

The Collier Trophy
For Flight Beyond the Speed of Sound

and

Presidential Citation

For Outstanding Fidelity and Meritorious Conduct
in the War Effort



Awarded to

Lawrence D. Bell

December 16-17, 1948



THE SOLDIER TROPHY

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2029 - 2030



THE UNITED STATES OF AMERICA

TO ALL WHO SHALL SEE THESE PRESENTS, GREETING:
THE PRESIDENT OF THE UNITED STATES OF AMERICA
AWARDS THIS

CERTIFICATE OF MERIT

TO

LAWRENCE D. BELL

FOR OUTSTANDING FIDELITY AND MERITORIOUS CONDUCT
IN AID OF THE WAR EFFORT AGAINST THE COMMON
ENEMIES OF THE UNITED STATES AND ITS ALLIES
IN WORLD WAR II

GIVEN UNDER MY HAND IN THE CITY OF WASHINGTON

THIS TWENTY-SECOND DAY OF MARCH 1948

Owen S. Roberts
CHAIRMAN, MEDAL FOR MERIT BOARD

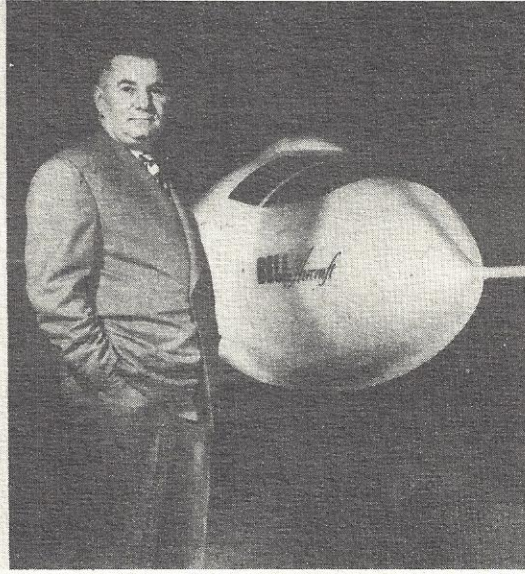
Harry Truman



Secretary for Air, W. Stuart Symington, presents Certificate of Merit to Mr. Bell on behalf of President Truman, December 16, 1948.



SCIENTIST: John Stack, for the past 20 years a government research scientist with the National Advisory Committee for Aeronautics, is the first of the three men who share the award of the Collier Trophy for the achievement of human supersonic flight. It was because of Stack's awareness of the absolute necessity for ever superior aircraft, and his intensive study of problems of supersonic flight that a workable program for the construction of a research plane came into being.



MANUFACTURER: Lawrence D. Bell, president of Bell Aircraft Corporation, was awarded the contract by the Air Force to design and build the plane evolved from Stack's scientific presentation of supersonic flight. Bell has a reputation for taking on the unusual, the unconventional and what some called the impossible. The ship he designed and built was the Bell X-1 which, before delivery, was tested in 21 flights at a speed slightly less than that of sound.



PILOT: Captain Charles E. Yeager, USAF, was chosen from the nation's finest test-pilot talent as the man to fly the plane pioneered by Stack and built by Bell. Deemed "a natural airman, if there is such a thing," on October 14, 1947, Yeager became the first man to fly faster than the speed of sound. It is for the combined achievement of these three men in their successful penetration of the transonic barrier that the Collier Trophy for 1947 has been awarded.

The Collier Trophy

For Flight Beyond the Speed of Sound

By **FREDERICK R. NEELY**

For bringing about the achievement of human supersonic flight, John Stack, Lawrence D. Bell and Captain Charles E. Yeager, USAF, win America's highest aviation award

AMERICA'S highest aeronautical honor, the 37-year-old Collier Trophy, was presented by President Truman at the White House Friday, December 17th, to the three men adjudged most responsible for the attainment of human supersonic flight. The trophy is awarded annually by a committee selected by the National Aeronautic Association for "the greatest achievement in aviation in America, the value of which has been demonstrated by actual use during the preceding year." It will be shared equally for the ensuing year by:

John Stack, career government research scientist of the National Advisory Committee for Aeronautics "for pioneering research to determine the physical laws affecting supersonic flight and for his conception of transonic research airplanes."

Lawrence D. Bell, president of Bell Aircraft Corporation, "for the design and construction of the special research airplane X-1."

Captain Charles E. Yeager, U.S. Air Force, "who, with that airplane, on October 14, 1947, first achieved human flight faster than sound."

To those three men goes the honor of playing the major roles in an achievement which the Collier

Trophy committee termed "the greatest since the first successful flight of the original Wright Brothers' airplane."

All three have been outstanding in their contributions to the vitally important science of supersonic flight—flight that is faster than sound, the speed of which at sea level, with a temperature of 59 degrees and in still air, is 761 miles an hour. However, at altitudes ranging between 40,000 and 100,000 feet, the speed of sound is reached at only 663 miles an hour. This is due to the fact that at such high altitudes the temperature is almost constantly 67 degrees below zero and sound travels more slowly in cold air. At just what altitude Capt. Yeager flew is as much of a secret as the actual supersonic speed he attained.

The problem that confronted Stack, Bell and Yeager was not so much that of flying faster than sound as it was successful flying at speeds between 600 and 900 miles an hour—the transonic range.

Aeronautical scientists were in grave doubt as to just what took place when conventional aircraft entered the transonic range in high-speed dives. They knew that both plane and pilot were kicked around unmercifully for seconds that seemed like

centuries and that both were completely out of control. Badly and naturally frightened, the pilots were unable to bring back detailed scientific reports on the phenomenon, and they were usually unwilling to repeat their flights.

Wind tunnel tests with small-scale models revealed that the flow of air over a plane in the transonic range was partly subsonic and partly supersonic. Because of this, the conventional planes (usually fighter types) took on an extremely inconsistent and erratic behavior. But the tunnel findings were not conclusive and since supersonic tunnels large enough to mount a full-scale airplane are prohibitive in cost the scientists concluded they needed a special research airplane equipped with instruments capable of measuring and automatically recording all of the forces acting upon an airplane in transonic flight.

This was where John Stack came in. It was natural that he should have conducted the research phase for he had been working on the fundamental problems of high-speed flight in the wind tunnels and laboratories of the NACA at Langley Field, Virginia, since 1929, shortly after he had joined the government's great aeronautical research es-

establishment. His entire background and education had prepared him for this task.

From his home town of Lowell, Massachusetts, where he was born in 1906 of Irish parents, he had gone to the Massachusetts Institute of Technology to study electrochemistry. But after his first year a new course leading to a degree in aeronautics was opened and he switched to that. He felt that this newest science and industry held the greatest promise for a serious young engineer.

In the perilous war days of 1942 when superior aircraft were a desperate necessity, John Stack vigorously attacked the problem of how special research planes faster than sound might be built—supersonic planes that could be flown successfully.

His intensive studies showed that the inadequate wind-tunnel results need no longer be a stumbling block to transonic and supersonic flight. With the support of the NACA, he laid his entire program before the military services in the early months of 1944. They grabbed it, and Stack began work on the many scientific details necessary for actual construction.

The Air Force then scrutinized its manufacturers of military aircraft to select a builder for the research plane and chose Larry Bell. In the airplane building field since 1912, Larry Bell had a reputation for taking on the unusual, and the unconventional, and what conservatives called the impossible. He had built the first cannon-carrying combat planes and America's first jet-propulsion fighter.

With complete equanimity he accepted the assignment in March, 1945, to build a rocket-powered plane—now known as the X-1—that would fly at 1,700 miles an hour and at an altitude of 80,000 feet! He was informed that such a plane would have to be so strong and tough that it could go through the transonic barrier and survive, despite the prevailing belief that no conventional plane could do it even if power could be found to build it through. This called for radical departures in aircraft design and construction.

The power plant that would do this job was found at Reaction Motors of Dover, New Jersey, where a rocket motor was being built for the Navy for use in a research plane to be made by another company. When the Air Force made out a strong case for its need, the Navy agreed to assign delivery of the motor—actually four rockets grouped in one installation—to Bell Aircraft.

No one in the United States had had experience in installing and operating such a terrifically powerful motor, with its four-ton load of highly explosive fuels, carried in tanks under extreme pressure. But Larry Bell's experts built the plane and worked out a safe and efficient method of flying it—by cutting it loose from the belly of a B-29 Superfort at an altitude of around 30,000 feet. So launched, the X-1 would be spared the risk of an extremely hazardous take-off under its own power, and its two-and-a-half-minutes' fuel supply could be reserved for its high-speed research flights.

Larry Bell's contract called for demonstrating the plane in 21 flights at a speed slightly less than that of sound, and this was done at Muroc, California, between December 9, 1946, and June 1, 1947.

The problem of obtaining reliable transonic

flight knowledge thus stood two-thirds solved. The scientist had written the prescription and the aircraft manufacturer had filled it with the construction of the desired plane.

And so it became the tremendous responsibility of the Air Force, specifically of Colonel Albert Boyd, chief of the Flight Test Division, to select a test pilot who could fly the X-1 intelligently, patiently and methodically—not once, but many, many times, so that scientific data on what lies in the transonic and supersonic fields of flight could be accumulated.

Every member of Colonel Boyd's outfit, which contained some of the best talent in the land, wanted the job. They were airmen with long experience in test flying, with extensive engineering

man territory, he escaped capture and with the aid of the French underground, managed to reach England via Gibraltar.

Before being shot down he had destroyed two German planes; he got 11 more when he returned to combat. Sent home in February, 1945, he immediately married Glennis Fay Dickhaut, of Oroville, Calif., the girl he left behind. (They have two sons, Donald, two, and Mickey, one.) He then took pilot-instructor training, served a short time as an instructor and was ordered to Wright Field, Dayton, Ohio, as a fighter-plane test pilot.

Perhaps the real reason for Yeager's selection as the man to fly the X-1 can be found in the observation of Richard H. Frost, Bell aircraft aeronautical engineer assigned to the X-1 flight program and himself a former fighter-plane test pilot.

"Charlie Yeager is completely nerveless," says Mr. Frost. "He's the coolest guy I've ever seen and it's been my business to see a lot of pilots preparing for flights of doubtful outcome. He is a perfectly natural airman, if there is such a thing. He flies a plane as though it were a part of him. In his test work he does exactly what the aeronautical engineers request and he brings back the answers."

The Collier Trophy was established in 1911 by the late Robert J. Collier, former editor, and son of the founder, of Collier's, The National Weekly. An enthusiastic pilot, plane owner and crusader for aviation when the infant science had few friends and virtually no public support, Mr. Collier hoped that it would inspire widespread development of the airplane and advance the science of aeronautics.

Mr. Collier was a close personal friend of Wilbur and Orville Wright, and was also one of that small group of persons with faith enough in flying to become the backers of the Wrights when they formed their airplane manufacturing company in 1909; and this friendship was responsible for Orville Wright's lifelong interest in the Collier Trophy. It was his oft-suggested wish that whenever the Award committee could accurately do so, it should honor the individual most responsible for the year's greatest achievement.

This year's Collier Trophy Committee was headed by John F. Victory, executive secretary of the NACA, and numbered 17 members representing every leading aeronautical activity in America. It would have been easy for the Committee to have cited the NACA, Bell Aircraft and the U.S. Air Force, because many people in those organizations have given invaluable aid in the achievement of supersonic flight and they displayed perfect teamwork between the aircraft industry and the government. But the Committee members probed deeper to find the individuals who were most responsible for this audacious undertaking which incidentally involved an investment of more than a million dollars and years of aeronautical research. They sought out the men who would have suffered most had it failed.

Because of their search, the names of John Stack, Lawrence D. Bell and Charles E. Yeager, in that order, are now engraved on the trophy under the year 1947.



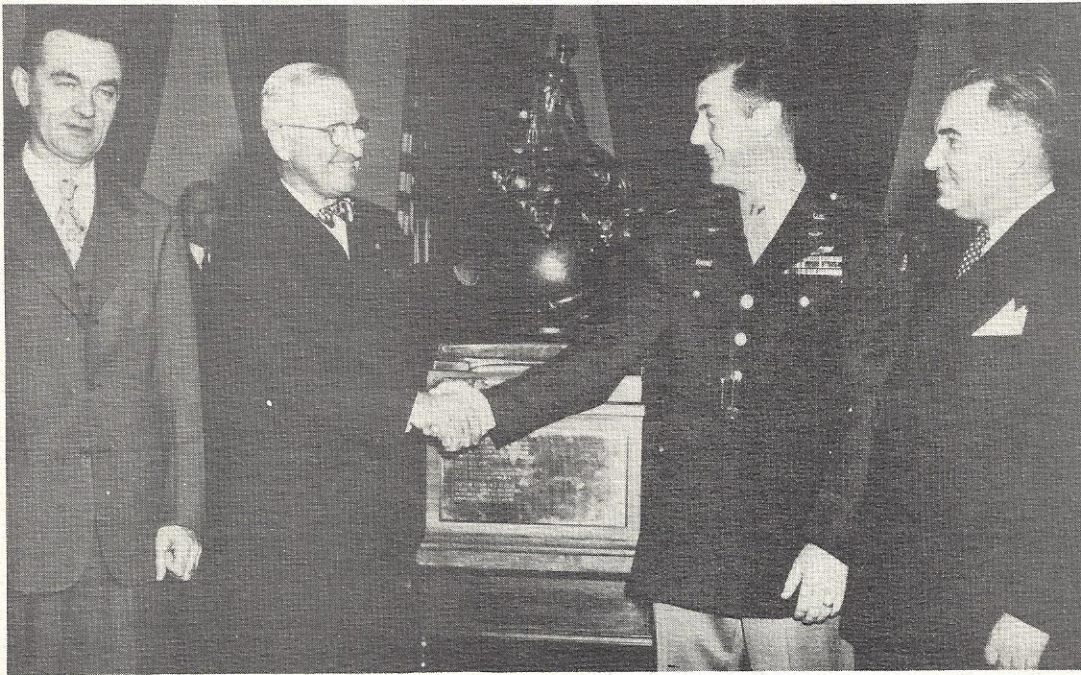
knowledge and training, airmen with college degrees. But twenty-four-year-old Charles E. Yeager was selected.

Captain Yeager's background and paper record could hardly be considered impressive for such a super-test pilot job, but Colonel Boyd's decision was not questioned then nor is it now.

Charlie Yeager came from the little town of Hamlin (population 850) in West Virginia. After graduating from high school in 1941, he enlisted in the Army Air Forces, got flying training as a fighter pilot and flew a P-51 Mustang with the Eighth Air Force on 64 combat missions for a total of 270 combat hours. Shot down over Ger-

PHOTOGRAPH FOR COLLIER'S BY EDWARD RINKER

Three Who Helped in First Faster-Than-Sound Flight Are Honored



President Truman shaking the hand of Captain Charles E. Yeager, Air Force test pilot who made the first supersonic flight, during the joint presentation yesterday of the Collier Trophy to Captain Yeager, John Stack (left), research engineer, and Lawrence D. Bell, president of the Bell Aircraft of Buffalo, whose company built the X-1 rocket plane

Associated Press wirephoto

CROSS COUNTRY NEWS

December 27, 1948

High Aviation Award Goes to Three for Supersonic Flight

WASHINGTON.—The National Aeronautic Association, custodian of the nation's highest aviation honor, the Collier Trophy, announced its award to three men most responsible for the attainment, on October 14 last year, of human supersonic flight, the greatest aeronautical achievement since the original flight of the Wright Brothers' airplane.

The trophy, established 37 years ago by Robert J. Collier, first editor of Collier's Weekly, was presented by President Truman in his office at the White House to: John Stack, of Hampton, Virginia, government career research scientist of the National Advisory Committee for Aeronautics "for pioneering research to determine the physical laws affecting supersonic flight and for his conception of transonic research airplanes"; to Lawrence D. Bell, president, Bell Aircraft Corporation, Buffalo, New York, "for the design and construction of the special research airplane X-1"; and to Captain Charles E. Yeager, U. S. Air Force, of Hamlin, West Virginia, "who, with that airplane, on October 14, 1947, first achieved human flight faster than sound."

Dr. William Frederick Durand, 89, dean of America's engineers, was the first to receive the newly established Wright Brothers Memorial Trophy "for significant public service of enduring value to aviation in the United States". The Trophy, founded by Dr. Godfrey Lowell Cabot, was awarded by its custodian, the National Aeronautic Association, at the Annual Banquet of the Aero Club of Washington on Wright Brothers Day, December 17, at the Statler Hotel.

Dr. Durand was selected because of his many important contributions to aviation.

WASHINGTON.—The Air Youth Division of the National Aeronautic Association announced that the Brewer Award for outstanding contributions to aviation education during 1948 has been voted to Philip S. Hopkins, president of the Binghamton, New York, Board of Education, and vice president of Link Aviation, Inc.

The award, which was established in 1943 by Frank G. Brewer, a Birmingham, Alabama, businessman, also was presented in Washington, D. C. at the Aero Club of Washington's annual Aviation Day dinner commemorating the first flight of the Wright Brothers.

Air Force Honors Bell, Vaughan, Wright

BUFFALO EVENING NEWS Washington Bureau
WASHINGTON, Dec. 16.—Presidential Certificates of Merit were awarded today to three Buffalo men who directed wartime aviation plants in the Queen City.

Honored at an Air Force luncheon in recognition of their services to the nation were President Lawrence D. Bell of Bell Aircraft Corporation; Guy W. Vaughan, wartime president of the Curtiss Wright Corporation, and Burdette S. Wright, vice president in charge of the Curtiss Airplane Division's plants in Buffalo.

The presentation was made to the Buffalo men and 60 other aviation leaders by Secretary of the Air Force W. Stuart Symington.

On Friday, Mr. Bell will receive the Collier Trophy from President Truman for his work in building the nation's first supersonic airplane, the Bell X-1.

BELL GETS TROPHY FOR PIONEERING IN SUPERSONIC FLIGHT

BUFFALO EVENING NEWS Washington Bureau
WASHINGTON, Dec. 18.—This is Larry Bell's day in Washington.

The president of Bell Aircraft Corporation went to the White House to join two other aviation leaders in receiving the Collier Trophy from President Truman.

The presentation is in recognition of supersonic flight by the Bell-produced X-1. Sharing the honor are the first supersonic pilot, Capt. Charles E. Yeager of Hamlin, Va., and Research Scientist John Stack of Hampton, Va.

Then, tonight at Hotel Statler, Mr. Bell will be the main speaker at the annual Wright dinner of the Aero Club of Washington. He will discuss "45 Years of Aviation Progress."

In selecting Mr. Bell for the Collier Trophy, a committee recognized him "for the design and construction of the special research airplane X-1."

Observances here and at Kitty Hawk today mark the 45th anniversary of the original flight of the Wright brothers' airplane.

Honored at an Air Force luncheon Thursday in recognition of their services to the nation were Mr. Bell, Guy W. Vaughan, wartime president of the Curtiss-Wright Corporation, and Burdette S. Wright, vice president in charge of the Curtiss Airplane Division's plants in Buffalo.

The presentation was made to the Buffalo men and 60 other aviation leaders by Secretary of the Air Force W. Stuart Symington.

...ates jet-propelled plane, will recognize the Wrights and talk about the Bell plane which reportedly has flown at 900 miles an hour—faster than sound.

Bell, with Government career Scientist John Stack and Capt. Charles Yeager of the Air Force, Friday received the prized Collier trophy for combining to crack through the sonic barrier for the first time. Bell's company built the plane, the X-1, on engineering principles conceived by Stack. Yeager flew it at supersonic speed on Oct. 14, 1947.

The Atlantic Journal FRIDAY, DECEMBER 17, 1948

Bell Divulges Struggle By U. S. to Master Air

On Friday three men were awarded the Collier trophy—top aviation honor—for combining to build and fly the first airplane which ever traveled faster than sound. Lawrence D. Bell, president of Bell Aircraft Co., which built the rocket-propelled X-1, was one. In this article Bell describes the fight to crack the supersonic barrier.

By LAWRENCE D. BELL
President, Bell Aircraft

Washington, Dec. 18 (INS)—When we stepped forward to receive the Collier trophy from President Truman, I felt more humble—and proud—than ever before in my life. Because I realized that in accepting this tribute, actually we were doing so as representatives of the countless men whose

efforts made possible the historic supersonic flights of the X-1.

And I couldn't help thinking about the great number of men—some of whom gave their lives—who have toiled for 45 years to make possible such an achievement. Orville and Wilbur Wright made their first flights in 1903. While I first became seriously interested in aviation in 1910 at the time of the first aviation meet, held in Los Angeles, I count 1912 as the date when I made aviation my life work.

Used by Villa
Most people think that aerial bombardment was born of the First World War, after 1914, but that isn't exactly true. I remember working on a Martin 75-horsepower pusher biplane before war began, making it into a bomber for Mexico's Pancho Villa. We fitted out some lengths of gas pipe, which we filled with dynamite and into which we inserted fuses. That was the first bomber. And the pilot

Lawrence Bell Foresees 3,000 MPH Air Speed

Niagara Frontier Plane Manufacturer Gives Views at Dinner in His Honor

By LUCIAN C. WARREN
Courier-Express Washington Bureau

Washington, Dec. 17—Leaders of the nation and the aviation world tonight paid homage to the Bell supersonic plane at an occasion in which its maker proudly announced it was now possible to make planes "two or three times as fast" as the X1.

"The success of the X1," President Lawrence D. Bell of the Niagara Frontier's Bell Aircraft Corp. declared, "has taught us much in the realm of speeds faster than sound. This now makes possible to build man-carrying planes with a speed two or three times that of the X1."

"The knowledge that we gained in this research opens entirely new frontiers of flight before not dreamed of. Speed and control at really high have been achieved."

Speaks at Dinner

The speed of sound has at from 650 to 670 miles at high altitude—the speed X1 has been unofficially exceeded that figure by hundred miles. Bell's therefore, indicates that speeds of about 3,000 hour are possibilities of

The Buffalo airplane talk was given at a dinner by 700 top aviation the nation and was the a day in which eloquent heaped on the Buffalo achievement in producing human-piloted plane than the speed of sound flight.

Earlier today President presented Bell and his laborers in the X1 the Collier trophy for best aviation achieve-

This trio—Bell, Capt. Charles Yeager, X1 test pilot, and John Stack, national advisory committee for aeronautics research scientists—also were the honor guests at tonight's annual dinner of the Aero Club of Washington.

Bell Principal Speaker
Principal speaker at the banquet, Bell, outlined the advance of aviation since the 1903

was a Frenchman named Diddier Masson and his mechanic was an Englishman named Tommy Dean.

During World War I, I was vice-president and general manager of Glenn L. Martin, where we made history-building bombers, and at the end of the war those bombers pointed the way of things to come. In the late 20s and from then until I organized my own company in '35, I was vice-president and general manager of Consolidated, where we pioneered in building flying boats.

Skepticism Cited

Up until a year or so ago, many people said that supersonic flight by man-carrying airplanes was impossible. So, in addition to building the X-1 and making it work, we had to keep up our courage in the face of such learned statements.

President Truman read the citation for the trophy award, saying in part:

"This is an epochal achievement in the history of world aviation—the greatest since the first successful flight of the original Wright Brothers' airplane, 45 years ago."

"It was not the achievement of any single individual or organization, but was the result of a sound aeronautical research and development policy, involving fine teamwork and co-operation between research scientists, industry and the military . . . a factor essential to keeping America first."

That could be said with equal truth about the growth of aviation since the days of Kittyhawk. We've come a long, long way in 45 years, but my guess is that we're a long, long way from the end of aviation progress.

security regulations would permit. The top flight speed of the rocket ship is still an air force top secret, but the Buffalonian did reveal these things:

Cites Difficulties

When work on the plane started, there was no fuel pump in existence that could pump liquid oxygen at minus 360 degrees Fahrenheit. The fuel system involved bottling up gases under 4,500 pounds pressure per square inch, when the sure per square inch, existence best enclosures in existence handled only 2,000 pounds. There were no air speed indicators to clock the high velocities expected, and initial flight tests were delayed months awaiting certain

Bell, Wright Honored For War Services

Buffalonians Receive Certificates of Merit

By SHIRLEY PETERSON

Courier-Express Washington Bureau

Washington, Dec. 16—W. Stuart Symington, secretary of the Air Force, awarded the President's Certificate of Merit to two Buffalo aviation heads at luncheon here today, and remarked that Buffalo might well add another jewel to its crown as "king of aviation."

Lawrence D. Bell, president of Bell Aircraft Corp., and Burdette S. Wright, former general manager of the airplane division of Curtiss-Wright, were among 62 civilians honored in recognition of wartime services. None received heartier praise from Symington than the two Buffalonians.

Wartime Work Cited

Bell specifically was cited for outstanding "design, development and manufacture of military aircraft," while Wright was given Presidential recognition "for the mass production of airplanes during wartime."

Bell will be principal speaker tomorrow night at the annual dinner of the Aero Club of Washington, commemorating the anniversary of the first airplane flight made by the Wright brothers at Kitty Hawk, N. C. He will speak on Teamwork in Supersonic Flight, in connection with the Collier Trophy award to him and Capt. Charles E. Yeager, X-1 test pilot, and John Stack, Hampton, Va., research scientist.

Bell Heads to Attend

A number of Bell executives are due to arrive tomorrow for the acceptance ceremony at Smithsonian and the Aero Club dinner. Walter Bonney, Bell public relations chief, said the party would include Ray P. Whitman, first vice-president of Bell; Julius J. Domonkos, vice-president; Harvey Gaylord, treasurer; Walter A. Yates, director; Robert J. Woods, chief design engineer; David F. Devine, compiler; and Richard Frost and Frey Smith, project engineers.

Courier-BUFFALO-EXPRESS

COLLIER TROPHY TO BELL WEDNESDAY, DECEMBER 15, 1948

Achievement in the field of supersonic flight is the basis for this year's award of the Collier Trophy, this country's highest aviation tribute.

Covering the year 1947, it is bestowed this time in recognition of the first human flight faster than sound, an achievement the trophy committee terms "the greatest since the first successful flight of the original Wright brothers' airplane."

Specifically it refers to the performance of the X-1, first rocket ship to break the transonic barrier.

The Collier Trophy for 1947 goes not to one man but to three: Lawrence D. Bell, president of the company which designed and built the plane; Capt. Charles E. Yeager of the U. S. Air Force, who flew it, and John Stack of the National Advisory Committee for Aeronautics, who conducted pioneer research in supersonic flight.

Our heartiest congratulations go to all three of these men for this recognition of their outstanding contributions to aviation science.

In particular they go to one of our own Niagara Frontier neighbors, Mr. Bell, who thus adds a distinguished national honor to the Chancellor's Medal of the University of Buffalo he already holds for dignifying this city in the eyes of the world.

12 such drops there was available a runway. These 12 tend to familiarization flights and the stalling speed and characteristics of the In fact, it worked so well procedure has since been for use with full fuel as it completely eliminates off hazard of the heavily airplane. In the event the engine fails to start all fuel expelled by the high pressure-out system, permitting always in light condition.

Experiments

Perhaps the most significant about the X1 is the fact that airplane has been flown—many in the sub-sonic, transonic supersonic ranges of speeds in original configuration as it off the drawing boards, and a single change has ever been or now deemed necessary. This is a real tribute to the engineers responsible."

us with praise for those stated him in the project. declared that "many people National Advisory Committee for Aeronautics, and its vendors and subcontractors contributed to this achievement."

Among those who Bell singled out for individual mention were: Dr. George W. Lewis, NACA director of research; the late Jack Woolams, former chief test pilot who first flew the X-1; the late Howard Lilly, the first NACA test pilot to fly it; the late Capt. James Fitzgerald, who first flew faster than sound in the plane, and Maj. Ezra Kitcher of Wright Field.

Officials at Bell mentioned by the firm's president as contributing materially to the X-1 project were Robert Woods, chief design engineer, and project engineers Stanley Smith and Dick Frost.

Cites Own Role

Bell told the aviation group that his own interest in aviation was stimulated by an incident in 1911 at Niagara Falls when "Lincoln Beachey made history and money by flying under the Suspension bridge. Shortly thereafter, as a youngster, I joined up as a mechanic with Beachey—my all-time stunt pilot hero."

The New York Times

Reg. U. S. Pat. Off.
"All the News That's Fit to Print."
ADOLPH S. Ochs, Publisher 1896-1926.

SUNDAY, DECEMBER 19, 1948.

SUPERSONIC VISTAS

Enshrinement in the Smithsonian Institution of the Wright brothers' Kitty Hawk," the first airplane to fly, and the simultaneous prediction that man soon may be able to travel through the air at a speed of 3,000 miles an hour dramatically illustrate how rapid has been the development of the machine. At the same time these things must raise the question of what man is doing to control this supersonic force his skill and ingenuity have developed. Has he, like Frankenstein, invented a monster that will eventually destroy him? Can he learn in time how to control himself as well as the machine so that its great potentialities can be used to achieve good ends and a better life for everyone, or will he allow it to be used by evil or stupid men for evil ends?

This enormous development in the speed of flight is something that has come about during the lifetime of most of the adult population of the world. The Wright brothers are dead, but there was a 63-year-old man at the Smithsonian Institution Friday who saw the first flight from Kill Devil Hill on Dec. 17, 1903, President Truman was 19 years old on that date. The Kitty Hawk's first flight of 120 feet and the second of 852 were made at speeds of about six and nine miles an hour, respectively. A man can run faster than that. A year later airplane speed was up to fifty miles an hour. Now, only forty-five years later, a young Army officer has flown at a speed of 1,000 miles an hour, and the developer of the rocket plane he flew says this speed can be tripled. This passage through the wild blue yonder at four times the speed of sound strains the imagination. At that speed London would be only a little over an hour distant from New York, and Moscow an hour and a half.

The evil uses to which this machine that has telescoped distances almost beyond comprehension in less than half a century can be put was amply illustrated in the Second World War. Armies moved at little faster pace than did the Roman legions, but in the air the Second World War was fought at speeds of 400 and 500 miles an hour. It is so vast an arena, that of the air, that there can be no absolute defense against attack. There was not in the last war at the now relatively slow speeds of 500 miles an hour. At 3,000 miles an hour the balance swings even more heavily to the attackers' side.

In a peaceful world this devourer of distance can bring many benefits to mankind. Food and medicine and succor to overcome the effects of natural disasters can be sent to where they are needed almost as soon as the need is known. But a 3,000-mile-an-hour plane could carry an atomic bomb the same distance in the same period of time. It would seem to behoove man to look to his development of peace machinery, and to accept the restraints on national pride and anger that are the only sure guarantee against war. Otherwise this machine he has invented will overwhelm and destroy him. The choice is his to make.

NEW YORK Herald Tribune



Sunday, December 19, 1948

The Evening Star

With Sunday Morning Edition.
WASHINGTON, D. C.

Peace and Supersonic Flight

When a man like Lawrence D. Bell says that aircraft manufacturers now know how to build passenger-carrying planes capable of flying at a speed of 3,000 or more miles an hour, people of this generation have good reason to believe that either they or their children may live to see the day when they will be able to travel from here to London in 45 minutes or so. They have good reason, too, to shudder a bit over what that possibility may lead to in case the world has neither the wit nor the wisdom to establish an enduring peace.

As one of the foremost aeronautical experts of the age, Mr. Bell speaks with authority. Among other things, he is the designer and builder of the celebrated X-1, the rocket-propelled experimental plane which Captain Yeager of the United States Air Force has piloted at speeds considerably faster than sound. Precise figures about its performance have not yet been revealed, but authoritative hints have left no room for doubt that the craft—the first to crash through the so-called sonic barrier—has been flown at the rate of at least 1,000 miles an hour.

Accordingly, when Mr. Bell declares that it is now possible to build man-carrying planes three times faster than the X-1, we may take it for granted that he is not joking but is speaking on the basis of what has been learned from that experimental craft. As a matter of fact—as he said here the other day during the Wright Brothers' celebration marking the 45th anniversary of the world's first flight by a heavier-than-air machine—the X-1 could attain a speed of upwards of 3,000 miles an hour but for the limitation imposed upon it by its four-minute supply of propulsive power.

Actually, according to Mr. Bell, "other supersonic planes are being built which will not suffer" from that limitation. In his opinion, our experience with the X-1 "opens an entirely new frontier of flight heretofore not dreamed of"—an opinion strongly suggesting that he himself believes in the not-too-distant advent of piloted aircraft flying at speeds of 2,000 or 3,000 miles an hour, with power plants (conceivably atomic) equipping them for non-stop transcontinental and transoceanic travel. When we consider aviation's fabulous development in the past few decades, such a prospect is not nearly so silly or exaggerated as it may seem at first glance.

Unpiloted supersonic rockets of limited range already are a reality. If they are improved, as they probably will be, and if equally fast man-carrying planes are developed, as Mr. Bell anticipates, then "the annihilation of space and time" will become much more than a rhetorical phrase. Indeed, unless men and their governments achieve genuine collective security, the phrase will have to be extended to include the annihilation of humanity itself. Our shrunken world, still shrinking, is much too small to absorb the shock of an all-out atomic and bacteriological war waged with lightning-like aircraft. If sanity prevails, the very nature of our age should make peace inevitable.

The Drama of the Air Age

All the drama of the air age, that dazzlingly brief period which so many now living have watched through all its phases, was packed into the ceremonies which marked the formal installation of the first airplane in the Smithsonian Institution on the forty-fifth anniversary of its primal flight. The powered box-kite with which Wilbur and Orville Wright inaugurated man's definitive conquest of the air provided the occasion for a breath-taking announcement of the present capabilities of jet planes; the craft which has already carried man through the sonic barrier, according to Mr. Lawrence D. Bell, its designer, have traveled at 3,000 miles an hour or more, but for the deficiency of its fuel supply. And other planes are already being built, Mr. Bell pointed out, which "will not suffer from this limitation."

In terms of overcoming physical obstacles, the victories of man in the air have been nothing short of magnificent, since the first Wright plane wobbled uncertainly over the sand dunes of Kitty Hawk. To be sure, the mind reels at the very thought of speeds which they place upon finite concepts of time and space. But there is exhilaration in the thought, as well, and pride that men so daringly challenge the material bounds of their environment. There are other "victories" of the air age which induce more gloomy reflections; the victories which are marked by great cities laid in waste, by the many graves of those who died in combat in the skies. These somber tokens, however, are not the true products of Kill Devil Hill, and the patient, daring exploits of the Wrights and their successors. They are, rather, signs of man's unending inhumanity to man, of his inability to rise above his primal urge to strife, as he has risen above the physical bondage that for ages held him to the earth. The smashed skull in some ancient burial place speaks of the same spiritual limitations as the ruins of Berlin; the flint arrow of a hunter and the cannon in the nose of a jet fighter are akin. The drama of the air age is the victory of bold spirits over gravity and space; the tragedy of the air age is the tragedy of all mankind.

The Washington Post

Registered in U. S. Patent Office

Monday, December 27, 1948

3000 Miles An Hour

For many years the prospect of inter-continental space ships flying the Atlantic in an hour or so has been part of the fantasies of such writers as Jules Verne and H. G. Wells. What seems hard to realize is that this possibility no longer is in the realm of fiction. The week before last the forty-fifth anniversary of the first flight of the Wright brothers' Kitty Hawk was celebrated in Washington. During that interval the speed attained by airplanes has increased some 30 times, from approximately 40 miles an hour to some 1200 miles an hour—the latter reportedly reached by the new supersonic X-1. At the dinner commemorating the Wright brothers' flight, Lawrence D. Bell, president of the Bell Aircraft Corp. which built the X-1, asserted that plane designers now have the knowledge to construct aircraft that will go two or three times the speed of sound.

It is almost superfluous to pay additional tribute to the many men in aviation who have made possible such attainments. The much feared sonic barrier proved to be less formidable than some persons had anticipated but to breach it required great ingenuity on the part of designers and manufacturers as well as tremendous personal courage on the part of the pilots willing to subject themselves to supersonic strains. These men are pioneers of the same breed as those who tamed the wilderness. Supersonic planes are, of course, still in the experimental stage, and it will require a great deal more work both with design and with fuels before such speeds are either practical or useful for other than military purposes. But no one can say today with out fear or contradiction by fact that hope over to London for luncheon are not in our grasp. The prospect is both wonderful and frightening.

Builder Says Supersonic Plane Will Fly at 3,000 Miles an Hour

Bell, at Wright Day Celebration in Washington, Says X-1 Lacked Sufficient Fuel Capacity, but New Models Won't Have This Defect

By C. B. Allen

WASHINGTON, Dec. 17.—The airplane which first achieved supersonic flight "easily" could have attained a speed of 3,000 miles an hour or more but for its limited supply of fuel, the man who

designed and built it said here today. In fact, he added, the plane's four-minute rocket propulsive power appears to be the "only limit on how fast it can go."

These disclosures were made by Lawrence D. Bell, president of the Bell Aircraft Corporation of Buffalo and designer of the Air Force X-1 "research plane" which first pierced the sonic barrier on Oct. 14, 1947. They overshadowed almost completely the event that brought Mr. Bell to Washington—the nation-wide celebration of Wright Brothers Day on the forty-fifth anniversary of the world's first airplane flight, a celebration featured by the government's final acquisition of the original Kitty Hawk machine.

While he did not disclose the still closely guarded secret of the highest speed attained by the X-1, Mr. Bell said it "could have gone two or three times as fast as it has" except for running out of fuel. He added that, although there was no way of modifying the X-1 to give it greater fuel capacity, "other supersonic planes are being built which will not suffer from this limitation."

Mr. Bell pointed out that Air Force Secretary W. Stuart Symington had revealed some time ago in New York that the X-1 had exceeded the speed of sound "by several hundred miles an hour" and that this had been interpreted to mean that it had attained at least 1,000 miles an hour. He emphasized that his claims were meant to be added onto those of Mr. Symington and did not mean merely that an additional fuel supply would have enabled the X-1 to double or triple the speed of sound.

"At and above the altitudes at which the airplane made its high-speed runs, the speed of sound remains constant—a little more than 660 miles an hour," Mr. Bell said. "In view of what Secretary Symington said and what I am saying now, you can figure it out from there yourself. Everything we found out indicated that the only limitation on the X-1's speed was the duration of its propulsive power."

Mr. Bell's disclosures came after a luncheon at the Wardman Park Hotel which followed President Truman's award to him and two co-recipients of the 1947 Collier trophy for the year's "outstanding achievement in American aviation." Those honored besides Mr. Bell were John Stack, of the National Advisory Committee for Aeronautics, for research leading to the development of the X-1, and Air Force Captain Charles E. Yeager, of Hamlin, W. Va., the first pilot to fly it at supersonic speeds.

The National Aeronautic Association, which is custodian of the thirty-seven-year-old Collier Trophy and selects its annual winner, characterized the X-1's flights as the "most significant" since Wilbur and Orville Wright made the world's first power-driven, heavier-than-air flights at Kitty Hawk, N. C., on Dec. 17, 1903.

Mr. Bell disclosed that flight tests of the X-1 were delayed because "there just wasn't an air-speed meter or an altimeter with high enough readings to be used on it."

Later he said that the Air Force's high-altitude altimeters were calibrated only to "about 55,000 feet." Neither he nor Air Force representatives would reveal the height at which the X-1 had made its high-speed runs, although the Air Force said it was designed to "fly at speeds up to 1,700 miles an hour and at altitudes up to 80,000 feet." Neither source would deny or confirm that the X-1 had set a new world's altitude record on many of the flights it has made after being released from a Boeing B-29 bomber at altitudes ranging from 25,000 to 35,000 feet.

The original Wright plane was formally turned over to the Smithsonian Institution during ceremonies this morning in the museum's Arts and Industries Building, where the priceless relic is suspended from the ceiling in the place of honor formerly held by Charles A. Lindbergh's Spirit of St. Louis. The latter now hangs immediately behind the Wright plane.

Dr. Alexander Wetmore, secretary of the Smithsonian, opened the ceremonies, which were presided over by Chief Justice Fred M. Vinson as chancellor of the museum. He accepted title to the airplane from Orville Wright's estate. Colonel Robert B. Landry, Air Force aide to the President, read a message from Mr. Truman, and Vice-President-elect Alben W. Barkley, as a regent of the Smithsonian, delivered the address of acceptance.

The hall was packed with representatives of the aircraft industry and the military services as well as with "early bird" airmen, many of whom had known the Wright brothers and some of whom had flown with them. Also present was Miss Mabel Beck, who served as secretary to the Wrights for thirty-seven years and who spent two weeks stitching the present muslin fabric on the Kitty Hawk plane's wings before it was sent to England in 1928.

Another interested observer was the only living witness of the plane's first flight, John Thomas Moore, of Nags Head, N. C., who said he was "just a kid of seventeen" at the time and had "helped 'em push 'er" on the take-off forty-five years ago.

Bell One of Three to Be Honored At White House for Aviation Work

By RAYMOND J. CROWLEY

WASHINGTON, Dec. 16 (AP)—Three men-in-a-hurry, one of whom thinks modern travel is so slow as to be downright boring, have a date at the White House tomorrow.

President Truman will give them a prize for pioneering the greatest transportation speed-up since the Wright Brothers.

They will get the Collier trophy, often called aviation's highest honor, for their part in the first faster-than-sound flight by an airplane carrying a human being.

The three: John Stack, government researcher, who laid scientific groundwork for the flight. He worked among the wind tunnels and labs of the National Advisory Committee for Aeronautics (NACA) at Langley Field.

Lawrence D. Bell, Niagara Falls aircraft maker, who designed and built the supersonic plane, the X-1.

Capt. Charles E. Yeager, air force test pilot, who made the first supersonic flight October 14, 1947.

Sitting around a dinner table with some colleagues and a newsman last night, Stack, a dynamic young man of 42 from Lowell, Mass., who now lives at Hampton, Va., peered a bit into the future.

Will ordinary passenger and cargo

planes ever hit a supersonic clip? he was asked. (Sound travels about 760 miles an hour at sea level; 660 miles an hour at 35,000 feet).

"I think so," he said. "Maybe not in 1950 or 1960, but no fundamental laws preclude transportation at such speed."

"Right now it's a military proposition—to guarantee the security of the nation."

Commercial Hopes Aired

"But we hope that when the world gets a little more sense it'll be a commercial proposition."

"It's quite unreasonable to expect a person to sit more than three hours in a train or plane seat to get anywhere on the face of the earth."

"You get bored crossing the ocean, for example. There's nothing to look at but water."

Is there no limit, then, to the speed at which man may travel?

"We don't know what the limit is, if any," Stack insisted. But he acknowledged that any pilot who tried to accelerate himself too fast would find his insides coming out, or something.

So somewhere between the speed of sound and the speed where a man's innards are in danger is John Stack's favorite speed for the future.

Supersonic X-1 Brings Bell Nation's Top Aviation Award

For helping in bringing about supersonic flight, Lawrence D. Bell, president, Bell Aircraft Corp., which designed the X-1 research airplane, has been awarded the Collier Trophy. He shares honors with two other men who contributed equally in achieving flight beyond the speed of sound.

America's highest aviation award for 1947 went jointly to Bell, John Stack, research scientist of the National Advisory Committee of Aeronautics, and Capt. Charles E. Yeager, U. S. Air Force, who flew the Bell-designed X-1 rocket ship to break the transonic barrier.

An article appearing in the December 25th issue of Collier's Magazine will laud Bell "for the design and construction of the special research airplane X-1."

Awarded annually by a committee selected by the National Aeronautic Association, the 37-year-old Collier Trophy will be presented to the three men Friday by President Harry S. Truman during ceremonies at the White House in Washington.

Stack is commended for "pioneering research to determine the physical laws affecting supersonic flight and for his conception of the transonic research airplane." Capt. Yeager is honored as the man "who, with that airplane, (X-1) on October 14, 1947, first achieved human flight faster than sound."

According to the article, Bell,

PLANES TO TRIPLE SUPERSONIC SPEED OF X-1, BELL SAYS

President Presents Collier Trophy to Aircraft Firm Head, Pilot and Researcher

Terming the supersonic flights of the Bell X-1 experimental airplane "an epochal achievement in the history of world aviation," President Harry S. Truman yesterday presented the Collier trophy to three men—one of them Lawrence D. Bell, president of Bell Aircraft corporation—in a White House ceremony yesterday, the Associated Press reported today.

The trophy, symbolic of the annual outstanding aviation achievement, was given to Mr. Bell, Capt. Charles E. Yeager, USAF, and John Stack of the National Aeronautics Advisory committee. The trio participated in the development of the plane, Mr. Bell as president of the firm which manufactured it, Mr. Stack as a research scientist in its pre-flight tests and Capt. Yeager as the pilot who, in October, 1947, flew the tiny plane faster than sound, thus becoming the first pilot in history to make such a flight successfully.

Tonight the National Aeronautics Association, at the annual dinner of the Washington Aero Club in the Hotel Statler, awarded its newly established Wright Brothers Memorial Trophy to Dr. William F. Dudand, eighty-nine-year-old "dean of America's engineers." The model, for "significant public service of enduring value to aviation," was given to Dr. Durand for his many contributions to aviation before his retirement as professor of mechanical engineering at Stanford University in California.

An Address by
GENERAL HOYT S. VANDENBERG
Chief of Staff, U.S. Air Force

At a Reception and Luncheon for Recipients of the Collier Trophy,
Collier Trophy Committee, and Relatives of Orville Wright.

At 1:00 P.M. EST
Friday, December 17, 1948

In the
Wardman Park Hotel,
Washington, D. C.

It is a genuine pleasure to extend greetings and congratulations to the men and women of the distinguished group we honor here today, not only for myself personally but also upon behalf of the United States Air Force.

Today, the world's greatest aeronautical treasure has returned to its native soil. To you, Dr. Shaw, and to the British Museum, our thanks for preserving it during these years. To you, Dr. Wetmore, and the Smithsonian Institution, our congratulations. We know you will safeguard it. It will serve to inspire those who refuse to recognize the impossible. We are pleased to honor both you gentlemen and your great institutions, for surely those who preserve our history are worthy of honor as well as those who make it.

We are happy that members of the Wright family honor us with their presence as we pay tribute to Orville and Wilbur Wright on the day we call Wright Day. On this date, forty-five years ago, those two intrepid pioneers, refusing to concede that what had not been done could not be done, accomplished what man had sought since he first became conscious of birds in flight. On that day, an aircraft they themselves had researched, designed, engineered, and manufactured, carried Orville Wright in controlled flight. The air age was born.

Today we honor the Wright brothers; today we look back to the beginning of air power and marvel at the ability of man to shape his physical environment to fit his needs.

But today we do more than look back. On this forty-fifth anniversary of the birth of human flight, we are honoring also the greatest aeronautical achievement since that first flight forty-five years ago. Today we honor three men and three great institutions whose cooperative efforts have breached the sonic barrier and accomplished controlled supersonic flight.

Here again we see the same indomitable spirit of the Wright Brothers. Here again are men who would not accept the dictum that what had not been done could not be done. But here, compared with Kitty Hawk, there is a great difference.

Captain Charles Yeager first flew the X-1 through and beyond the sonic barrier. For that feat, Captain, the Air Force and the world honor you. We in the Air Force like to think that you are typical of the Air Force — fine, alert, superbly trained, and, given even an outside chance at success, ready to tackle any air assignment.

But, unlike the Wright brothers, neither Captain Yeager nor even the Air Force engineered and built the aircraft he flew. Lawrence Bell and Bell Aircraft did that. In a manner typical of free enterprise, American labor, American capital, and American management cooperated to produce what none could have produced alone. For the X-1 we are pleased to honor Mr. Bell and the great industrial institution he heads.

But even as American industry stood behind the Air Force in this great achievement, still another man and another great institution stood behind industry. For more than ten years, John Stack, a great research scientist, and the National Advisory Council on Aeronautics have sought out the physical laws governing transonic and supersonic flight. Patiently and persistently, without fanfare and in the best scientific tradition, Mr. Stack and his colleagues discovered and put together the thousand and one jig-saw pieces of this great puzzle. When they had translated the results of their painstaking research into terms useful to the aeronautical engineer, the X-1 was on its way.

We are proud of you, Mr. Stack, proud of the tradition you represent, and proud of the institution that affords you the academic atmosphere of intellectual freedom that makes your work possible.

Often we have pointed out that the X-1 is not a military aircraft. It is truly a laboratory instrument. What, then, we are asked, do we hope to gain from it? In answer to that question, let me say that from the operation of the X-1 we shall gain useful, full-scale data to permit intelligent design of transonic and supersonic aircraft for whatever purpose, civil or military, such aircraft may prove adaptable.

John Stack, Larry Bell, Chuck Yeager — we are glad to honor you on Wright Day. You represent the inseparable trinity of modern air power — scientific research, industrial capability and trained performance. Any one of you or any one of your institutions without the other two is largely impotent. None of you could have accomplished this great feat alone. For that reason, the great honor represented by the Collier Trophy has been bestowed upon you jointly. Together you represent Air Power — the power to knit mankind together, the power to maintain peace and freedom throughout the world.



Address by

LAWRENCE D. BELL

President, Bell Aircraft Corporation

And Co-Winner of Collier Trophy for 1947

Before the Annual Wright Brothers Dinner
Of the Aero Club of Washington

Statler Hotel,
Washington, D. C.

December 17, 1948

Forty-five years ago tomorrow the Evening Mail of Stockton, California carried a headline across the front page which read:

"AN AIRSHIP ON THE KITE PLAN FLEW THREE MILES IN NORTH CAROLINA - ROSE AGAINST STRONG WIND AND DESCENDED GRACEFULLY - NO BALLOON USED."

This was one of the very few, if not the only newspaper in the United States that carried this important news so prominently. A few other papers also mentioned the flight. Apparently the people at the time did not catch the significance of this important event. This is emphasized by Charlie Kettering's famous story: "Forty-five years ago today Katherine Wright at Dayton, Ohio, received a telegram from Kittyhawk, North Carolina, which read: 'Made our first successful flight today. Will be home for Christmas. Signed Wilbur and Orville.'

"In her enthusiasm Miss Wright displayed the telegram to a number of her friends and it was suggested that she call a local newspaper. She finally succeeded in getting the editor on the telephone and read to him the telegram, whereupon he replied: 'Thank you very much, Miss Wright, for calling. We are glad to know the boys will be home for Christmas.'"

Much has been written about the Wright Brother's first flights measured in feet and in seconds, and the subsequent accomplishments of these famous men. We are today reviewing the aviation progress of 45 years that stemmed from that humble beginning. The entire history of practical aviation has been written within the lifetime of most of the men - not the women - of this audience. Many of you have contributed to this astonishing advancement, and some here helped to nurse this infant in its very early days.

The highlights of what happened following 1903 are a great tribute to the pioneering achievements of many men. Few will remember that Professor John H. Montgomery of Santa Clara College, California designed and built a glider in 1905 and in the same year a parachute jumper named Dan Maloney, seated in the glider, was carried aloft by a balloon from which he cut loose at 3500 feet and made a successful controlled glide flight to earth.

In September 1908, less than five years from the first flight, Wilbur Wright flew more than 60 miles non-stop in France, and on December 31 of the same year he won a \$4,000 prize by setting the world's endurance record of two hours and 20 minutes. On July 25, 1909, Louis Bleriot won \$5,000 by being the first to fly across the English Channel, after an earlier attempt by Latham had ended in failure. In July, 1945, I had the pleasure of dining in Paris with Mme. Bleriot on the 36th anniversary of her husband's historic flight.

Also in 1909, the year the War Department accepted the first Wright flyer, Orville reached the thin-air altitude of 902 feet while flying over Berlin. The next year, 1910, less than 7 years after their first flight, Eugene Ely made history by taking off in an airplane from the armored cruiser U.S.S. Birmingham. On another flight two months later he made more history by landing on the deck of the cruiser U.S.S. Pennsylvania.

Things were happening fast now. That same year Glenn Curtiss made his famous flight from Albany to New York City, a distance of 150 miles, in the breath-taking time of 2 hours - 51 minutes. Rivalry was really keen. The Wright Brothers brought infringement suits against the Herring-Curtiss Company. Some things in life don't seem to change at all.

According to Collier's Magazine of 1911 the world military aviation strength, expressed in number of airplanes, was as follows:

France	- 38	Russia	- 6
Germany	- 24	England	- 3
Italy	- 8	United States	- 1

In 1911 C. P. Rogers was the first to fly across the American Continent. He wasn't as wise as some of our latter day speed demons, because he flew from east to west. He made the 3390 mile journey from New York to Pasadena with only 68 stops in 82 flying hours, spread over 49 days, and on at least one occasion had to set his machine on a hand car and take off down a railroad track.

Exhibition flying was now coming into its own, which, incidentally, financed the industry for several years. In 1911 Lincoln Beachey made history and money by flying under the Suspension Bridge at Niagara Falls. Shortly thereafter, as a youngster, I joined up as a mechanic with Beachey - my all-time stunt pilot hero.

In 1913 Beachey was the first in America, second in the world, to "loop the loop" as it was called then.

It was these Early Birds that have contributed so much to the development and history of American aviation that have been so little recognized. I really do not belong at this table but instead belong with my contemporaries, the Early Birds, at the table below. It was these men and others, no longer here, that contributed so much to aviation from the early days of the Wright Brothers to World War I. This was the era of exhibition flying and it was through their efforts that aviation, such as it was then, was financed and kept alive. Too much credit cannot be given these men for their pioneering when others lacked the courage. They did this on their own with their own meagre funds in the days when life insurance and insurance on equipment was unobtainable. Likewise there was nothing like bank credits for aviation in those days.

Most people believe that the first aerial bombardment started in World War I after 1914. That is not true. It was General Pancho Villa, whom we later chased through Mexico, who first used the airplane for bombardment. His air force consisted of one Martin 75 HP Pusher Biplane, his pilot was a Frenchman named Diddier Masson and his mechanic an Englishman named Tommy Dean.

January 1, 1914 marked the commencement of America's first airline from St. Petersburg to Tampa. That was the beginning of quite a chain reaction too.

The 4 years of World War I pushed aviation ahead with an urgency undreamed of in times of peace. Overnight the fabric and spruce airplane became a fighter, a bomber, a tactical weapon. The effectiveness of the airplane as a weapon in World War I was not demonstrated to any great extent, but military observers of all nations seized upon its potential as a weapon of the future. It is hard to believe, but the fastest fighters in World War I were slower than present day helicopters.

Following World War I aviation suffered its usual post-war slump, but hardy souls carried on. In May 16 - 27, 1919 the Navy's NC-4 made the first trans-Atlantic flight by way of the Azores. Less than a month later - June 14 - 15, the Britishers Alcock and Brown made a non-stop flight in the Vickers-Vimy biplane from St. Johns, Newfoundland to Clifden, Ireland. Shortly before this another Englishman, Hawker, attempted the same flight, but after a thousand miles saw a nice big boat and successfully crash landed alongside.

A number of one-shot air mail demonstrations were made beginning as early as 1911, but it wasn't until May 15, 1918 that the first regular, on a sustaining basis, air mail service was inaugurated by the Army between New York and Washington. Shortly thereafter the Post Office Department took over the Air Mail operation and expanded the service from New York to Chicago on December 12, 1918. The early days of the Air Mail development were fraught with many difficulties but the service was continued and expanded. Transcontinental Air Mail service flown through the night as well as the day, was first accomplished in February 1921.

However, regular day and night service did not begin until 1925 when beacons lit the way across the country. May 2 and 3, 1923 the team of Kelly and Macready were first to fly non-stop in a Fokker monoplane across the continent, again from east to west, in 26 hours - 50 minutes. The next year, 1924, four Douglas single engine planes set out on a flight around the world - two completed the trip to the starting point 175 days later. In 1924 a daring young Army lieutenant named Maughan made a flight from New York to San Francisco between dawn and dusk, with several stops, in 17 hours - 52 minutes.

The real awakening of the peoples of the world to aviation came as a result of Lindbergh's successful solo flight from New York to Paris non-stop in May 1927. Following this flight it seemed that everyone began flying everywhere at great distances and with great risk. Shortly after Lindbergh, Chamberlain and Levine flew 3911 miles non-stop from New York to Germany. In the same year Maitland and Hegenberger made the pioneering flight from Oakland to Honolulu - 2407 miles over water. This flight was followed by several others that ended in tragedy.

From July 1 to July 7, 1929 the then unknown team of Spaatz, Eaker and Quesada stayed aloft in the Question Mark for more than 150 hours by the aid of re-fueling in the air. The same year Lieutenant Soucek, USN, reached an altitude of more than 39,000 feet, and the following summer took his plane above 43,000 feet.

Events of the past two decades are two well known to all of you to require more than the briefest review. During the 30's despite the bitterest financial depression which the nation has ever experienced aviation continued to forge ahead on all fronts. Commercial air transport was tremendously expanded and great airlines developed to give a continuity and dependability of service that had been impossible in the pioneering days.

In the fields of military aviation no less great progress was made in the face of bare subsistence appropriations. Multi-engine bombers and transports, as well as single engine and twin engine fighters came into being with all of the attendant improvements and power plants, radio, fuel and many other accessories and services.

It is interesting to note that throughout the entire history of aviation up until about 1930, there was no pattern as to design. Every conceivable configuration had been tried, including monoplanes, biplanes and triplanes, pushers and tractors, straight wings, swept back wings, tail-less and tails in front. By 1930, however, in most part, the designs settled down to either high or low wing, unswept monoplanes with tractor propellers.

Now with jet and rocket propulsion and higher performances, new and radical designs are again appearing, including extremely thin swept back wings, thick flying wings and planes with half tails. It will take some more years to reach the optimum configuration and then in turn new discoveries in propulsion and aerodynamics will bring new configurations in the interest of over-all efficiency and performance.

World War II with its tremendous demand for more and more superior aircraft resulted in tremendous progress in the art of flight. Published records of today are most impressive. Non-stop flights of more than 11,000 miles. Altitudes of more than 59,000 feet. Speed dashes of 670 miles an hour. The performances of other military machines are yet un-published. The capabilities of these late models are concealed for reasons of military security.

With respect to the X-1, obviously, many people in the NACA, the Air Force and our organization and its vendors and subcontractors contributed to this achievement. These number far too many to be mentioned now, but there are a few to whom I wish to pay special tribute. These include the late Dr. George W. Lewis, Director of Research of the NACA, without whose enthusiastic support we could not have succeeded; the late Jack Woolams, our former Chief Test Pilot, who was first to fly the X-1; and the late Howard Lilly, the first NACA test pilot to fly the X-1; and the late Captain James FitzGerald, who had the distinction of exceeding the speed of sound on his first flight in this plane.

In this group who made special contribution, I would also like to point out Major Ezra Kotcher of Wright Field, who was responsible for much of the development of the early plans for this project.

Due to the high speeds and high altitudes at which the X-1 was intended to operate, many problems were presented. Because of lack of needed apparatus much improvising was necessary to accomplish the desired results. As an example - there was not in existence any type of fuel pump that could pump liquid oxygen at 360 degrees below zero Fahrenheit, and alcohol and water at the required high capacity. This necessitated an improvised fuel system which by its very nature reduced the airplane's fuel capacity. This fuel system involved 12 specially constructed steel spherical bottles ranging from 15 to 21 inches in diameter to be connected together and tucked away in the odd corners of the limited space available in the airplane. These bottles carried inert gases under pressure of 4500 lbs. per square inch. Inasmuch as commercial nitrogen gas could not be obtained in excess of 2,000 lbs. pressure, it was necessary to develop and build special nitrogen evaporators to produce gas at the desired high pressure.

Many other accessories suitable for this project were unavailable. There existed no air speed indicators or mach meters to measure the high speeds expected. There was no altimeter that would register the airplane's expected altitude. It was too hazardous for the pilot to attempt to fly at these speeds and altitudes without these direct reading instruments.

While the X-1 was designed to take off under its own power on its own landing gear, it has always been launched by dropping from the belly of a B-29 at high altitude. This procedure came about by happen-stance. After the airplane was completed, its initial flight tests were delayed six months awaiting certain accessories. It was then that our engineers conceived the idea of dropping it from a B-29 at high altitude as a glider in order to give the pilot an opportunity to determine the flying characteristics of the airplane. Jack Woolams, in the winter of 1946, made 12 such drops in Florida where there was available a 10,000 foot runway. These 12 ten minute glide familiarization flights determined the stalling speed and the flying characteristics of the airplane. In fact, it worked so well that the procedure has since been adopted for use with full fuel aboard, as it completely eliminates all take-off hazard of the heavily loaded airplane. In the event the rocket engine fails to start all fuel can be expelled by the high pressure blow-out system, permitting landing always in light condition. Perhaps the most significant thing about the X-1 is the fact that the airplane has been flown many many times in the sub-sonic, transonic and supersonic ranges of speeds in its original configuration as it came off the drawing boards, and not a single change has ever been made or now deemed necessary. A real tribute to the engineers responsible.

The success of the X-1, which has been honored here today and tonight, has taught us much in the realm of speeds faster than sound that now makes it possible to build man-carrying airplanes with speed two or three times that of the X-1. The knowledge that we have gained in this research opens an entirely new frontier of flight heretofore not dreamed of. Stability and control at really high speeds have been achieved.

It is safe to say that the end of the first 45 years of aviation brings us only to the beginning.

CHARLES E. WILSON
570 LEXINGTON AVENUE
NEW YORK 22, N.Y.

December 21, 1948

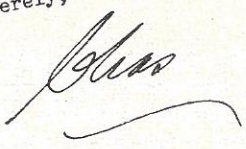
Dear Larry:

I have just returned to the office this morning, after some time before a Senate Investigating Committee, and hasten to send you my sincerest congratulations on the award to you of the Collier Trophy, for the magnificent contribution made by you to our country.

While in Washington, I saw newspaper pictures of you receiving the Trophy from the President, and also saw a telecast of the same event. I was indeed proud of our friendship. The outstanding job which occasioned this recognition is so obviously one of tremendous import to the future of our Air Force strength that I am sure if all our citizens fully understood the nature and potentialities of your contributions you would be even more widely acclaimed for your accomplishments.

More power to you, and all good wishes for a Happy Christmas and a Prosperous New Year.

Sincerely,


Mr. Lawrence D. Bell, President
Bell Aircraft Corporation
Buffalo, New York

DEC 27 REC'D

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CHICAGO 6, ILLINOIS

OFFICE OF
THE VICE PRESIDENT

December 27, 1948

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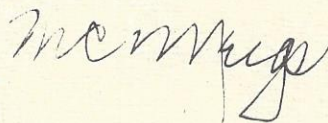
Mr. Lawrence D. Bell
President
Bell Aircraft Corporation
PO Box 1, Buffalo 1,
New York

Dear Larry:

Congratulations on sharing the Collier Trophy
award, presented to you by President Truman, for design-
ing the supersonic plane. A hundred years from now a
lot of things will be forgotten that have happened dur-
ing this era, but your invention will be remembered to
the end of Time.

A Happy New Year to you and yours and the same
to your assistant, Dave Forman.

Sincerely,



Merrill C. Meigs
mdb

DEC 29 REC'D

