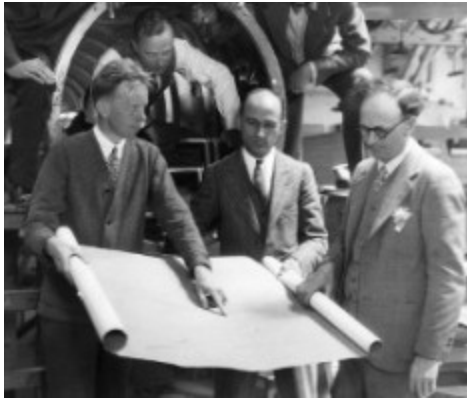


# The Vultee Aircraft Company

Western  
Museum  
of Flight

Gerard "Jerry" Freebairn Vultee (1900-1938).

In 1912 his family moved to Ocean Park, California, and he attended Caltech from 1921 to 1923, studying aviation science. As a student project he designed and built a full-sized aircraft, the Tal Glider ( Photo right).



In 1923, Art Mankey, who was then in charge of engineering at Douglas Aircraft, hired Vultee as a structural aeronautical engineer ( Jerry Vultee in Vega fuselage, 1929 photo at left). Also at Douglas was Jack Northrop who was working on an idea for a commercial aircraft, the Vega (Photo left). Since Douglas was doing military aircraft at the time, Northrop took his idea to mentor Alan Loughead (spelling later changed to "Lockheed.", photo left of Bill Henry in middle and Lockheed at right).

In 1928, Northrop invited Vultee to join him and they built the Vega, one of the most popular planes of its day. Wiley Post, Amelia Earhart and Charles Lindbergh all flew and adored it. (Wiley Post right).



In 1928, Northrop left the young company, and Vultee became Lockheed's new chief engineer. He designed the Lockheed 8 Sirius for Charles Lindbergh which brought him some notoriety.

Some of the innovations he helped introduce were the engine nacelle or cowling, the fully retractable landing gear, replaceable fuselage panels, the V-type windshield, and Vultee large wing flaps that made it possible to reduce landing speeds.

But genius was not enough in the face of the Great Depression. Controlling interest in Lockheed was purchased by the Detroit Aircraft Corporation. In 1931 it went into receivership, and Vultee was replaced as chief engineer by Richard Von Hake. Vultee accepted a job developing and teaching drafting and engineering courses at the Curtiss-Wright Technical Institute. He also took a post as chief engineer for the E.M. Smith Corporation (EMSCO) in Downey. But the Depression smothered new designs at EMSCO as well and he left, but eventually he went off on his own in pursuit of financial backing for some ideas that he and Vance Breese had for a single-engine six passenger monoplane V-1 (V for Vultee).



Vultee's search ended when he met Errett Lobban Cord in September 1931. Cord, the head of the Cord Corporation, owned two aviation companies, Stinson Aircraft and Lycoming Motors, two automobile companies, Auburn and Dusenberg, and five other engine manufacturers. In early 1931, Cord had founded two airlines and he saw Vultee's high-speed transport as a replacement for the Stinson tri-motors these airlines were operating. In January 1932, Cord formed the Airplane Development Corporation as a subsidiary of the Cord Corporation, with Vultee as chief engineer, to begin work on the Vultee V-1 transport. The company initially used a hangar in Burbank, California. The V-1 was a popular aircraft, and American Airways ordered ten. Completed as a prototype in 1933, it was the fastest plane of its kind with a top speed of 235 mph. When modified by American Airways it was known as the V-1A. The federal government's regulation of civil aviation, created an unexpected reversal of fortune by ruling that all commercial passenger planes be Multi-engine. The V-1A was single engine, and was thus grounded for passenger use.

In early 1932, Cord faced labor problems with his airlines pilots and he sold both airlines to American Airways in exchange for seven percent of the stock of American's parent company, the Aviation Corporation. By late 1932, Cord had purchased 30 percent of the stock in the Aviation Corporation and after a bitter stockholder's battle, Cord gained control of the company.



Gerald Vultee, second from right, July 1937

The U.S. Congress passed the Air Mail Act of 1934 which prohibited any air mail contractor from holding an interest in any other aviation enterprise except landing fields. The result was that the Aviation Corporation was required to divest American Airways which was promptly renamed American Airlines. Another result was that the Cord companies were restructured, i.e., the Aviation Manufacturing Company was formed as a division of the Aviation Corporation (AVCO) and the corporate hierarchy was now the Aviation Company-Aviation Manufacturing Company-Airplane Development Company. (Note that none of these companies were named Vultee.) Gerard Vultee was named vice president and chief engineer of the Aviation Manufacturing Company and work began on an attack bomber for export. The facilities at Glendale proved too small for production and the company moved to an abandoned plant in Downey, California in June 1936.

E.L. Cord sold his interests in the Aviation Corporation to a syndicate in 1937 which resulted in a number of corporate reorganizations. In November 1937, Vultee was reorganized as the Vultee Aircraft Division of the Aviation Manufacturing Corporation; this was the first time that an independent company was named Vultee.

Vultee aircraft sold well overseas, with 1,500 employees and more than a million dollars in orders for V-1s, V-1As and V-11s, the U.S. Army Air Corps (USAAC) had ignored their aircraft, On Saturday, January 29, 1938 Jerry and Sylvia Vultee were flying home from Washington, D.C. in his personal Stinson Reliant SR-9C cabin monoplane, registration number NC17159, after presenting a new aircraft design to the Army. The venerable 1936 Stinson Reliant was popular at the time and featured leather upholstery, walnut instrument panels, and automobile-style roll-down windows. The Stinson Reliant was a rugged aircraft built of fabric-covered welded steel-tubing structures with a single strutbraced double-tapered wing. Powered by a 260hp Lycoming R-680 radial engine, the Reliant carried a pilot plus three or four passengers at speeds close to 165 miles per hour. Pilots appreciated the Reliant's durability, safety, and stability in flight, while passengers enjoyed a comfortable ride in an opulent cabin. The couple was anxious to return to their six month old son and home in Glendale California. They departed the TWA Winslow Arizona Airport at 8:35 in the morning and were headed west to Downey California when they were caught in a snowstorm and blizzard. Jerry Vultee was an excellent pilot but had no training in instrument flying and it is believed that he was unable to find his way out of the blinding snow storm. He most likely became disorientated and lost direction. The aircraft disappeared approximately two hours after taking off. Local Oak Creek Canyon ranchers heard the plane flying a crisscross pattern apparently lost in the snow storm trying to find a break in the clouds and then crash. The rancher's accurate description gave searchers a good direction in which to search, narrowing down the search area. Forest Rangers, Civilian Conservation Corps (C.C.C.) workers and over a hundred hunters were involved in the search. Thickly wooded terrain covered by at least 1 ½ feet of snow proved difficult for the searchers. The search continued for hours until darkness closed in and had to be abandoned. The next day it was announced that a \$500 hundred dollar reward was offered by the Vultee Company for finding the plane and passengers. Additionally, five Army planes from March Field California also joined in to help in the search. The wreckage was discovered by a Forest Ranger and a couple of C.C.C. workers about noon Sunday, January 30 after an extensive search. Witnesses said that the plane wreck was a terrible sight; little was left of the plane except a heap of twisted and blackened metal. A small branch of a nearby tree had broken off showing that the plane had come in from the west. The aircraft had slammed into the snow covered ground, about three miles north of Mount Wilson between Sedona and Flagstaff, Arizona. The impact site was only a couple hundred feet from the edge of a deep rocky chasm. The propeller had dug into the ground, breaking off and burying one blade. The plane was found inverted facing west and badly burned. Pieces of the engine and unburned debris were found hurled almost to the brink of the canyon leading to the conclusion that there was no pre-crash fire. The exact cause of the crash has never been determined. The opinion at the time was that the pilot was headed east when the aircraft nosed into the ground and that flames closely followed the crash. It was also believed that the two were fatally injured by the crash and not killed by the flames. Mrs. Vultee was identified by her jewelry and several pieces were recovered and returned to the family. Gerald Vultee's wrist watch had stopped at 9:56 a.m. Two young promising lives were cut short, Gerald Vultee was only 38 at the time and his wife Sylvia Vultee was 27. A bronze plaque memorializing the Vultees is located at the end of Coconino Forestry trail named in honor of Vultee Arch, a natural rock arch near the site of the plane crash. Jerry Vultee's close friend and Vice President of Vultee wrote a letter to TIME magazine about Jerry's death:

Sirs:

Gerard F. Vultee ("Jerry"), not Gerald, my close friend and business associate for many years, was killed when the cabin monoplane he was flying with Mrs. Vultee crashed on the flat top of Wilson Mountain [TIME, Feb. 7].... Caught in a local snowstorm and blizzard with no training in blind or instrument flying, he was unable to find his way out. The fire occurred after the crash, not before.

DON P. SMITH Vice President

Jerry Vultee was succeeded as president and general manager of the Vultee plant by Richard Palmer who became chief engineer in 1940, and the plant was named Vultee Aircraft. A new plane known as the V-12-C was ordered by the Chinese who took 26 in 1939. And the U.S. government ordered training planes in a contract worth \$2,986,000 with Vultee in August of the same year. The plant was redesigned to meet the new production demands.

In 1939, Stinson Aircraft became a division of Vultee and on 14 November 1939, Vultee Aircraft, Incorporated was established to acquire the assets of the Aviation Manufacturing Company making Vultee a subsidiary of the parent company, the Aviation Company. The next major reorganization occurred in November 1941 when Vultee acquired majority ownership of the Consolidated Aircraft Corporation. Two boards of directors, headed by the same person, were maintained to control the two companies but this changed on 17 March 1943 when the two companies merged and were renamed the Consolidated Vultee Aircraft Corporation with headquarters in San Diego, California. Stinson remained a division of the new company.

By 1940 the plant had doubled in size. As World War II approached, activity at the Vultee plant, in both production and personnel, continued to increase. To protect the plant from possible enemy detection, most of the buildings were camouflaged to appear like surrounding farmland and orange groves. An antiaircraft gun was also emplaced on the roof of Building 1 to support antiaircraft operations that occurred near Paramount and 3rd Streets. Crosswalks were also built across Lakewood Blvd. to assist thousands of workers as they crossed the busy street. During the early 1940's the Vultee Valiant Basic Trainer was produced for the Army Air Corps.



Vultee was the first major manufacturing plant to use powered assembly lines producing more planes in a shorter span of time than any other similar plant.

In numbers of planes, the [BT-13](#) Valiant Basic trainer represented the largest order ever placed by the Army Air Corps. By July 1941, Vultee was producing 15 percent of all the military aircraft in the nation. The company received enormous military contracts to construct these basic training planes for Army, Navy, and Marine pilots; many of Downey's men went off to war; and hundreds of women joined the Vultee workforce. Vultee was the first military aircraft manufacturer to employ women directly in production. Women received exactly the same pay for equivalent work as men. Vultee's particular masterpiece is what executives exultantly describe as the first and truly powered assembly line in the industry. It consists of an overhead oval track, located at the head of the final assembly, from which dangle twenty-five cradles fed with raw fuselage frames.

1942-1948 Consolidated Vultee Aircraft Corporation (Convair) brought together Consolidated Aircraft of San Diego and Vultee of Downey, California. Practically every type of military aircraft from small, single engine, civilian defense trainers to huge, multiple engine land and sea bombers were produced in the diversified plants of the companies. 11,537 trainer aircraft (Valiants) had been produced at the Vultee field. Also, in the first 6 months of 1944, Convair at Vultee field helped turn out the largest delivery of heavy bombers (B-24 Liberators) produced in the country. At the end of World War II production of military



aircraft at the Downey plant was nearing an end. The Vultee Field division of Convair remained open to support a contract with the Navy for a short-range missile called the Lark. The Lark was a surface-to-air missile with a range of 35 miles and a speed of 300 knots per hour.

1942-1948 With a foot in the door of the newly emerging missile industry, the Vultee Field division of Convair was awarded a \$1,2 million contract by the government to study long-range missile weapons systems. The study was called project MX-774 and was designed to study two types of missiles: a subsonic, jet engine cruise missile and a rocket-powered supersonic ballistic missile. Downey's engineers focused on the ballistic missile concept and used information about the German V-2 rocket as a starting point. Although the MX-774 program was eventually canceled by the Defense department, the Downey Division was developing numerous other projects including the Y-P1 fighter plane and components for the huge XP-38 bombers.



The Vultee plant was also engaged in the engineering and manufacture of a "guided missile which carries power equipment providing for travel outside the atmosphere of the earth.

"Indeed, the MX-774 was described as a "streamlined" version of the German V-2. The missile was 31 feet, 7 inches long by 2 feet, 6 inches wide and had a finspan of about 6 feet. It weighed 1,200 pounds empty". Convair continued ballistic missile research and design work following the expiration of the MX-774 project. At the time, U.S. Air Force funding centered around more conventional winged cruise missile applications, most notably the Navajo, built by North American".

The NA-704/XSSM-A-2 proto-Navaho (Air Force designation MX-770) was a very impressive vehicle that represented the US rocket design state of the art in 1947-8. It was a lengthened V-2 with extra tankage for ramjet fuel and numerous structural improvements, giving the missile five times the range of a standard V-2. Guidance technology equal to such an advanced airframe was years in the future



1948-1953 Convair was only one of many aircraft manufactures in America challenged by the post-World War II economic slump. A few miles away from Downey, in Inglewood, North American Aviation had more than 90 percent of its 8,000 aircraft order cancelled within 24 hours of the Japanese surrender in 1945. North American turned its focus toward jet aircraft, supersonic aerodynamics, and rocket propulsion. Like Convair, North American saw the future in long-range missile technology and based their research on the German V-2 rocket used in World War II. North American was headed by James Howard "Dutch" Kindelberger . Lee Atwood was Dutch's assistant . North American aircraft included the FJ-1 Fury, F-86 Sabre jet, and the B-45 Tornado. Kindelberger had been chief engineer for Donald Douglas, creating the famous DC-2 and 3. planes. Photo right, Dutch Kindelberger receives Collier Trophy from Eisenhower



## Convair - Vultee Deal Confirmed

Consolidated Chief Will Have Advisory Position After Merger  
from the San Diego Union, November 26, 1941, page 1

Formal confirmation of reports that the comparatively small Vultee Aircraft Inc., of Downey plans to take control of the huge Consolidated Aircraft Corp. of San Diego was given yesterday afternoon in a joint statement by the companies. The statement asserted the deal had not been completed, but indicated that, when it is consummated, Maj. Reuben H. Fleet, Consair president, would be retained in an advisory capacity for a time.

Issued after a day in which the companies at first refused comment, then denied knowledge of merger plans, the statement is as follows: "Of our own volition, we have for some time been mutually exploring the business aspects of a possible future association of our companies. The facilities, products, proximity of location and experience of Consolidated and Vultee so complement each other as to make possible the more expeditious completion of their defense assignments. However, the initial steps of this transaction, the terms of which are not fully agreed upon, contemplate the purchase by Vultee Aircraft, Inc., of the Consolidated stock holdings of Maj. Fleet and others. The present negotiations are between Vultee and Maj. Fleet as an individual and not with Consolidated as a corporation. In the event the transaction is consummated, it would be the desire that the extensive knowledge and long experience of Maj. Fleet be made available in an advisory capacity for a substantial period of time. Any other statements are premature and were not authorized by either party."

The first paragraph of the statement was taken by observers as an effort to refute intimations that the move had been inspired by a war department desire "to effect a change in management" at Consair.

News of the Vultee-Fleet deal came over the wires in advance notices of a story the American Aviation Daily planned to print at Washington. Confronted with the story, a Vultee spokesman early yesterday morning said the deal was under way. Consair officials steadfastly denied any knowledge of the transaction, while Maj. Fleet was reported "unavailable" for comment on reports that he and members of his family had sold their stock holdings to Vultee for \$10,000,000. Later Vultee asserted the company spokesman who had issued the "premature" confirmation of the merger had been discharged. While there were no official reports on financial powers behind the merger plan, it was rumored in aircraft circles that Tom Girdler, chairman of the board of the Republic Steel Corp., might be interested in the transaction.

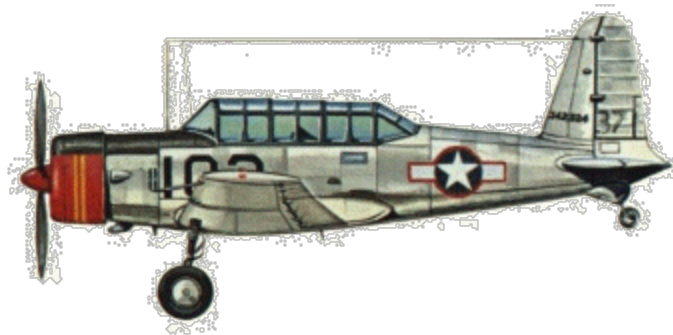
Another name mentioned was that of Victor Emanuel, New York investment banker, director of Vultee and Republic and a navy pilot during the World War. Meanwhile reports were current in local aircraft circles that Girdler was at Downey or on the way there in connection with the big aircraft deal. Talk of such a transaction has been heard in financial circles in Los Angeles and in Washington for weeks one authority said. Vultee was prepared to take over the huge Consolidated plant Dec. 1.

He said Vultee was purchasing the 348,822 shares of Consair stock owned by Maj. Fleet and an undisclosed number of shares held by other members of the Fleet family.. Consolidated's common stock totals 1,291,574 shares. We added that the purchase would give Vultee control of Consair.

Consolidated has \$750,000,000 in orders from the United States and British governments for multi-engined bombers. Vultee has \$162,000,000 in orders from the United States, Peru and China for training planes. W. J. Chudleigh, president of Aircraft Local 1125 of the A.F.L. Machinists union, which holds bargaining rights for most of Consair's 30,000 workers, said the contract between his union and the plane plant would continue if there is a change in management. He said that, while Vultee at Downey has a labor contract with the C.I.O. United Auto Workers, a Vultee plant in the east has an A.F.L. contract. The Consair-A.F.L. contract expires May 27, 1943, or at the end of President Roosevelt's unlimited national emergency, whichever is shorter.

The company now planning to obtain control of Consair is named after the late Jerry Vultee, aircraft designer, who founded the company, but who died in an air crash three years ago while honeymooning in Arizona. Following reorganization two years ago, Vultee began expanding. A year ago it increase its facilities by a merger with the Stinson Co., which had plants in Tennessee and Michigan. Its Downey plant employs 10,000 workers. Its president is Richard W. Miller. Consair was formed in East Greenwich, R. I., and moved to Buffalo N. Y. in 1924, and came to San Diego in 1935.

Developer of the quantity-production B-24 bomber known to the British as the Liberator, and the PBY navy patrol plane, called the Catalina by the British, Consair is one of the largest airplane factories in the world. Its home plant is estimated to have cost \$20,000,000, while a \$20,000,000 estimate also has been placed on a recently completed parts plant. In addition the company has a contract to provide management for a huge plant at Ft. Worth, Tex., designed to build B-24 bombers from parts manufactured by Henry Ford in Ypsilanti, Mich.



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