By Bruce D. Callander

USAF built only one XC-99, in 1947. Soon, this enormous aircraft will have a new home at the US Air Force Museum.

Big Fella

IN THE 1940s and 1950s, the Air Force explored the potential of a super cargo carrier by flying its one-of-a-kind XC-99 on regular, often record, transport runs. It also was touted as a possible prototype for a new generation of commercial air carriers. The experiment lasted 10 years. Then, for almost 50 years, the airplane was left open to wind and weather in a Texas field.

Now the big bird—one of history's largest airplanes—will soon have a fitting place in Air Force history. It is to be reassembled, restored, and enshrined at the US Air Force Museum in Dayton, Ohio.

"The XC-99 may have to go on display outside for a short time initially," said

The XC-99 comes in for a landing during its November 1947 maiden flight out of Lindbergh Field, Calif. It was, at the time, the world's largest land aircraft. The transport required a 3,000-foot runway to take off and a 5,000-foot runway to land.

museum spokesman Chris McGee, but the museum's long-term plan for construction will open "lots of space," much of which will be used to display experimental aircraft. "The XC-99 will go into that [experimental aircraft] building eventually," said McGee.

Everything about the XC-99 was huge. Its tail fin stood the height of a five-story building, some 57.5 feet. Its double-decker interior had 16,000 cubic feet of useable payload space, enough to carry 400 fully equipped troops or 50 tons of cargo. (The largest transport aircraft of the day—the C-97, which was based on the B-29 bomber—could only carry about 100 troops and less than half of the tonnage.) The XC-99 carried 21,000 gallons of fuel. Its gross weight was 322,000 pounds, which was distributed over 10 tires, making it possible for the huge aircraft to land on any 5,000-foot runway that could support the weight of the much smaller C-54. (A C-54 had a gross weight of only 73,000 pounds.)

A company news release noted that the six engines of the XC-99 developed as much horsepower as five locomotives. The engines weighed more than 10 tons. The release also noted that the aircraft had more than 60,000 square feet of sheet metal, more than one million rivets, and more than 25 miles of wiring.

The XC-99 had various nicknames, among them "Aerial Goliath" and "Queen of the Skies."

Photo via Robert F. Dorr

The XC-99, shown on a flight line alongside B-50s—the Air Force's workhorse bomber of the time—was derived from the B-36, but it was 20 feet longer, with a tail 10 feet taller. XC-99 dwarfed its contemporary aircraft.

The XC-99 grew out of the B-36 bomber, which was conceived and developed in the midst of World War II, when America feared that England might fall to Germany and the US would need to fly direct combat missions from its own shores. The B-36 was to be a truly intercontinental bomber that could carry 10,000 pounds of bombs more than 5,000 miles and return. Until then, no aircraft had even approached the proposed range of 10,000 miles.

In October 1941, the Army Air Forces selected a Consolidated Aircraft Corp. (later Convair) proposal, designated Model 35, as the most promising candidate. In November 1941, Consolidated received a contract for two experimental aircraft to be designated XB-36.

The first XB-36 was to be delivered by May 1944, but when the war situation in Europe improved, the program lost some momentum. The XB-36 did not make its first flight until August 1946.

The bomber had a wingspan of 230 feet. It was 163 feet long and stood more than 46 feet high. Its gross weight was 265,000 pounds. It was powered by six Pratt & Whitney R-4360-25 radials; each pusher-type engine generated 3,000 horsepower as they turned 19-foot propellers. The wings were large enough for the crew to walk upright down a catwalk to reach the engines for in-flight maintenance. It had a maximum speed of 346 mph at 35,000 feet and a cruising speed of 216 mph.

It was the heaviest and largest land airplane to fly up to that time. It was also the first very large aircraft to be produced in any quantity. The initial production contract called for 100 bombers. The full production run would be 385 aircraft.

The first production B-36A aircraft flew in August 1947. Strategic Air Command's 7th Bomb Group received its first B-36A in June 1948 for crew training. The first combat-

The image at left shows one of the two huge tires initially used for XC-99 landing gear. The image at right shows one set of the four-wheel system—used on production B-36s—that was retrofitted to the XC-99.

ready production version—the B-36B—flew in July 1948, almost a year after the Air Force became a separate service.

From B-36 to XC-99

In 1942, as it was developing the huge bomber, Consolidated began preliminary studies for turning out a transport version. The Army Air Forces wanted to explore whether a supersize aircraft would be practical for rapid transport of large numbers of troops and much more cargo than was possible with contemporary airlifters.

AAF in December 1942 gave the company a formal contract to produce a test aircraft, dubbed XC-99. Because its development took a backseat to the B-36 bomber, however, the XC-99 was not completed until 1947.

Early that year, the company announced that the huge aircraft had been moved outdoors for completion. "No building at Consolidated Vultee ... is high enough to house the giant plane with its main landing wheels installed, or wide enough to house it with outer wing panels in place," stated the release. The XC-99 had the same wingspan as the bomber, but it was 20 feet longer and its tail was 10 feet higher.

Despite its huge size, aircrews that flew it said that, once airborne, the XC-99 handled with ease. On land, its reversing propellers and tricycle landing gear made it possible to back easily into parking areas. It had a top speed of 300 mph and a maximum range, with minimum load, of 8,100 miles.

The Air Force took formal delivery of the XC-99 in May 1949. It first went to the 7th Bomb Wing at Carswell AFB, Tex., because the unit had experience with the B-36 bomber. On June 9, 1949, Capt. Deane G. Curry piloted the first Air Force flight of the huge transport, making six landings during the mission. Curry subsequently made five more flights, including a night mission and an emergency landing at Kelly AFB, Tex., where it underwent repair and engine modifications.

In September 1950, the XC-99 was transferred from Carswell to Kelly to begin its formal operational test program. According to an Air Force news release, it was one of the few experimental aircraft to clear its initial development costs. Yet, its days were numbered as the jet age approached.

Breaking Records

During its relatively short life, the XC-99 flew numerous missions, setting several records along the way. It flew its first cargo mission to Kelly in July 1950, with Col. Frederick Bell as pilot. That mission, known as Operation Elephant, delivered 101,266 pounds of cargo, including engines and propellers for B-36s, from San Diego to Kelly and was the first record-shattering flight of the XC-99. In another record flight, the XC-99 would lift 104,000 pounds from an airfield at 5,000-foot elevation.

The XC-99 test program routinely involved twice weekly runs from Kelly to the aircraft depot at McClellan AFB, Calif. The aircraft would return by way of other bases or depots, making pickups and deliveries.

In addition, the Air Force tasked the huge transport with special missions, such as the emergency transport of 42 C-54 aircraft engines to McChord AFB, Wash., during the Korean War. The C-54s were flying round-the-clock missions to resupply forces in Korea, so time was

The XC-99's ample cockpit accommodated a sizeable crew. When the airplane was in service, USAF noted that the pilot and flight engineer were responsible for overseeing more than 250 gauges, switches, and levers.

A double-decked cargo hold allowed the XC-99 to carry a record-breaking payload of 104,190 pounds. One month, the aircraft flew seven round-trips between Texas and California, delivering an average of 75,531 pounds of cargo per trip—for a total of more than one million pounds.

critical. Col. T.W. Tucker, the first XC-99 chief pilot and project officer, delivered the engines—27 on the lower deck and 15 on the upper—on a single flight and landed at McChord where he taxied the monster aircraft down a 48-foot-wide strip with only one foot of clearance on either side of the aircraft.

From July 1951 to May 1952, an Air Force record shows, the behemoth flew 600 hours and airlifted seven million pounds of equipment and supplies. About half of that went to support forces in Korea. One of its primary missions was to resupply SAC units that flew the B-36 bomber. In that role, the XC-99 flew thousands of hours around the US and to SAC locations in the Caribbean.

In August 1953, the XC-99 made its longest flight—12,000 miles—to Rhein–Main AB, Germany, by way of Bermuda and the Azores. It carried more than 60,000 pounds each way. At every stop, it attracted much attention from the public and the press. During 1953, the aircraft flew 200 missions at an average cost of 13 cents per ton-mile, less than half the ton-mile cost of its contemporaries.

In May 1955, the transport ferried cargo from Dover AFB, Del., to Keflavik, Iceland, destined for the Distant Early Warning Line project. (See "A Line in the Ice," p.64.) It flew six round-trips, delivering 380,000 pounds of cargo. The aircraft carried alternating crews and 31 maintenance technicians from Kelly. The technicians were able to make the few repairs needed during the 30,000 miles of flying under extreme weather conditions.

The big bird was also seen at various air shows and open houses around the country. One anecdote sums up the wonder the aircraft evoked at every stop. During an exhibit at Wright–Patterson AFB, Ohio, a woman asked Capt. Jim C. Douglas, the XC-99 pilot, how he got the aircraft off the ground. He replied: "We fly it, lady." To which, the woman retorted, "Young man, what kind of a fool do you take me for?"

The Death Knell

The XC-99 had proved it could operate economically if given long-distance routes that would have 60,000 to 80,000 pounds of cargo for transport at each end of the run. However, while that was possible during the Korean War, such loads were infrequent after combat operations ceased.

By 1955, the Air Force was focused on producing jet aircraft, so it dropped plans to start serial-production C-99s. With the phaseout of the B-36—rapidly being replaced by the B-52—parts common to both aircraft became scarce, and XC-99 maintenance became more expensive. In March 1957, the Air Force canceled XC-99 operations and declared the aircraft to be surplus.

Only 11 years later, the Air Force's current supersize transport, the turbojet C-5 Galaxy, made its first flight. The C-5 has a 223-foot wingspan, seven feet less than that of the XC-99, but the C-5 is longer, taller, and has twice

Photo via Robert F. Dorr

USAF took formal delivery of the XC-99 in 1949 and flew the aircraft until 1957. Early in its brief tenure, the XC-99 received its upgraded landing configuration and a nose radar unit.

the gross weight and cargo space. And, in the 1980s, the XC-99 lost the title to the largest land airplane when the Soviet Union introduced the Antonov An-225 with a wingspan of 290 feet—60 feet longer than that of the XC-99. Overall, the An-225 is 48 feet longer, about three feet higher, and can carry five times the payload.

During its brief life, though, the XC-99 added to USAF's knowledge of airlifters and helped the service develop improved loading and cargo-handling techniques. It had flown 60 million pounds of cargo a total of 1.5 million miles—the equivalent of 59 trips around the world. It amassed more than 7,400 flying hours.

After retiring the big aircraft, the service briefly considered flying the XC-99 to the Air Force Museum, but officials decided it would cost too much to make it flyable again. It was turned over to the Kelly disposal officer for sale, but a sale date was never set because public reaction in San Antonio was so negative. Instead, the Air Force donated the aircraft to the Texas Disabled American Veterans to be used only for "display, ceremonial, and historical purposes," according to a history of Kelly.

The DAV had 45 days to move the XC-99 from Kelly, where it stood on the base's north runway. After one extension, the huge aircraft finally was moved to an off-base location, northwest of the main Kelly runway.

For some 18 years, it was the property of the DAV and served as a historic tourist attraction. One-time commander of the Texas DAV Clem Searles was one of the key players in the effort and often led tours himself.

However, in 1976, the DAV passed the aircraft to the San Antonio Memorial Air Museum, a nonprofit group that planned to raise money to build a shelter to house it and to refurbish it. The amount needed was $6 million. Just moving the aircraft—at one point the group thought it would place it on the Lackland AFB, Tex., parade ground—was estimated to cost $135,000. The plan fizzled and so did an effort by the group to get the Air Force Museum interested. At that time, the Air Force Museum considered the project too expensive.

In the interim, ownership of the XC-99 became confusing. At one point, a Tennessee businessman claimed ownership and proposed turning it into a restaurant. The San Antonio museum group maintained it still "owned" the big airplane, though.

Nothing developed, so, for years, it remained on or near Kelly, visible to passersby and exposed to effects of the weather. Remarkably, the giant aircraft is in relatively good condition, according to the Air Force Museum's McGee.

"Although the exterior appears to be in poor shape," said McGee, "the aircraft remains in good overall condition, considering it's been exposed to the elements for 46 years. The interior structure remains sound."

Plans call for the museum, once it completes its current construction efforts, to house the XC-99 among other experimental aircraft in the museum's R&D hangar, located on the main portion of Wright–Patterson. ■

Photos by Robert F. Dorr

These photos show the XC-99 weathered by the decades the aircraft was left exposed to the elements in Texas. The Air Force Museum plans to refurbish the giant aircraft before it goes on display.

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