



# The Douglas DC-3

75 years of service: Part 2

by Henry M. Holden

## World War II

In September 1939, war broke out in Europe. The Douglas Aircraft Company was suddenly swamped with orders for the C-47, which was still on the drawing board. As a stopgap measure, Douglas engineers modified the DC-2. They assembled a DC-2 fuselage to a DC-3 tail, added more powerful engines,

and called it the C-39. The Army ordered 35 of them, and it became the nucleus for the Army's first air transport group.

By December 7, 1941, the Army Air Corps had ordered 957 C-47s. The orders flooded the Santa Monica plant, and Douglas opened a plant in Long Beach, California. Before war production ended,

Douglas opened plants in Oklahoma City and Tulsa, Oklahoma. In 1942, massive wartime orders began to pour into the Douglas plants. By December 1942, Douglas received orders for 5,500 C-47s and its variants.

Orders kept coming in, but the next massive order came in February 1944, when the Army asked Doug-

The British called it the “Dak” and the “Dakota,” a clever acronym based on DACoTA, which stood for Douglas Aircraft Company Transport Aircraft.



**Left:** As a stopgap measure, until the C-47 was available, Douglas engineers modified the DC-2. They attached a DC-2 fuselage to a DC-3 tail, added more powerful engines, and called it the C-39.

**Above:** This C-47 is launching a Waco CG-4 behind it in a practice flight leading up to D-Day. Notice both the C-47 and the glider are wearing “invasion stripes.”



las to manufacture an additional 2,000 C-47s. June saw another order for 1,100 C-47s. The last order, for 1,469 C-47s and its variants, came in July 1944, but not all of this order was completed.

Douglas delivered 2,000 C-47s by April 1944, in time for the D-Day invasion. By that time, the Oklahoma City plant was turning out a record 1.8 C-47s an hour, besides the other aircraft it was producing. In May 1944, two plants, Oklahoma City and Long Beach, produced 573

completed C-47s. During that 31-day period the production output was equivalent to 18.5 planes a day. In May 1945, the Long Beach plant alone produced more than 415 C-47s, in addition to 120 Boeing B-17 bombers in the same month.

Based on the same engineering design, from outward appearances, the C-47 was almost the twin sister of the DC-3; the astrodome and the “barn door” on the left side of the aft cabin were the most obvious differences. Beneath the looks, the C-47 production presented many design challenges for Douglas.

“The C-47 wasn’t a very hard airplane to sell; it was just a question of putting the right type of door on it,” said Arthur Raymond, Douglas’ assistant chief engineer.

The Army wanted a large cargo-loading door, and that was a challenge. Douglas engineers realized that to cut the door opening they would need to reinforce the airframe or the tail would fall off. With the new door opening, the Army could roll a Jeep or small artillery piece into the airplane, but the floor would not support the weight. Reinforcing the floor added even more weight to the airplane. Weight-and-balance engineers trimmed and changed the shape of the rudder and stabilizer slightly until they got the desired results.

Although the C-47 was a universal transport, the constant military modifications resulted in an assortment of models and designations. It became difficult to track them. In all, there were 69 variants, all having



AUTHOR'S COLLECTION

Paratroopers are waiting to board a C-47 for a practice jump. By December 7, 1941, the Army Air Corps had ordered 957 C-47s. One year into the war, Douglas had received orders for 5,500 C-47s and its variants.



AUTHOR'S COLLECTION

Air Force C-47s are seen here unloading tons of supplies to the beleaguered city of Berlin. In the first three months of the blockade, C-47s made more than 12,000 round trips between West Germany and Berlin.



AUTHOR'S COLLECTION

The U.S. Air Force used the C-47 as an ambulance ship as did its predecessor, the Army Air Forces. The C-47 ambulance reduced the time it took to get the wounded to surgery, and it saved many lives.



AUTHOR'S COLLECTION

The DC-3/C-47 adapted to almost every role into which it was placed. One variant of the C-47 that was unsuccessful was the XC-47 on floats. The XC-47C was equipped with two Edo Model 78 floats. The XC-47C was limited and could operate only on smooth water. One hundred sets of floats were ordered from Edo, and the C-47C saw limited service in New Guinea and Alaska.



DC-3/Dakota Historical Society  
[www.dc3history.org](http://www.dc3history.org)

VIA COERT MUNK

This Soviet Union-built C-47 was designated Lisunov Li-2 after aeronautical engineer Boris Pavlovich Lisunov, who had spent two years at the Douglas plant. Originally designated the PS-84, it had flown with Aeroflot primarily as a passenger transport before World War II. It was redesignated the Li-2 when the war broke out, and NATO's code name for it was "Cab."



AUTHOR'S COLLECTION



DEPARTMENT OF DEFENSE

**The C-47 truly saw service in every theater of World War II. Here one is seen flying over part of Egypt. At the end of the war, many C-47s were released to their host countries via lend-lease agreements. One C-47 was converted back to passenger operations and was used to start Saudi Airlines.**

**This C-47 was flown into Berlin to commemorate the end of the Berlin Airlift. C-47s supplied the barricaded city for months, flying around the clock, in every type of weather. Later the Air Force standardized the airlift operations, using the Douglas C-54 Skymaster.**

their roots in the DC-2 and DC-3.

The C-47 had a major influence on the outcome of the war. During the first airdrop of the Sicilian Campaign, called Operation Ladbrooke, on June 9, 1943, 147 aircraft, including 112 C-47s towing 137 Waco CG-4 and eight Horsa gliders, carried 1,600 British troops. It was the most successful aerial assault. The glider missions that followed were disasters.

Operation Husky 1 involved 226 C-47s and 3,400 paratroopers from the 82nd Airborne Division. Eight C-47s were lost to enemy action. Operation Husky 2 was nearly a complete disaster. After 144 C-47s dropped 2,000 troops to reinforce

the 82nd Airborne, 23 C-47s were lost, and more than 60 were badly damaged. Operation Fustian, on July 13, involved 132 C-47s. Of those, 14 C-47s were lost and 50 badly damaged; 27 returned without completing their drops. After that, the U.S. Army Air Forces (USAAF) used special "invasion stripes" for all Allied aircraft.

On June 6, 1944, D-Day, the ground invasion of Europe by Allied forces began. Part of this contingent was the largest airborne armada ever assembled to that point. The first wave of transports included 821 C-47s. In the first 24 hours, there were at least 1,674 sor-

ties by C-47s, towing 513 gliders, from more than 20 bases in England. At the height of the invasion one C-47 took off every 11 seconds, with an average of 20 paratroopers aboard each aircraft. They flew in waves of four abreast and stretched more than 200 miles from the southern coast of England to the Cherbourg Peninsula.

"The steady stream of transports kept coming and coming in an endless sky train," CBS correspondent Charles Collingwood reported. "The awe of it stopped the fighting in some sectors as men looked skyward with unbelieving eyes."

By the end of the war, the C-47



COURTESY VIC FOUCHE, DAKOTA ASSOC. OF SOUTH AFRICA

**This South African Air Force C-47 had most of its rudder and elevator blown away by a surface-to-air missile in 1987. The pilot brought the plane in for a safe landing, claiming the damage made little difference to the plane's handling.**



HENRY M. HOLDEN

**To honor Vietnam veteran Sgt. John L. Levitow, the lowest-ranking Air Force member ever to earn the Medal of Honor, the American Flight Museum, in Topeka, Kansas, purchased a C-47 airframe (USAAF, c/n 43-16369), registered N2805J, and converted it to a replica of Levitow's AC-47 gunship.**

had carried 22 million tons of goods and flown 67 million passenger miles. The C-47s under the Air Transport Command logged on average 15 to 19 hours a day in the air.

For every use found for the C-47, someone created a new nickname. Americans called it the *Gooney Bird*, *Doug*, *Dumbo*, *Old Fatso*, *Charlie 47*, *Skytrain*, *Skytrooper*, and *Tabby*. The British called it the “Dak” and the “Dakota,” a clever acronym based on DACoTA, which stood for Douglas Aircraft Company Transport Aircraft.

The Royal Canadian Air Force called one squadron of Dakotas “The Flying Elephants.” The Russians



COURTESY PBA, AUTHOR'S COLLECTION

**The all-time high-timer: Provincetown-Boston Airlines N136PB, c/n 1997, started out on October 27, 1937, as ship 341 with Eastern Air Lines as N18121. It went to the USAAF on June 8, 1942, as a C-49G, registered 42-56631, and back to Eastern near the end of the war on July 22, 1944, with its old N number. In December 1978, PBA registered it as N136PB. The ship had 82,873 hours and had flown the equivalent of 12,438,735 miles. The last reported time was 91,400.02 in August 1993.**



DEPARTMENT OF DEFENSE

This flight of four U.S. Marine Corps C-117D (Super DC-3), redesignated from R4D-8, illustrates the changes to the wings and empennage made for the Super DC-3. In 1949 the Super DC-3 was an effort by Douglas to catch up to an airline market that had outgrown the DC-3. The Super DC-3 was unsuccessful in landing any more substantial airline orders; the Navy bought the 102 copies that Douglas had remanufactured from DC-3 airframes.



COURTESY AMERICAN AIRLINES

American Airlines flagship NC21798, c/n2202, is seen here on its way to the C.R. Smith Museum in Dallas, Texas, in 1992. Today it is on display inside the museum.



AUTHOR'S COLLECTION

This is a Navy R4D-5, the Navy version of the C-47, BuNo. 17274, c/n 14332/25777. It was USAAF 43-48516 delivered August 28, 1944. It participated in Operation Deep Freeze, a series of missions to Antarctica. Eventually it was used as a “taxi” with its outer wings removed until it was lost on an ice floe in the Ross Sea in 1962.



AUTHOR'S COLLECTION

C/n 3283, DC-3-343A, NC28379 was delivered on March 21, 1941, as United Airlines Mainliner *Washington/Klamath Falls*. It was registered as N144D when it was sold to Ozark Air Lines in 1954.



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**Delta Air Lines NC28341 is the former N29PR. After more than three and a half years of refurbishing the old freight dog, Delta's ship 41 received its airworthiness certificate from the FAA on October 26, 1999. It was photographed at Oshkosh, Wisconsin, in 2000.**

called it the "PS-84" and the "Li-2." The North Atlantic Treaty Organization gave the Russian Li-2 the code name "CAB." The French Navy called it "The Beast." It even enjoyed the fleeting nickname "Biscuit Bomber," after dropping 5,000 cases of rations to Gen. Patton's troops in France.

Civilian pilots called it "The Three," "Old Methuselah," "The Placid Plodder," "The Dowager Dutchess," "The Flying Vagrant," and "The Dizzy Three." In Vietnam, it earned the sobriquets "Puff the Magic Dragon," "Puff," "Spooky," and "The Dragon Ship."

Most people remember Gooney Bird. Some say the name came from the South Pacific, where small atolls were the home of the wandering albatross, the giant seagull-like bird noted for its powers of flight and sometimes unflattering but safe landings. Some GIs said the C-47 looked like the bird, with a heavy body and long wings, and mimicked the bird in its struggle to get off the rain-soaked dirt fields.

After the war, the DC-3 went back into civilian use with the major airlines. Hundreds more were sold as surplus to entrepreneurs who often



**This photo shows hundreds of C-47s and CG-4 gliders staging for an aerial invasion. Operation Fustian, on July 13, 1943, involved 132 C-47s. Of those, 14 C-47s were lost and 50 badly damaged; 27 returned without completing their drops. After that, the USAAF used special "invasion stripes" for all Allied aircraft. Note the absence of invasion stripes on these aircraft.**

formed "fly-by-night" operations. But the war had spurred massive aviation advances, and the DC-3 would find itself slowly pushed aside as the larger, faster four-engine airliners such as the DC-4, DC-6, and DC-7 came on the scene.

### Berlin Airlift

On June 24, 1948, the Russians blockaded the land routes into the Allied sector of Berlin. The USAF and the Royal Air Force used C-47s (and C-54s) as the leading edge of a 15-month airlift of food, medicine, and fuel that neared the total tonnage moved during World War II.

At first, C-47s comprised 85 percent of the total aircraft flown. Many flew with 8,000-pound payloads, again greatly exceeding the Douglas specifications. Through an error in an invoice, one C-47 flew 13,500 pounds of pierced steel planking (PSP) instead of the intended payload of PAP, pierced *aluminum* planking, more than twice the weight recommended. Of course, the plane protested and was reluctant to fly, but it did anyway. When it landed, tail wheel first, the weight blew both main tires.

The full extent of the C-47's help may never be known, but it is known that in the first three months of the blockade, C-47s made more than 12,000 round trips between West Germany and Berlin. One C-47 flew continuously for 327 hours, 27 minutes. The C-47s supplied the barricaded city for months, hauling food, coal, and everything else needed to run a city, by flying around the clock, in every type of weather. Later the Air Force standardized the airlift operations using the Douglas C-54 Skymaster.

On September 23, 1949, 321 days after the Russians blockaded the city, the last C-47 flew into Berlin. Stenciled on the side were the words, "Positively the last load from Lübeck." Beneath this was written, "For they intended evil against thee; they imagined a mischievous device, which they were not able to perform. Psalm 21: Verse 11." The C-47/Dakota had kept West Berlin alive, and the world out of another war. 