

# Robert Novell Year in Review 2015

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# Robert Novells' Third Dimension Blog

February 27, 2015

Good Morning,

The weekend is here again, I am still behind with all of my work, but I am ready to acknowledge that today at 5:00 PM it is time for family and friends – I hope you can do the same; however, before that magic hour arrives I want to talk about the road to conquer the “Third Dimension.”

While there are an abundance of stories in history that depict our love affair with flight, one of the most famous comes from the Greeks. If you have forgotten the specifics of The Flight of Daedalus and Icarus, then click on the photo below.



## The Father of Flight - February 27, 2015

There was not much improvement on the wax wing concept as the years progressed but the science of flight certainly progressed. An interesting person in that progression was a man called Abbas Qasim Ibn Firnas who lived in Spain when Spain was part of the Ottoman Empire.

In 852 CE, Firnas witnessed an attempt to fly from a minaret of the Great Mosque in Cordoba. The would-be aviator survived the event and Firnas was so intrigued by this event that he spent the next two decades studying birds, bats, and wind-borne seeds to discover the secrets of flight.

In 1783 he was ready to make his own attempt. Hanging from a tail-less glider, he jumped from a high point in the city and made a short, uncontrolled glide, but he injured his back when landing putting an end to his test flights. Nonetheless, he was the first scientist ever to study and test the possibility of manned flight using a fixed-wing aircraft. An interesting, but not well known, fact is that NASA named a crater on the dark side of the Moon in his honor.



OK, let's stop here with our look back at others who participated in the quest to conquer the "Third Dimension" and talk about the Father of Flight – Sir George Cayley.

## **Sir George Cayley**

Cayley literally has two great spurts of aeronautical creativity, separated by years during which he did little with the subject. He was the first to identify the four aerodynamic forces of flight – weight, lift, drag, and thrust – and their interrelationship – as well as he also was the first to build a successful human-carrying glider.

Cayley described many of the concepts and elements of the modern airplane and was the first to understand and explain in engineering terms the concepts of lift and thrust. Before him, researchers thought that the propulsion system should generate both lift and forward motion at the same time, as birds were able to do. So they constructed their flying machines with flapping wings (called ornithopters) to resemble the motion of birds. Cayley realized that the propulsion system should generate thrust but that the wings should be shaped so as to create lift. Finally, Cayley was the first investigator to apply the research methods and tools of science and engineering to the solution of the problems of flight. In his experiments, Cayley would first test his ideas with small models and then gradually progress to full-scale demonstrations. He also kept meticulous records of his observations. One of his first experiments as a young man was to build a small helicopter model. This toy was rooted deep in European history. The earliest ancestors of the device date to the 14th century. Cayley was inspired by a version developed in 1784 by the Frenchmen Launoy and Bienvenu. It had two rotors consisting of feathers stuck in corks and was driven by a string from a bow.

The design demonstrated an understanding of how a propeller worked. It also addressed Cayley's interest in finding a means of powering an aircraft. He attempted to use an engine fueled by gunpowder but it was unreliable. His inability to find a means of propulsion caused him to revert temporarily to Leonardo da Vinci's concept of using flapping wings as a means of propulsion. This resulted in his 1843 convertiplane model called the Aerial Carriage. Cayley reverted to ornithoptering propulsion and vertical flight ideas on several occasions in his career.

In 1799, Cayley designed a configuration that was basically in the form of a modern airplane with a fuselage and wings. Etched on a silver disk this design bears a close relationship to the modern flying machines of more than a century later. On one side of the disc he showed the forces that govern flight. On the reverse side, he engraved an aircraft that illustrated how those forces operated.

It had a fixed main wing, a fuselage, a cruciform tail unit with surfaces for vertical and horizontal control, a cockpit for the pilot, and a rudimentary means of propulsion that consisted of revolving vanes, a precursor to the propeller. Thus, one hundred years before the Wright brothers flew their glider, Cayley had established the basic principles and configuration of the modern airplane, complete with fixed wings, fuselage, and a tail unit with elevators and rudder, and had constructed a series of models to demonstrate his ideas.

Experiments that he began to carry out in 1804 allowed him to learn more about aerodynamics and wing structures using a whirling arm device. He observed that birds soared long distances by simply twisting their arched wing surfaces and deduced that fixed-wing machines would fly if the wings were cambered. This was the first scientific testing of airfoils. After these experiments, he constructed what is considered to be the first real airplane in history. This glider, which was basically a kite on top of pole, was about 5 feet (1.5 meters) long, with a fixed wing set at an angle of incidence of 6 degrees and a cruciform tail that was attached to the fuselage by universal joints. Movable ballast controlled the center of gravity. After this model successfully flew, Cayley designed a larger model glider with rigid wings.

By 1808, Cayley had constructed a glider with a wing area of almost 300 square feet (28 square meters). By the middle of 1809, Cayley had investigated the improved lifting capacities of cambered wings, the movement of the center of pressure, longitudinal stability, and the concept of streamlining. He demonstrated the use of inclined, rigid wings to provide lift and roll stability, and the use of a rudder steering control. He even came to realize that an area of low pressure is formed above the wing. By 1809, he had advanced from model gliders to the building and successful flying of a glider with a total wing area of approximately 172 square feet (18.5 square meters).

Soon after, Cayley published a paper, *On Aerial Navigation* (1809-1810), which appeared in *Nicholson's Journal of Natural Philosophy, Chemistry and the Arts*. In this paper, he laid out the basis for the study of aerodynamics. However, this work was not known and acknowledged for some years.

After having built several models (with an interruption to explore the possibility of an Aerial Carriage of 1843), Cayley concentrated on experiments with full-size gliders. He built his first full-size glider in 1849 and initially carried out trials with ballast. Later that year, the ten-year-old

son of one his servants became the first person in history to fly when he made a short flight in a Cayley glider.

Four years later, in 1853 and fifty years before the first powered flight was made at Kitty Hawk, North Carolina, Cayley built a triplane glider (a glider with three horizontal wing structures) that carried his coachman 900 feet (275 meters) across Brompton Dale in the north of England before crashing. It was the first recorded flight by an adult in an aircraft.

Throughout his long career, Cayley recognized and searched for solutions to the basic problems of flight. These included the ratio of lift to wing area, determination of the center of wing pressure, the importance of streamlined shapes, the recognition that a tail assembly was essential to stability and control, the concept of a braced biplane structure for strength, the concept of a wheeled undercarriage, and the need for a lightweight source of power. Cayley correctly predicted that sustained flight would not occur until a lightweight engine was developed to provide adequate thrust and lift, an event that did not take place until the flight of Orville and Wilbur Wright in 1903.

#### [Source Document](#)

For more information please take a look at the following link. This video covers a lecture presented at the Royal Society of London and speaks to the importance of Sir Cayley's work to the Wright Brothers.

#### [Sir George Cayley and the Wright Brothers](#)

Thanks for stopping by and sharing your time with the Third Dimension Blog. It has been a long week for most of us so take some time to decompress, enjoy time with family, and should you have some time after the 5:00 PM witching hour on Friday, take a look at the videos below which contain original footage of many historical events in aviation.

Robert Novell

February 27, 2015

## **Robert Novells' Third Dimension Blog**

### **January 26, 2015**

Good Morning and Happy Friday,

For me the week has been busy and full of surprises - some good surprises and some not so good; however, I hope for those of you reading this you have had a good week and life has been good for you and yours. This week I want to go back and connect you with an aviation pioneer whose showmanship, and skills, were legendary. His name - Roscoe Turner - and you may be a bit surprised when you discover who Gilmore is.

Enjoy.....

## Roscoe Turner



The inimitable and greatly admired Colonel Roscoe Turner became one of the renowned names in aviation in the late 1920s and early 1930s. This was the flying era that abounded with the achievements of a small group of gallant pilots, dedicated engineers, courageous air leaders, and audacious daredevils. Roscoe Turner was a leader among those who pursued their destiny in the skies and bet their lives, not only on their own skill, but also on the soundness of their aircraft's design. While true that they flew to set new records, thrill huge crowds and reap the rewards of victory, they also gave a vital stimulus to the technical development of aircraft. Their deeds kept alive a spark of interest in aviation when there was little public or governmental concern for it. They also advanced the technology which was so vital to the nation during World War II and which served as the foundation for supersonic and space flight.

Roscoe Turner was born in a small rural clapboard cabin near Corinth, Mississippi, on September 29th, 1895. As a boy he developed a great affinity for speed. First he was fascinated by the speed of the train that passed near the family farm. But his father scolded him, saying that was too dangerous, and handed him the reins to a mule pulling a plow. When a caravan of early automobiles chugged past the farm lane, Roscoe set his heart on becoming a chauffeur and a race driver. At that, his father gave him a serious lecture and said: "You'll never be worth anything if you keep fooling around with things that burn gasoline instead of oats."

Finally, at the age of sixteen, Roscoe ran away from home and made his way to Memphis, Tennessee, where he eventually became an ice truck driver, then a taxi driver and finally an expert auto mechanic for local Packard and Cadillac dealers. Just before World War I, he tried to enlist in the aviation section of the Signal Corps, but was turned down because he lacked the required two years of college education.

After the U.S. entry into World War I, Roscoe Turner enlisted in the Ambulance Corps and was sent to France. The following year he transferred to the aviation section, but the armistice ending the war was signed before Turner could see combat.

In 1919, Turner and a partner formed the Roscoe Turner Flying Circus and for five years put on death-defying performances. Roscoe subsequently purchased a Sikorsky cabin plane. For a while, he decked it out as a flying cigar store. Later he used it to hold teas for society women and make radio broadcasts aloft.

Hollywood beckoned and Turner became a movie stuntman and actor in the Howard Hughes film, *Hell's Angels*. He played the role of a dashing British airman, but his Sikorsky went down in flames as a German bomber in the movie. Soon Turner became fascinated with speed flying, and entered the free-for-all event of the 1928 National Air Races. But his little Timm biplane was no match for the speedy Lockheed and he finished the race last.

At this point, Turner helped organize Nevada Airlines in 1929, operating between Los Angeles, Reno, and Las Vegas. After movie star Bebe Daniels christened the four Lockheed "Vegas", he converted one into a racy showpiece and proved the practicality of transcontinental passenger service by flying the "Vegas" from Los Angeles to New York with four passengers aboard. After the Governor of Nevada bestowed him with the title of "Colonel", Roscoe acquired a resplendent uniform and sported a neatly trimmed and waxed mustache. His appearance soon became his trademark.

Claiming his Lockheed to be the fastest in the world, Turner now entered the Los Angeles to Cleveland Derby of the 1929 Air Races. But when the race was over he was disqualified for landing after the 6 P.M. deadline. Undaunted, Turner took part in the free-for-all race and finished third.

In a brilliant move, Turner convinced the Gilmore Oil Company to buy a Lockheed Air Express and to animate the company's lion head trademark. He bought a lion cub and named it "Gilmore," in 1930. Before long, Roscoe became known to millions as the man who flew with a lion, and crowds flocked to see the intrepid pair. The pair set an East-West record and make a record flight between Canada and Mexico. They also entered the 1930 Derby Race from Los Angeles to Chicago. But Wiley Post won and Roscoe and Gilmore finished fifth. It would prove to be Gilmore's last race, for after 25,000 miles of flying he became more payload than Turner could afford to carry. Turner retired Gilmore from flying.



A new era began in 1932 for Turner when he acquired a Wedell-Williams racer to satisfy his quest for speed. Naming it the Gilmore Lion, he flew it in the 1932 Bendix Race and took third place. Next he flew it in the Thompson Trophy Race, but scrappy Jimmy Doolittle won, while Roscoe took third. The following day he placed third in the Shell Oil Speed Dash. Later, he set a new transcontinental record of 12 hours 45 minutes.

In 1933, Turner encountered little difficulty in winning the year's Bendix Race from New York to Los Angeles and his record stood for five years. He also took first place in the Shell Oil Speed Dash and in the Thompson Race quickly grabbed the lead. When Turner lands, well ahead of the field, he received presented the Thompson Trophy. In one of the most poignant moments in racing, however, the judges disqualified him for not re-flying a pylon cut on the first lap. Even so, Turner later received the Clifford Henderson Trophy as America's number one speed pilot when he set a new West-East transcontinental record.

For the 1934 Air Races, Turner modified his racer's engine to make it the most powerful in the air. With it, he won the grueling Thompson Trophy race his first win in three tries. In October, 1934, twenty planes departed from England in the greatest air race in history – the Robertson Race to Australia. Turner and his crew thundered their Boeing transport to Athens. Then they raced on to Baghdad, Karachi, Allahabad, and Singapore. When the plane finally reached Melbourne, Turner and his crew received 1,500 pounds for their effort, but few realized that the race had cost Roscoe \$35,000 out of his own pocket and it would take him five years to pay it off.

After taking second place in the 1935 Bendix, Turner quickly took the lead in the Thompson Classic. But, suddenly during the race, smoke filled the cockpit. Roscoe managed to bring his racer down safely. He lost the Thompson but made thousands of friends through his display of skill and daring.

Turner flew his radically new Turner-Laird "Meteor" in the 1937 Thompson Race. After 18 laps he assumed the lead. But the sun blinded him and he turned to re-fly a pylon he thought he had missed. But race officials claimed that he didn't cut the pylon and the incident cost him the race.

When Turner crossed the finish line in 1938, he became the only two-time winner of the Thompson, and also received the Allegheny-Ludlum Trophy for setting a world's lap record of 293 miles per hour.

In the 1939 Thompson Race, Turner again missed a pylon and had to re-circle it. But his skill and speed enabled him to move from last to first place and capture the classic. Then, when he received the Thompson Trophy, Turner said, "Make room for the photographers. It's their last chance to shoot me. Racing is a young man's game. I'm 43!"

At this point Turner established the Roscoe Turner Aeronautical Corporation in Indianapolis in 1940, and opened an aviation school. When America's entry into World War II appeared imminent, he formed the Turner Aviation Institute to help train the flight instructors, pilots and mechanics that the national war effort would require.

Shortly after Pearl Harbor Turner itched to be in combat, Lieutenant General Frank Andrews told him, "You are making a bigger contribution to the war effort in training men to fly."

After the war Turner prophesied, "Aviation is going to control the world economically and militarily whether we like it or not. Airpower is not merely military aviation, it is also civilian aviation and air power is peace power." Throughout the 1950s and 1960s Turner continued to contribute to the development of aviation through his flight school and aircraft sales and service facility at Indianapolis.

Roscoe Turner died on June 23rd, 1970.

[Source Document](#)

Have a good weekend, enjoy time with family and friends, and remember that life is short. Enjoy each and every moment.

Robert Novell

January 30, 2015

## **Robert Novells' Third Dimension Blog**

# March 30, 2015

Good Morning,

A new day, a new week, and yes Monday is here again. I hope all is well with you and yours and you enjoy the article, and videos, below on a NASA project called - The Adaptive Compliant Trailing Edge.

Robert Novell

March 30, 2015

## Shape-changing Flap Project Meets First Milestone

The Adaptive Compliant Trailing Edge (ACTE) project achieved a major milestone at NASA's Armstrong Flight Research Center on February 18, when the modified Gulfstream G-III completed a flight with 15 degrees flap deflection, thus successfully meeting all of the project's primary requirements. Flight tests have been performed with deflections ranging from zero to 15 degrees, with plans for flights up to 30 degrees of deflection. Although the flexible ACTE flaps are designed to morph throughout the entire range of motion, each test is being conducted at a single fixed setting in order to collect incremental data with a minimum of risk.

The ACTE project is a joint effort between NASA and the U.S. Air Force Research Laboratory (AFRL) at Wright-Patterson Air Force Base, Ohio, to advance compliant structure technology for use in aircraft to significantly reduce drag, structural weight, and aircraft noise. It is part of NASA's Environmentally Responsible Aviation (ERA) project to explore and document the feasibility, benefits and technical risk of vehicle concepts and enabling technologies for reducing aviation's impact on the environment.

Last year, researchers replaced the G-III's conventional aluminum flaps with advanced, shape-changing assemblies that form seamless bendable and twistable surfaces. The revolutionary flaps were designed and built by FlexSys, Inc., of Ann Arbor, Michigan, with AFRL funding based on FlexSys patented technology.

"Reaching our minimum success criteria for the ACTE Integrated Technology Demonstration is a testament to the exceptional cooperation and collaboration toward the success of this flight campaign between NASA, AFRL and FlexSys, the inventor of the technology," said Ed Waggoner, Integrated Aviation Systems Program Director in NASA's Aeronautics Research Mission Directorate. "Every milestone we achieve helps us to better understand how these enabling technologies reduce aviation's impact on the environment."

ACTE technology has the potential to be retrofitted to existing airplane wings or integrated into entirely new airframes. ACTE enables engineers to reduce wing structural weight and to aerodynamically tailor the wings throughout the flight envelope to promote improved fuel economy and more efficient operations, while reducing environmental and noise impacts. Flight testing at Armstrong is key to proving the concept's airworthiness.

Peter Merlin, Public Affairs  
NASA Armstrong Flight Research Center

## Robert Novells' Third Dimension Blog

May 1, 2015

Good Morning – It is Friday so it must be time for a look back at aviation history here at the 3DB. Today I want to take you back to the beginnings of commercial aviation and talk about airlines and airliners. I think it is fair to say that most Aviators are familiar with the beginnings of Pan Am, TAT, and others but how about Lawson Airlines?

Let's begin with a look at the dates when some of the original players of commercial aviation began operations:

1. 1909.....Delag was the world's first airline in revenue service and they operated Zeppelin airships.
2. 1913....St Petersburg-Tampa Airboat Airline was the first fixed-wing airline. (Click [HERE](#) for the blog I wrote on their history)
3. 1917....Chalk's Ocean Airways began service between Florida and the Bahamas. (Click [HERE](#) for the blog I wrote on their history)
4. 1919....KLM and Avianca began operations.
5. 1920....Qantas began operations.
6. 1924...Delta began operations.
7. 1925...Western Air Express (which became TAT-TWA) began operations. (Click [HERE](#) for the blog I wrote on their history)
8. 1926....Varney Airlines (which became United), Eastern Airlines, Northwest Airlines, and Colonial Air Transport (which became American Airlines) began operations.
9. 1927....Pan American World Airways began operations.

In the list above, which is but just a few of the world's airlines, I don't see a date for the company we are going to talk about today – Lawson Airlines. There have been numerous airline companies that history has forgotten, such as [Aeromarine](#) who paved the way for Pan Am, but let's revisit the years 1908 to 1928 and talk about an airline that history has forgotten.

## Alfred W. Lawson – Aviation Pioneer

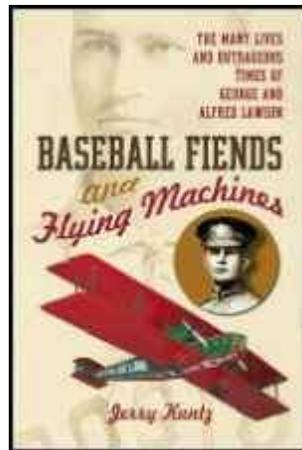
(From major league baseball player to aviation entrepreneur)

Three weeks after Alfred William Lawson's birth in London on March 24, 1869, the Lawson family set sail for Canada and, several years later, crossed the border to settle in Detroit. There young Al grew up and trained to be a coat-maker. But a more glamorous life opened when, at the age of 18, he signed on to pitch for a semi-pro baseball club in Frankfort, Ind. Pitching engagements with several Midwestern minor league teams followed in 1888 and 1889.

Although Lawson's early record is not fully documented, it apparently was good enough to give him a chance in the National League in 1890. But there he was found wanting. In his May 13 debut with Boston, he matched pitches with Mickey Welch of New York and lost 7-2. In two games pitched for Pittsburgh, the results were even unhappier – on May 28, a 12-10 loss to Philadelphia, followed by a 14-1 loss (and three errors by Lawson) in a June 2 contest with Cap Anson's Chicago team. Thus, within a three-week span in 1890, Lawson's major league career began and ended.

That same year in Philadelphia, in a remarkably rapid transition, he began to publish and edit *Fly*, the *National Aeronautic Magazine*, the first popular American journal devoted mainly to promoting flight in heavier-than-air machines. Two years later, in New York, he launched *Aircraft* (a word coined by Lawson), which journal he edited until 1914 and built into an authoritative voice of early aviation. Through these ventures Lawson secured a place as an aviation industry pioneer.

The audacity of Lawson's entry into aviation journalism was breathtaking. What, after all, were the market prospects? By 1908, only three Americans had ever gone aloft in airplanes. Moreover, Lawson had no editorial experience, and his only background in writing was an unpromising Utopian fantasy, *Born Again*, published in 1904. A school drop-out at age 12, he presumably knew very little about aviation or engineering. But Lawson had two things going for him: a farseeing vision (rare in 1908) of the future commercial possibilities of aviation and a considerable entrepreneurial ability. Where he got the former remains a mystery, but that his entrepreneurship was honed during this baseball years is clear enough.



Lawson took his first flight in 1910 and in 1913 became New York's first air commuter by flying his plane from the North New Jersey beach area to 75th Street in Manhattan. He used his journals to beat the drums for commercial and military development of aviation. In 1913 he sent a message to Congress asking for \$10 million for the development of American aviation. When the U.S. entered World War I, he negotiated the financial backing to form his own company in Green Bay, Wisconsin. The Lawson Aircraft Co. designed and built excellent military trainer-plane prototypes, but the war was nearly over before the firm received contracts for large-scale production.

At war's end, Lawson embarked on his most ambitious and estimable enterprise – the attempted founding of the first nationwide air passenger service. He was many years ahead of the field (and probably of the market and available technology) with this idea. Losing his financing in Green Bay, he reorganized his company in Milwaukee. In 1919 he had finished his first plane – a 16-passenger craft having many novel features (some of which became standard in passenger planes) – and flew it without mishap on a triumphal 2000-mile odyssey as far as New York and Washington, D.C., and then back to Milwaukee.

This flight was well publicized, particularly in Washington, where, on September 21, he displayed his "airliner" (a neologism that stuck) to a large number of dignitaries. In fact, he took more than a dozen of them on a flight around Washington. Included were six U.S. Senators, the former President of Notre Dame University, and Secretary of War Newton D. Baker and his wife.

But this flight was only the prelude to the projected creation of the national passenger service, a dream which now seemed within Lawson's grasp. The U.S. Post Office enhanced his prospects by awarding him its first large airmail contracts, totaling \$685,000. When Lawson's second plane crashed on take-off in 1921, however, his financial backers, already made jittery by production delays and the deepening 1921 depression, withdrew support. Soon the Lawson Aircraft Co. and the Lawson Airline Co. were no more.

A dispiriting blow, but it didn't shake Lawson's faith in the merit of the air passenger idea and in himself as the man needed to bring it into being. He gamely made one more try in the late 1920's, this time pinning his hopes for an airline network on a conception fantastic for its time – a fleet of huge, 12-engine planes, each capable of carrying 125 passengers in a two-tiered compartment (an

idea, incidentally, which Lawson patented and licensed profitably to bus and train companies). But the first plane was still under construction when, again, Lawson lost his financing, this time in the Great Depression. With considerable bitterness, he abandoned aviation work forever.

Fittingly, in the 1930's Lawson struck back at "the financiers" by organizing and leading the multi-million-member Direct Credits Society to agitate for his own plan for national financial reform. At the same time, he continued to develop in many books his unorthodox scientific and religious ideas, which he called "Lawsonomy." Eventually, he founded Lawsonian Religion (six churches operate today) and, in Des Moines, the "University of Lawsonomy," an institution (now located in Sturtevant, Wisconsin.) from which he hoped would come the seed for a "new species" of humanity, perfected by the study and practice of Lawsonomy.

Lawson died in San Antonio, Texas at age 85 on November 29, 1954, bringing to a close an amazing life, to which these few pages can't do justice. He had come a long way from coat-making and those three major league appearances of his nonage. Although his contribution to early American aviation has not been sufficiently recognized, he is still remembered by a devoted band of Lawsonomists as the best and wisest man they ever knew.

#### [Source Document](#)

The Lawson Air Line Company designed and built a series of large biplane airliners for use on its planned airline routes. The initial Lawson "Aerial Transport" Lawson C1 or T-1 was built early in 1919 to demonstrate that a large commercial passenger plane could be built. The L-1 was a single pilot, 10 passenger biplane with twin Liberty 400 hp pusher motors. It was followed by the Lawson C.2 or L-2. The L-2 was a tractor biplane also with 400 hp motors, capable of carrying 26 passengers, and piloted by two pilots with differential controls. Mr. Lawson took it on a 2000 mile multi-city tour to advocate commercial air travel.

After he completed his 2000-mile flight, Mr. Lawson built the Lawson Midnight Liner for use on the night service between Chicago and New York. The Midnight Liner was larger with three 400 hp Liberty engine – one on each wing and another in the nose. The airliner sported sleeping berths and a shower. It was his objective to produce large number of these aircraft to outfit his airline, but the 1920 Fall recession deprived Lawson of the investment funds to meet payroll and other development expenses. The first and only Lawson "Midnight Liner" was completed on December 9, 1920. Bad weather, however, delayed its maiden flight. As Lawson's the financial situation worsened, Lawson decided to fly his new airliner from a space near the factory, rather than make a costly ground transport move to Hamilton Field (now Gen. Mitchell Field). The prepared strip was only about 300 feet long. Lawson finally gave the order to attempt flight on May 8. The aircraft did not clear an elm tree and crashed on takeoff. The pilots were unhurt but the airliner was never repaired.



Lawson had a 100 passenger, a double decked version, on the drafting board, but the Lawson "Midnight Liner" was the last. The company folded in 1922, and the assets were auctioned off. The two Lawson Air Liners are renowned due to their size (for the time) and the ambition of its flamboyant promoter, Alfred Lawson.

[Source Document](#)

Have good weekend and remember to enjoy time with family and friends. Take care, fly safe, and remember: Protect your profession, protect yourself, and all who will follow in your footsteps.

Robert Novell

May 1, 2015

## **Robert Novells' Third Dimension Blog**

**June 12, 2015**

Good Morning,

The story of Smokey the Bear, his real name is "Smokey Bear," is well known to most but did you know that Bill Piper, owner of Piper Aircraft, was responsible for getting Smokey to Washington? That is our topic today along with a few facts about Smokey.

Enjoy.....

# The Orphan Bear

One spring day in 1950 in the Capitan Mountains of New Mexico, an operator in one of the fire towers to the north of the Capitans spotted smoke and called the location into the nearest ranger station. The first crew discovered a major fire being swept along the ground between the trees, driven by a strong wind. Word spread rapidly and more crews reported to help. Forest Rangers, army soldiers, Native American crews, men from the New Mexico State Game Department, and civilian volunteers worked together to gain control of the raging fire. As soon as they contained the fire to one spot, the wind would push it across the lines. During one of the lulls in firefighting, a report of a lonely bear cub who had been seen wandering near the fireline was reported. The men left him alone because they thought the mother bear might come for him.

About 30 firefighters, mainly soldiers but also a Capitan High School student, Several soldiers were caught directly in the path of the fire storm, barely escaping by laying face down on a rockslide for over an hour until the fire had burned past them. In spite of the experience, the firefighters were safe except for a few scorches and some burned holes in their clothes.

Nearby, the little cub had been caught in the path of the same fire and had not fared as well. He had taken refuge in a tree that was now completely charred. His climb had saved his life but left him badly burned on the paws and hind legs. The soldiers removed the little bear cub from the burned tree, but they did not know what to do with him. A rancher, who had been helping the firefighters, agreed to take the cub home. A New Mexico Department of Game and Fish Ranger heard about the cub when he returned to the fire camp and drove to the rancher's home to get the bear. The cub needed veterinary aid and was flown in a small plane to Santa Fe where the burns were treated and bandaged.



The news about the little bear spread swiftly throughout New Mexico. Soon the United Press and Associated Press picked up the story and broadcast it nationwide. Many people wrote or called to inquire about the little bear's progress. The State Game Warden wrote an official letter to the Chief of the Forest Service, presenting the cub to the agency with the understanding that the small bear would be dedicated to a publicity program of fire prevention and conservation. The go-ahead was

given to send the bear to Washington, DC, where he found a home at the National Zoo, becoming the living symbol of Smokey Bear.

[Source Document](#)

Now, let's talk about how Piper Aircraft became involved.....

## Smokey and Bill Piper



After Smokey, the bear cub, was injured in the Capitan, New Mexico forest fire, he was moved to Santa Fe, New Mexico. There, the children of Ray Bell and Homer Pickens nursed him back to health.



Young bear cubs grow rapidly, and Smokey soon become unmanageable. A decision had to be made. The Game and Fish Department of the state of New Mexico and the United States Forest Service made the decision to dedicate the bear cub to the boys and girls of America.

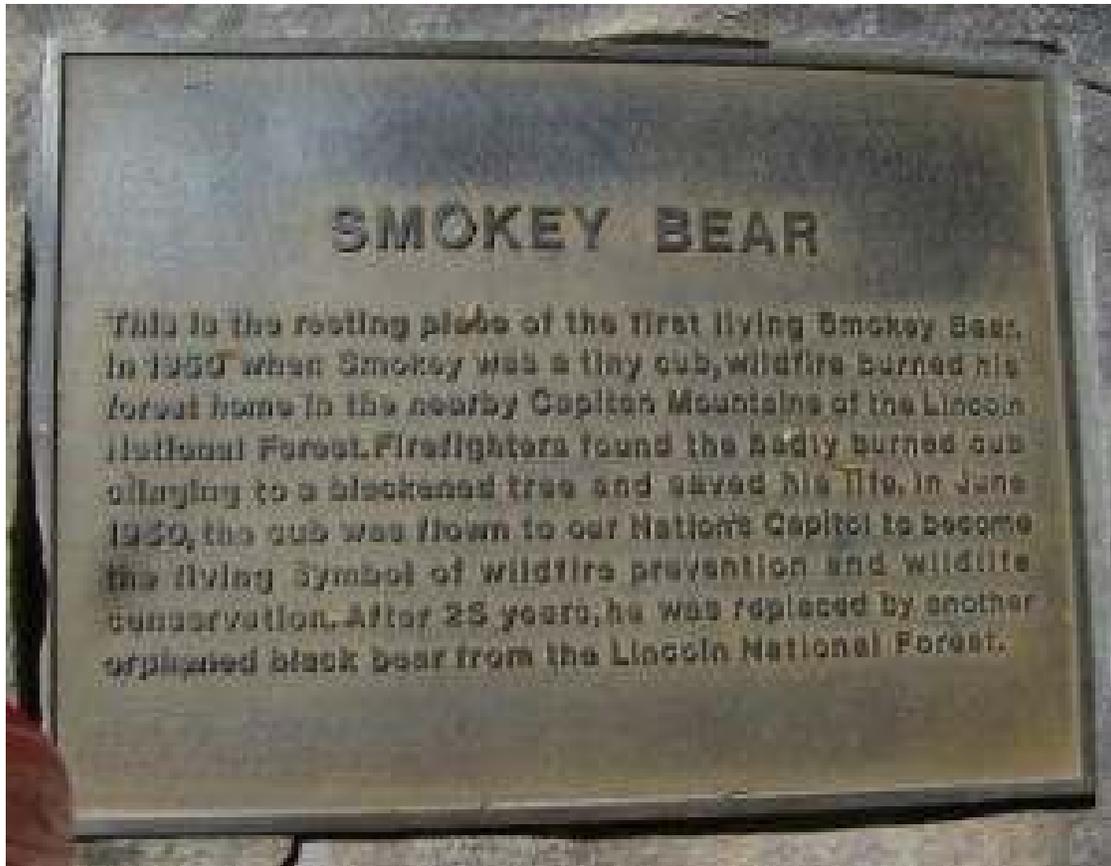
Bill Piper, owner of Piper Aircraft Co., sent a brand new Piper Cruiser to Santa Fe so they could fly Smokey to the National Zoo in Washington, D.C. Can you imagine trying to travel with the bear cub in an airliner?

On the eve of the flight, prominent Santa Fe artist Will Schuster hurriedly painted the Smokey Bear logo on the plane. Frank Hines, the Piper dealer in Hobbs, New Mexico, piloted the plane. Homer Pickens, Assistant Director of the New Mexico Game and Fish Department, tended to Smokey for the duration of the several days' plane trip to Washington, D.C. I really can't imagine holding a bear in my lap in the back seat of a small plane for a trip across the United States. Finally, in ceremonies at the Nation's capital, Mr. Pickens presented Smokey to the boys and girls of America as a living symbol of forest fire prevention.



[Source Document](#)

Smokey lived to a ripe old age of 70 at the zoo in Washington and many newspapers ran obituaries on S. Bear when he died. A real life legend that lives on in the hearts, and minds, of many Smokey was buried on the grounds of his museum in Capitan, New Mexico.



Have a good weekend, enjoy each moment with family and friends, and fly safe/be safe.

Robert Novell

June 12, 2015

## **Robert Novells' Third Dimension Blog**

**July 17, 2015**

Good Morning and welcome to the 3DB. I hope everyone has had a good week and with the weekend upon us I think we are all looking forward to a little quiet time. This week I have a story about a man who brought forward a better aircraft design but things just did not work out for this quiet man from Texas. I originally published this last year but after I received an email from a reader I decided to revisit what I think is a story all aviators should be familiar with.

# Vincent J. Burnelli



Burnelli was born in Temple, Texas, on November 22, 1895 and attended public schools in Temple and in Monterrey, Mexico, before moving east to spend three years studying at St. Peter's College in New Jersey. From his early youth, Burnelli showed an interest in aviation. He first learned to fly gliders on Staten Island, N.Y., in 1915, and graduated to piloting powered aircraft in Lincoln, Neb., in 1919.

Designing aircraft, rather than flying them, was Burnelli's greatest passion. Along with friend John Carisi, he first began experimenting with gliders in 1912. By 1915, the pair had produced their first powered design which was an open biplane they built in Queens, N. Y. They tested it at the Hempstead Plains Airfield, which was later to gain much greater fame in aviation history as Long Island's Roosevelt Field. Always concerned about practicality, Burnelli and his partner wasted no time putting their creation to work. We used it for barnstorming, Burnelli later recalled of his first design. You could make \$500 to \$1,000 in those days working a fair, and that was big money.

World War I created a great demand for aviation know-how, and Burnelli used the opportunity to establish himself in the aircraft industry. During the course of the war he worked for the International Continental and Lawson aircraft companies, in such varied positions as engineer, designer and superintendent. However, Burnelli became interested in designing transport aircraft, and this fascination would follow him through the rest of his life. In 1919, while working for Milwaukee's Lawson Aircraft Co., Burnelli designed one of the first commercial transports, a 26-passenger biplane. Despite the project's success, Burnelli was disappointed with the resulting design.

As an engineer, Burnelli believed that all of an aircraft's basic components should be designed to help it maintain flight, which was not the case in transports of the time. The fuselage in a conventionally designed plane, he felt, was only a box to carry passengers and cargo and provided no lift. Because the Lawson transport possessed this weakness, he referred to it as a streetcar with wings.

Now, let us fast forward a few years.....

As an aircraft designer Burnelli promoted a revolutionary design concept. He based his design on lift-body theory. The theory is simple. Lift-body design uses the body of the aircraft in the shape of an airfoil thereby providing lift from the body which added to the lift from the wings. A conventional tube-body aircraft gets its lift from only its wings which make up about 15% of its structural weight. The Burnelli designs, using lift-body, got lift from almost 65% of its structural weight.

Burnelli was fighting an uphill battle against the established aircraft designers and the big companies that backed them; however, Burnelli went North to find a partner. In 1944 the Canada Car & Foundry built Bernoulli's aircraft in its Montreal shops – it was designated the CBY-3 Loadmaster.

A quick recap.....

We are talking about an innovative design that no manufacturer in the U.S. would consider but was produced by a Canadian firm. Now, this is where our story takes a turn and to describe those events I am going to use an interview with Chalmers H. "Slick" Goodlin that was written back in 1989 by David Noland of the Smithsonian Air and Space Magazine.

## **The Bernoulli Controversy**

(Was this designer a genius or his own worst enemy?)

"This is the biggest story in aviation history," says Chalmers H. "Slick" Goodlin. He puffs on his pipe and leans back in a 16th century oak chair in the living room of his sumptuous Coral Gables home. A suit of medieval armor sits astride a life-size wooden horse over behind the couch, and banyan trees are visible outside the window. Goodlin, a 66-year-old dealer in used jet airliners and a former test pilot from the glory days at Muroc, is talking about a subject that has consumed him—some would say obsessed him—for nearly four decades: the Burnelli lifting fuselage. This 69-year-old concept of aircraft design is one that Goodlin insists would revolutionize aviation today. "The government and the military-industrial complex have engaged in a diabolical conspiracy to kill the Burnelli concept," he says. "The cost of that conspiracy has been hundreds of billions of dollars and thousands of human lives. It's one of mankind's greatest tragedies of the 20th century."

One day in 1920, a clever young aircraft designer from Texas named Vincent J. Burnelli had a brainstorm. Seeking to increase lift for a larger version of the Lawson Airliner he'd designed the

year before, Burnelli hit upon the idea of shaping the fuselage like an airfoil. Instead of simply dragging through the air and unnecessarily burdening the wings, reasoned Burnelli, his fuselage would generate its fair share of lift. Moreover, the lifting fuselage would reduce structural loads on the wing and provide the additional bonus of a cavernous cabin.

Burnelli's first lifting-fuselage aircraft was the 32-passenger RB-1 biplane, which made its maiden flight in 1921. It had a broad slab of a body, curved like an airfoil across the top and bottom and tapering to a knife edge at the rear. The fuselage contributed more than 500 square feet of lifting surface, about a third of the total wing area, and was so wide that the two 550-horsepower Galloway Atlantic engines fit side by side in the nose. An improved version, the RB-2, could carry three tones of freight, an astonishing load in those days, and in 1925 the prototype hauled around a Hudson Essex automobile on an aerial sales tour. But the RB-2 was sluggish and slow, and Burnelli couldn't get financing for production.

He continued to design and build airplanes based on his lifting-fuselage concept into the late 1940s, persuading various backers to fund six more prototype aircraft. None ever went into production, even though Burnelli had the support of big names like Hap Arnold, Clyde Pangborn, and Billy Mitchell. His unusual designs also caught the fancy of aviation buffs of the day, among them an airplane-crazy Pennsylvania boy named Chalmers Goodlin, who built a model of a Burnelli when he was 10 years old.

But the big contract remained elusive. Until his death in 1964 Burnelli continued to sketch designs for aircraft ranging from commercial jet transports to suborbital space planes, all employing his lifting-fuselage concept. The last Burnelli aircraft to fly was the CBY-3 Loadmaster, a squat, bulky twin-engine cargo transport that first took wing in 1947. The only surviving Burnelli, it now sits, forlorn and partially disassembled, in the grass out behind the New England Air Museum in Windsor Locks, Connecticut.

When Slick Goodlin met Vincent Burnelli in 1949, Goodlin too was feeling the sting of rejection by the aviation establishment. Two years earlier, Goodlin, then a dashing 24-year-old test pilot for Bell Aircraft, had made the first powered flights of the Bell X-1, the bright orange rocket plane that would later break the sound barrier and make a national hero out of Air Force pilot Chuck Yeager. Goodlin took the X-1 to the brink of Mach 1, but it was Yeager who stepped in for the epochal supersonic ride.

According to Yeager's autobiography, and the book *The Right Stuff*, Goodlin lost his shot as soon as he insisted on a \$150,000 bonus to fly the X-1 past the sound barrier. When the Air Force balked, Yeager took over for \$283 a month, his regular service pay.

"That account is false," says Goodlin vehemently, the bitterness still evident. "I had a handshake deal with Bob Stanley of Bell that I would make the first supersonic flight before we turned the plane over to the Air Force. He agreed I'd get \$150,000 for the supersonic flights. But the Air Force wanted a man in uniform to break the sound barrier—better PR. And to make Yeager look like a hero, they made up the story about me refusing to fly."

In 1949, Goodlin, who had left Bell to start a used-airliner business, was introduced to Burnelli by a mutual friend. The two hit it off immediately. Empathizing with Burnelli's role as the frustrated outsider, Goodlin grew interested in the lifting-fuselage concept, test-flew the CBY-3, and got hooked. "It was the best-flying airplane of the 10 different types I've flown," he rhapsodizes. "It stalled beautifully. You could cut an engine, pull the stick back in your lap, and it would shudder a little and recover by itself. Try that in a C-46 and you're in big trouble."

Goodlin became a stockholder in the Burnelli Company in 1950 and president in 1960. "That about finished me as far as the establishment was concerned," he says with resignation. For, as Goodlin sees it, it has been the aviation establishment that has worked to suppress Burnelli's accomplishments.

Burnelli was dogged by bad luck. One prototype crashed when the ground crew forgot to put in the aileron hinge bolts; another crashed when the ailerons were hooked up incorrectly to their controls. A major backer went broke and a government loan was called in at just the wrong time. Sales prospects for the postwar CBY-3 plummeted when the market was flooded with surplus DC-3s at \$5,000 apiece.

Burnelli was clearly a talented designer, but he sometimes undermined his own cause. Zealously guarding his lifting-fuselage concept, he patented every detail and always seemed to be involved in patent fights, making him appear a secretive, paranoid outsider to some. Around 1930 the U.S. government tried to buy the rights to Burnelli's patents so that other manufacturers could build Burnelli-style airplanes. Burnelli refused. On the advice of his patent attorney, he also stayed out of the Aviation Manufacturers Association, which had its own cross-licensing and patent-pooling system. At one point Burnelli had a chance to merge with Consolidated, a big establishment manufacturer, but he backed off.

His dealings with the military were also fruitless. Despite repeated rejections, Burnelli constantly bombarded the Army with design proposals that it called "unsubstantiated" and "based on faulty or misleading data." A 1948 Army chronology of its duels with Burnelli runs 30 pages.

Goodlin describes Burnelli as "too nice a man for the cut-throat aviation business." Short, shy, mild-mannered, Burnelli was far more comfortable at his drafting board than in the offices of Wall Street financiers or Army generals. "Like so many inventors and technical geniuses, he was not a commercial man," says Goodlin. "He was an innocent. He didn't appreciate how dishonest big businesses could be."

\*\*\*\*\*

Now, here is where the story gets interesting. I have found this information in three different places ,and of course it may have been copied from the same source, so you decide if politics was at play or it is simply another conspiracy theory.

\*\*\*\*\*

As Goodlin tells it, an event in 1940 perfectly sums up Burnelli's lifelong bad luck and frustration. His A-1 fighter-bomber design, after gaining the support of General Hap Arnold, won an Army Air Corps competition over Boeing, Douglas, and Lockheed designs. An elated Burnelli, the story goes, was invited to the White House to watch President Franklin Roosevelt sign the production contract. While an aide served champagne in the Oval Office, Roosevelt, pen in hand, casually asked Burnelli who his backer was. When he told the President it was Arthur Pew, the Sun Oil magnate, Roosevelt exploded with anger, threw the pen across the room, and ordered Burnelli out. Pew, it seems, had been a big supporter of Wendell Willkie, Roosevelt's Republican opponent that year. Burnelli never got the contract.

Shortly thereafter, an Army review board issued a report that denigrated the Burnelli lifting-fuselage concept and stated that no Burnelli design proposal "would ever again be considered by the Air Corps." Burnelli continued to submit designs anyway, and finally, in 1948, the Air Force tested the CBY-3 at Wright Field. It concluded that the Burnelli was comparable to the Douglas C-47 in handling and performance, but obsolete compared with newer designs then under development. Burnelli, frustrated after so many years of rejection, never built another airplane.



**1939 - Burnelli A-1 Bomber.**

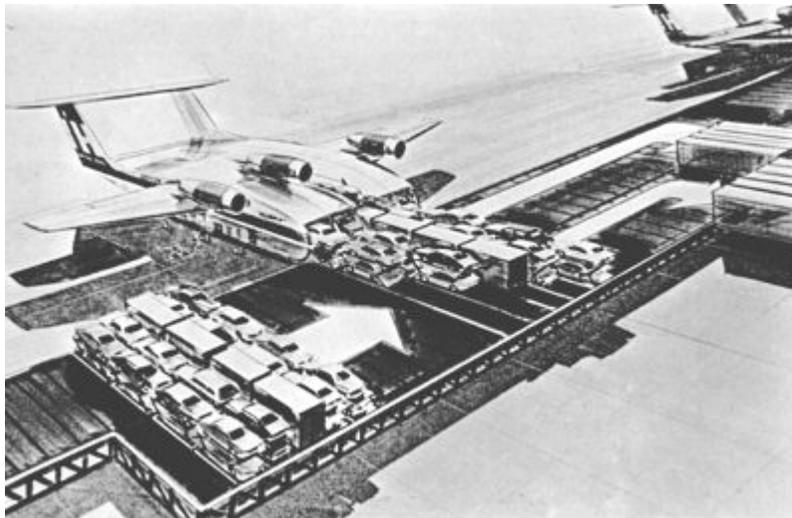
Since Burnelli's death, Goodlin has carried on the crusade alone—39 years of evangelistic fervor that have brought him little but rejection and scorn. It cost him his first wife. "She told me, 'You love that airplane more than you love me.' I told her, 'You're right, baby.'" He subsequently married his secretary, who, after years of typing acid letters to Burnelli's foes, presumably knew what she was getting into.

Goodlin targets Boeing as the kingpin in the anti-Burnelli conspiracy. In 1963 he ran into a Boeing marketing executive in Florida and pitched the Burnelli concept. The executive went home enthusiastic, says Goodlin, and promised to talk to his superiors. But he called back and said Boeing wasn't interested after all. Twelve year later, Goodlin says he got a phone call from the president of Royal Jordanian Airlines. "'Hey, Slick,' he told me, 'I'm here in Seattle looking at a

mockup of a Boeing Burnelli. They're telling me it's the airplane of the future, and they're trying to sell me a fleet of 'em.'”

The mockup turned out to be the model 754 Husky, a freight hauler Boeing developed for a company headed by Ed Cole, former president of General Motors. The Husky did indeed have a Burnelli-style airfoil-shaped fuselage. (In fact, the Boeing patent filing on the 754 cites Burnelli's earlier patents.) A spec sheet on the 754 surreptitiously mailed to Goodlin by a Boeing engineer showed that, using the same engines as the 767, the 754 had double the 767's payload.

\*\*\*\*\*



The Annual Report of the cargo airline Cargolux for 1975 showed on its front cover an artist's concept of the Boeing 754 front loading cargo through cavernous cargo doors. Cargolux intended to be a launch customer for the aircraft, but like many other aerospace technology innovations the Boeing 754 was abandoned in favor of the inferior conventional approach as we are still seeing with the A380 and 787 today.

[Source Document](#)

\*\*\*\*\*

Goodlin promptly fired off a letter to Boeing asking about royalties; Boeing attorneys sent back a series of increasingly testy letters. The 754 project was eventually shelved—according to Goodlin,

to save Boeing the embarrassment of admitting the superiority of the Burnelli concept and to avoid paying him royalties. In a gesture of conciliation, Goodlin offered to drop the matter if Boeing would (a) take out a full-page ad in *Business Week* apologizing to him for stealing the Burnelli concept for the 754 design, and (b) donate \$50 million to an air safety organization designated by Goodlin.

Boeing opted not to comment for this article. “We’re a little skittish on the whole subject of Burnelli,” a Boeing spokesman said.

Goodlin describes evasive treatment by other aerospace companies. He cites as an example a Northrop engineer who wanted to submit a Burnelli design for a Naval design competition. Management killed the deal, transferred the engineer, and told him never to talk to Goodlin again. Goodlin says Northrop was edgy because the Stealth bomber has Burnelli characteristics.

A Northrop source confirms the outline of Goodlin’s tale but says, “Slick didn’t just shoot himself in the foot, he shot his whole foot off. Things were going just fine until he wrote an aggressive legalistic letter to Tom Jones, the chairman. The whole thing blew apart when it hit top management. Slick shoots from the hip, and that prevents him from being taken seriously.”

“The whole aerospace industry is interconnected, and they’ll do anything to stop us,” says Goodlin. “We have enough evidence for a criminal conspiracy.” (He sued the Department of Defense in 1984 but has since withdrawn the suit.) “Things haven’t changed since the 1920s. They’re still a bunch of rotten bastards.”

Since there are no Burnelli airplanes in flying condition, it’s difficult to evaluate Goodlin’s claims of superior performance. According to contemporary editions of Jane’s *All the World’s Aircraft*, performance of the early Burnelli CB-16 and UB-14 was comparable to similar aircraft of the day. The most modern Burnelli, the CBY-3, though close in power and payload to the Douglas Super DC-3, was a good 40 mph slower.

On the other hand, Goodlin points out with glee that Boeing’s own spec sheet shows that the 754 Husky would have had greater payload capacity than the 767. But the Husky had 31 percent more wing area and a higher aspect ratio—the ratio of span to average chord, a measure of the “skinniness” of the wing—than the 767, two factors that, entirely aside from its Burnelli-style fuselage, would give it a big weight-lifting advantage. Moreover, the Husky would have cruised at just Mach 0.74, compared with the 767’s Mach 0.80.

According to standard aerodynamic theory, the “extra lift” provided by a Burnelli fuselage is, under most conditions, beside the point. A Boeing 767 cruising at 41,000 feet doesn’t need extra lift from the fuselage. Its wing easily provides all the lift necessary to balance its weight. (In engineering terms, the aircraft cruises at well below the wing’s maximum lift coefficient.) The designer’s task is to get that lift with the least drag. It happens that a high-aspect-ratio wing (long and skinny) has inherently less induced drag than a low-aspect-ratio lifting surface (short and fat, like a Burnelli fuselage). In cruising flight, the less the fuselage lifts, the lower the induced drag.

Conventional wisdom also dictates that a Burnelli jetliner would suffer drag penalties because of its larger frontal area, larger wetted area (the area over which air flows), and the discontinuity between the lifting fuselage and the wings. NASA aerodynamicist Jerry Hefner comments: “I would think the induced drag would be horrendous. And your skin friction drag is going to go up because of the larger wetted area.” An engineer from a major aerospace firm who asked to remain anonymous (to avoid angry letters from Goodlin) estimates the drag penalty of a Burnelli-style jet transport at about 20 percent more than that of an airplane like a 767. That may be a reasonable compromise for a bulky cargo carrier like the Husky, but not for a passenger jet.

Slick Goodlin, of course, has never let conventional wisdom get in his way. “Boeing and Douglas and all the rest of them are simply wrong,” he declares flatly. “The aerodynamics textbooks have been misinterpreted for 50 years.”

Goodlin and established aeronautical theory do agree on one thing, however: the extra lift of a broad, flat, airfoil-shaped fuselage can theoretically reduce landing speed. Goodlin correctly cites the takeoff and landing speeds of current jetliners—typically 140 to 180 mph—as potentially dangerous. All of Burnelli’s airplanes, by contrast, had low landing speeds.

But an airplane’s landing speed is essentially a market decision, one of the tradeoffs in aircraft design. If Boeing had wanted the 747 to take off at 100 mph in 3,000 feet, it could have simply enlarged the wing and limited the weight. But since the major cities of the world all have 10,000-foot runways and since there is no great public clamor for slower, safer landing speeds, Boeing saw no reason to pay the speed, payload, and cost penalties of a short-takeoff-and-landing 747, Burnelli or otherwise.

Goodlin may not win many converts to his aerodynamic theories, but he’s on much firmer ground when he criticizes the modern jetliner’s crashworthiness. Goodlin says the Burnelli’s rigid box-like fuselage would protect passengers in a crash, pointing proudly to the 1935 crash of the UB-14. The airplane hit the ground, wingtip down, at 130 mph and cartwheeled. Engines, wings, and tail were ripped off, but the boxy fuselage remained intact and the crew walked away. One vocal Burnelli proponent, Edmund J. Cantilli, professor of transportation planning and engineering at the Polytechnic Institute of New York, has decried the poor crashworthiness of the modern jetliner and proposed a Burnelli-style craft in its stead.

In 1986 Goodlin enlisted the aid of Florida senator Lawton Chiles, who persuaded the Air Force to invite Goodlin to Wright Field for a speech about the Burnelli concept. Goodlin promptly demanded that the engineering vice presidents of Boeing, Douglas, Northrop, and Lockheed be in the audience. These are the people who need to hear his message, he says. “They care nothing for principle, ethics, or integrity. They care nothing for the number of people unnecessarily killed. They will even jockey us into war if it means preserving their power and greed.”

And so Goodlin continues to wage his holy war on all fronts. Like most holy warriors, he seems to savor the call to battle more than the promise of victory. “I hate to say this about Slick,” says one Burnelli supporter, shaking his head, “but darn it, I wish he’d simmer down a little. He’d accomplish a lot more.”

Jerry Hefner comments: “I would think the induced drag would be horrendous. And your skin friction drag is going to go up because of the larger wetted area.” An engineer from a major aerospace firm who asked to remain anonymous (to avoid angry letters from Goodlin) estimates the drag penalty of a Burnelli-style jet transport at about 20 percent more than that of an airplane like a 767. That may be a reasonable compromise for a bulky cargo carrier like the Husky, but not for a passenger jet.

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#### [Source Document](#)

Interesting to say the least. I do know that Bell did turn over the X-1 project to the Air Force and it was actually Bob Hoover who had been selected to make the history making flight: however, for an unknown reason he was replaced by Yeager and Bob Hoover acted as his second.

I have one more point to share – take a look at the document below:

DESIGN

ABSTRACT

Thomas J. Burnelli, 18101 Spring Valley, 194, Edward G. Burnelli,  
inventors; Edward G. Burnelli, 18101 Spring Valley, 194, assignors

Filed Feb. 27, 1962, Ser. No. 75,891

Form of design 19 pages

Cl. 297-1-12

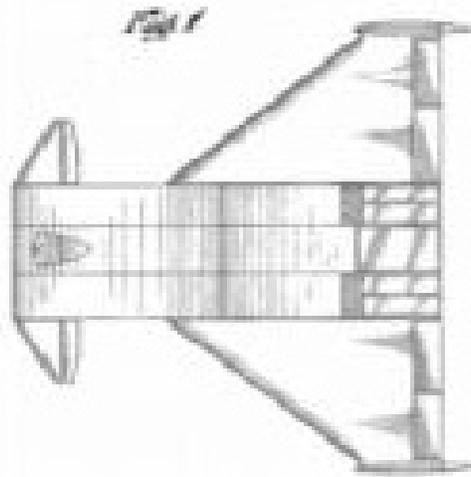


Fig. 2

The Burnelli GB888 - 1962

Now, take a look at the photo below:



### **The NASA X43B – Is this a copy of the Burnelli design?**

Have a good weekend, enjoy time with family and friends, and remain true to your profession. Those who will follow in your footsteps are depending on *you* to show them the right way.

Robert Novell

July 17, 2015

P.S. Slick Goodlin died in 2005, click [HERE](#) for an LA Times article that paid tribute to his life, and the reader whose email prompted me to repeat the article has a web site that may interest you and that can be found here - <http://www.burnelliaircraft.com/wp/blog>

## **Robert Novells' Third Dimension Blog**

**August 7, 2015**

Good Morning,

Welcome to the 3DB and Happy Friday. Today I want to talk about how American Airlines cracked Pan Am's monopoly on the North Atlantic routes in to Europe back in the 1950s. As we have discussed previously, Pan Am was the chosen instrument by the US on all international routes; however, there was another player that did that manage to crack the code and it was this

player that allowed AA to enter the European market. So, who was the player that I speak of - American Export Airlines is the company and below is a brief overview of that company.

## American Export Airlines

American Export Airlines (AEA) was established in 1937 by the shipping company, American Export Lines, with the goal of establishing a North Atlantic flying boat route. Dr. Edward P. Warner (1894-1958), an American aviation pioneer and one of the leading figures in world air transport systems, was engaged by AEA to prepare reports on possible North Atlantic routes.

Warner produced reports in 1937 and 1938 but AEA was not able to start their New York - Ireland flying boat service until June of 1942, due in part to stiff resistance from Pan American. In 1945 AEA was awarded transatlantic rights covering northern Europe, and the airline cut its strings with the shipping company.

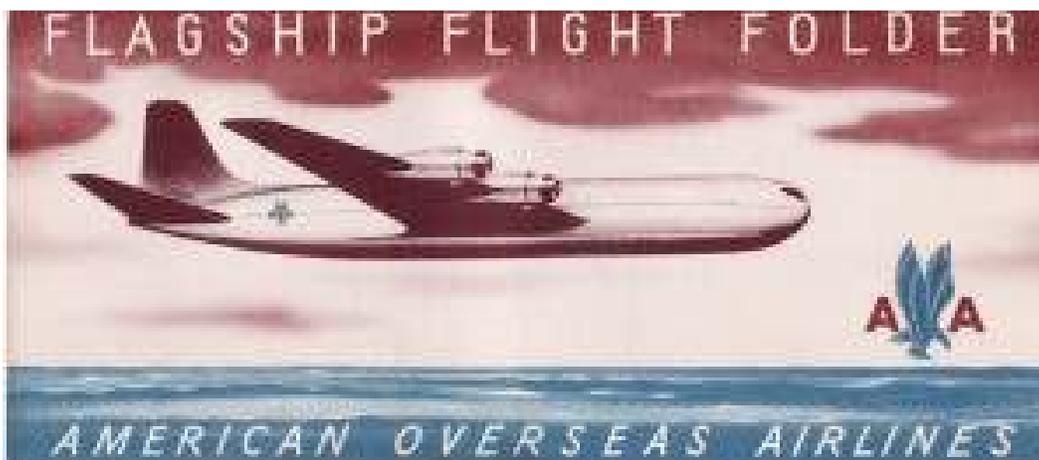
In November 1948, AEA merged with American Airlines to become American Overseas Airlines (AOA) and Pan American purchased AOA from American in 1950 and merged their aircraft, and routes, in to their system. American wouldn't serve Europe again for over 30 years, until it launched DFW-London Gatwick services in 1982.

### [Source Document](#)

Enjoy the photos/ads below and.....have a good weekend, enjoy time with family and friends, and protect yourself/your profession.

Robert Novell

August 7, 2015



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# Robert Novells' Third Dimension Blog

September 11, 2015

Good Morning,

Welcome to the 3DB and this week I want to talk about the *Aviation Game of Chess* again and give everyone a little more perspective on how Howard Hughes won, and lost, the game. Howard Hughes is the man we want to talk about but I also want to introduce you to the man behind the man..... Jack Frye.

## Jack Frye, Howard Hughes, and TWA

Jack Frye was a founder of the Aero Corporation of California, which became Standard Airlines in 1927, a major airmail transporter. Standard was consolidated with Western Air Express to form Transcontinental & Western Air (TWA) in 1930. Frye became president of TWA after his famous letter to aircraft manufacturers calling for the development of a safer, more efficient aircraft. Donald Douglas, as we all know, responded with the DC-1, DC-2, and other DC models which gave TWA an advantage over their competitors.

Under Frye's leadership, TWA was known as a "pilot's airline". He took the lead in exploring high-speed, high-altitude, all weather flying. This research led to the development of the Boeing 307 "Stratoliner", the first fully pressurized passenger aircraft.

Negotiations went quickly, and smoothly, with Boeing and on Jan. 29, 1937, TWA ordered five Boeing 307 Stratoliners, with delivery of the first set for Dec. 22, 1938. However, between the time T&WA placed the Stratoliner order and Boeing's promised delivery date, Frye's vision clashed with the practicality of TWA's major stockholder, John Hertz (yellow cab and rental car mogul), who believed the price of the new airplane, which Frye saw as TWA's future, was too much for the financially strapped airline. The dispute caused problems with the delivery, and the order was cancelled.

Frye then turned to Howard Hughes, who, sensing a major opportunity, surprised onlookers and bought enough shares to gain control of the company. The Stratoliner contract was resurrected in September 1939, and delivery of the pressurized, all-weather airliner was made on May 6, 1940, with the inaugural flight following on July 8, 1940.

Once the Stratoliner situation with Boeing had been settled, Howard Hughes's vision turned toward more-advanced, larger, and faster airplanes, talking with Frye about future equipment even before the first Stratoliner was delivered. The new airplane would be big—carrying 50 passengers and 6,000 pounds of cargo, it would be fast with over-weather capabilities, it would be luxurious, and it would fly across the continent nonstop. But most importantly, all talk and plans pertaining to it would be highly secret.

Many meetings with Lockheed contacts resulted in an order for 40 Constellations at a cost of \$425,000 each to be bought by the Hughes Tool Company, as would be all future aircraft purchases. Announcement of the Constellation program, which had managed to stay a tightly held secret, just a few months before Pearl Harbor caused a sensation within the aviation industry. But TWA was not to immediately reap the rewards of its marvel; war needs prevailed. All Constellations that came off the assembly line were designated C-69s and went into military service.

However, the airline did accept the first Constellation, dressed in TWA livery, and after its acceptance flight, turned it over to the military. The acceptance flight—Burbank to Washington, D.C.—was a record-maker. On April 17, 1944, Hughes and Frye flew the cross-country trip in 6 hours 58 minutes. Although the Constellation was to have given T&WA a healthy 3-year lead over its competitors in operating the highly sophisticated transport, the war eliminated that possibility. Owing to the "Connie's" transport configuration, the government gave production preference to combat aircraft, so that Lockheed manufactured only half of TWA's original order for 40. Hughes had contracted to retain buy-back rights from the government, so at the war's end, a sizable fleet returned to T&WA.

On July 5, 1945, TWA gained temporary authority to serve Paris, Rome, Athens, and Cairo, finally placing the Constellation into commercial service on Feb. 5, 1946, when it made the first commercial flight from Washington, D.C., to Paris, via La Guardia. Capt. Hal Blackburn commanded the crew of co-captains Jack Hermann and John Calder, flight engineer Art Ruhanen, plus a navigator, a radio officer, and two cabin attendants. On February 15, the inaugural Los Angeles-to-New York flight became reality.

Several events hurt TWA's operations and precipitated a drop in TWA stock price from \$71 a share to \$9, along with a loss of \$4 million in 1946. The 18 Constellations on order were cancelled. The TWA Board of Directors voted Jack Frye, ever the visionary, out of office. Although the company was experiencing equipment, financial, and labor problems, Frye wanted to buy more Constellations; Hughes and the Board did not. In early 1947, Douglas introduced the DC-6, which proved to be serious competition to the "Connie" fleet. But the next year, TWA placed a new-model Constellation, the L-749, into service.

For 25 years, the elegant, streamlined Connie, with its distinctive triple tail and long fuselage, dominated TWA skies. The airplane underwent much modification, culminating in what has been referred to as the "most luxurious piston aircraft," the L-1649A. The last TWA Constellation flight, Flight 249, took off from Kennedy Airport at 3:15 p.m. on April 6, 1967. The crew of Capt. Joseph Duncan, First Officer Richard Green, and flight engineer George Martin closed a chapter of TWA aircraft history as TWA prepared for the commercial jet transport.



Now, we know how it was really Jack Frye who guided Hughes and made TWA a great airline let's talk about how Hughes, after Frye's departure, made the worst possible chess move possible.



Just as the Douglas series of transports, the Boeing Stratoliner, and the Lockheed Super Constellation had played such vital roles in TWA's development during the piston-engine era, the jet-engined Boeing 707, 727, and 747, along with the L-1011 and the DC9/MD 80, would become the airline's vital equipment in years to come. During the 1950s, 1960s, and through the early

1970s, TWA further developed its first-class character for which it will long be remembered. The carrier would acquire airlines and international routes that spanned the globe, its pilots would set many aviation records, and its safety record would be second to none.

But all that was not entirely evident from the Boeing order pad for the first American commercial jet transport, the Boeing 707, which showed 186 aircraft ordered by the nation's airlines, except for TWA, whose order tallied "0." This was not for lack of interest. Howard Hughes continued to dominate TWA and its planning and equipment procurement. He was working with Convair to develop a jet larger and faster than the B-707; the deal collapsed at about the same time that his company, Hughes Tool, which bought all of TWA's airplanes, suffered a serious cash flow problem that was not publicly evident. Ironically, TWA was earning good profits.

Hughes's resistance to ordering the B-707 wilted; and on March 2, 1956, he allowed an order for eight "domestic" B-707s to be placed; his executives were aghast at the meager number and aircraft type. Ultimately, the order was increased to a total of 33 as of Jan. 10, 1957. On March 20, 1959, TWA inaugurated jet transcontinental service from San Francisco to New York with its single Boeing 707, almost 2 months after American's B-707 coast-to-coast flight on Jan. 25, 1959. The first TWA B-707 flight over the Atlantic was on Nov. 23, 1959. In that year, TWA experienced its best financial year to date.

The Convair 880 was brought on line in 1960 to supplement the long-range B-707. The CV-880 was faster than either the B-707 or its competitor, the DC-8, and helped TWA pilots set many city-pair speed records. The jets' voracious thirst for fuel, however, caused TWA to sell them in the early 1970s.

In the meantime, Howard Hughes's financial problems with Hughes Tool had deteriorated to the point that on Dec. 29, 1960, his financial backers placed his TWA stock (78 percent of all company stock) into a 10-year voting trust, repossessed all the aircraft, and ousted Hughes from control of the airline. By 1965, TWA's value had zoomed up, and its stock was again in the range of \$97 per share. The airline had revenues exceeding \$500 million and a profit of \$50 million, and paid its first dividend to stockholders in 30 years. Hughes sold his holdings for \$550 million and cut his last ties with the airline.

#### [Source Document](#)

The source document above is one of the primary documents used but there were others. Take some time to look around the web and discover a few more facts for yourself; however, before I wrap it up my story on Jack Frye, and Howard Hughes, I want to share an interesting fact about Jack Frye that is not known by many.

In 1934 President Roosevelt ordered all air mail contracts to be canceled because of airline inefficiency and, in a defiant gesture, Frye flew from Los Angeles, in the new DC-1, to Newark Airport in a record transcontinental time of 13 hours, 4 minutes. Because of this flight, mail contracts were awarded back to the airlines.

Now we know the rest of the story.....

Have a good weekend, enjoy time away from airplanes, or your office, and remember to keep family and friends close.

Robert Novell

September 11, 2015

## **Robert Novells' Third Dimension Blog**

**October 2, 2015**

Good Morning,

Today I want to talk about the man whose contribution to the success of Pan American Airways is not well known or talked about. While this Russian Immigrant's name is forever linked to helicopters he was in fact a very skilled, and versatile, aviation designer whose 50-year career included pioneering work on fixed wing aircraft, and flying boats, before focusing on his first love - the helicopter. The Russian immigrant I speak of is of course Igor Sikorsky and before we move ahead with the main article I have an interesting story to pass on about his departure from the USSR.

After studying engineering in Paris, and St. Petersburg, Sikorsky finished his studies at the Mechanical Engineering College of the Polytechnic Institute in Kiev. For the next decade he worked on fixed-wing planes in Russia and became known internationally when he designed and flew the first four-engine passenger airplane that was later converted for use as a World War I bomber; however, the Russian Revolution changed Sikorsky's life when he learned he might be on Stalin's "Hit List."

Sikorsky immigrated to the U.S. in 1919, where, unable to find work in aviation, he taught Russian immigrants math and other sciences. Within a few years, however, he had made connections with people who shared his interest in aviation and they persuaded him to start his own company. Opening the Sikorsky Aero Engineering Corp. on a friend's chicken farm on Long Island, he began working on the S-29A, a twin-engine closed cabin aircraft. It wasn't long before the company was facing financial difficulties, but a surprise visit by fellow countryman, composer [Sergei Rachmaninoff](#), impressed by Sikorsky's commitment, invested \$5,000 in the business, about 100K in today's dollars, and the rest of this story is history we all know; however, if the rest of the facts are a little fuzzy I think the main article will get things in to focus.

Enjoy.....



Today, Sikorsky's name is synonymous with the successful development of three important types of modern aircraft: the large four-engine airplane, the giant flying boat, and the unique and versatile helicopter, each of which has played a vital role in the development of aviation.

This pioneer of the air was born in Kiev, Russia (now Ukraine), in the late 1880s. One of his earliest recollections is of his mother telling him of Leonardo da Vinci's attempts to design a flying machine. From that moment on the dream of flight captured his imagination, even though he constantly heard that flying had been proven impossible. Sikorsky firmly stuck to his belief, however, that the flying machine would become a reality. He tried, time and time again, to build a successful flying model from tissue paper and bamboo. Finally, at the age of about 12, Sikorsky made a model of a crude helicopter, powered by rubber bands, that rose into the air. Now he knew that his theory was not just a youthful dream.

Years later, while vacationing in Germany with his father, he learned about the flights of Count von Zeppelin's early dirigibles. He also read of the successful heavier-than-air flights of the Wright Brothers and was stunned that the newspaper reported such a great achievement in small type on its back page. At that moment, Sikorsky decided to make aviation his life's work. His special goal was to develop a craft that could hover over one spot or fly in any desired direction; a helicopter.

He began his experiments immediately, in the small hotel room in Germany where he was staying, by building a crude rotor and then measuring its lifting forces. When he returned to Kiev, he dropped out of the Polytechnic Institute and embarked upon extensive research in the embryo science. He was not quite twenty years old, with plenty of enthusiasm and ideas, but no practical experience and little money. Before long, he went to Paris to buy an engine and other parts for his helicopter. There, at the local flying field, the smell of burning castor oil and the sight of the crude, early planes attempting to fly left an indelible mark upon him. Soon he enrolled in a newly established, highly informal French school of aeronautics, though never once did the eager student have an opportunity to go aloft. While purchasing a three-cylinder Anzani engine, he met Louis Bleriot, who was also buying an engine for his new monoplane. A few weeks later, the daring

Bleriot made aviation history by making the first flight across the English Channel, an epic event that had profound influence on the development of aviation.

By mid-1909 Sikorsky had completed his first helicopter. But no matter how violently its twin, counter-rotating rotors thrashed through the air, the craft never showed the slightest inclination to budge from the ground. Sikorsky finally built a crude biplane and coaxed it a few feet into the air in June 1909. For twelve precious seconds, he had tasted success. In the months that followed, Sikorsky produced more prototypes, made more short flights, and an almost equal number of crashes, expected incidents in these early days. But he quickly used each wreck's salvageable parts and rebuilt the wreck into the next improved model. He wasn't discouraged by his first failure, for he had learned a great deal about helicopters and was sure that the next one, or the next one, or the one after that, would certainly fly. Early in the spring of 1910, Sikorsky's second helicopter proved to be equally obstinate in lifting him. Sikorsky's persistence had been admirable, but slowly he came to the sad conclusion that perhaps he was ahead of his time and should tackle a more conventional airplane instead. In the many years of his aeronautical career that followed Sikorsky never forgot his dream of building a truly successful helicopter. He soon earned his pilot's certificate from the Imperial Aero Club of Russia and demonstrated his S-5 plane in the Russian Army maneuvers near Kiev. There Sikorsky met the Russian Tsar, Nicholas II. Sikorsky's next plane, the S-6A received the highest possible award at the Moscow aircraft show. But a seemingly minor incident in which a tiny mosquito clogged a fuel line and caused Sikorsky to make a forced landing proved to be fateful. That incident led Sikorsky to the idea of using several engines to increase his airplane's reliability, a most unorthodox and radical concept for the times. Sikorsky proceeded to build a gigantic, four-engine, cabin type biplane of outlandish size for the times. It soon earned the nickname of the Grand. At the front the plane had a large open balcony. Behind the enclosed pilot's cabin was a roomy passenger compartment.

In May 1913 he made the first test flight in the Grand. This flight was a moment of great personal satisfaction, as many had told Sikorsky that such a huge airplane couldn't fly. His faith in his ideas and his determination to stick to his convictions paid off. Tsar Nicholas II came to inspect the Grand and presented Sikorsky with an engraved gold watch for developing aviation's first four-engine plane. Enthusiastically, Sikorsky built an even larger four-engine airplane, the Ilya Mourometz. It had an open bridge atop the fuselage where brave passengers could stand and enjoy the scenery passing by below. The big craft created a sensation in military circles and Russian Navy representatives came to Petrograd to see one equipped with pontoons.

With the assassination of the Archduke Franz Ferdinand of Austria, Russia was soon engulfed in World War I. Sikorsky's Ilya Mourometz was converted into a bomber that became the backbone of the Russian aerial offensive against the Germans. Altogether, the planes participated in over 400 raids and only one took damage from anti-aircraft fire. When the Bolshevik Revolution swept Russia in 1917, Sikorsky decided to leave his native land. Leaving behind all of his personal possessions, he fled to Paris in the summer of 1918, where he began to design a large bomber for the United States Army Air Service. But the Armistice ending World War I put a stop to his work. A few months later, Sikorsky culminated a life's dream when he immigrated to America. He had no friends in the United States and only \$600 in his pocket. But he had been inspired to come because he believed that in the United States a man with ideas of value had a chance to succeed.

For a brief while, he worked a temporary job at McCook Field at Dayton, Ohio, helping to design a super-bomber. But the conventional wisdom at the time was that aviation was a dying industry, and Sikorsky returned to New York, out of a job. Unable to find a job in aviation, Sikorsky turned to lecturing Russian immigrants in mathematics and astronomy. Meanwhile, he visited the local flying fields and wistfully watched the planes of others fly. He began to include aviation in his lectures and secured several pledges of financial backing to re-enter aviation. Encouraged, Sikorsky designed a twin-engine commercial airplane capable of carrying 12 to 15 passengers, the forerunner of the modern airliner. As Sikorsky raised more cash, construction began in a barn on a chicken farm on Long Island. But there was never enough money for all new parts and he used many salvageable parts from local junkyards. The engines were second-hand and from World War I. Finally, the great Russian composer, Sergei Rachmaninoff, came to the rescue with a \$5,000 subscription. When the new plane was ready for its initial test flight, eight of his employees crowded aboard. Sikorsky knew that it is a mistake, but didn't have the heart to put them off. After a slow takeoff, the engines lost power and he made a forced landing, severely damaging the plane. This appeared to be the end for his company. Sikorsky had learned years before not to become easily discouraged and in a few months he had rebuilt the plane into the S-29-A. The "A" in its name stood for "America." The S-29-A soon proved to be a remarkably good airplane and a financial success. Finally, the colorful Roscoe Turner bought the plane for charter flight and airline use. Later he even converted it into a flying cigar store.

In 1926, the entire aviation world was excited by the \$25,000 prize that had been offered to the first person to fly non-stop between New York and Paris. Sikorsky was asked to build a large trimotor-biplane for the French war hero, Rene Fonk, who planned to capture the prize. The crew rushed through some of the final preparations before they had completed all of the tests on the plane. During the takeoff run, the overloaded plane ran down an embankment. Within seconds, it became a roaring inferno. Fonk miraculously escaped, but two of his crew members died. Almost immediately, the plucky Frenchman ordered another plane built for a second attempt to capture the prize. But before it was completed, an unknown, Charles Lindbergh, finished his epic solo flight across the Atlantic and captured the prize and the admiration of millions of people.

Once again Sikorsky's company was struggling for its very life. At this point he decided to build a twin-engine amphibian. It proved to be a very practical and serviceable craft and he built a fleet of them. Almost immediately, Pan American Airways used the planes to pioneer its new air routes to Central and South America. Soon Sikorsky had more business than he could handle! He reorganized his company and constructed a new plant at Stratford, Connecticut. This plant became a subsidiary of the United Aircraft Corporation a year later. Before long, Sikorsky was invited to build a very large sea-going air transport plane for Pan Am to pioneer in the transoceanic field. His majestic American Clipper would go on to become the second of the new type of aircraft that Sikorsky contributed to aviation. It was nearly twice as large as other planes of the day and after Mrs. Herbert Hoover christened it, Charles Lindbergh captained its maiden flight from Miami, Florida to the Panama Canal in late 1931.



(For a complete profile on the S-42, and Pan Am, click on the photo above)

This great flying boat became the forerunner of a whole series of “Clipper” ships that established American air routes across all of the oceans. Among the foremost of these was the S-42, completed in 1934. With its great range and speed, Lindbergh was able to set eight world’s speed, distance and payload records in a single day! Soon afterwards, Pan Am used the flying boat to inaugurate air travel between the United States and Argentina. Six months later, another Clipper took off from Alameda, California and opened the airline route to Hawaii. This was followed by other flight routes extending eventually across the Pacific to New Zealand. In 1937 another Clipper made the first regular airline crossing of the North Atlantic. Now Sikorsky’s great transoceanic planes are successfully engaged in commercial crossings of both major oceans.

Throughout all of these successful years, Sikorsky never forgot his dream of building a practical helicopter. He never thought of it as a flying machine but rather as a dream that he wanted more than anything else to see realized. In 1939 he finally realized his lifelong goal when he developed his first practical helicopter. But it represented such an entirely new and difficult problem that he had to devote himself completely to its solution. It was a challenge that had called for all of his intellect, energy, and love of flight. But this achievement had been his chance to live his life again at the threshold of a new challenge, to design a new craft without knowing how it should be done. The helicopter had been a personal goal for more than three decades when he began to design his new craft in the spring of 1939, using ideas that he had thought about for the past ten years. By September, it was ready for its first tests. It had one main lifting rotor and one small rotor at the end of its tubular fuselage to counteract the torque. It also had a unique system of changing the angle of the lifting rotor blades as they revolved. In the unbelievable short span of half a year Sikorsky solved one of aviation’s unsolvable problems.

As he added refinements, Sikorsky established the first helicopter endurance record of one hour, five minutes and 14 seconds in 1941. Two days later, he took the float-equipped craft off of both land and water. Now he achieved his third important contribution to aviation: a contribution born from a dream of a strange new craft, that was to write an unbelievable story of service to mankind and which would astonish the world with its ultimate maneuverability in the air. But more than all else, it was to be a monument that must be dedicated to a man who had an abiding faith in a great dream, and an ever greater faith in himself to achieve it.

[Source Document](#)

Have a good weekend, enjoy time with family and friends, and remember to check back next week when we will talk about.....

Robert Novell

October 2, 2015

## **Robert Novells' Third Dimension Blog November 13, 2015**

Good Morning and Happy Friday,

Today I want to revisit a subject that has been, and will always be, hotly contested by most aviation historians. The subject of course is the invention of the jet engine. Today's post covers both sides of the debate as well as I have a video that you will find interesting.

### **Hans von Ohain and Sir Frank Whittle**

Dr. Hans Von Ohain and Sir Frank Whittle are both recognized as being the co-inventors of the jet engine. Each worked separately and knew nothing of the others work. Hans Von Ohain is considered the designer of the first operational turbojet engine. Frank Whittle was the first to register a patent for the turbojet engine in 1930. Hans von Ohain was granted a patent for his turbojet engine in 1936. However, Hans Von Ohain's jet was the first to fly in 1939. Frank Whittle's jet first flew in in 1941.

#### **Sir Frank Whittle**

English aviation engineer and pilot, the son of a mechanic, Frank Whittle joined the Royal Air Force or RAF as an apprentice. He joined an RAF fighter squadron in 1928 and became a test pilot in 1931. The young RAF officer was only 22 when he first thought to use a gas turbine engine to power an airplane. While often regarded as the father of modern jet propulsion systems, the young Frank Whittle tried without success to obtain official support for study and development of his

ideas. He had to pursue his research on his own initiative and received his first patent on turbojet propulsion in January 1930.

With private financial support, he began construction of his first engine in 1935. This engine, which had a single-stage centrifugal compressor coupled to a single-stage turbine, was successfully bench tested in April 1937; it was only a laboratory test rig, never intended for use in an aircraft, but it did demonstrate the feasibility of the turbojet concept. The modern turbojet engine used in many British and American aircraft is based on the prototype that Frank Whittle invented.

The firm of Power Jets Ltd., with which Whittle was associated, received a contract for a Whittle engine, known as the W1, on July 7, 1939. This engine was intended to power a small experimental aircraft and, in February 1940, the Gloster Aircraft Company was chosen to develop the aircraft to be powered by the W1 engine - the Pioneer. The historic first flight of the Pioneer took place on May 15, 1941, with Flight Lieutenant P. E. G. Sayer as pilot.

### **Doctor Hans Von Ohain**

Hans Von Ohain obtained his doctorate in Physics at the University of Göttingen in Germany and then became the junior assistant to Hugo Von Pohl, director of the Physical Institute at the University. German aircraft builder, Ernst Heinkel asked the university for assistance in new airplane propulsion designs and Pohl recommended his star pupil. Hans Von Ohain, was investigating a new type of aircraft engine that did not require a propeller. Only twenty-two years old when he first conceived the idea of a continuous cycle combustion engine in 1933, Hans Von Ohain patented a jet propulsion engine design similar in concept to that of Sir Frank Whittle but different in internal arrangement in 1934.

Hans Von Ohain joined Ernst Heinkel in 1936 and continued with the development of his concepts of jet propulsion. A successful bench test of one of his engines was accomplished in September 1937. A small aircraft was designed and constructed by Ernst Heinkel to serve as a test bed for the new type of propulsion system - the Heinkel He178. The Heinkel He178 flew for the first time on August 27, 1939. The pilot on this historic first flight of a jet-powered airplane was Flight Captain Erich Warsitz.

### [Source Document](#)

Now that we know the basics of the debate at hand I think that which is even more important is how the US handled the transfer of technology. I have a video, produced in the 1950s, that details that story and I think you will find the specifics of how this was done to be very interesting and unique.

Have a good weekend, enjoy time away from work, and remember to keep friends and family close.

Robert Novell

November 13, 2015

# Robert Novells' Third Dimension Blog

December 18, 2015

Good Morning,

This will be the last blog of the year and today I want to recap a few items in aviation history that were not represented correctly as well as introduce you to the work of a gentleman who spent twelve years of his life getting the story right; however, before I proceed forward I want to give credit to the blog, where I found today's featured image. The blog is called "My View by Silvio Canto, Jr." and if you click [HERE](#) you will find a quick overview of who Paul Harvey was, Paul Harvey is the man depicted in the image above with bags in hand, as well as one of his video broadcasts that is well worth a listen.

Now, let's talk about my version of "The Rest Of The Story."

## Aeromarine Was First and Not Pan Am

There was a company that was making aviation history flying to Havana, Nassau, Bimini, and other locations long before Pan Am came to the forefront as the USA's preferred international carrier.

Who was that company?

The company is Aeromarine and they had a network of flying boats that operated from Miami, New York, Cleveland, and other locations. The company was created by a merger between Aeromarine Sightseeing and Navigation Company, a subsidiary of Aeromarine Plane and Motor Company, and Florida West Indies Airways who had just been awarded an airmail contract from the US Post Office for the Key West to Havana route. On November 1, 1920 the resulting company, Aeromarine West Indies Airways, began the first scheduled international passenger and air mail service in the United States.

Now I know that Pan Am has been awarded that distinction but let's take a look at what the archives at the Smithsonian say:

***“One year after Aeromarine terminated its service in 1924, aviation interest was revived when a Colombian delegation, en route to the United States to request operating authority, arrived in Havana and requested authority from the Cubans to operate in and out of their territory prior to proceeding to the US . This new air service was sponsored by the Colombian airline, SCADTA, which wished to start a trans-Caribbean air route in to Miami; however, the U.S. State Department would not grant permission. Nevertheless, the episode stimulated official U.S. interest in foreign air transport, especially for air mail, and this was to lead to the foundation of the U.S. “Chosen Instrument,” Pan American Airways.***

[Read More](#)

Now I find it interesting that Aeromarine's accomplishments remain obscured by Pan Am but there are more interesting facts to consider. Do you know who was at the controls of Pan Am's first flight? Captain Mucick who was an Aeromarine pilot. Do you know who the first Chief Pilot for Pan Am was? It was Captain Mucick. Do you know who made the first Clipper flight across the Pacific for Pan Am? You guessed it - it was Captain Mucick. For more information on Captain Mucick click [HERE](#).

## **The Wright Brothers and Charley**

When we think of the first powered flight we automatically think of Wilbur and Orville Wright; however, there was a third person involved whose skills were an essential part of the Wright's success. Charles "Charley" Taylor was that man and without his help the Wright Brothers may have lost their place in history.

Charley was born in Illinois in 1868 and at the age of twelve quit school to find his place in life. He quickly learned that his hands, and tools, were almost one in the same, and America's first aviation mechanic for powered flight started down a path in life that would have him working for the Wright brothers and building the first engine for the Wright Flyer.

Charley started to work for the Wright brothers on June 15, 1901, doing routine repairs on bicycles, so that the Wright brothers could pursue their experiments with gliders which included many trips to Kitty Hawk. After one of these trips, the brothers decided they needed more accurate information and decided they needed to build a small wind tunnel. With this, they would measure the amount, and direction, of air pressures on plane and curved surfaces operating at various angles and improve their theories based on their gliding experiences.

Building the wind tunnel was the first job that Charley Taylor did for the Wright brothers that had any connection with aeronautics. The wind tunnel was a rectangular box with a fan at one end driven by a natural gas engine. The Wright brothers did many experiments in their wind tunnel and from this data they began to make their 1902 glider with Charlie machining many of the parts.

[Read More](#)

## **Who Was First - The British Or The Russians**

Before the Space Race, before the fatal fire on Apollo 1 or the deaths of three cosmonauts returning to Earth aboard Soyuz 11, there was a Jet Race, whose tragedies and triumphs are now mostly forgotten. Begun in the last years of World War II, when the combatants struggled to get military jets into the skies, the competition continued into the 1950s, when the United States, the United Kingdom, and the Soviet Union were scrambling to field the first passenger jets.

The British were the first to build a passenger jetliner, the de Havilland D.H.106 Comet, which was tested in 1949 and started flying scheduled routes in 1952. But two years later, when two of the airliners broke up in mid-air within four months of each other, Prime Minister Winston Churchill ordered the fleet grounded. The Soviets can claim the first continuous commercial jet service, which they began with the TU-104 in 1956, two years ahead of the debut of the iconic Boeing 707 and the resumption of flights by the Comet. The TU-104 also had its share of disasters, but Tupolev and the Soviets managed to learn from them and keep flying.

[Read More](#)

Now, the articles above are just a few of the events in history that you need to look at more closely because as you can see things are not always the way they seem. To finish up, however, I want to talk about one more event in history that I find extremely interesting and I have wrote about on numerous occasions. My most recent article, ["Howard Hughes Played The Aviation Chess Game Brilliantly But Lost."](#) tells part of the story but there is a gentleman who I have become acquainted with recently who has the rest of the story on.....

## Jack Frye, Howard Hughes, and TWA

The gentleman I speak of is Mr. Randall Reynolds and he has spent twelve long years getting the story right. The name of his book is, "**The Jack and Helen Frye Story**," and in his book you will go back and explore what I refer to as the "Golden Years of Aviation." Mr. Reynolds will tell you in great detail why Howard Hughes was not the man at the helm of TWA and why it was Jack Frye who kept Howard Hughes out of trouble.

I have an abundance of information that Mr. Reynolds provided me but what I want to highlight today is an interview he had with Robert Serling. Robert is the brother of Rod Serling who created the series [Twilight Zone](#), which was the original Sci-Fi series on television which was also provided social commentary, and Robert is an Aviation Historian. That which follows is an interview that Mr. Reynolds had with Robert Sterling:

*Three years ago I had the great honor of meeting Robert Serling at Tucson Arizona (now passed away) who was (is) the most renowned (perhaps the most qualified) airline historian ever. Bob has always been especially fond of Jack Frye in my dealings with him and as well in his visits with Jack's daughter Nevajac Frye. In regard to my work on Jack Frye, Bob gave me his own "future project" notes which addressed Frye, stating to me, that I could use the information in any way I desired as he doubted at his age he would be able to finish many future projects. The pages addressing Frye are current (2008) as opposed to his writings about Frye in his 1983 book*

*"Howard Hughes' Airline; an Informal History of TWA". Bob conveyed the following sentiments in his notes as reprinted below and in person he basically stated similar sentiments to me personally about Frye, and I quote:*

*"Jack Frye of TWA: "He may very well have been the most underrated and unappreciated airline president of them all. He was a pilot himself, smart and as likeable as he was capable,*

*but was also saddled with the fact that he was overshadowed and subservient to TWA's majority stockholder, who controlled TWA and happened to be Howard Hughes."*

*"Frye was a true visionary, far more so than Hughes who was not as farsighted as the film "The Aviator" portrayed him. (Bob was especially adamant about this film being grossly inaccurate historically and maligning Frye's accomplishments and reputation). It was Frye, not Hughes who actually ran TWA from an operational standpoint and who truly belongs in the ranks of civil aviation's most significant pioneer contributors. For example, he was the airline chief who convinced Donald Douglas to design and build an airliner that could out-perform Boeing's new 247. The eventual result was the DC-2 which begot the DC-3."*

*"Hughes had no cause to quarrel with Frye, but Jack had the misfortune to run afoul of Noah Dietrich, at the time Howard's financial advisor. He was jealous of Frye, viciously bad-mouthed him to Hughes, and Jack was brutally fired. There is no doubt that Dietrich deliberately orchestrated the ouster of one of the industry's most far-sighted and charismatic leaders."*

*"What cost Frye his job, and also cost TWA dearly, was an ill-timed 25-day pilot's strike in 1946, just when TWA was getting its postwar international service into full operation, and about the same time Hughes was recovering from near-fatal injuries suffered in a plane crash (Beverly Hills). Dietrich managed to convince Hughes and TWA's board of Directors that the strike was Frye's fault, and that Jack's mismanagement had put the airline in a precarious financial state."*

*"Both these claims were outrageously false, but Dietrich timed his campaign against Frye to coincide with the post-crash trauma Hughes was experiencing. Howard was in no shape either to judge or grasp what really was happening at TWA in those difficult months, and foolishly believed what Dietrich was telling him."*

*"The cold-blooded execution of one of the airline's most brilliant presidents was unnecessarily cruel in the way it was handled: a terse one-sentence announcement to all TWA officers and employees that "Jack Frye is no longer associated with the Company."*

*"This was the official epitaph for the man largely responsible for elevating TWA to its leadership position as one of the nation's five most influential air carriers. If Hughes hadn't personally authorized that humiliating final slap-in-the-face, he certainly did nothing to stop it. Yet to his dying day, Frye refused to blame Howard for his ouster and would scold anyone who criticized Hughes."*

*-Robert J. Serling-*

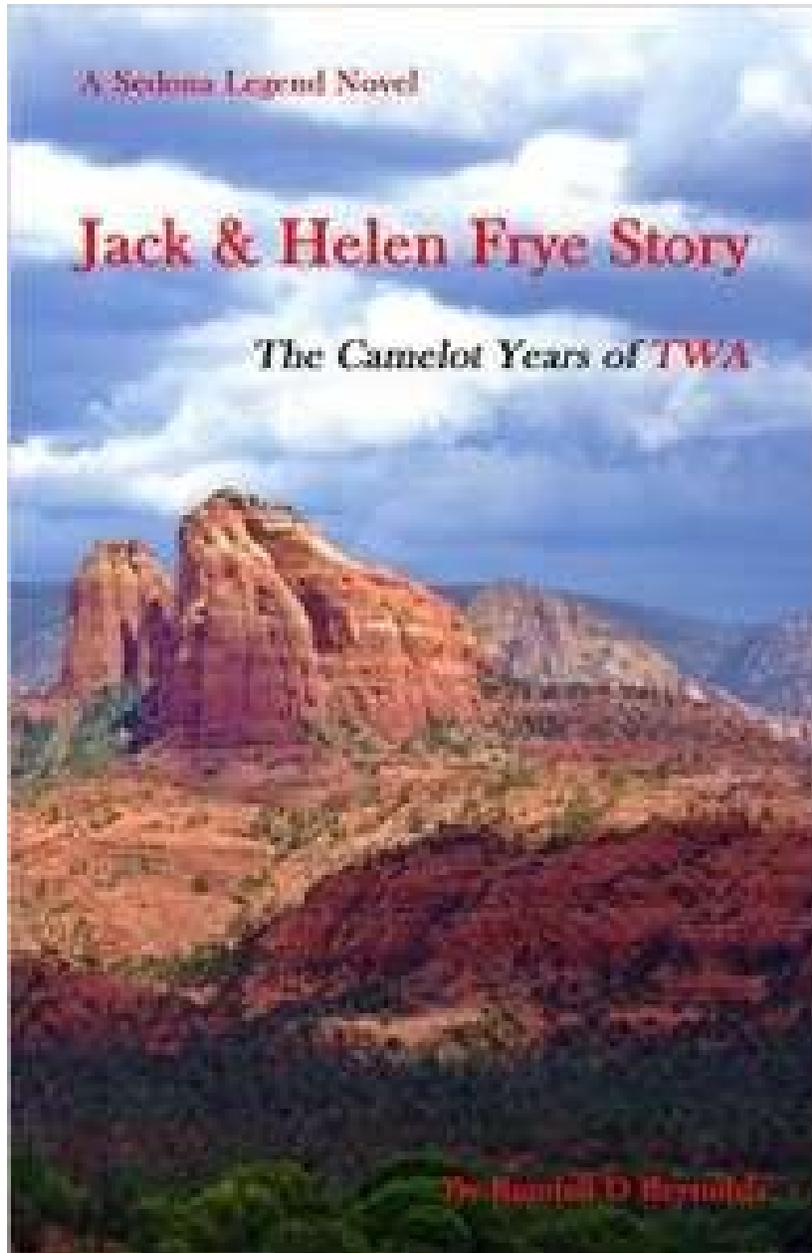
Now, for those who are not familiar with Robert Serling please click [HERE](#).

While Mr. Reynolds has certainly done his homework on the subject of Jack Frye, Howard Hughes, and TWA there is no way that I can do justice to what he has done in his book. So I encourage you to explore the following links and then click on the image of Mr. Reynolds book and invest in

aviation history. I think Mr. Reynolds has it right when he says: "*History is Meaningless- Unless Shared!*"

[Jack & Helen Frye Tumblr](#)

[Sedona Legend YouTube Channel](#)



I hope you have enjoyed the article today, as well as others that I have presented this year and I wish, for each and everyone of you who enjoys the freedom of the "*Third Dimension,*" that your

efforts, and energy, in this life bring to you only the best that life has to offer and to everyone I wish a .....

## **MERRY CHRISTMAS**

Robert Novell

December 18, 2015

