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# Failure at the Factory

A trio of wartime incidents causes the loss of four aircraft and six lives

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In 1944, San Diego, California, was a town filled with the hustle and bustle of people working in the war industries; soldiers, sailors, and Marines on shore leave; and the constant drone of new aircraft flying overhead. While civilians worked around-the-clock shifts at the Consolidated Vultee aircraft factory at Lindbergh Field—the city's

airport situated between downtown and Point Loma—military fliers from nearby Camp Kearny, Brown Field, and Naval Air Station North Island flew search patrols and training missions. During the war, the Consolidated Vultee factory at Lindbergh Field built PB4Y Catalina flying boats, four-engine B-24 Liberator bombers, PB4Y-2 Privateer patrol planes, and the

U.S. Army Air Forces' four-engine B-32 Dominator.

Consolidated Vultee's PB4Y-2 Privateer was a modification of the company's successful B-24 bomber for use by the U.S. Navy. The fuselage of the -2 was lengthened 7 feet to accommodate a radar operator's station, and it was fitted with two upper turrets, two side turrets, and a nose turret that could traverse to

**Lead Photo: PB4Y-2 BuNo 59554, flown by a Consolidated Vultee Aircraft civilian crew who lost their lives when factory workers failed to install 98 bolts holding on the left outer wing panel. Installation of the missing bolts was signed off by an inspector.**

fire under the aircraft, negating the need for a ball turret. Used primarily against Japanese shipping, the aircraft was deployed to the Pacific Theater in January 1945. The aircraft had a wingspan of 110 feet; had a length of 74 feet, 7 inches; and was 30 feet tall at the tip of the tail. The Privateer had a top speed of 237 mph at 13,750 feet, a service ceiling of 20,700 feet, and a maximum range of 2,800 miles. The plane had an empty weight of 37,485 pounds and a gross weight of 65,000 pounds. Its role as an anti-shiping patrol bomber mandated that the engines be fitted with single-stage, two-speed superchargers for better performance between sea level and 10,000 feet. In all, Consolidated Vultee built 739 PB4Y-2s and 33 cargo versions designated RY-3s (Liberator Mk. IX).

Three incidents during Privateer

construction, each within a six-month time span—two in the same month—were preventable. These incidents illustrate the failure of some process or chain of events at the factory, which could have prevented the loss of aircraft and six lives.

### *Missing Bolts*

The sun shone brightly on November 22, 1944, as PB4Y-2 BuNo 59544 (see Bureau Numbers, page 38) sat on the ramp at Lindbergh Field ready for its maiden flight. After rolling off the Consolidated Vultee production line, the aircraft's first flight was flown by a company crew. If there were no squawks, the aircraft was presented to the Navy's Bureau of Aeronautics Representative (BAR) for its acceptance flight. Then, if the BAR was satisfied, the aircraft was accepted and subsequently

flown from the Consolidated Vultee factory in San Diego to the Navy's modification line at Litchfield Park, outside of Phoenix, Arizona, for installation of the nose turret and other government-furnished equipment and modifications needed to make the plane combat ready.

At 10 a.m., Consolidated Vultee's inspection department noted that the aircraft had 1,800 gallons of fuel in its four main tanks and certified that the aircraft was ready for its first flight. The company crew arrived at the aircraft around 11:30 a.m. and began the preflight inspection and systems check. The crew of six consisted of pilot Marvin R. Weller, copilot Conrad C. Cappe, flight engineers Frank D. Sands and Clifford P. Bengston, radio operator Robert B. Skala, and Consolidated Vultee field operations employee Ray Estes.



**Consolidated Vultee company photographer Otto Menge took this official photograph of a PB4Y-2 in flight before the aircraft was delivered to the U.S. Navy. The aircraft was heavily armed with 12 .50-caliber machine guns in six power-operated gun turrets.**

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**A factory-fresh PB4Y-2 is seen on the ramp at Lindbergh Field, San Diego. Notice that the aircraft has been fitted with an aerodynamic covering over the location where the nose turret will be installed. This is the configuration of BuNo 59554 when it took off on November 22, 1944.**



**Aerial view showing San Diego Bay, Lindbergh Field, the flight path of BuNo 59544, the location of the wing, and the aircraft's final resting place.**



**Scene of the crash showing the short distance between where the detached wing panel landed and the crash site. The area of the crash has since been built up with houses.**



**After recovery from in front of the Kingsley St. home, the left outer wing panel was thoroughly examined. It was quickly determined that workers failed to connect the panel by omitting 98 bolts. Only the four spar attach bolts were installed, having failed shortly after takeoff.**

Weller and Cappe taxied BuNo 59544 to the end of the runway, which parallels San Diego Bay. Applying full power, the Privateer's four 1,350-hp Pratt & Whitney R-1830-94 engines roared to life. As 59544 picked up speed, Weller and Cappe lifted the aircraft off

the runway. Climbing for altitude, the pilots heard a loud crack as the port outer wing panel tore away. The loss of the wing panel caused an asymmetric lift condition from which the pilots could not recover.

The port outer wing panel was described to have "twisted like a

leaf," striking the roof of the front bedroom of the home at 3121 Kingsley St. in Loma Portal. The wing panel came to rest on the lawn. The single-story residence was owned by Cmdr. A.B. Cartwright, and at the time of the accident, his wife was in the backyard watching the whole incident unfold. Houseguests of the Cartwrights were inside the home, but they were not injured. It was now 12:23 p.m.

With the port outer wing panel gone, the remainder of the aircraft began to lose what little altitude it had. The aircraft continued another quarter-mile before striking a ravine in an undeveloped section of Loma Portal, near the Navy Training Center. The aircraft had traveled less than 2 miles from the point of liftoff. San Diego city firemen and military rescue crews raced to the scene, only to find the aircraft engulfed in flames and the crew of six dead.

In the aftermath of the crash, the wreckage was hauled away for inspection. Two days later, on November 24, Consolidated Vultee officials announced that four employees (C.R. Alexander, H.B. Hendryz, J.E. Lahyer, and J.C. Hedgpeth) were terminated. Either they were directly responsible for installing bolts that connected the outer wing panel to the wing center section, or they were inspectors who had signed off on the work (none of which had been done). Although the four spar bolts that had held the wing panel were in place, a post-crash inspection revealed that 98 additional bolts were missing and never installed. U.S. Navy officials immediately ordered an inspection of the wing panel attach points of all PB4Y-2 aircraft in service.

On the human side, each of the families was compensated an average of \$21,000 for the loss of their



U.S. COAST GUARD/PLATNICK VIA TODD HACKBARTH

**The first sign of trouble: Smoke rises above the factories around Lindbergh Field as BuNo 59836 becomes fully engulfed in flames.**



U.S. COAST GUARD/PLATNICK VIA TODD HACKBARTH

**Sailors, Coast Guardsmen, and factory workers try to extinguish the flames of 59836 after a Ryan Fireball crashed into it. Four of the PB4Y-2's crew escaped, one with serious injuries.**

loved one. This included \$10,000 in aviation accident insurance, group insurance death benefits, any retirement annuity from the company, and a one-time payment of \$6,000 from Workmen's Compensation. In all, \$130,484.86 was paid to the

families of the six crewmen.

On January 5, 1945, a San Diego coroner's jury voted 11-1 to find Consolidated Vultee guilty of "gross negligence" in the six deaths. Subsequently, on December 4, 1945, the Bureau of Aeronautics reduced

the number of aircraft deliverable on the contract by one and reduced the amount paid to Consolidated Vultee by \$155,000.

### *Freak Accident*

April 5, 1945, was another fine San Diego day. Lt. D.W. Rietz had accepted PB4Y-2 BuNo 59836 from the Bureau of Aeronautics representative for delivery to the modification line at Litchfield Park. At 10:45 a.m., Rietz sent the enlisted crew, aviation machinists mates G.R. Brown and J.H. Randall, out to the plane with everyone's flight gear. Ten minutes later, Rietz and Lt. J.E. Creed climbed aboard the Privateer and settled in, beginning to work through the checklists.

Also located on Lindbergh Field was Ryan Aeronautical Co. At 11:00 a.m., Dean Lake, a Ryan test pilot, was flying an experimental XFR-1, Fireball, BuNo 48234, over the field. The Fireball was powered by a Wright R-1820-56 piston engine and featured a General Electric J31-GE turbojet engine that took air in at the wing roots and produced



**A Ryan Fireball lost a wing, and the resulting wreckage dropped onto PB4Y-2 BuNo 59836 as it sat on the Lindbergh Field ramp. Ryan immediately added a skin doubler to the wing and looked at re-engineering the canopy release latch.**

thrust through a tailpipe at the rear of the fuselage. The FR-1 had “one turning and one burning.”

As Lake flew over Lindbergh Field, the skin between the front and rear spars on the right wing tore off, and the airflow over the open hole caused the wing to disintegrate. A second plausible theory claims the canopy departed in flight and knocked off the tail.

With the wing folding up, Lake jumped from the aircraft and parachuted to safety. As Lake floated down, his FR-1 was torn to pieces. Momentum carried the craft further, spinning over Lindbergh Field, crashing into the fuselage of the Privateer occupied by Lt. Rietz and his crew. Rietz, Creed, and Brown were able to exit the aircraft without injuries. Aviation machinist mate Randall was not so lucky. He suffered first-, second-, and third-degree burns as well as mild lacerations.

Both aircraft were completely destroyed. To address the accident’s probable cause, Ryan added a .064-inch skin doubler between the wing spars and experimented with a new canopy and canopy release mechanism in tests in the 40-by 80-foot wind tunnel at the National Advisory Committee for Aeronautics’ (NACA, the forerunner of today’s NASA) Ames Research Center in Mountain View, California.

### *Qualified Personnel Required*

In the late evening of April 30, 1945, the first production PB4Y-2, BuNo 59350, was on the Lindbergh Field ramp, being prepared for a flight to Naval Air Station Minneapolis, Minnesota. At the time, Consolidated Vultee’s midnight shift change was taking place.

Mechanic Milton H. Fisher was instructed by crew chief Charles

Zimmerman to remove the port battery solenoid, which is located 14 inches below the cockpit floor. At 11:59 p.m. local time, Fisher was attempting to remove the nut that attaches the positive battery cable to the solenoid. Fisher, not a trained electrician, had begun working without disconnecting the battery. A series of hydraulic lines was 3 inches above the nut. As Fisher rotated the socket’s ratcheting handle, it punctured a hydraulic line, sending fluid over the battery and solenoid. The fluid ignited, and when help arrived Fisher was found outside the aircraft with severe burns. The entire aircraft burned, with only the number four engine considered salvageable.

The cause of the fire was officially listed as: “due to the assignment of a mechanic to perform electrical work which should be attempted only by a qualified electrician; an electrical short circuit between the battery terminal of the port battery solenoid and the adjacent hydraulic line. This condition resulted when [an] employee attempted to disconnect the positive battery cable terminal, at the solenoid, with a metal wrench without disconnecting the battery.”



**When an unqualified mechanic attempted to remove a battery solenoid, he broke a hydraulic line. The subsequent fluid spill ignited with the results shown here. BuNo 59350, the first production PB4Y-2, was completely destroyed.**

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## Safety First

Whether it was a design flaw or human error, in each of the above accidents the aircraft was a total loss, and in one case, six people lost their lives. These three incidents, although of varying causes, illustrate the need to establish or follow procedures and approach each task with an eye to safety.

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### Bureau Numbers:

U.S. Navy aircraft are assigned Bureau of Aeronautics serial numbers, abbreviated as "BuNo," in the order the aircraft are acquired, thus the first PB4Y-2 built under contract No(a)s 855 was BuNo 59350—the 59,350th aircraft serial number allocated by the Navy (in the third serial number series, which was reset in 1941 from the previous four-digit systems). The Army Air Forces and Air Force, on the other hand, use a fiscal year prefix serial number; an example of such is 42-31651, representing a Boeing-built B-17G of modification block 25 that was delivered on January 12, 1943. ✈



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**The PB4Y-2 plane crash was probably the biggest thing to happen in the quiet Loma Portal neighborhood then and now. The port outer wing panel's size can be determined when comparing it to the height of the men standing around it. Notice the vacant lot next door.**

## 59544: 60 Years Later

As time passes, memories fade of that long ago day when a Consolidated Vultee PB4Y-2 fell out of the sky at Point Loma. Kathee and Steve Weisenberg are the caretakers of the home caught in history. Through many a paint job and a potential remodel or two, 3121 Kingsley St. has maintained its 1930s classic California charm. Today, the exterior of the home is little changed from that November 1944 day when an aircraft's outer wing panel impacted the roof. The lawn is tightly manicured and a rich green, and the shutters that framed the front bedroom window are still in place. The porch's lathe-turned support post remains the same, yet in the course of 60 years, three palm trees have sprouted and matured. Kingsley St. is peaceful and has changed little since the war.

The main impact point, however, is a different story. Houses have sprung up, hiding the terrain and masking the Privateer's final resting place. Drawing a line up Kingsley St. and moving left 10 degrees puts the aircraft crash site in a ravine bordered by Oleander Dr. and Larga Cir. on the north and east, and Azalea Dr. and Wisteria Dr. on the west and south. Interestingly, the houses that border this area all share a common area behind their backyards. Each borders this canyon, with the impact site at the bottom of the ravine and on the property owned by Pat Wise and family. Note that there is no public access to this area, and it is private property belonging to the homeowners.

Comparing the photographs from the scene of the crash to today, you can still see the drainage ditch at the bottom of the ravine, and the shoulder-shaped hill below the Wise home. Gone are the Navy barracks, replaced by homes, and in the distance a Home Depot store.

In the ravine, a close examination of the ground yields pieces that were once molten aluminum, sections of Fiberglas insulation, plexiglass, and other small parts. It is also the ground where Consolidated Vultee employees Marvin R. Weller, Conrad C. Cappe, Frank D. Sands, Clifford P. Bengston, Robert B. Skala, and Ray Estes gave their lives in service of their country. Their sacrifice will not be forgotten.

**Compare this photograph with the 1944 photo of 3121 Kingsley St. Other than the removal of some bushes near the front of the lawn and the two shrubs against the front of the house, as well as the growth of three palm trees, everything looks the same.**



**Above:** At the impact site of BuNo 59554, Navy crews worked to rescue any possible survivors. Notice the hole chopped into the rear fuselage near the horizontal stabilizer. 'A' denotes the unusual shoulder of the hill, and 'B' shows the starboard outer wing panel lying across a drainage ditch.

**Below:** The crash site today: 'A' is the shoulder of the hill leading up to Oleander Dr. The Navy barracks were located behind this hill. 'B' shows the drainage ditch, and 'C' marks an area where debris from the crash was found 60 years after the event.

