there to talk about flying. And to a person, I bet those pilots could share with the others a Piper J-3 Cub story.

Perhaps more amazing is that a real campfire crackling at virtually any fly-in that took place this past summer could host a similar collection of memories.

Echoes from those conversations—both real and imagined—came flooding in when we asked in the July issue of *AOPA Pilot* for feedback from AOPA members who had owned or flown or been otherwise inspired by a Cub. The mailbag was full, each story a gem.



### The greatest generation

The tale of the J-3 best begins with one of these stories, in fact—one that highlights how the airplane filled its responsibility for teaching the World War II generation and its progeny to fly.

"I was the youngest of four boys, two sets of twins just 13 months apart," says Wray Fleming, AOPA 126751. "My father practiced medicine on [Maui] and caught the bug of flying in 1941. He began lessons in an Interstate but was interrupted

PHOTOGRAPHY BY MIKE FIZER



Bob Milkie (inset) shares his Cub flying with son Max. Buyers should look for rust near the main gear attachment bolts, indicating a lack of proper lubrication.

by the bombing of Pearl Harbor and the ensuing World War II." Upon returning to civilian life, his father, known as "Pop," completed his lessons and acquired a J-3. Peter, a friend of Pop's, was an auto-racing enthusiast and flight instructor, and Pop owned a 1939 Ford, which he traded to the man for flight lessons for his sons. "Peter patiently taught us four boys the mysteries of flight; each of us got to solo," says Fleming. "One of the greatest moments in my life was when Peter got out of the J-3 on the side of the runway at Kahului, Maui, Hawaii, and said to me, 'Take her up yourself.' For a 16-year-old, flying up there alone—solely in control, over the cane fields in the Maui skies and tropical

ways (see "Mr. Taylor's Cubs," July 1986 *Pilot*). One of Taylor's Cubs, the J-2, continued in production by the Piper Aircraft Corp. after the new company set up shop in Lock Haven, Pennsylvania. Piper engineer Walter Jamouneau (who had previously worked for Taylor Aircraft) started in on an update to the J-2 in late 1937; that aircraft, with its extensive changes, became the J-3.

In the four years between late 1937 and November 1941, Piper built 10,000 Cubs, most of them the then-new J-3. To put that into perspective, Cirrus Design, a general aviation aircraft company doing well by modern standards, just delivered its 2,000th SR-series airplane in June 2005, nearly seven years into its manufacturing run.

## The good news

With numbers like that, combined with the J-3's simple design and low hourly operating costs, if you have enough scratch for a second car, you probably can find a decent J-3, afford to buy it, and afford to fly it. Bring a couple of friends together on the deal, and it can become downright cheap, as far as aviating is concerned. What William Piper intended as an airplane for everyone still is, with a couple of minor caveats.

Myths about Cubs abound. "They are overpriced," grumbles one pilot. "You gotta hand-prop 'em," laments another. "Too much to insure a taildragger—you'll ground loop it for sure," wails the finalist in the trio, stroking the last

## What William Piper intended as an airplane for everyone still is, with a couple of minor caveats.



winds—was true freedom. Needless to say, Cub yellow is still my favorite airplane color."

Most of the early, prewar J-3s were painted that iconic yellow with a black lightning bolt and bear on the tail—the yellow color originated with the predecessor J-2 model—and to this day that remains the most popular way to dress a Cub. Other models followed, but this paint scheme wasn't often altered until the advent of the PA-11 Cub Special in 1947, its paint a primary blue.

### An abbreviated history

The lineage of the J-3 begins before William Piper's partnership with C.G. Taylor in 1930. The Taylor Cubs deserve their own article—and it would take one to describe the complex relationship between Taylor and Piper, as the two worked together and ultimately parted

Milkie relocated the carb-heat knob on his J-3 to the left below the throttle to ease operation (above left). Pay attention to the tailwheel and rudder. Says Clyde Smith, "Pinch the bottom of the rudder trailing edge to see if it's like pinching popcorn," indicating a rotted tube inside the fabric.

Of course, the world changed on December 7, 1941, and demand for civilian airplanes plummeted. While Piper went on to re-purpose its J-3 for military use (as an L-4 and similar variants) and continued to produce Cubs after the war, production never again reached those heady prewar levels—in 1941 alone, Piper delivered 3,016 aircraft. But all told, Taylor and Piper built roughly 40,000 airplanes that could carry the name "Cub."

Of that incredible number, more than 5,500 Piper J-3s remain on the FAA's aircraft registry today.

swath of icing on this anti-Cub cake. But each myth can be answered with a positive slice of the truth, as I discovered as I dug into the Cub story.

### Cub master

An authoritative myth-debunker is Clyde Smith Jr., who is known in classic aircraft circles as The Cub Doctor. Smith's father was an experimental test pilot for Piper in the 1940s, 1950s, and 1960s; Smith Jr. was a longtime Piper employee until it closed the Lock Haven plant in 1984. He remains an advisor for the Cub Club (the type club for Piper Cubs), and is a walking encyclopedia of all fabric Pipers. His restorations of fabric-covered Pipers have won awards, and he conducts seminars on their restoration.

Type clubs in general have proven critical to the longevity of many classic aircraft, and the Cub Club is no differ-

ent. Current Cub Club leaders Steve and Sharon Krog took over the club and the publication of its newsletter in 2000 from the previous owners, John and Alice Bergeson, who started it in 1984. The newsletter, which is chock-full of technical advice on Cub acquisition, maintenance, and flying technique, is published every other month. Contact the club through its Web site ([www.cub-club.com](http://www.cub-club.com)) or by telephone at 262/966-7627.

Because the J-3 meets the new light-sport-aircraft guidelines, there has been a resurgence of interest in the airplane—both in the original and in remakes of the design (look for *AOPA Pilot* features about these modern Cubs in future issues). And while the new light sport aircraft that claim “Cub” in their titles have made significant upgrades, the essence of the de-

### A sport pilot's tale

Milkie bought the core of his hangar on the airport at Crivitz, Wisconsin, for \$2,500, which he then expanded (the hangar's original width was 35 feet—the Cub's wingspan is anywhere from 35 feet 2 inches to 35 feet 4 inches, depending on whom you ask). He finished out the inside, plumbed in electricity and water, and built a translucent door that lets in just the right amount of light in the winter to bring the temperature up to 50 degrees Fahrenheit. That's no small thing considering there are several months of the year that you need skis to navigate the grass runway. (The airport has a paved strip as well.)

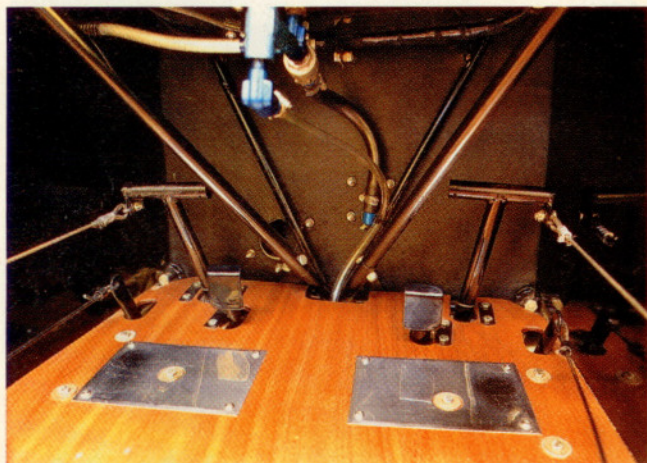
In this hangar, in 2004, he completed a project that he's been working at since 1998. Those who have restored an elderly airplane may recognize

glanced at the bulletin board in front of him and saw a photo of one of the Cubs that Hatz senior had restored, a photo that Charlie had stuck there in the corner of the frame. The photo, faded and yellowed, taken in the 1970s, showed a pretty yellow Cub parked on a patch of grass—the classic summer shot.

Scrutinizing the photo while Charlie continued on the airplane, Milkie asked Charlie, “Hey, was this airplane one of your dad's?”

Charlie, without looking up from his work, answered, “That's *your* airplane.”

Milkie did a double take, and squinted at the photo. Sure enough, that was his N number, NC31085. “So—,” and he looked over at Hatz working away on his airplane—the same airplane that Hatz's father had worked on more than 30 years ago.



sign—the wing, the geometry, the flying characteristics—remains true to the original. With so many reasonable airframes (in price and in condition) to ferret out and rescue with restoration—or simple upkeep—many pilots are finding that the old Cub is still the best Cub. Smith notes that 2005 has been the best year so far for his seminars, and he fields about six calls every day from pilots and aircraft owners with questions regarding restoration of fabric-covered Pipers.

In fact, the airplane flown for the photos that accompany this story belongs to a pilot who restored his J-3 just so he could continue to fly it as a sport pilot—and hopefully his son will learn to fly this airplane too. All Bob Milkie wants out of flying is a conveyance to help him enjoy the long summer days in Wisconsin, and to share the joy of flying with his 8-year-old son, Max.

**Heel brakes can be a new and exciting experience for transitioning pilots (above left). Fuel lines from wing tanks come into the header tank from the front cockpit—watch for drips. Otherwise, the fuel system is stone simple (above right).**

pieces of the story, but suffice it to say that there were some false starts along the way, and the good parts were brought into being by the kindness of those commonly good folks in our small GA community.

Like the serendipitous involvement of mechanic Charlie Hatz. Hatz's father, who built the Hatz biplane and also restored a couple of Cubs in his day, had passed along the wrenching bug to his son Charlie. When Charlie heard of Milkie's project, he helped him bring it to completion through many long months in the hangar at Crivitz.

One evening, Milkie took a short break from the work to walk over to the counter to make a pot of coffee. He

That's what Cubs do. They are time machines. They bring people into flying. They keep generations connected. And they do that job just as well today as they did when Milkie's Cub first rolled out the doors at Lock Haven 65 years ago.

### Personal history

Because the J-3 came out in such high numbers, it's no surprise that many pilots have a connection to the airplane. My first “Cub” ride was in a Super Cub shortly after I got my private certificate in 1988, and I did the spin training required for my flight instructor certificate in a Super Cub five years later.

But my first J-3 flight was one I'll always remember with clarity. The setting probably resembles that of many such first flights: an early summer morning, with a kind instructor throwing over the wooden prop, the ticking of the little Continental as we



**That's what Cubs do. They are time machines. They bring people into flying. They keep generations connected.**

taxied out to greet the day, a short hop over to a grass strip shared with ultralights. Several bounces came to conclusion before I started to get the hang of the airplane's casual marriage of aileron, rudder, and elevator.

I got back into the J-3 this past summer, both to fly the airplane for the photos on these pages, and to spend some time really learning to fly a fond acquaintance.

Taking Rich and Ginger Davidson up on a longstanding invitation, I visited the couple's privately owned public-use grass strip, Lee Bottom Flying Field, near Hanover, Indiana. The Davidsons offer tailwheel training and a safe harbor for classic aircraft.

Flying the J-3 again, I learned some things.

I learned that there is a little muscle in my shoulder that I don't use at any other time than when landing the Cub, and when that puppy gets sore, my ability to keep the stick back all the way in the flare deteriorates.

I learned that you can feel the difference between a slip to lose altitude

and a slip to correct for a crosswind much more readily in the Cub—not just in the seat of your pants but also in the change of wind across your cheek. (Of course, we're flying with the door and windows open, a state that shouldn't be altered from May to September when flying a Cub in most parts of the country.)

I learned that there's a time when squaring off the base-to-final turn is not only *not* required, but frowned upon. When flying from the back, as one solos a Cub, you want to keep as much of the touchdown zone in sight as possible during the landing process. In the J-3, you make this a J-turn—and if you do it right, your rollout from the turn coincides with your arrival over the first few feet of grass.

I learned that there's always plenty of time to just go up for a few minutes before supper. With few systems to check, there's little preamble to flying a J-3, which means you don't need to invest so much in preflight and post-flight that it wipes out all your flying time when that time is short.

### Basic maneuvers

Our first lesson was in ground handling. Instructor Rich Davidson gave me a task: to slalom the white cones lining the runway at Lee Bottom. The challenge? I got the stick and rudder and heel brakes; Davidson got the throttle.

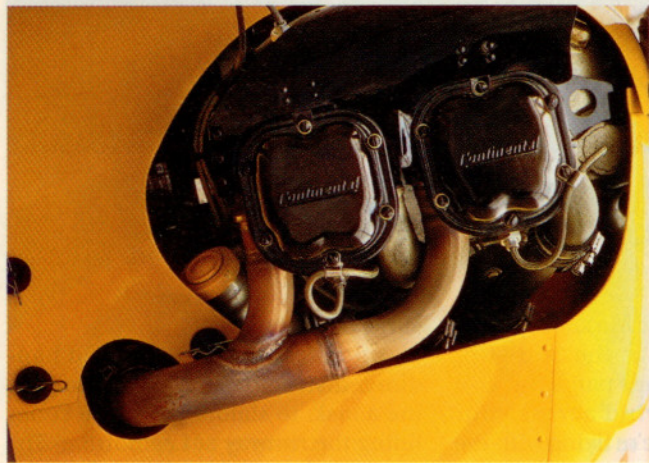
Within a minute, I had tossed a cone several feet. "Your name's on that one," he said, and I laughed, knowing I'd been set up—a well-timed burst of power sealed the cone's fate. My ego appropriately deflated, and a lesson learned about the relationship between speed and the arc of turn, I was in the proper mindset to press on.

On takeoff, Davidson talked about using "the force" to guide the airplane during the critical moments of acceleration, when the airplane's nose blocked the view as speed over the ground increased. Keeping the airplane pointed between the banks of tall grass and shrubs that lined the runway (and later, between the rows of July-high cornstalks at a neighbor's airstrip) was an act of faith.

As it turned out, my first takeoffs (with almost no forward pressure on the stick) were good—for a short-field performance. A little more forward pressure once I felt the tail get light with lift led to a less aggressive takeoff and better visibility over the nose.

Flying the J-3 requires you to lead with the rudder just a bit—there are airplanes of its vintage with far more adverse yaw to overcome. And while the airplane's climb rate (with the 65-horsepower Continental A-65 up front) won't set your hair on fire, you're not climbing that high anyway. A Cub is meant to be flown low. On a summer evening, this means within shouting distance of a friend on the ground, given the right circumstances. Not that we'd know this for a fact.

Stalls are benign, and spins come about in a lazy fashion. This is a trainer from the days when trainers spun on a daily basis. Just don't completely horse



up the recovery inputs, and you'll come right out. In fact, if you hand control back over to the airplane, you'll also come out, given a reasonable amount of altitude.

Landing is where the challenge lies, and David summed up everything I needed to know with this: "Land straight." As long as there's no sideways impulse for the airplane to follow, the gear is happy to absorb quite a bit of bounce (as I proved several times). The key is avoiding drift—the J-3, like other tailwheel airplanes, won't correct for you like a Piper Cherokee might. Any bad habits in this area will land you in the weeds.

However, during our practice sessions, I found a problem that challenged me more—keeping my heels off the brakes. Pointing my toes more seemed to help. For this reason David-

## Good Cub reads

*Want to expand your knowledge of Cubs? Try these books to start.*

**Cubs on the Loose: Old Airplanes—New Adventures, NC-87881** as told to Lyle Wheeler

**Those Legendary Piper Cubs: Their Role in War and Peace**, Carroll V. Glines

**Piper Cubs**, Peter M. Bowers

**Flight of Passage: A Memoir**, Rinker Buck

son advises wearing thin-soled shoes. No boots in the Cub, please.

## Cub bugaboos

Accidents involving Cubs in the past 10 years include several ground loops, a couple instances of fuel exhaustion, low-level maneuvering, and two airshow blunders.

Two noncertificated pilots have come to grief in the Cub over the past decade—perhaps because it is relatively

winds affect it more. "It's like a kite," says Milkie, on the prospect of flying the J-3 in gusty conditions. You feel every lump as the fabric-and-wood wings negotiate the air. A strong gust on landing that is recoverable in a tricycle-gear airplane—or a heavier conventional-gear one—can upset the J-3 irrevocably. While the low-level-maneuvering accidents are usually serious or fatal, many of the others aren't—a benefit of that same slow stall speed. Whatever you hit, you won't hit it very fast.

More good news? The airplane burns at the very most 5 gallons per hour—and can be coaxed to sip less. This is why the standard 12-gallon header tank is adequate, if not ideal, though wing tanks are a common upgrade. Smith points out that a 1985 airworthiness directive addressed problems of fuel contamination that occurred as rainwater entered the header tank through the stainless-steel wire fuel gauge. Airplanes



The "eyebrows" of the Cub are the curved black metal plates attached to the cylinders on each side (above left).

easy to fly, the airplane lends itself to such "do it yourselfers."

Things to note: Understanding the fuel tank capacities, the fuel gauge—a wire that sticks out of the cowling is attached to a float and gives an immediate reading (albeit not a very precise one) of the relative amount of fuel in the tank—and the fuel selectors can help you avoid fuel-exhaustion and -starvation accidents. In a low-powered airplane, turning the carb heat off during a takeoff or go-around is critical—and turning it on at the appropriate time more critical still, since the Continental carburetors do ice up.

The airplane's slow stall speed means it lands slow but also that weather and

that are in compliance with the AD have fuel drains installed at the low point of each tank—those drains are not original equipment.

Insuring the J-3—as long as you're not giving instruction in it—won't wipe you out financially, since the hull value is relatively low, and the liability envelope relatively small. Since most accidents in the series tend only to hurt the airplane, with a reasonable amount of training and some tailwheel time you can be insured.

## Longevous Cubs

Stephen Moddle, AOPA 158538, tells of 2038M, a J-3 he flew from Zahn's Airport on Long Island in the late 1960s and early 1970s. He eventually bought 38M in 1982, and donated it in 2004 to the Piper Aviation Museum in Lock Haven—the airplane had more than

21,000 hours on it when he signed over the papers.

It's not a showpiece, but an example of a working J-3 that gave back to a lot of pilots before coming to rest at Lock Haven. Keeping it company in the museum are many classic Pipers and a detailed history of the corporation.

Piper pilots make a pilgrimage every summer to the site of the old plant and the museum, a trip referred to as "Sentimental Journey." If you want to see a bundle of classic Pipers gather in one place at one time, this is your weekend. Event details are on the Piper Museum Web site ([www.pipermuseum.com](http://www.pipermuseum.com)). Another fly-in, Wings Over Piper, is held later in the summer at Lock Haven; details can be found online ([www.wingsoverpiper.com](http://www.wingsoverpiper.com)).

### J-3s for sale

A review of the marketplace reveals a number of J-3s for sale, varying from projects untouched for decades to recently restored champions. Taking a look at the baseline J-3—a model recovered in the past 10 years, with a midtime Continental A- or C-65 engine and no electrical system—prices average around \$29,000. A bigger engine commands more, as do upgrades such as generators and starters (the J-3 I flew at Lee Bottom had a generator and starter), and any recent restoration.

While one could easily argue that you can buy a decent two-place con-

## J-3 training

*A selection of locations that provide Piper J-3 training across the country.*

**Lee Bottom Flying Field** (Hanover, Indiana)  
[www.leebottom.com](http://www.leebottom.com)

**Hampton Airfield** (North Hampton, New Hampshire)  
[www.hamptonairfield.com](http://www.hamptonairfield.com)

**Vansant Airfield** (Erwinna, Pennsylvania)  
[www.vansantairport.com](http://www.vansantairport.com)

**Aberdeen/Lake Mina** (South Dakota)  
[morrisriggin@hotmail.com](mailto:morrisriggin@hotmail.com)

**Island Air** (Boeing Field and Vashon Island, Washington)  
[www.island-air.com](http://www.island-air.com)

**Sunrise Aviation** (Santa Ana, California)  
[www.sunriseaviation.com](http://www.sunriseaviation.com)

ventional-gear aircraft for less than you can a Cub, the market seems well able to bear the approximately \$5,000 to \$10,000 premium accorded the J-3. Perhaps an Aeronca Champ flies better, and the early Cessnas and later Luscombes boast full electrical systems, and Cessna 140s have flaps (oh, the technology!), but the appeal of the J-3 holds strong, and holds its value. Selling today for more than 10 times the price of when they were new, the Cub series shows no signs of losing ground.

Smith notes that it "might be worth paying a bit more for the Cub because repair is just a phone call away," as compared to other factory-orphaned classics. While the manufacturer no longer fabricates J-3s or Cub parts, the airplane

is well supported by Univair and The Wag-Aero Group, which manufacture and vend parts for just about the entire airplane. There are a couple of unique items that Smith himself fabricates—such as the black rubber handgrip for the control stick emblazoned with Piper's P—that any owner can order directly from him or through dealers.

On a prepurchase inspection, Smith recommends paying very close attention to the tailwheel assembly. Davidson agrees. You can learn a lot about how the airplane has been flown by the condition of the spring assemblies and the tailwheel itself. On the tailwheel, compression springs are preferable to tension springs, since you can't easily stretch them out—they compress to a limit. The spring assemblies should have only a little slack, not much, for good positive control of the tailwheel. And there shouldn't be undue wear in the holes where the spring linkage attaches.

Though much of the J-3 has escaped the dissimilar-metals corrosion that plagues other aircraft of its generation, Smith notes an area of growing concern around the aileron control horn, where a steel bracket is mated to an aluminum spar. He also looks for Univair's sealed lift struts—those are a plus.

Of course, a hard look at the airplane's overall condition is critical. "Some of them are so crooked, they've been ground looped so many times and put back together. But a lot of them will still fly hands-off. It's amazing," says Smith.

### Cub a long time

"To the uninitiated, you can't explain it; to those who know, no explanation is necessary." This truism is from Jack Lakeman, who bought his "Super" J-3 (with a Lycoming 108 engine) from Marion Cole (head of the famed Cole clan of aerobatic pilots) in 1970. His wife, Sylvia, learned to fly in this J-3, along with his younger son. The Lakemans still have their J-3, and there can be no better testimony to the brand than the fact they have owned their Cub for decades—and they have a lot of company. **AOPA**

E-mail the author at [julie.boatman@aopa.org](mailto:julie.boatman@aopa.org)

## SPECSHEET

### Piper J-3 Cub

Current market value: \$23,000 to \$45,000

Price as tested: \$40,000

Price in 1946: \$2,195

#### Specifications

Powerplant.....Continental A-65, 65 hp  
Recommended TBO .....1,200 hr  
Propeller .....Sensenich two blade,  
72-in dia, fixed pitch  
Length .....22 ft 5 in  
Height .....6 ft 8 in  
Wingspan.....35 ft 3 in  
Wing area .....178.5 sq ft  
Wing loading .....6.8 lb/sq ft  
Power loading .....18.7 lb/hp  
Seats .....2  
Standard empty weight.....700 lb  
Max gross weight .....1,220 lb  
Max useful load .....520 lb  
Payload w/full fuel .....448 lb  
Fuel capacity, std .....12 gal (72 lb)  
Baggage capacity.....20 lb

#### Performance

Takeoff distance, ground roll .....370 ft  
Rate of climb, sea level .....450 fpm

Cruise speed/range w/45-min rsv (fuel consumption), 3,000 ft @ 75% power, best-power mixture .....73 mph/206 nm (4.4 gph)  
Max cruise speed .....87 mph  
Service ceiling .....11,500 ft  
Absolute ceiling .....14,000 ft  
Landing distance, ground roll .....290 ft

#### Limiting and Recommended Airspeeds

V<sub>X</sub> (best angle of climb) .....50 mph  
V<sub>Y</sub> (best rate of climb) .....55 mph  
V<sub>NO</sub> (max structural cruise) .....90 mph  
V<sub>NE</sub> (never exceed) .....122 mph  
V<sub>R</sub> (rotation) .....39 mph  
V<sub>S1</sub> (stall, clean) .....38 mph

All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, sea level, gross weight conditions unless otherwise noted.

**i** Links to additional information about Piper J-3 Cubs may be found on AOPA Online ([www.aopa.org/pilot/links.shtml](http://www.aopa.org/pilot/links.shtml)). Members can read more Piper J-3 stories online ([www.aopa.org/aircraftreports/cub](http://www.aopa.org/aircraftreports/cub)).