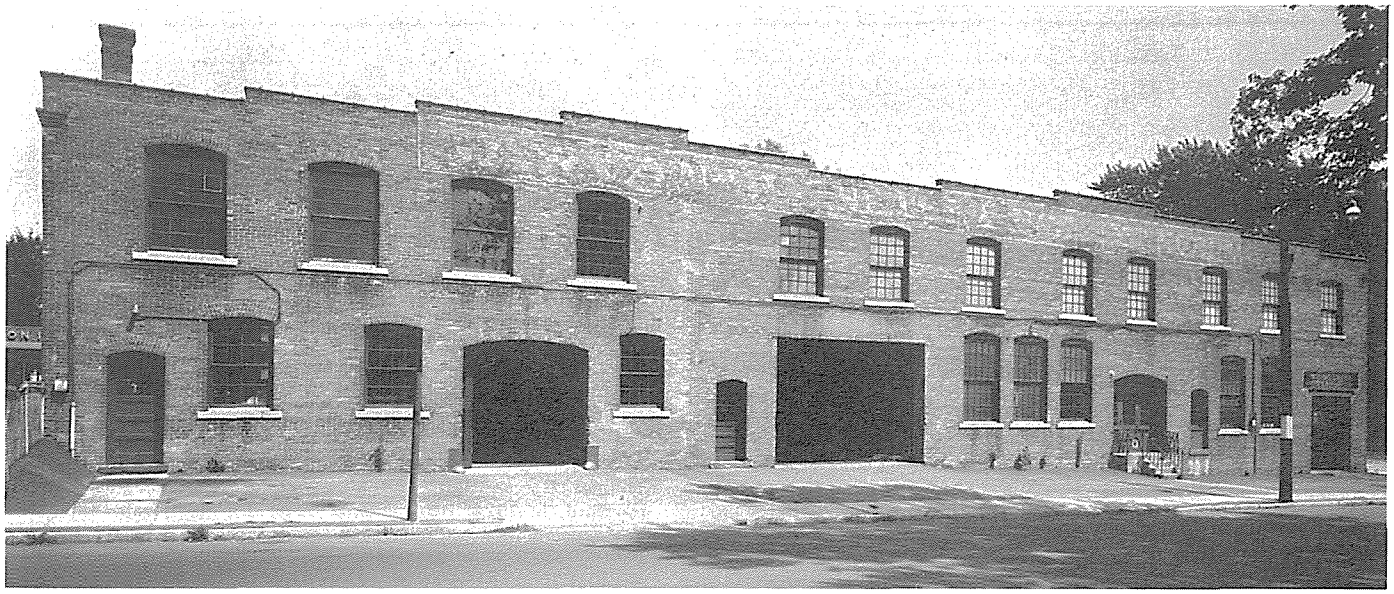

WHEN BURNELLI CAME TO HARTFORD

By HARVEY H. LIPPINCOTT

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In the summer of 1962 a small factory building at 1840 Broad Street, Hartford, Connecticut, was vacated. When the firm's sign was pulled down from the front of the building, there appeared beneath another sign painted on the red bricks. In faded black letters was "GARVAN-BURNELLI AIRCRAFT CORP." The appearance of this long forgotten sign seemed to evoke but few memories. Two men however, remembered when Vincent Burnelli came to Hartford in 1924; George S. Pranaitis and Morris ("Moe") Ertman.[1]

In those days (1924) George Pranaitis was the sole aeronautical inspector for the State of Connecticut. He had spent some time at the Burnelli factory observing the construction of the huge Burnelli RB-2 lifting fuselage transport. Later, when the airplane was flown at Brainard Field, Hartford, George closely followed the flying activities of the RB-2 to insure the adequate safety and airworthiness of the craft.

Moe Ertman, as a youth, spent every available moment he could coax from his father at Brainard Field watching the flying. He well remembers the big red and silver Burnelli airplane with the Essex automobile inside its huge wing-like fuselage, thrilling at the remembrance of its flights. As is the habit of air-struck boys, Vincent Burnelli became one of Moe's heroes.

By coincidence Vincent Burnelli returned to Hartford in 1964 after the factory sign came to light. Accompanied by Ertman and the author, Burnelli went to see his old factory and with much nostalgia, told the story of his aviation days long ago in Hartford.

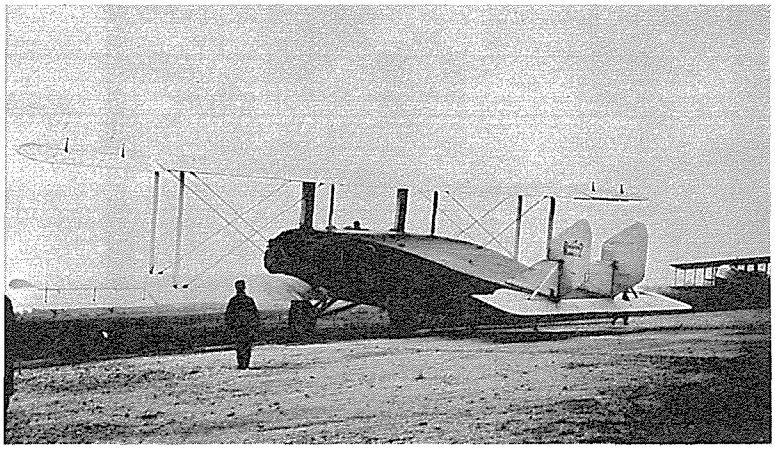
Vincent J. Burnelli was born in Temple, Texas, on November 22, 1895. He grew up at Temple and later at Brooklyn, N.Y., attending school there. He studied engineering at St. Peters Academy, Union, N.J.

Prior to coming to Hartford, Vincent Burnelli had developed considerable skill in aircraft design, the first being single-engine pusher biplanes: the Burnelli-Carisi of 1915 and the Burnelli-Continental KB-1 of 1916. He also designed a conventional two-place KB-3T trainer in 1917. It was somewhat similar to the Curtiss JN-4 and was produced in limited number by the Continental Aircraft Corporation of which Burnelli was chief engineer and factory superintendent. While the trainer was being manufactured, Dr. William Christmas and a crowd of financial backers arrived at the Continental plant to build an airplane that would be used to kidnap the Kaiser and stop the War which was then in full force. Christmas was a persuasive eccentric, with money and Government backing available, and a bag full of far out ideas. Burnelli designed an excellent fighter plane for Christmas, known as the Christmas Bullet. The fuselage of the plane was completed and awaiting the installation of the aerodynamic surfaces, when suddenly "Doc" Christmas brought in for installation a set of flimsy wings and tail surfaces of his own design and manufacture. Burnelli's protests were to no avail. Foreseeing the inevitable tragedy that would result, he resigned and left the factory. Later, when the plane was flown, the wings ripped off and the pilot was killed.

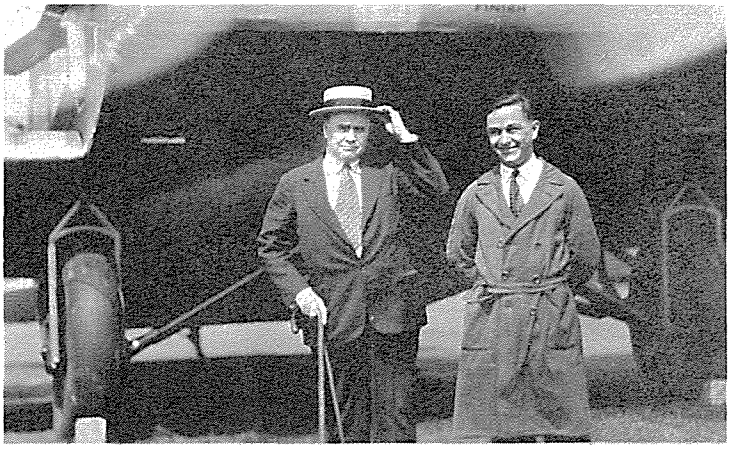
Vincent Burnelli became a consultant to Alfred Lawson at Milwaukee, Wisconsin, where he had a major hand in designing the famed Lawson Airliner. While the Lawson Airliner was an excellent airplane for its day, there were few airports and little public interest to support a transcontinental airline, or, for that matter any airline.

As a result of his experience with the Lawson Airliner, Burnelli determined to seek a way of reducing the large parasitic drag inherent in the usual airplane fuselage. He reasoned that if the fuselage could be built in the form of an airfoil, then the drag would be greatly reduced and additional lift realized. He called his concept a "lifting body."

In 1920, Burnelli joined with Remington to form the Remington-Burnelli Aircraft Corporation at Amityville, Long Island, New York. Here Burnelli put his concepts on paper and his RB-1, the first "lifting body" airplane, was born. It was, for that time, a very large biplane, with a wing span of 74 feet. The fuselage profile was in the shape of an airfoil, with two 420 horsepower Liberty engines mounted within the fuselage nose. The basic structure was of wood, with fabric covered wings and corrugated aluminum covered



The airfoil shape of the fuselage is well shown in this view of the Remington-Burnelli RB-2. (Photo – George S. Pranaitis via CAHA)



Thomas Garvan, left, and Vincent Burnelli at Brainard Field, Hartford, in 1924. RB-2 engines being run up. (Photo – CAHA)

fuselage. The machine could carry 25 passengers and two pilots sitting in open cockpits. Aircraft control, however, suffered from blanketing of the rear control surfaces by the fuselage and, after making numerous demonstration flights, the RB-1 was wrecked in a crash in mid-1923. According to Burnelli (in 1964) the Liberty engines from the RB-1 project were transferred to Igor Sikorsky for installation in his S-29A.

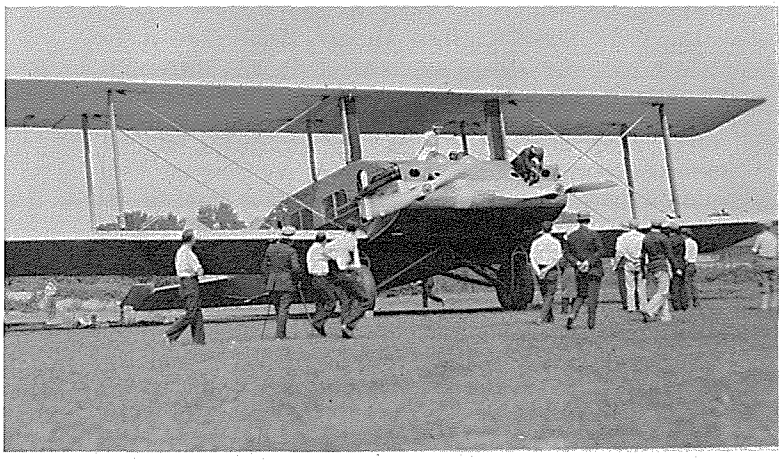
With this setback, Vincent Burnelli determined to build an improved airplane that would be a cargo type, known as the RB-2 Freighter. Design was undertaken at Amityville, It was similar in appearance to the previous RB-1; construction, however, was more advanced. The wings were of duralumin structure, the fuselage was all metal framework, and both were covered with corrugated aluminum. The empennage was metal framework, fabric covered.

Wingspan of the RB-2 was to be 80 feet, length 46 feet, and height 19 feet, 6 inches. The weight was to be 9,800 pounds empty and 16,500 pounds loaded. Two Galloway "Atlantic" engines of 500 HP were to provide power to achieve a maximum speed of 102 mph. Redesign of the rear fuselage was to largely eliminate the control surface blanketing problem. A principal outwardly distinguishing feature between the RB-2 and the RB-1 was the two-wheel landing gear of the RB-2 vs the four-wheels of previous design.

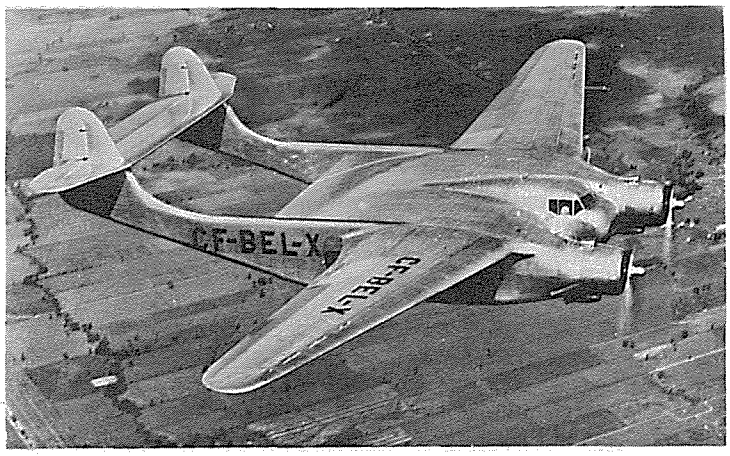
As construction began on the RB-2, the Remington-Burnelli firm of Amityville ceased operation. Vincent Burnelli had been successful in securing the financial backing of Thomas Garvan, of the Garvan Paper Company, Hartford, a major backer of the development of Brainard Field there. The Garvan-Burnelli Aircraft Corporation was organized, and the factory established at 1840 Broad Street, Hartford, where the sign was rediscovered in 1964. Here the construction of the RB-2 began again. Only detail parts and components were built at Broad Street, and these were shipped to a hangar at Curtiss Field, Long Island, for assembly. The first flight of the RB-2 was at Curtiss Field in 1924, and it was later flown to Brainard Field where it was to be based.

Its stay at Brainard Fd. was relatively short. On a demonstration flight, with a number of dignitaries and newsmen aboard and Lt. George Pond, USN, piloting, the RB-2 became lost, ran out of fuel over Rhode Island, and landed in a swamp, suffering damage. As Burnelli described it years later, loose wicker chairs were simply placed in the cabin for the passengers, since the airplane was to be a freighter, and not fastened down. When the abrupt landing occured, for a few minutes there was pandemonium inside as chairs, and passengers, sailed through the air to crash in a heap against the forward cabin bulkhead.

The passengers came through the experience with only bumps, bruises and abrasions. The airplane was dismantled, fished out of the swamp, brought to Hartford by barge, and repaired at the Broad Street plant. It was then reassembled at Brainard Field.



The RB-2 at Brainard Field, following its first flight from Curtiss Field, Long Island. (Photo – Courtesy of H. H. Lippincott, CAHA)



The last Burnelli airplane, the CBY-3 "Loadmaster," built by Canada's Cancargo, Ltd., at Montreal. (Photo – Courtesy of Mrs. V. J. Burnelli)

Burnelli next obtained a contract from Hudson Motor Company to use the RB-2 as a flying automobile show room. A shiny black Essex two-door sedan was installed inside the fuselage. (Holes drilled through the body allowed the airplane's structural bracing wires to pass through.) George Franaitis later related that he had lifted the auto's hood to examine the engine and to his surprise found none. The airplane and its cargo made flying visits to various cities to promote sales of the Essex, and, incidentally, to demonstrate the capabilities of the Burnelli Freighter.

Burnelli further conceived a new, improved design which became known later as the CB-16, a monoplane with a "high-rise" tail for more effective control and a retractable landing gear. Unfortunately, before construction was undertaken, Mr. Garvan died. Not having the same faith in aviation, the Garvan family withdrew their financial support and the company was dissolved, thus ending the need for the GARVAN-BURNELLI AIRCRAFT CORP. The RB-2 and subsequent Burnelli airplanes were cut up as scrap at the Uppercu hangar at Keyport, N. J.

EPILOGUE

Vincent Burnelli left Hartford and through the years went on to build eight more "lifting body" designs. However mass production of his aircraft eluded him. He attributed this to political complications and legal problems. When he died on June 22, 1964, he had just completed a design for a turbo-jet powered version of the lifting body with the jet engines mounted on pylons above the wing. He believed that this engine arrangement would reduce the engine noise reaching the ground. Burnelli was one of aviation's great and imaginative aircraft designers. One can only speculate whether or not his last jet-powered lifting body configuration would have provided the "scientific breakthrough" for which he had been searching most of his life.

NOTE

1. **Mssrs. Pranaitis and Ertman are both Founding Members of the Connecticut Aeronautical Historical Association.**

LAST BURNELLI AIRPLANE THREATENED

For several years the last Burnelli airplane, the Cancargo CBY-3 "Loadmaster," has sat forlornly in the weeds at Baltimore's Friendship International Airport. In late 1968 Mrs. Vincent J. Burnelli was notified by the airport management to remove the airplane or it would be destroyed. The airplane has been owned by the Burnelli Avionics Corporation, inactive since Mr. Burnelli's death. As there seemed little likelihood that the CBY-3 would be utilized further, Mrs. Burnelli began a last ditch effort to preserve the airplane.

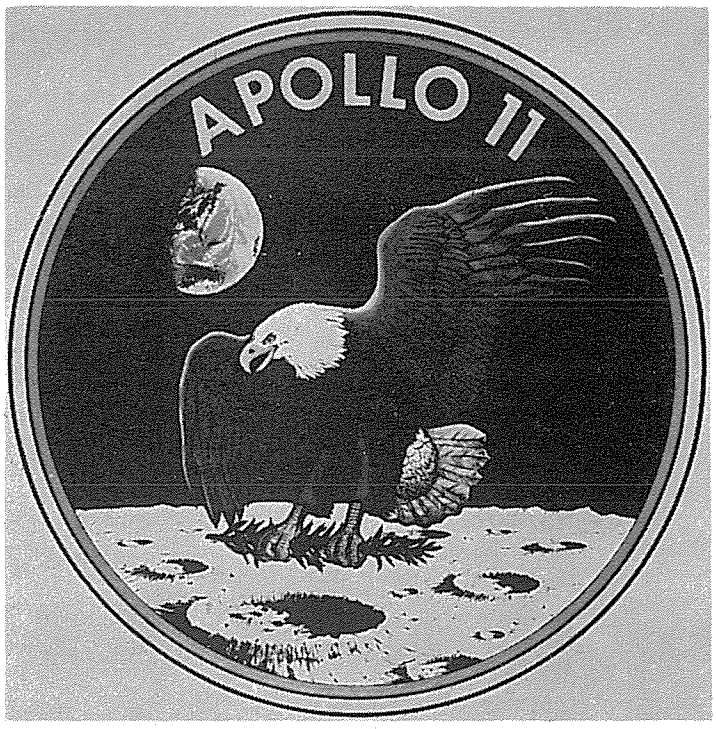
CBY-3 was first offered to the National Air and Space Museum but reluctantly declined because of its size and the lack of display space. Mrs. Burnelli then offered it to the Connecticut Aeronautical Historical Association. The offer was accepted with the provision that the airplane be delivered to the CAHA at Bradley International Airport, Windsor Locks, Conn. The Association agreed to restore it as a non-flying display and to create an exhibit on the life and work of Vincent J. Burnelli.

David Fox, of Kingston, N.Y., and Cole Palen of Old Rhinebeck Aerodrome, both A.A.H.S. Members, voluntarily pitched in to help save the airplane, to raise funds and equipment to bring the CBY-3 to Bradley Airport. After long study, the only sensible means to move the airplane to Bradley seemed to be to fly it there. The width of the fuselage – twenty feet – makes overland movement by truck or rail impractible. However, as of mid-1969, it will require work to put it in flying condition. Control surfaces require recovering, power plants must be obtained and installed, new tires put on, control cables and instruments repaired, and many other details accomplished before it could take to the air again.

The CBY-3 was designed and built by the Cancargo Aircraft Mfg. Co., Ltd. Division of Canadian Car & Foundry, at Dorval Airport, Montreal in 1945-47. It is of all-aluminum alloy construction and originally used Pratt & Whitney Twin Wasp 2SD13-G engines. These were later replaced by Wright R-2600 "A" series engines.

EDITOR'S NOTE: As this issue of the JOURNAL was being prepared we received word that other problems have beset the rescue of CBY-3. See NEWS & COMMENT Section.

TO MOON AND BACK



We pause to give honor to the Astronauts, Neil Armstrong, Edwin Aldrin, and Michael Collins, whose brilliant and flawless performance in landing on the moon and returning to earth defies mere words to describe. Honor must go, too, to those men here on earth who made the magnificent decisions involved. Those of us who have participated in this gigantic space program can appreciate the courage needed, not only to lay one's life on the line in the journey to the moon, but also to weigh the imponderables and come to the conclusions that would commit men's lives and fortunes for many years to come. Indeed, the economic fate of all of us here on earth are touched.

To quote von Braun, "The space program is doing what war used to do. For the first time in history a non-military program is making enough demands on human ingenuity."

We already see the many places where space-developed technology has found its way into our daily lives, in communications, metallurgy, chemistry, life support, and others innumerable. We must enlarge and continue that application to the immense problems of our environment here on earth. Therein lies the promise, and the destiny. (Editor)