



70th anniversary
of the DC-3



Douglas DC-3: Together we fly

Strength greater than the sum of its parts

BY JULIE K. BOATMAN

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Perched 15 feet up in the air at the controls as we progress down the taxiway at Thomaston-Upson County Airport, in Thomaston, Georgia, I don't really consider this, as it takes nearly all my concentration to keep our 18-foot-6-inch-wide main gear centered on this 35-foot-wide strip of asphalt. From the right seat, N143D's owner and instructor Dan Gryder suggests that I focus a

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The call

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I split the throttles left and right to stay the course, and before I know it, we're at the approach end of Runway 30, ready to run the last checklists before flight. As I tap the brakes, they *psst* with a whine and a lurch, bringing our polished aluminum mass to a halt.

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Douglas Aircraft had reasonable success with the DC-2—185 had been built when the first DC-3 flew (only one DC-1 was built)—but in the competitive airline business (not much has changed), any advantage could mean the difference between success and failure in the fragile economy following the hardest years of the Depression.

A two-hour phone call in late 1934 from C.R. Smith, then at the helm of American Airlines, to Donald Douglas sketched out the company's requirements for a new airliner, a sleeper version of the DC-2 that would eventually carry half again as

PHOTOGRAPHY BY MICHAEL P. COLLINS



many passengers in its typical daytime configuration (21). Douglas was initially skeptical. But he took a chance, and engineer Arthur Raymond together with the Douglas team and American's, led by William Littlewood, created the DC-3.

The first Douglas Sleeper Transport (DST) flew on December 17, 1935, with Douglas' Carl Cover (pilot) and Frank Collbohm (copilot) at the controls, just 32 years to the day after the Wright brothers flew at Kill Devil Hills, North Carolina, and just five months after Smith's telegram arrived to firm up the details of that \$335.50 phone call. Through a six-month test period, Douglas engineers and American's chief test pilot Dan Beard put the airplane through its paces. The DST quickly evolved into the DC-3 with only minor adjustments.

My experience with the DC-3 began on modern terms, with an e-mail, an invitation to fly that I could not pass up. Drawn to the airplane's silvery sleek lines, I'd spent many an idle moment at airshows through the years simply staring at whatever example had parked in the classic rows. The airplane's numbers and facts didn't leap out at me; I just wanted to be around it. Pressing your ear against the fuselage, your mind tricks you into thinking you can hear all

the wind that has rushed by over the years, like hearing the ocean in a conch shell.

The idea blossomed, and soon I was headed for the airplane's home at Griffin-Spaulding County Airport, in Georgia, and a date with an airplane that shaped a generation of pilots and framed air travel in the twentieth century.

Anticipation

To a pilot whose skills were born and bred in a Cessna 150, the prospect of flying a 25,200-pound (fully loaded) taildragger with twin 1,200-horsepower radial engines felt like a momentous responsibility. But in answer to my sleepless nights prior to the start of training, Gryder told me two things.

First, the DC-3 was the airplane so many commercial pilots cut their teeth on decades ago, their first introduction to flying the line, and most had my experience—or less—when their DC-3 lessons began. And second, aside from its mass (and in some respects, because of it), the DC-3 is just an airplane, and a fairly conventional, docile one at that. Many of the systems we take for granted in modern airplanes (hydraulics for raising the gear and lowering the flaps, full-feathering props, pneumatic deice boots, the Janitrol-style heater) were created for or honed on the DC-3. So within this intimidating machine lie straightforward parts and familiar patterns.

For the training, I was paired with Charlie Atterbury, a retired corporate pilot who has held dreams of flying the -3 since childhood. We ran checklists as a team, attempted to draw systems for each other ("the hydraulic bus is like a trough from which five pigs feed"), and groaned together at Gryder's incessant yet championship-level puns.

The airplane we would fly was originally assembled under a license from Douglas Aircraft to Fokker Co. in the Netherlands,

and it was delivered in October 1938 to Swiss Air under the registration HB-IRO. Atterbury found these letters still stamped on the right jack point under the wing during one of our pre-flights. Later, the airplane worked for Ozark Airlines from 1955 to 1967, and became a cargo hauler for Griffin's Academy Airlines from 1974 until its sale to Gryder in 2001. Gryder created a DC-3 training program based on modern crew resource management concepts—just like it takes a dedicated

The DC-3 flown for this story began its career in Europe, flying for Swiss Air under the registration HB-IRO (below). It was one in a series of ships with the "HB-IR" designation.





Dan Gryder (left) and Charlie Atterbury (right). Mornings were spent in ground school (inset).



team to build a great airplane, it takes teamwork to fly this one well.

Preflight was just a really big walkaround; starting the engines was a combination of standard multiengine procedures and standard radial-engine procedures—instead of pulling the prop through by hand to check for hydraulic lock (when oil pools in the lower cylinders and creates a barrier against which the pistons cannot move), we engaged a preoiler in conjunction with the starter, verified good rotation, counted 12 blades, and then advanced the mixture.

Although it's a sizable airplane, the DC-3 was designed when people came in slightly smaller packages—because with the rudder pedals set to the nearest stops, and the seat

adjusted to the top of the rail, the airplane fit me better than the right seat of an old Cessna 172. And from this position, the front windscreen was only a foot or two from my face, making for an immediate sort of view over the nose.

When it came time to set the airplane in motion, intimidation returned—and justly so. Our first (and second, and third) trip to the runway involved moments of calm punctuated by Gryder's, "I've got it!" every 30 feet or so.

The takeoff roll is like that of any tailwheel airplane, just more so. Once the mass gets moving, keeping it in a straight line involves rudder pressure, not sudden input. After speed builds past 30 knots, you push forward on the control yoke—a half-moon rail topping an angled column that comes out of the floor—and the tail flies readily.

The liftoff takes away all cares of the ground. The DC-3 doesn't climb so much as it levitates, like a magic carpet, over the runway end lights, the power lines, the treetops, and beyond.

In the air, you command as though from the prow of an ocean liner, and compared to lighter craft, the DC-3 has

Flight Check legacy

N34 continues its mission for the FAA

N34, with its gray-and-orange-lightning livery, is a unique airplane in many ways. Built in 1945 in Oklahoma City, it was contracted as a C-47B and then designated an RD4-7 for its use in the Navy. But after a decade of flying naval squadrons hither and yon, in 1956 the airplane came to its current owner, then the Civil Aeronautics Administration (CAA)—now the FAA. That makes N34 one of the few in the DC-3 brood that has flown for the same owner for almost 50 years and more than 24,000 hours. The CAA/FAA operated more than 60 DC-3s in flight inspection, making it one of the largest civil operators of the type.

Today N34 tours the country as part of the FAA's Office of Aviation Systems Standards, AVN. In 1985, then-FAA Administrator Donald Engen determined the airplane could reach out to the public about an important part of the FAA's mission. In 1993, N34 was returned to storage, but was later brought out again by Administrator Marion Blakey for the Centennial of Flight. Outfitted with its original airway- and navaid-inspection equipment, today N34 continues to visit aviation events to tell the story of what pilots know through the call sign "Flight Check"—the airspace system inspection process that helps keep our airways the safest in the world. AVN-200 (Flight Inspections Division) operates the aircraft for AVN, and AVN Program Director Tom Accardi oversees the program, a personal favorite of his.

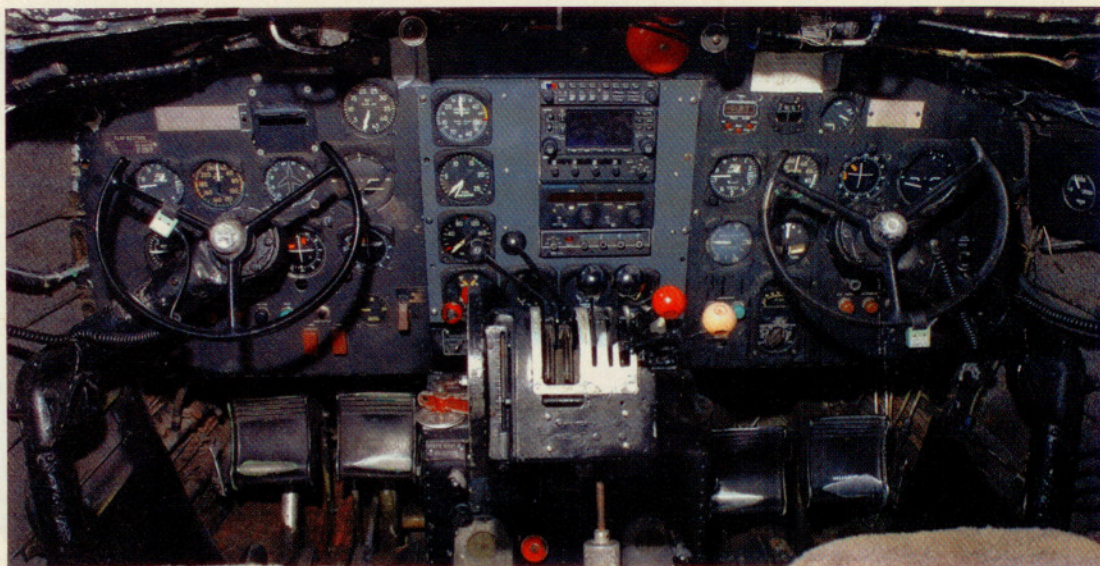
Robert Tahte Perkins, pilot for the Anchorage Flight Inspection Office, currently is one of four captains for N34 and serves as its program manager. He enjoys showing visitors (short and tall alike) the radio racks and technician's workbench used to test early VOR and ILS installations. He's also witnessed history brought to life, in the stream of veterans who come on board to talk about their relationship with the airplane, and in one special memory: Last summer he flew the airplane to Alaska, and escorted to the cockpit the widow of Jack Jeffords, who led the CAA in Alaska during its frontier days. While she knew she wasn't in the DC-3 that her husband flew (N14, *King Chris*), Ruth Jeffords' eyes filled with tears as she surveyed the front office of an airplane that remains so much the same—and still serves a similar mission.

—JKB

N34 is shown in its current colors.



A few modern avionics have updated the front office of N143D—the ADF receiver was swapped for a Garmin GNS 430. While this airplane is now configured for cargo operations, in its passenger-carrying days it would have resembled the DC-3 interior in the photo below.



the responsiveness of a freighter. The airplane is a thinking pilot's airplane: You think about making a turn, and a few seconds later, the airplane thinks about making the turn as well. Pitch forces are light—once you establish a turn, the back-pressure required to maintain altitude doesn't require extraordinary effort, though you learn quickly to use the effective trim (in all axes) to manage the load. DC stands for "Douglas Commercial," but to the DC-3 pilot it means "direct cable." Those aileron cables in particular are mighty long to reach its 24-foot ailerons on a 95-foot wingspan.

While setting up a turn takes forethought, once the DC-3 settles in and hunkers down, it feels like it's carving through the turn on rails. This stability makes for a pleasurable ride, and also translates to other fundamentals of flight. For example, we configured the airplane for instrument approaches (both precision and nonprecision) by setting one-quarter flaps, then one-half flaps and gear down prior to reaching the outer marker or final approach fix. At the fix inbound, full flaps (45 degrees of split flap across roughly 45 percent of the wingspan) resulted in a 90-knot approach speed and roughly 500 fpm descent. Once it's configured, the DC-3 tracks the

Duggy the DC-3

The National Aviation Hall of Fame reaches out to kids

"I think Donald Douglas would be flabbergasted to see not only the aircraft still flying but to see a big smiley face on it," says Ron Kaplan, executive director of the National Aviation Hall of Fame (NAHF). Kaplan is referring to *Duggy*, a 1942 C-47/DC-3 that originally served in the Pacific Wing during World War II, flew for Wein Air Service in Alaska after the war, and finished its working role in government service flying for the Canadian Department of Transportation through the 1970s. Now N1XP wears bright yellow paint and is charged with putting a friendly face on aviation for the children who see it at airshows and fly-ins across the country.

Duggy is part of the SkyReach project of the NAHF, which is based in Dayton. SkyReach represents a marriage between the *Duggy* cartoon character created by Mitch Carley, Rob Challans of Aviset Studio, the NAHF, and N1XP—whose services are donated to the museum by Robert Odegard Aviation. NAHF promotes the people of aviation, as opposed to historic events—and the *Duggy*

program plays right into that mission. Carley imagined the *Duggy* character when he was a child, and now the airplane headlines the educational program designed to teach kids in grades kindergarten through four about the valued character traits of NAHF enshrinees.

Take, for example, enshrinee Donald Douglas himself. Vaunted by the NAHF for his character trait of "teamwork," Douglas threw his resources (the Douglas engineers and factory craftsmen) together with those of the airline industry to make a world-changing airplane. And 70 years later, *Duggy* flies the skies to serve as an example of Douglas' teamwork ethic and spirit of cooperation, as well as the values of those other enshrinees we honor for doing the right thing—and furthering aviation in the process.

—JKB



course like a knife through butter, smooth and true. I'll take an instrument checkride in a DC-3 any day.

Single-engine work was another line item that sounded daunting, but the airplane proved it was a surmountable challenge. Ruby Sheldon, former pilot for the U.S. Geological Survey, recalls from her type-rating ride in the DC-3 back in the 1960s: "I just put both feet on that rudder and stomped for all I was worth!" My legs had strength enough to handle it just fine.

Although the airplane accepts a three-point landing, normally saved for light loads and deft hands at the controls, wheel landings are the norm, being both satisfying and consistent. When Gryder started us in on touch and goes, it seemed like a big deal until I realized that the real trick to landing happens as you fly the tail to the ground—repeated wheel landings that keep the tail in the air give you time to hone your directional skill prior to the more challenging task of bringing the airplane to a stop.

The full stop

On our third day of training—mornings of ground school on systems punctuated by afternoons flying and swapping seats—we did touch and goes with successive V_1 cuts, and then a round of landings at Thomaston. The runway there, longer than that of the airplane's home base, made for better training circumstances.

Atterbury was slowing the airplane

for a full-stop landing when he felt 143D pull sharply to the right. As the aircraft slowed, Gryder took the controls, and the right-rear drag strut punched up through the wing, collapsing the right main gear. The prop, engine at idle, struck the pavement seven times, and sparks flew from the oil cooler as we slid to a stop and pitched over in slow motion.

Inside a wing rib, the attach point of the drag strut had failed, the casualty of more than 40,000 landings.

As we considered the airplane, lame on the runway, in disbelief, the genius of the design flickered through the fog of massive disappointment. The gear design and placement of the fuel tanks ensured that a failure wouldn't likely breach those tanks or lines. Though the massive C-47 gear folded in half (the airplane had been modified for cargo operations with the stronger gear), it remained intact to pad the wing and belly from further damage. The right wingtip was dented, but only because in our misfortune we'd topped a runway light a few yards back. And, incredibly, the imploding gear had destroyed a section of the main spar web—but not the attach angle, or spar cap, that carried through the aircraft's midsection. It had missed by a sixteenth of an inch on the top, and less than that on the bottom. That stroke of luck made the airplane fixable, from a financial standpoint.

The sum of its parts

"The Landing" (as we referred to the event) happened at Thomaston, where Mark McSwiggan, who once co-owned and operated the airplane with his father, Robert, at Academy, keeps his maintenance hangar. McSwiggan—a patient man with the heart of a teacher—began the process of re-creating the pieces wiped out by the errant strut, assisted by other experienced hands.

The author pumped more than 160 gallons into this main tank, which holds 210 gallons total.



A new life

Basler Turbo Conversions makes a DC-3 turbine workhorse

The late Warren Basler and his company, Basler Airlines, used DC-3s to fly cargo and, among other missions, make passenger trips to fishing camps in the Canadian wilderness. He admired the airplane's cubic volume, payload, and performance into unimproved strips—he loved the airplane, truly, but for one thing. "The engines kept breaking," says Tom Weight, president of Basler Turbo Conversions, of Oshkosh.

When he couldn't identify a replacement for the DC-3, Basler took the airframe and mounted turbine engines and new props on its shoulders. In 1990, this modification began its evolution into the BT-76 conversion, in which a tired DC-3 gets new skin and ribs, all-new current-production fuel, hydraulic, and electrical systems, and any upgrades necessary to fit the client's mission.

The BT-76 clientele comes from all over the globe. The roughly \$5 million airplane is used by the U.S. Forest Service in Utah, and by the Colombian Air Force as a drug-enforcement tool—the gunship modifications make the stately airplane a menacing beast. The Bolivian Air Force uses the airplane for troop transport, and the Royal Thai Air Force fights fires and makes rain with the BT-76.

When asked if the company worries about running out of decent airframes to recycle, Weight laughs and gestures at the baker's dozen sitting outside its hangars at Wittman Field. "We're still finding fuselages all over the world," he says, estimating more than 500 known airplanes ripe for rescue from the jungles and deserts where they last came to rest. With no real expensive parts—"there are no \$2,000 bolts on the airplane," says Weight—and an airframe that is readily regenerated, he sees the BT-76 flying well past the DC-3's centennial. —JKB

SPECSHEET

Douglas DC-3

Current market value: \$220,000 (varies widely on condition)

Price as new in 1937: about \$110,000

Specifications

Powerplants.....Two Pratt & Whitney
R-1830-92 radial engines, 14 cyl, super-
charged
.....1,200 hp at 2,700 rpm
.....1,050 hp at 2,550 rpm
Recommended TBO1,300 hr
Propellers.....Hamilton Standard Hydromatic
.....full feathering, 11-ft-7-in dia,
.....constant speed
Length64 ft 5 in
Height16 ft 11.5 in (tail down);
.....14 ft 11 in (tail height);
.....23 ft 6 in (tail up; wheel-landing profile)
Wingspan.....95 ft
Wing area.....987 sq ft
Wing loading.....25.5 lb/sq ft
Power loading.....12.9 lb/hp
Seats2+1 (cargo configuration)
.....2+21 (passenger configuration)
Basic empty weight (plus oil and std
equipment)17,345 lb
Max gross weight (FAR Part 91 ops)
.....25,200 lb
Max gross weight (FAR parts 121,135 ops).
.....26,900 lb
Max useful load.....7,855 lb
Payload w/full fuel.....2,923 lb
Fuel capacity, std ..822 gal (802 gal usable)
4,932 lb (4,812 lb usable)
Oil system capacity, both engines59 gal
Baggage capacity (max all compartments) ..
.....9,520 lb; 1,300 cu ft

Performance

Takeoff distance, ground roll,
1,200 hp ea side890 ft
Takeoff distance, ground roll,
1,050 hp ea side1,070 ft
Max demonstrated crosswind component.....
.....13 kt
Rate of climb, sea level,
1,200 hp ea side1,410 fpm

Cruise speed/range w/45-min rsv (total fuel
consumption), 10,000 ft
@ 65% power, auto lean mixture.....
.....142 kt/1,107 nm
(93.8 gph)

Cruise speed/endurance w/45-min rsv
(total fuel consumption) @ max endurance
speed, auto lean mixture.....85 kt/16 hr
(49 gph)
Service ceiling26,500 ft
Absolute ceiling24,800 ft
Absolute ceiling, single engine12,500 ft
Landing distance over 50-ft obstacle .. 2,100 ft
Landing distance, ground roll.....800 ft

Limiting and Recommended Airspeeds

V_X (best angle of climb)84 KIAS
 V_Y (best rate of climb).....91 KIAS
 V_{XSE} (best angle of climb, single engine).....
.....84 KIAS
 V_{YSE} (best rate of climb, single engine)
.....95 KIAS
 V_{MC} (minimum controllable airspeed,
single engine)76 KIAS
 V_A (design maneuvering)120 KIAS
 V_{LE} (max landing gear extended) ...148 KIAS
 V_{FE} (max flap extended, one-quarter flaps) ...
.....135 KIAS
 V_{NO} (max structural cruising)158 KIAS
 V_{NE} (never exceed).....190 KIAS
 V_1 (takeoff decision speed)84 KIAS
 V_R (rotation)84 KIAS
 V_2 (takeoff safety speed)84 KIAS
 V_{S1} (stall, clean)68 KIAS
 V_{SO} (stall, in landing configuration) ..64 KIAS

*All specifications are based on manufactur-
er's and airlines' calculations for the specifi-
c aircraft tested. All performance figures
are based on standard day, standard atmos-
phere, sea level, gross weight conditions
unless otherwise noted.*

How does an airplane stay in service for 70 years? For one, more than 10,000 DC-3s and C-47s (the military version) and their variants were built. And because the bulk of those were C-47s destined for war (the airplane was credited as one of four reasons the Allies were victorious in World War II, along with the jeep, the bazooka, and the atom bomb, an assertion attributed to Gen. Dwight D. Eisenhower)—the U.S. government requisitioned a monumental stockpile of parts. To this day, new primer-green parts with original Douglas stickers intact can be purchased or scavenged from attics and dusty hangars for much of the airplane. And what you can't buy ready-made, you can probably fabricate legally. The DC-3 will fly past its 100th birthday on this happy circumstance—even if its only original part is the data plate.

But to rebuild the airplane after a serious mishap, you need jigs and tools specially designed for the old lady. For example, the wings are reinforced with a layer of corrugated 62-one-thousandths-inch-thick sheet metal, which is topped by the smooth aluminum skin. To achieve the proper corrugation pattern, the two layers must be riveted together under compression. A tool was built to compress the section as part of the restoration.

For the aircraft's major structural repair signoff and return to service, Gryder documented the process with digital photos and notes that could make an excellent primer in sheet-metal work for budding airframe and powerplant mechanics. As they assembled the parts for the project, Gryder marveled repeatedly at how well the structural parts of the airplane work together to make the whole so much stronger than the sum of its part numbers.

The DC-3 is overbuilt, and Gryder and the team bucked more than 4,000 rivets over a hot Georgia summer to overbuild it back to Douglas standards. The airport community at Thomaston, consistently supportive of the efforts taking place on

The DC-3's tailwheel unlocks for turns, but for long taxi runs—and landing—you want the tailwheel locked.



its ramp, watched as the majestic silver airplane came back to life.

A zero-time engine was hung on the right side—Pratt & Whitney doesn't build 1830s anymore; this one was rebuilt from new and serviceable parts by Roy Owens and his crew at Global Radial Aircraft Engines in Oklahoma City—and we were back in business.

Team effort

Atterbury and I returned to Georgia in September to complete our type ratings and finish the photos for these pages. One night, while standing on the ramp after a long day of flying, Thomaston Airport Manager Mitch Ellerbee reminisced about the airplane's working days: "Years ago I used to watch guys dressed in dark clothes—to hide the oil—load newspaper bundles into the back of this same airplane every night. Now she's all prettied up like a baby doll."

Flying the airplane after a hiatus (and major repair work) filled me with excitement and, yes, anxiety. But after making peace again with taxiing—and making some more full-stop landings—I made friends with the airplane I so admired and trusted that the type rating was an attainable goal. And so it was.

Later, we launched into the end-of-summer haze for a photo formation flight. Loafing behind a Piper Super Cub at 90 knots, I worked pitch and rudder to stay in position while Gryder gave me what power adjustments he could—already at 20 inches manifold pressure and 2,050 rpm, we didn't have much to play with on the low end, but working together we stayed in position long enough to capture the lady in the fading Georgia evening. We dropped the gear for our final breakaway into the sunset (hydraulic gear lever down then neutral, handle latched,

pressure up on the downlock side, and a green light), and I slid open the pilot window farther to let my elbow trail in the breeze. And I wondered again at how the best of aircraft designs seems

destined to soldier on, flying on the strength of teamwork.

AOPA

E-mail the author at julie.boatman@aopa.org.

Listening for the stories

70th anniversary
of the DC-3

The legendary Douglas DC-3 is still making people talk

BY MICHAEL MAYA CHARLES



A few years ago, I was fortunate to fly a Douglas DC-3 located in the Denver area. The private owners were quite generous with their treasure and one day allowed me to participate in an EAA Young Eagles event at the local airport.

We flew four loads of 10 Young Eagles each; an adult rode in the back of the airplane and another in the front—just in case we needed to get everybody out in a hurry. It was a beautiful day for an airplane ride, the first for many of my young fares. Before each takeoff, I'd turn around toward the rear of the cabin and ask, "Everybody ready?" Wide eyes and excitement you could feel in your hair.

Each flight was but 10 to 15 minutes, but the memories will surely last a lifetime. There was much pointing and shouting as excited kids spotted their homes or school. We ended each flight with a gentle wheel landing, letting the old Doug roll to the end of the 4,700-foot-long runway in deference to her tender brakes.

This American Airlines Flagship was one of a Douglas fleet that helped bring the airline to profitability in the late 1930s.

After the Pratt & Whitney 1830s clattered to a stop, some of the kids just walked down the stairs and ran to their parents' side or looked around for the "next ride," never even glancing back toward the airplane or saying thanks to its crew, clueless about the amazing thing that had just happened to them.

But a few, a precious few, didn't want the moment to end. They lingered, studying the upturned nose, graceful lines, and old-world details of the nearly 70-year-old airliner. One young lad and his father begged a ride back to the airplane's home airport, in spite of the inconvenience arranging transportation back home at the other end. That's why we flew those flights: The DC-3 is an amazing bridge between past and future.

Someday 15 or 20 years from now, I'm going to be sitting in a bar somewhere, and between sips of my porter

i Links to additional information about the Douglas DC-3 may be found on AOPA Online (www.aopa.org/pilot/links.shtml).

i Your DC-3 stories may be sent to editor@aopa.org with "DC-3" in the subject line to post in our special section (www.aopa.org/members/aircraftreports/dc3).

I'll hear a mid-20s lad brag, "Well, my first airplane ride was in a DC-3."

"What's a DC-3?" the neighboring barfly will ask flatly, not really caring about much beyond the label of his Budweiser.

"It's just one of the coolest airplanes ever built: A big taildragger, radial engines that smoked and belched fire...an art-deco look and feel...it's about the size of one of the engines on modern widebody jets and cruised at about the approach speed of modern airliners. But it would seat 15 to 20 passengers, and in the 1940s and 1950s, it was the bee's knees to airline passengers."

"Oh."

What that lad will be unable to convey to his unappreciative audience is the essence of the DC-3, the reason we keep writing stories about this great aging airliner: There is something special about the DC-3, something magic that just doesn't exist in the modern jetliners that we now fly. That magic is a sense of history. Old airplanes have soft voices, stories to tell, and the last DC-3 story has yet to be told.

Gen. Hap's bird

The story of the DC-3 I flew is certainly unique. It was the second military DC-3, delivered to the U.S. Army Air Corps in September 1939. Configured as a VIP transport with four sleeping berths forward and four swivel armchairs and galley aft, the Douglas was based at Bolling Field in Washington, D.C., during the war. It was one of two similarly configured DC-3s, and served as Gen. Hap Arnold's and other top-level staffers' corporate steed. During its time in the service it was painted with Arnold's "flag" and two stars just to the right of the entrance door. Can you imagine the discussions that took place in the back of that airplane during those years? The stories that airplane could tell!

But this airplane is certainly not the only one with tales to tell. When we flew the airplane to fly-ins, there were always people there to tell us of their connection to the DC-3, their stories: There were some who jumped out of DC-3s for fun or duty, flew home from battle in them, took their first airplane ride in one, watched them fly over as a kid from the seat of a farm tractor, met their wife when she was a stewardess on one, rode to school on one, got married in a DC-3, flew them for an airline, the Army, or a corporation.... These amazing airplanes have volumes of

stories like this, all personal and many heartrending. These old airplanes, one story at a time, built a solid record that will never be equaled.

The foundation for all airliners

The DC-3 is one of the foundation blocks of all airliners that followed. In the DC-3's systems, you can see the beginnings of modern-day jets. Hydraulics, for example, were used to perform many jobs in the DC-3, including raising and lowering the landing gear, and operating the brakes, flaps, cowl flap, and even the windshield wipers. When I checked out in the DC-10 a year or two after getting my DC-3 type rating, I had to smile when I learned that the model—like its newer brother, the MD-11 jet—has a feature in the hydraulic system to prevent pilots from

"overspeeding" the flaps. I recalled that a similar feature was originally built for the DC-3, a simple relief valve that prevents you from lowering the flaps beyond one-quarter extension at speeds over 135 knots. I also noticed a family resemblance in the upright, prow-shape windscreen in the DC-10/MD-11 series, the very last of the distinguished Douglas line.

We no longer have free-swiveling tailwheels, or have hydraulic cowl flaps, or worry about dreaded hydraulic lock in our modern jetliners. But that's largely because the DC-3 showed us how to create the reliable systems that we now take for granted.

AOA

Michael Maya Charles, of Erie, Colorado, is a captain for a commercial airline.

70 years old and still flying folks

One of the last airlines flying passengers in DC-3s is located in the Canadian Northwest Territories. Family-run Buffalo Airways owns six of the type, three of them configured for passengers. Its scheduled service, operated since 1978, runs six days a week from Yellow Knife to Hay River, a short 45-minute DC-3 hop across 125-mile-wide Great Slave Lake—or a six-hour drive. Your choice.

Its well-cared-for Douglas Racers have 28 folding seats, allowing the company to haul passengers, freight, or, as is often the case, a little of each. Chief DC-3 pilot and owner of the company, Joe McBryan, or "Buffalo Joe" as he is known, has been flying DC-3s since 1969, when he chose to fly them for an operator in Canada over all other types. "It's a very comfortable airplane, and people feel safe in it," McBryan says.

He points out that the airplane can haul three and a half tons of people and stuff at two air miles per gallon—better than his son's truck, which he points out only gets six miles per gallon and hauls a lot less. Although that son claims that hearing a DC-3 fly overhead "sounds like a Harley fu-

neral going by," there simply isn't a better airplane for many of Buffalo's missions.

McBryan talks fondly of his many years in the airplane, and is quick to praise its simple, rugged design, especially the huge rudder and tail, big wheels and tires, and its ability to open up unimproved areas of Canada for exploration. "I can't think of anything I don't like about the airplane," he says.

McBryan is aware that the shortage of aviation gasoline is one of the biggest threats to the DC-3. But he has a plan for that, too. "When we can no longer buy gas, we'll just put turbines on her," he says pragmatically. Like many who operate the type, he believes that the -3s are not going away any time soon. These airplanes will last forever if they're cared for, McBryan says.

"There will always be an England, always be prostitutes, and there will always be DC-3s."

—MMC

i Links to additional information about Buffalo Airways may be found on AOPA Online (www.aopa.org/pilot/links.shtml).

