



ON APRIL 1 THROUGH APRIL 4, 2004, more than 100 Beech aircraft descended on the Staggerwing Museum Foundation's growing complex located on Tullahoma, Tennessee's Regional Airport. The occasion was the Bonanza/Baron Museum Groundbreaking celebration, attended by over 200 ABS, WBS, T-34, Staggerwing, Twin Beech, Twin Bonanza and other Beech enthusiasts.

A SURPRISE WAS IN STORE for attendees when, during the opening night dinner, the hangar door opened for Bonanza NC80418, S/N D-18, to make its grand entrance. The new museum's first aircraft donation!

THE STAGGERWING MUSEUM FOUNDATION currently displays several historical Beech aircraft including a Travel Air 1000 bi-plane, the first aircraft built by the Travel Air Company, plus a Travel Air, Model R

"Mystery Ship." Both aircraft were built in the 1920s during Walter Beech's tenure as president. Additionally, Beech Aircraft's first aircraft the 1932 Model 17 "Staggerwing"—anchors a growing fleet of Staggerwing and Model 18 Twin Beech aircraft.

LATER THIS YEAR, the Bonanza/Baron Museum Division will have built the initial space to accommodate Bonanza D-18 and a collection of other Bonanza, Debonair, Baron, Travel Air, Twin Bonanza and T-34 models plus related memorabilia.

ABS MEMBER BARRY WEBER, Livermore, California was the generous benefactor who purchased, painstakingly restored and then donated D-18 to the Staggerwing Foundation. Which brings us to the story of D-18's rescue.

## BEEHCRAFT OF THE MONTH

NC80418

Staggerwing Museum Foundation  
Bonanza/Baron Museum Division, Tullahoma, Tennessee

*"The Beechcraft Bonanza is a masterpiece of engineering; it's an airplane that constitutes a modern miracle of aeronautic design and, in our opinion, marks a new milestone in the progress of aviation."*

—Walter H. Beech, August 1, 1946

Beechcraft was heavily marketing the new Model 35 Bonanza by the end of 1946. Ads in all magazines—such as *Saturday Evening Post*, *Holiday*, *Skyways* and Beech's internal magazine *Beech Log*—were touting the Bonanza's speed and efficiency for both business and pleasure. The other big marketing pitch was "Step in and Fly, No more to Buy."

The Bonanza came fully equipped for day, night and instrument flight. The only options available were dual controls and flares. Beech sold out the first 1,500 units prior to any production, which began in late 1946. Delivery was scheduled for early 1947.

On January 28, 1947, less than six months after Walter Beech proclaimed it a "modern miracle of aeronautical design," Bonanza NC80418, S/N D-18, penetrated the cold Wichita sky, successfully logging its first flight. Nearly a month later, on February 25, 1947, it was delivered to

Pacific Aircraft Sales in Burbank, California, where it served as the first west coast Bonanza demonstrator, averaging five demo rides per day.

It is interesting to note that D-18 flew 35 hours of dems before Beech received its Model 35 Bonanza Type Certificate on March 25, 1947, from the CAA (predecessor to the FAA).



Barry Weber fully restored D-18 to near factory condition. Then donated it to the Staggerwing Foundation in Tullahoma, Tennessee. It will be the first display in the Bonanza/Baron Museum.

Neglected for decades, D-18 escaped the variety of available modifications experienced by many of its siblings. Fortunately, Barry Weber purchased D-18 with the vision of restoring it. He proceeded to completely disassemble, clean, inspect, repair, re-assemble and detail this remarkable aircraft, achieving his goal of restoring it to nearly the condition it left Beech Field in 1947.

D-18 is one of the first 40 Model 35s delivered with fabric flaps and ailerons and is the earliest Model 35 to be restored to its near original condition. Although currently flying with a metal propeller, the original wooden propeller is available for display.

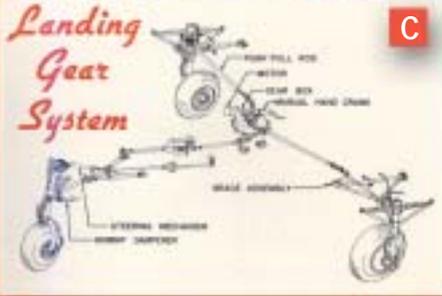
Barry spent 21 months on the restoration, working on the airplane about three evenings a week, all day Saturdays and half day every Sunday. A friend with an IA license, Jason Giese, was employed for 14 weeks during the restoration. Without



A



B



C

- A: First gear swing after installation.
- B: Center truss cleaned and inspected.
- C: Landing gear diagram from original Bonanza handbook.
- D: Flap and aileron areas were detailed and painted silver.
- E: Gear wells were stripped, cleaned and painted.
- F: The nose gear wheel is full swiveling not steerable.
- G: Airframe during restoration. The skin seen clecoed, behind engine compartment, was the only new skin installed.



D



E

F



G

his expertise and his logbook entries, the restoration would not have happened as it did.

## Exterior

The Model 35 originally came in one color—code 83-2622R red and Roxaprene red—and one paint scheme—a simple accent strip from the spinner to the tail. The rest of the plane was left metal to highlight the all-metal construction. Only one known 1947 Model 35 left the factory fully painted and it was featured on the cover of *FLYING* December 1947.

Starting with S/N D-171, Beechcraft changed the paint scheme to more fully cover the nose and upper cowl. As the Bonanza's image was fine-tuned, small details changed.

The "BEEHCRAFT" letters on both sides of the plane were light colored on the prototypes, but dark letters appeared on marketing materials and advertisements. The control surfaces also varied from red to silver but were silver for the first 250.

D-18 was fully painted when Barry purchased it. Once stripped, the original paint lines were evident even after all its years of service. The lines were measured and all references to original paint color and schemes were checked for accuracy.

## Interior

Larry Ball, author of *Those Incomparable Bonanzas*, was kind enough to send prints of the wooden mock-up for the Bonanza showing close-to-production panel, interior and headliner treatments. Except for the trim around the sunvisors and a change in the seat fabric, production models rolled out of the factory in January 1947 looking fairly close to these images.

The interior of NC80418 has been restored to original using matching fabrics and patterns. As luck would have it, the seats were only slip-covered and the original covers were intact. Although stained and torn, they proved invaluable

in reproducing an original interior. The seats and side panels are covered in the same tan wool broadcloth with green stitching and the wooden floorboards with wall-to-wall carpeting.

The durable green canvas covering the rear seat backs and the padding and burlap inside the seats have been replaced.

New plexiglass was installed and all trim pieces were refinished in original colors and all chrome replated.

The original insulation was removed and replaced with more efficient and safer materials.

Only two of the original wooden floorboards needed replacing.

## Airframe

The only exception in returning NC80418 to near-original state was the addition of zinc chromate in all areas that would be inaccessible after reassembly: wing roots, stabilizer roots and fuselage.

All new wiring was installed (mil spec 22759). Control cables were removed, cleaned, inspected and re-used after treating with Corrosion X, rigged,



The pair of legs sticking out of the cockpit door belong to Barry. Working upside down is just part of making sure every inch of D-18 was fully cleaned and restored.

tensioned, etc. They are in very good condition as they were corrosion-proofed by the factory with a wax-like coating.

The only re-skinning was a small area in front of the cabin door to remove old avionics cooling scoops.

The ruddervators and a couple of lower ribs in the right stabilizer needed

replacement. The flaps and ailerons were recovered and painted, and repairs made to the cowlings.

The 20-gallon, aux. fuel tank under the baggage compartment floor was installed by Beech in 1948.

The wings were removed and completely disassembled. The gear, controls and fuel bladders were removed for evaluation.

The main gear wells were thoroughly cleaned of decades of grim, and the light surface corrosion under all of this stuff was removed. The gear, flap and aileron areas etched, treated with Alodine and painted silver.

The Bonanza was the first aircraft to have electrically retractable tricycle landing gear completely enclosed in the wings and nose. Taken for granted now, it was a revolution in 1947 and helped make the Bonanza a success.

The gear on D-18 was removed and overhauled. The struts were rebuilt and rechromed and all legs and linkages refinished. The nose gear doors and the main gear inboard doors had to be replaced. The nose wheel is full swiveling and not steerable. It was not made steerable until the A35 in 1949. The gear retraction time is 15 seconds and the Vge is 105 mph.

A look inside found the wings to be like new, with no corrosion or damage. The fuel bladders, manufactured in 1946, were overhauled and considered to be of better material than what is produced today. New hoses were used where needed.

The fuselage was kept at the airport on a wheeled dolly. Barry took the wings home and worked on them in his garage. The underside skin of the wings had surface corrosion that had been painted over. It was cleaned with Scotch Brite. The wheel wells were a grimy, hard-caked mess, which took days to clean and brighten in preparation for paint.

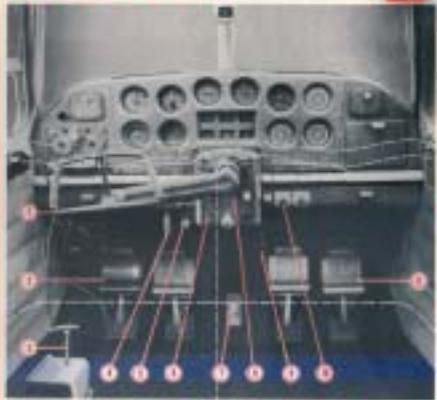
The most time-consuming aspect of cleaning the wings was scrubbing inside the slot for the ailerons and flaps. Reaching in and around all of the areas



A

*The Interior*

B



- 1. Control Wheel
- 2. Pilot's Builder Points
- 3. Fuel Tank Selector Valve and Warning Pump
- 4. Beverage Rack Control Wheel
- 5. Nitrox Control
- 6. Magneto/Prop Control Switch
- 7. Landing Gear Position Indicator
- 8. Warning-Tab Position Indicator
- 9. Parking Brake Handle
- 10. Cabin Heat Control
- 11. Captain's Builder Points

A: The instrument panel was refinished in the original colors. New radios however were installed where the Narco VRTR-1 would have been.

The dual control was optional and was installed for the aircraft's role as the first west coast Bonanza demonstrator.

B: Instrument panel layout from original Bonanza handbook.

C: Panel previous to restoration.

D: The fully restored interior is very faithful to the 1947 original. From the headliner to the baggage compartment, every detail was researched and restored.

E: The old seats were very distressed, but provided valuable info.

F: Interior illustration from original Bonanza handbook.



C



D



E

*The Cabin Interior*



F

and obstacles, to scrub them clean, went on for days and days. This area was not originally painted or accessible for cleaning, so surface corrosion got a good start all over.

All magnesium castings were replaced with aluminum parts to comply with ADs or eliminate recurring inspections. The original ruddervators were a little crispy. A set was found from an A model that had run out of fuel and landed in a lake in Iowa some 30 years ago, then kept in dry storage. These original spot-welded ruddervators were balanced to the new requirements after painting.

Barry literally took everything apart and rebuilt or replaced upon reassembly: all new windows, weather-stripping, hardware, wiring and everything rubber or fabric.

There are many ways the early airplanes differ from the later production models. Barry's "parts" airplane was serial #127 and is quite different from D-18. For instance, D-18 has a second cabin door latch overhead: the storm window stay is a simple aluminum strap; the rivets holding the stabilizer skin to the spar are flush (other Bonanza have button-head rivets); cabin door hinges are hidden and wingtips were stretch-formed from one piece of aluminum, with no weld. There is no cabin vent from the wing root. And some of the rivet lines and rivet spacing on the fuselage are different.

## Instrument panel

The panel needed extensive rebuilding to bring it back to original. It was stripped and repaired and refinished in original colors.

The cockpit plastic handles and knobs were replaced and original-style flap and gear indicators were installed. All placarding was recreated. NOS leather rudder boots were installed. The original yoke and wheels were refinished and new radios reside where the original Narco VTR-1 would have been in '47.

Only three of the original center engine gauges were present, having been replaced by standard round ones, so replacements were sourced and all restored. The center gauge cluster is marked "Ser. No." NC80418 was *not* delivered with the standard light-faced Bonanza instruments. The few original instruments still installed were black-faced.

## Performance

Barry took D-18 to Oshkosh in 2003, flying 750-mile legs, burning 8.5 to 9 gph at 160 to 165 mph at 11,500 feet. The engine is limited to 2050 rpm and, with the new sound insulation, new windows and new weather-stripping, the interior was quiet enough to hold a conversation.

According to Barry, with the big 88-inch diameter propeller and the empty weight well under 1,600 pounds, D-18 gets off amazingly short and climbs like crazy. "I get off the ground or stop in about 400 feet when I'm solo. It's not the kind of performance people are used to seeing from a Bonanza, and it created quite a buzz at the airport," Barry said.

How appropriate that this magnificent aircraft has now found a home to share with many other distinguished Beech aircraft—a home that is just down the road from Walter Beech's Tennessee birthplace.

## HIDDEN HISTORY

Once all the paint was stripped from D-18 the original paint lines were visible on the airframe, and other paint features also became visible.

Sometime in the early years, the names "Isabelle" and "Betty" were painted below the windows. I hope to find out who these women were. Possibly a team competing in the all-women cross-country "Powder Puff" race? The race started in San Diego. D-18 was based on the west coast from circa 1948-53.



Artwork for Fiesta del Pacifico was found on the baggage compartment door.

The Festival of the Pacific translated into Spanish, is Fiesta del Pacifico. It was a tourist attraction for the city of San Diego first staged in 1956. The fiesta was to run for thirty-three days; the pageant for fourteen days.

The fiesta opened with a grand parade of nearly 3,000 persons, hundreds of richly-costumed men and women astride horses, girls on floats tossing flowers at spectators, and the massing of 500 American flags, and seventeen bands.

However, history proved that vacationers who visit San Diego were more interested in doing something themselves than watching somebody else's performances. Fiesta del Pacifico lasted only four summers before disappearing from the San Diego scene.

## SPECIFICATIONS NC80418, S/N D-18

ENGINE – E-165-4A rated at 165 hp with 2050 maximum continuous rpm and 185 hp at 2300 take-off rpm for one minute. D-1 through D-491 were delivered with E-165-4 and 4A Continental engines that were later redesignated as E-185-1 to permit the higher rpm and horsepower.

CRUISE – 175 mph

GROSS WEIGHT – 2,550 lbs.

OPTIONS – Dual controls and brakes, auxiliary fuel tank

LANDING – 46 mph

EMPTY WEIGHT – 1,646 lbs.

RATE of CLIMB – 950 fpm

FUEL CAPACITY – 40 gallons – 20-gallon auxiliary tank

USEFUL LOAD – 904 lbs.

SERVICE CEILING – 18,000 ft