

Dashing and Darting

Through the Sky

KELLY TRIMBLE

The diminutive Culver Dart Model LCA

BY SPARKY BARNES SARGENT

The summer of 1940 found 9-year-old Mark Trimble at the Kansas City Municipal Airport, watching in boyish awe as a tiny purple airplane streaked past the windsock. “I never saw anything move like that,” he says, fondly describing the occasion. “It went by like a shot, and he did a big duster turn and put the gear down and came in. It was like a spaceship landed. There was a crowd of people around that airplane.”

That airplane was Culver Aircraft Corp.’s Dart Model LCA—a dashing new design by Al Mooney. The sight of this sensational flying machine did more than catch young Trim-

ble’s eye. It was at that moment that he began cultivating a lifetime affinity for Culver aircraft. The Model LCA flew for the first time in early December 1939, and though it was christened a Dart, its name was soon changed to Cadet, and it received Approved Type Certificate No. 730 in September of 1940.

Knight Culver’s company, located in Port Columbus, Ohio, was already known for its production of various radial-powered Dart models when this new Continental A-75-powered airplane made its public debut in the spring of 1940. Late that year, the company moved to Wichita, Kansas,

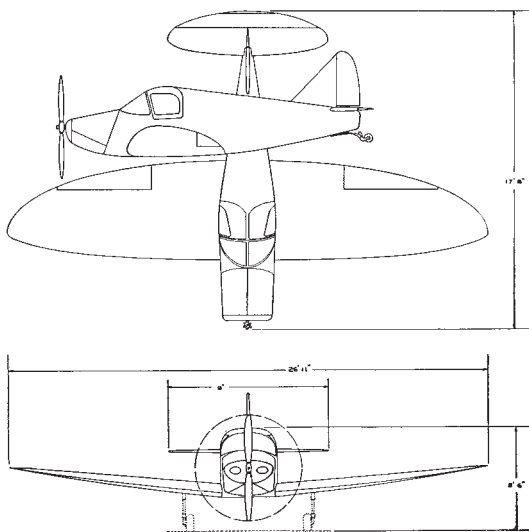
where it flourished. By the following year, Walter Beech and Charles “Pappy” Yankey acquired controlling interest in the company and were actively managing it, with Al Mooney and his brother Art continuing their impressive work there. Culver Aircraft went on to produce several more models—including target drones for the military—with the Culver V-2 being its last in 1947.

Ahead of the Industry

The sprightly Culver was considered years ahead of the industry, not only by Culver Aircraft, but also by its customers. It measured 17 feet 8

inches from nose to tail, and its cantilever, wood wings spanned nearly 27 feet. Elliptical-shaped wings and tail gave it a chic look while its curved doors blended right into its streamlined fuselage. The aircraft featured semi-monocoque construction, which a company advertisement of the era described as “plywood bonded together with plastic resins, which form a stressed skin shell,” which was then dipped in a chemically treated sealer “to make it impervious to moisture.”

Advertised as “the world’s fast-



Three-view from the *Aircraft Yearbook for 1940*.

SPARKY BARNES SARGENT



NC20949’s dataplate reveals the airplane’s early manufacture, while Culver Aircraft was still located in Ohio.

est light airplane for a given horsepower,” the petite Model LCA weighed 750 pounds empty, with a gross weight of 1,305 pounds. Pilot and passenger sat side by side on its bench seat and were allowed a total of 50 pounds of baggage. It carried 20 gallons of fuel and cruised at 120 mph when powered by a 75-hp Continental with a Freedman Burnham adjustable propeller, for a range of 500 miles. Landings were softened by

air-oil shock struts and a set of steel leaf springs mounted on the gear by the wheel. Hydraulic brakes provided adequate stopping power. The price tag at the factory was \$2,395, and although it was quite capable of aerobatic maneuvers, it was apt “to lose its wings when suddenly pulled out of a high-speed dive,” explains Trimble. Therefore, the following placard was required: “Intentional acrobatics and instrument flight prohibited.”

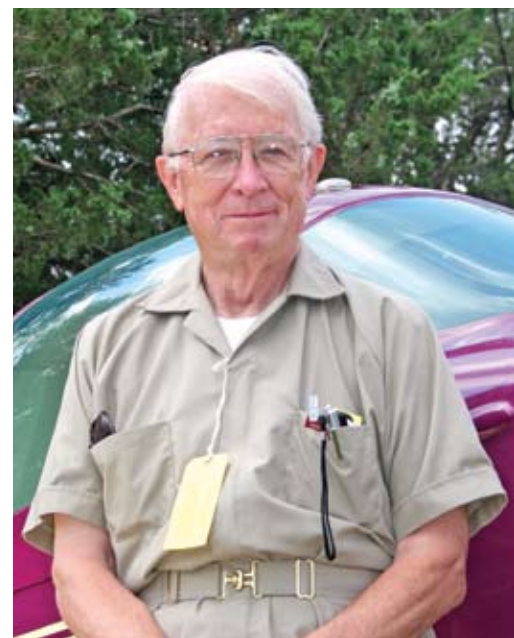
Castaway Culver

Trimble became intimately acquainted with flying a Culver V while attending college in the early 1950s. In fact, it was his chosen transportation between his Missouri home and the University of Arkansas. He thoroughly enjoyed the airplane’s speed and responsiveness.

Nearly four decades later, Trimble happened to be visiting the West Plains, Missouri, airport one day in 1991, where he discovered a partially dismantled Cadet concealed in a dilapidated hangar. He soon telephoned the owner, engaging him in friendly conversation, and then asked him if he’d have any interest in selling the Cadet. “After a moment’s hesitation,” recalls Trimble, “he said, ‘Well, yeah, I really should sell it. I have too many

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Close-up view of the control stick (left), the pool-ball handle atop the gear lock lever, and chrome wheel, which are used to manually retract and lower the landing gear.



Wingspan was nearly 27 feet, and its landing gear is retractable.



SPARKY BARNES SARGENT

The Model LCA's cockpit. Note the clear windows in the floor panel for viewing the gear position.

airplanes. Come over and talk to me.' So I flew over there and we looked the airplane over, and I wrote him a check for it."

No sooner had the check changed hands than the man told him that NC20949 (s/n 102) was the oldest known Model LCA, and that it originally wore the factory colors of purple and cream. Upon hearing that, Trimble was even more delighted with his purchase. Brandishing a boyish smile, he says, "I didn't realize until after I already bought the plane

that this is the same airplane that I saw in 1940!"

Fly Away

It was time to take the Culver to its new home near Branson, Missouri. The previous owner assured Trimble that, once reassembled, it would be safe to fly—but he warned him not to lift the tail immediately during take-off or he'd be sightseeing off the left side of the paved runway. Trimble wasn't too concerned, though, and didn't heed the gentleman's advice.



SPARKY BARNES SARGENT

The tail features a fabric gap seal between the horizontal stabilizer and elevator.

He pushed throttle and stick forward, and as soon as the Culver's lightweight tail was off the ground he and the airplane headed left for the grass. "I pulled the power off, straightened it out, and I realized what he said is



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A close-up view of the steel leaf springs on the main gear.

right. This particular airplane has the worst P-factor of any plane I ever flew," he says, laughing heartily. "So there's a technique to taking off in it. You hold the stick back until it gets so light it's about to fly, and then you let the tail up. The rudder is working at that point, and you have control."

Power and Paint

NC20949 started life with a 75-hp Continental A-75-8 engine (Model LCA), but had also been powered by

an 80-hp Franklin 4AC-176-F3 at one time (Model LFA—both engines are listed on Aircraft Specification No. A-730). When Trimble purchased it, it had a C-90-12F installed. It flew fine with 90 horses, but Trimble figured more horsepower just might make it even better. So, although the Culver was airworthy, he had a few enhancements in mind for it. With the help of Kenny Blalock of Conway, Arkansas, the Culver was soon sporting a Continental O-200 engine, a new fiberglass cowling in place of the worn aluminum cowling, and Air-Tech fabric and paint. He matched the purple to his mind's eye from 1940, and was helped by a picture of an early Culver Cadet on a vintage Wings cigarette pack collector's card. Additionally, a new panel accommodated a few extra instruments, including a rate-of-climb indicator and manifold pressure gauge. A new Cleveland brake system was also installed.

Retractable Gear

Serial No. 102 has some quirky operating characteristics, which Trimble attributes to its being "hand-built, and there are a lot of things on it that really don't work as well as the later

production models." One such example entails the art of manual gear retraction and extension, which requires two hands. That necessitates gripping the control stick between the knees, because the spirited little airplane, being pitch sensitive with its light stick pressure, quickly displays its unstable tendency as soon as its pilot lets go of the stick. See-through panels in the floorboard provide a handy visual check to confirm the gear position—but apparently that's the only easy part.

"You trim the plane carefully before you begin the process, but you end up flying all over the sky while you're pulling the gear up," laughs Trimble. "First you pull up on the gear lock, move the wheel, and then put the lock over to the first notch. It's a ratchet system, and the gear comes up one notch at a time. You have to keep pulling the wheel hard—it takes both hands—until you get to the last notch. Then you have to jerk on it, but it finally works. Now when you want to get the gear down, you have to unload the ratchet by pulling as hard as you can on that wheel. At the same time you pull up on the gear lock and put



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Rear view of Trimble's 1940 Culver Dart Model LCA, between the horizontal stabilizer and elevator.

it over to the free position. Then the weight of the gear dropping will jerk the wheel out of your hand, so you have to grab the wheel again quickly to keep them from slamming down. Just as the gear hits bottom, you immediately slam the gear lock to the left and try to get the lock pins seated. If it doesn't work, you just keep trying until it does!"

In Flight

While this Culver offers a challenge when it comes to picking up and lowering its "feet," its climb and cruise rate are quite pleasing to its owner, who indicates that it will reach 1,000 fpm climb in a hurry. It's not uncommon for Trimble to take it up to 10,000 feet on a cross-country flight. Of course, the climb rate is hampered by a full load, but he maintains that it's still a good performer and was so even when it had its original 75-hp Continental.

Replace that 75 hp with 100 hp and the tiny Culver really zips through the sky. Trimble can easily cruise at 140 mph while burning only 5.8 gph. He says he "normally runs around 21-1/2 or 22 inches of manifold pressure, which is 55-60 percent power, and it'll show 130 mph. If I move it up a little, it'll show 140 mph."

Equally pleasing is the airplane's

surprisingly benign stalling characteristics, attributed to its leading-edge wing slots, which facilitate airflow over the ailerons while flying at high angles of attack. It can also be fairly



*Apparently
NC20949
exemplified the
company's advertising
slogan, "It's Culver
for Cross-Country."*

docile when it comes to landing. Trimble finds that NC20949 responds better to touching down in a three-point attitude, as opposed to a wheel landing. "If you fly it on and touch the main gear, it'll jerk hard to the right," he says, explaining another of its idiosyncrasies. "This one's gear is canted slightly to the right, so it'll jerk hard in that direction, and there's no adjustment for toe-in. But it touches down around 45 mph, so it's really not a hot airplane on the ground at all."

Dead Stick

While out flying on an afternoon jaunt one day, Trimble discovered NC20949's most surprising performance feature. He was flying at 4,500 feet over the scenic, forested mountains just a couple of miles north of Branson when suddenly the little Culver decelerated rapidly. "The motor just died like a heart attack," says Trimble, shaking his head as he relives the moment, "and I thought, uh oh, I'm in trouble here. The airport was on the south side of town, and a divided road went right through the town. I decided to head to the airport, and if I had to, I'd take one lane of that road. I glided all the way across Branson, and I couldn't believe the glide ratio that airplane had!"

Trimble, who has experienced a total of six engine failures while he's been pilot-in-command, remained calm as he and the Culver flew silently over Branson. Amazingly enough, by the time he crossed the center of the airport, he still had 1,200 feet of altitude. "I turned left downwind for runway 29, but that was a little bit downwind, so I glided on around the airport and entered the downwind for runway 11. So I turned into the pattern, and as I was going downwind, another airplane came in behind me and I said, 'Cul-



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An efficient design allows the Culver to slice cleanly through the air. The racy little Culver Model LCA created quite a sensation among pilots when it was first introduced in 1940.

ver 949 turning base with the engine out.' I touched the numbers when I landed and stopped in the middle of the runway—and I'm not bragging, because I'm not that skillful a pilot. I was just lucky to have enough altitude! That other guy came in and saw me and said, 'You weren't kidding, were you?' I said, 'No, the engine was out and had been for a while.' That was an interesting ride. That was one of the most impressive things about the airplane to me, was how far I got with a dead engine."

Cross-Country

Apparently NC20949 exemplified the company's advertising slogan, "It's Culver for Cross-Country," on at least one historic flight. Trimble cites newspaper accounts that credit his Culver with a record-setting flight more than six decades ago, and he's adorned the Culver's fuselage with a tribute to that event: "*On June 5, 1940 this airplane was flown from Columbus, OH to Santa Monica, CA in the daylight hours of one day, thereby establishing a cross country record for light aircraft that still stands today. Total flying time was 16:40.*

Refueling stops were made at Tulsa, OK and Winslow AZ. Total fuel cost was \$15.48."

Trimble admits that he's pondering the possibility of duplicating that flight but remains noncommittal. "I'm 75 years old now; maybe I'll wait until I'm 80," he says with a lingering smile. Elaborating upon the feasibility of such a flight, he reflects that "June 5th is close to the longest day of the year, and you gain two hours going west from Ohio to California. A high-pressure system might give you tail winds along the way. But I think (on that record flight) the pilot must have put a fuel tank in the passenger seat, because he went from Columbus to Tulsa. That's 750 miles, and beyond its normal range. And from Tulsa to Winslow is 800 miles."

As for the pilot who made that record flight, Trimble says, "I understand that it was 'Pop' Johnson, the same pilot who flew this as a factory demonstrator. After flying this airplane as many hours as he did, he knew where this plane fell short and tried to correct those things in the Swift design. So this particular air-

plane was forerunner of the very first prewar Swift (the 1941 Globe GC-1, NX17688). Just look at a Swift and you'll see the similarities."

Affinity for Culvers

Even with its quirky operating characteristics—or maybe because of them—Trimble has a fondness for Serial No. 102. But that's not the only Culver he keeps in his hangar. Nestled between Wacos, a Fairchild 24, a Grumman Widgeon, and various other aircraft in his unique collection are a 1938 Culver Dart GK and a post-war Culver V ("V" for Victory). The most recent addition to his fleet is a 1946 Culver V, which he describes as "the Superior Satellite, which is the last mutation of the Culver V." (Superior Aircraft Co. of Wichita, Kansas, is the type certificate holder.)

Trimble delights in flying his aircraft on a regular basis and is rather partial to his Culver models. So perhaps one day soon, when he's flying NC20949, there will be another young boy who will be inspired by the sight of a small purple Culver dashing through the sky, just as he was many years ago.