today
and
tomorrow
Birdman's Eye View of Air Transport

1926

1,000 AIRPORTS

12¢ PER MILE

5,782 PASSENGERS

8,252 ROUTE MILES

142 MILLION REVENUE

347 AIRPORTS

4,668,330 PASSENGERS

1944

62,937 ROUTE MILES

142 MILLION REVENUE

FUTURE

Applications pending before Civil Aeronautics Board

678 new scheduled airline stops covering

780,000 route miles, and

6,000 new communities

Consensus of estimates:

6 take-offs per minute at Idlewild, N. Y. .

20,000,000 passengers per year soon after w

7 times pre-war volume of air transport by 1

...
WAR JOB

There is no more dramatic forecast of the role of air transport tomorrow than the story of the war job performed by the airlines of the United States.

The men and women who had linked every big city in this country with highways of the air, overnight extended their operations overseas.

In areas where man had never flown before and no aids to navigation existed, they pioneered routes across the Arctic icefields, the vast ocean spaces of the Atlantic and Pacific and desert wastes, where hundreds of planes today are flying routine schedules with greater frequency than along such heavily traveled prewar airlines as between New York and Chicago.

During the first three years of our participation in the war the airlines of the United States flew more than 8,000,000,000 passenger miles and totaled more than 850,000,000 ton miles of cargo carrying. Their overseas war routes, operated directly for the Army and Navy under contract, accounted for more than 2,500,000,000 of the passenger miles and more than 600,000,000 of the ton miles.

They have flown the equivalent of 26,000 times around the world at the Equator. Carrying the same tonnage of cargo the same distance they have operated during the war, the airline fleets could have moved all the 140,000-odd passenger cars registered in the state of North Dakota from Seattle to Tokyo. Or they could have moved by air the entire population of Philadelphia to London.

From the moment of Pearl Harbor, the airline personnel, from top executives to ground crews, both as companies and as individuals, met crisis after crisis in the early days before the Army and Navy air forces were in full action with sufficient equipment. Since then, they have racked up an almost unbelievable record in the transport of men, munitions, equipment, doctors, nurses, blood plasma and whole blood, food, medical supplies and materiel of all kinds.

More recently the carriers under contract with the Army and Navy played a big part in evacuating wounded men, bringing thousands of soldiers and sailors back across the oceans to hospitals at home. Their operations in unarmed planes resulted in many heroic rescues in the case of sinking vessels and even in tracking down enemy submarines.

While still carrying on their civilian schedules at a record-breaking peak, with war priority passengers and express predominating, the airlines turned in this miraculous performance under contracts with the Air Transport Command of the Army Air Forces and the Naval Air Transport Service:
<table>
<thead>
<tr>
<th></th>
<th>Passenger Miles</th>
<th>Ton Miles</th>
<th>Miles Flown</th>
<th>Hours Flown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overseas</td>
<td>2,581,903,999</td>
<td>603,137,283</td>
<td>246,832,422</td>
<td>1,427,436</td>
</tr>
<tr>
<td>Domestic</td>
<td>114,412,093</td>
<td>103,914,981</td>
<td>62,087,339</td>
<td>400,571</td>
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<tr>
<td>Total</td>
<td>2,696,316,092</td>
<td>707,052,264</td>
<td>308,919,761</td>
<td>1,828,007</td>
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</tbody>
</table>

The history of the war could almost be written in the cargo manifests of transport planes, revealing how they rushed critical supplies and personnel in time to turn defeat into victory on far-flung battle fronts.

The lists include fuses for tank-destroying shells which helped Montgomery turn the tide at El Alamein, when one plane, among many, made 17 round trips over the South Atlantic in three weeks. They include the bombs, pilots and materiel which forestalled a Jap attack on Dutch Harbor. They include gasoline, plane parts, jeeps and other supplies, flown steadily over the treacherous “Hump” of the Himalayas, which kept the isolated Chinese and our own “Flying Tigers” in action against the invaders. They include ammunition and food flown to the heroic Marines cut off from all other sources of supply on Guadalcanal. And they include, day after day, the steady flow of every item in the quartermaster’s book, which never made the headlines but enabled the front line troops to keep pushing forward.

Dynamite, eggs, war dogs, fresh vegetables for exhausted fighter pilots, hog bristles, cutting diamonds, President Roosevelt, Prime Minister Churchill, generals, admirals, or vitally needed farm laborers from the Bahamas—all rode the flying boxcars, both to and from and in between the battlefronts.

Most precious cargo of all, perhaps, was the returning army of wounded fighting men. Counting all the air units which do this job, shared largely by the airlines on the long overseas hops, more than 800,000 sick and wounded were carried to safe beds and life and hope during the last two and a half years.

More than one-third of the airline personnel, including pilots, stewardesses and operations staffs, joined up with the armed forces. Many gave their lives and many received citations for performance above the line of duty, largely in the same field of flying in which they had gained invaluable experience in civilian life.

Another of the spectacular war contributions by the airlines was the revamping at modification centers of planes fresh off the production line. In three years these centers adapted almost 50,000 planes to improve their combat efficiency. It was a three billion dollar gamble which paid off in surprises for the enemy.

The airlines shared with the Army Air Forces the famous Collier trophy for pioneering world-wide transportation “vital to immediate defense and ultimate victory.” Now that victory is won few will deny that men and women of the commercial air fleets have, in the war years, earned that award a hundred times over.
TRANSPORT

Air transport has flown to amazing heights in the short span of 27 years since the spring afternoon when aviation became a business as well as an adventure.

On May 15, 1918, the first air mail route in the United States was opened between Washington, D. C., and New York City. It was the beginning of the vast network of regularly scheduled air service, which, spurred by the demands of a second World War, is opening another new era in the transportation of passengers and cargo.

The Army polo field at Potomac Park was the “airport” for the 1918 takeoff with two sacks of letters and packages. From the Wright brothers’ first experimental field at Dayton, Ohio, through the cow pasture landing fields of the early birdmen and the improvised Army and Navy air stations, aviation had reached the milestone of establishing terminals. And its first terminal was typical of many for some time to come: a turf surfaced field of 17 acres, worth about $110,000, equipped only with a shed described loosely as a hangar.

It is a far flight from the airport of little more than a quarter of a century ago to the airport of 1945. What a vast span in the conquest of the air to the present 750-acre Washington National Airport with its miles of paved runways, its four- and five-story administration building and hangars, and its 150-foot ticket counter! Yet this $20,000,000 airport is soon to be eclipsed by the $100,000,000 Idlewild terminal at New York.
And it is a far flight from the single-engine, open cockpit, wire-braced mail plane of 1918 to the multi-engine, streamlined, space-shattering transport plane of today.

In between and all along the line is the story of how air transportation has developed in America; how airports have grown from a one-hangar empty lot to the magnitude of the magnificent National Airport, of LaGuardia Field, and of others like it throughout the country; how transport planes have developed from the two-passenger capacity of the early flights to the 21-seaters in regular commercial use today, with their portent of great 204-seaters for the near future.

It is the story of how airline service has expanded and multiplied until less than 10 per cent of our people live more than 25 miles from present or pending airline terminals; and how speed has increased until the regular scheduled time for crossing the continent is between 12 and 14 hours. It has been done in a transport plane in a little over 6 hours and aeronautical engineers say we are on the threshold of linking the coasts in half that time.

From that May 15 in 1918 the story moved forward to the start of the first transcontinental trip of the air mail on Sept. 8, 1920; and then with many high lights in between, to the first regularly scheduled passenger service by a commercial airline between Los Angeles and Salt Lake City on April 17, 1926. From then on the pages turned rapidly, with the volume and range of air transport increasing by leaps and bounds.

In 1926 there were about 1,000 airports. In 1944 there were 3,427. Today the investment in airports is around $2,000,000,000, including Army and Navy fields, many of which will be in civilian use after the war.

In 1926 the airlines carried 5,782 passengers. In 1944 they carried 4,668,330, or 920 times as many.

Revenue miles flown in 1926 were 4,258,771. In 1944 the figure was about 35 times that, or 142,234,837.

Passenger miles flown in 1930 were 84,014,572. In 1944 the figure was about 27 times that, or 2,281,704,377.

Mail ton miles in 1934 were 2,461,411. In 1944 the figure was about 25 times that, or 50,825,202.

Express and freight ton miles in 1935 were 4,089,802. In 1944 the figure was about 17 times that, or 17,142,677.

The airline fleet in 1941 was 359 planes. It dropped to 166 in 1942, when the government requisitioned more than half the fleet. At the end of 1944 it was back to 347 and this was the entire fleet which set up the all-time transport records of 1944. Average number of seats per plane had risen to 19 from 6½ in 1932, while personnel had mounted from 1,451 in 1928 to more than 31,000 in spite of service with the armed forces of thousands of men and women of the airlines.

Fares have been reduced from 12 cents in 1926 to about 5 cents per mile and further cuts are contemplated.

The network of air routes flown was increased in 1944 by 8,435 miles, equal to the country’s system of airways in 1926, and bringing regular air service to hundreds of new communities. The total at year-end reached the peak of 62,937 route miles, to which 1,244 were added in the first quarter of 1945.
The present domestic airline system serves cities with one-third of the nation's total population and 76 per cent of our urban population. Within a 25-mile radius of these stops live 82 per cent of our urban population and 93 per cent within 50 miles.

At the end of 1944 there were 185 designated stops for air transport in use, plus 101 temporarily suspended because of the war, some of which are already being restored. Even with the war on, 16 new stops were added last year. There were 542 applications for scheduled domestic airline service before the Civil Aeronautics Board as of April 1, 1945. Of these 415 were of the conventional type, 48 pick-up service, and 79 helicopter. These applications name 678 new scheduled stops, cover 780,000 route miles and would serve 6,000 new communities.

The tremendous growth of air travel is already taxing even the finest airports to the limit. There were 500 landings and take-offs at the old Washington airport in 1930. In March, 1945, at the new Washington National Airport, there were 13,000 military and civilian movements, or one every 3½ minutes. The situation is similar at LaGuardia Field in New York, in Chicago and many other cities. The gigantic Idlewild Field is being built to handle 360 landings and take-offs an hour, or six every minute.

Air transport reached its peak in 1944 in spite of war handicaps largely due to increased efficiency developed along tested airline patterns but intensified to meet war needs. Planes were flown on an average of from 11 to 12 hours daily, as compared to 7 to 9 before Pearl Harbor. In some cases they flew as high as 14 hours daily, without detriment to maintenance.

Another item was the high point reached by the passenger load factor—or the actual extent to which available seats are filled. For the year this averaged 90.83 as contrasted with 55 per cent in 1935.

Every single day in the year, now, more than twice as many passengers are traveling safely by air in the United States as during the entire year of 1926. It has been a far flight, indeed. And we are just warming up for a still longer and even faster flight.
The talents of a Jules Verne or an H. G. Wells are not needed to chart the course of air transport in the near future.

The shape of things to come is revealed by United States Government aeronautical surveys, on the drawing boards of airplane manufacturers, and on the flying fields of this war. The coming of peace will speed the air traveler to the far corners of the earth with facilities hardly dreamed of before the war.

Planes with speeds of 400 miles an hour and, before long, ranging to nearly twice that to out-distance the velocity of sound.

- Gas turbine or jet-propulsion power plants which will not only make such speeds possible but permit smooth and vibrationless flight in the stratosphere, above turbulence of weather.

  Pressurized cabins assuring comfort at any altitude.
  Passenger capacities of 50 to 100 seats for domestic operations and more than double that for mammoth luxury liners of the sky on overseas routes.
  No big city in the world more than 60 hours’ flying time distant from any other place.

Local schedules so frequent that reservations will be unnecessary, one plane following another in a matter of minutes.

Airports that will handle six or more landings and take-offs every minute, with mile and one-half long runways radiating from a central administration terminal speeding the process of embarking and disembarking.

Radar which will detect the presence of all approaching aircraft, whose actual positions as far away as 25 miles will appear on a screen in the control tower, even in bad weather or at night. The controller will have complete ability to direct traffic to safe landings regardless of the weather. Similar apparatus will warn each pilot if another plane or obstacle is within hazardous range, seeing in all directions in sunlight, darkness, or fog. Planes above, below, ahead, behind, at either side will all show on the radarscope and will furthermore show which way they are going.

Twenty million passengers a year with a quarter-million of them making trips to Europe annually. Six billion passenger miles in 1946.

All first-class mail dispatched by air, and the air carriers delivering parcel post. The volume of air express exceeding passenger revenue.

Ten to twelve thousand pilots and crew members, backed up by 125,000 airline workers on the ground. On the airports 63,000 operations jobs, plus 125,000 jobs directly connected with airport activities.

Nearly six million potential new air travelers as a result of the war experiences of 350,000 military pilots, 2,500,000 men in the armed forces
trained in aviation skills, 2,500,000 aircraft production workers, 150,000 civilian and student pilots, and 300,000 students spurred by the war to take aviation courses.

New domestic service already proposed over 779,666 route miles; and overseas coverage 634,461 route miles.

Feeder service, pick-up service (without stops), funeral service, airplane delivery service, fly-yourself service, and local delivery of department store purchases.

Some times and fares already proposed:

- New York to London: 9 hours, $148
- New York to Paris: 10 hours, $152
- New York to Calcutta: 40 hours, $332
- San Francisco to Shanghai: 36 hours, $303
- Seattle to Tokyo: 20 hours, $209
- Seattle to Juneau: 7 hours, $52
- New York to Buenos Aires: 21 hours, $190.50
- New York to Rio de Janeiro: 19 hours, $175

Sample schedules contemplated in the near future at home: New York—Miami, 3 hours 40 minutes; Chicago—Miami, 5 hours; New York—Washington, 1 hour; all at less than 5 cents per mile.

"Clock-stopping schedules," possibly with jet-propelled planes, are next in order. Under such a schedule you could leave Boston at 12 noon and arrive in Los Angeles at noon sharp on the same day.

A new era in peacetime flying surely is not far around the corner.

COAST TO COAST

The linking of the Atlantic and Pacific ever more closely, through air transportation, has provided one of the most dramatic time-tables of United States history.

From the days of the Covered Wagon to the Stratosphere plane, the progress of our nation has been reflected in the new records for swift transit from Coast to Coast.

The annals reveal that throughout this accelerating contest to annihilate space between the oceans, the goal of speed for speed's sake has been secondary to transporting people, their mail, and their belongings.

Even with the airplane, which has shattered all previous conceptions of rapid travel, it is significant to note that the fastest transcontinental records of all are now being set by planes designed to carry passengers and cargo.
### LESS TIME TO CROSS THE CONTINENT

#### 1858
Mail Coach and Rail

#### 1861
Pony Express and Rail

#### 1869
First Transcontinental Train

#### 1921
First All-Air Mail

#### 1929
First Air-Rail Passenger Service

#### 1944
Regular Air-Passenger Service

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1840</td>
<td>The ox-drawn Covered Wagon</td>
</tr>
<tr>
<td>1846</td>
<td>Sailing vessels around the Horn</td>
</tr>
<tr>
<td>1849</td>
<td>Steam vessels around the Horn</td>
</tr>
<tr>
<td>1858</td>
<td>Overland mail coaches and rail</td>
</tr>
<tr>
<td>1861</td>
<td>Pony Express and rail</td>
</tr>
<tr>
<td>1869</td>
<td>First transcontinental train</td>
</tr>
<tr>
<td>1903</td>
<td>First transcontinental automobile trip</td>
</tr>
<tr>
<td>1911</td>
<td>First transcontinental airplane trip</td>
</tr>
<tr>
<td>1919</td>
<td>First transcontinental round trip by air</td>
</tr>
<tr>
<td>1920</td>
<td>First air-mail: New York-San Francisco</td>
</tr>
<tr>
<td>1921</td>
<td>First air-mail: San Francisco-New York</td>
</tr>
<tr>
<td>1923</td>
<td>First non-stop coast-to-coast flight: Lt. John A. Macready and Oakley Kelly</td>
</tr>
<tr>
<td>1924</td>
<td>Fastest transcontinental railroad trip: Col. Russell L. Maughan, New York-San Francisco</td>
</tr>
<tr>
<td>1927</td>
<td>First coast-to-coast commercial air passengers: New York-San Francisco</td>
</tr>
</tbody>
</table>

#### THE CONTINENT GROWS SMALLER

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1929</td>
<td>Round-trip record by Frank Hawks: New York-Los Angeles</td>
</tr>
<tr>
<td>1930</td>
<td>New round-trip record by Frank Hawks: Los Angeles-New York</td>
</tr>
<tr>
<td>1931</td>
<td>Record by Jimmy Doolittle: Burbank-Newark, September 4</td>
</tr>
<tr>
<td>1933</td>
<td>Regular coast-to-coast air passenger, mail, and express schedule</td>
</tr>
<tr>
<td>1934</td>
<td>Jack Frye and E. V. Rickenbacker in regular commercial transport plane</td>
</tr>
<tr>
<td>1935</td>
<td>Record by Leland S. Andrews and H. B. Snead: Los Angeles-Washington</td>
</tr>
<tr>
<td>1937</td>
<td>Record by Howard Hughes: Los Angeles-New York, January 19</td>
</tr>
<tr>
<td>1938</td>
<td>Westbound record by A. P. DeSeversky: Brooklyn-Burbank, August 29</td>
</tr>
<tr>
<td>1943</td>
<td>Regular schedule for passengers, mail, express</td>
</tr>
<tr>
<td>1944</td>
<td>New record by Howard Hughes and 17 passengers in transport plane:</td>
</tr>
<tr>
<td>1945</td>
<td>Regular extra fare service: New York-Los Angeles</td>
</tr>
<tr>
<td>1949</td>
<td>Record in transport plane: Seattle-Washington, January 10</td>
</tr>
</tbody>
</table>
### The Planes...

Section of Airliner of 1932 - Average Capacity 6.58 seats, 118 miles per hour

<table>
<thead>
<tr>
<th>Number of Airline Planes</th>
<th>Average Seats Per Plane</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬠</td>
<td>5</td>
</tr>
<tr>
<td>⬠</td>
<td>6</td>
</tr>
<tr>
<td>⬠</td>
<td>7</td>
</tr>
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<td>⬠</td>
<td>8</td>
</tr>
<tr>
<td>⬠</td>
<td>9</td>
</tr>
<tr>
<td>⬠</td>
<td>10</td>
</tr>
</tbody>
</table>

Each symbol represents 70 planes in service

Each symbol represents 1 seat

* Estimated

© 1932
Annual average mileage travelled by different vehicles per year

<table>
<thead>
<tr>
<th>INTERCITY BUS</th>
<th>52,600 miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAILROAD COACH</td>
<td>70,800 miles</td>
</tr>
<tr>
<td>PULLMAN CAR</td>
<td>145,000 miles</td>
</tr>
<tr>
<td>DOMESTIC AIRLINER</td>
<td>464,000 miles</td>
</tr>
</tbody>
</table>

SOURCE: J. Parker Van Zandt, Civil Aviation and Peace, p. 119, Data for 1942

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GASOLINE CONSUMPTION (Domestic Airlines)

Gallons per plane per year

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Gasoline (Gallons)</th>
<th>Oil (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1932</td>
<td>2,230,000</td>
<td>107,000</td>
</tr>
<tr>
<td>1933</td>
<td>2,270,000</td>
<td>110,000</td>
</tr>
<tr>
<td>1934</td>
<td>2,310,000</td>
<td>113,000</td>
</tr>
<tr>
<td>1935</td>
<td>2,350,000</td>
<td>116,000</td>
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<tr>
<td>1936</td>
<td>2,390,000</td>
<td>119,000</td>
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<td>1937</td>
<td>2,430,000</td>
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<td>1938</td>
<td>2,470,000</td>
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<td>1939</td>
<td>2,510,000</td>
<td>128,000</td>
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<tr>
<td>1940</td>
<td>2,550,000</td>
<td>131,000</td>
</tr>
<tr>
<td>1941</td>
<td>2,590,000</td>
<td>134,000</td>
</tr>
<tr>
<td>1942</td>
<td>2,630,000</td>
<td>137,000</td>
</tr>
<tr>
<td>1943</td>
<td>2,670,000</td>
<td>140,000</td>
</tr>
<tr>
<td>1944</td>
<td>2,710,000</td>
<td>143,000</td>
</tr>
</tbody>
</table>

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Gallons per million passenger miles

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Gasoline (Gallons)</th>
<th>Oil (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1932</td>
<td>136,000</td>
<td>86,000</td>
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<tr>
<td>1933</td>
<td>138,000</td>
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<td>1935</td>
<td>142,000</td>
<td>92,000</td>
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<td>144,000</td>
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<td>152,000</td>
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<tr>
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<td>158,000</td>
<td>108,000</td>
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<tr>
<td>1944</td>
<td>160,000</td>
<td>110,000</td>
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</tbody>
</table>
# Airways and Airports

## Air Routes of the United States

### Legend of Routes
- **Prior to 1944**
- **New since Jan. 1, 1944**
- **Not operating**

### Airways: Lighted and Other

<table>
<thead>
<tr>
<th>Year</th>
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<th>Other</th>
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<td>![Other Symbol]</td>
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<tr>
<td>1942</td>
<td>![Lighted Symbol]</td>
<td>![Other Symbol]</td>
</tr>
<tr>
<td>1944</td>
<td>![Lighted Symbol]</td>
<td>![Other Symbol]</td>
</tr>
</tbody>
</table>

*Full distance between 2 symbols represents 5,000 miles*
JSE OF FEDERAL AIRPORTS, December, 1944

ARMY

NAVY

AIRLINES

and Others

Each symbol represents 10% of total use

POPULATION SERVED BY AIRLINES

TWO out of every FIVE people in the U. S.

are served directly by Airlines

80% of the Urban Population lives
I  Length of landing strips, 1,800–2,700 feet. Adequate for small personal aircraft.

CLASS II
Length of runways, 2,500–3,500 feet. Adequate for small size transport planes.

III  Length of runways, 3,500–4,500 feet. Adequate for present day transports.

IV  Length of runways, 4,500–5,500 feet. Adequate for largest aircraft now in use.

CLASS V
Length of runway, 5,500 feet and over. Adequate for largest aircraft now in use.
THE MEN BEHIND THE FLIGHTS...

AIRLINE BUS

OFFICE EMPLOYEES

MECHANICS AND RIGGERS

REPAIR AND OVERHAUL

WEATHER AND RADIO

AIR MAIL
U.S. POST OFFICE
AIRLINE and PULLMAN TRAVEL
in the last pre-war years

AIRLINE
PASSENGER
MILES

16.3%
of Pullman Passenger Mileage

Domestic Airline Passenger Service

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Revenue</th>
<th>Non-Annual Revenue</th>
<th>TOTAL Passenger Miles (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931</td>
<td>663,261</td>
<td>83,685</td>
<td>1,492</td>
</tr>
<tr>
<td>1932</td>
<td>911,148</td>
<td>109,783</td>
<td>1,643</td>
</tr>
<tr>
<td>1933</td>
<td>958,510</td>
<td>144,197</td>
<td>1,876</td>
</tr>
<tr>
<td>1934</td>
<td>1,717,090</td>
<td>156,961</td>
<td>2,066</td>
</tr>
<tr>
<td>1935</td>
<td>1,772,830</td>
<td>231,660</td>
<td>2,804</td>
</tr>
<tr>
<td>1936</td>
<td>3,498,852</td>
<td>291,653</td>
<td>3,255</td>
</tr>
<tr>
<td>1937</td>
<td>3,349,134</td>
<td>202,699</td>
<td>3,551</td>
</tr>
<tr>
<td>1938</td>
<td>3,251,527</td>
<td>102,982</td>
<td>3,454</td>
</tr>
<tr>
<td>1939</td>
<td>4,575,716</td>
<td>92,614</td>
<td>4,668</td>
</tr>
</tbody>
</table>

*Not Available.
ASSENGER LOAD ACTOR (domestic)

SPEED vs COST
Los Angeles-New York

BUS
SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

Fastest scheduled plane, train or bus (regular fare)
Plane fare includes meals. Train fare includes lower berth but no meals.

ASSENGER LOAD ACTOR (domestic)

SPEED vs COST
Los Angeles-New York

BUS
SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

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SPEED vs COST
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SPEED mph
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SPEED mph
COST PER MILE

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SPEED vs COST
Los Angeles-New York

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COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
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SPEED vs COST
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BUS
SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

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Plane fare includes meals. Train fare includes lower berth but no meals.

ASSENGER LOAD ACTOR (domestic)

SPEED vs COST
Los Angeles-New York

BUS
SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

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SPEED vs COST
Los Angeles-New York

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SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

Fastest scheduled plane, train or bus (regular fare)
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ASSENGER LOAD ACTOR (domestic)

SPEED vs COST
Los Angeles-New York

BUS
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COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

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COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
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BUS
SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

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BUS
SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

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ASSENGER LOAD ACTOR (domestic)

SPEED vs COST
Los Angeles-New York

BUS
SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

Fastest scheduled plane, train or bus (regular fare)
Plane fare includes meals. Train fare includes lower berth but no meals.

ASSENGER LOAD ACTOR (domestic)

SPEED vs COST
Los Angeles-New York

BUS
SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

Fastest scheduled plane, train or bus (regular fare)
Plane fare includes meals. Train fare includes lower berth but no meals.

ASSENGER LOAD ACTOR (domestic)

SPEED vs COST
Los Angeles-New York

BUS
SPEED mph
COST PER MILE

PULLMAN
SPEED mph
COST PER MILE

PLANE
SPEED mph
COST PER MILE

Fastest scheduled plane, train or bus (regular fare)
Plane fare includes meals. Train fare includes lower berth but no meals.
ROUTE MILES OF DOMESTIC AIR MAIL SERVICE

FISCAL YEAR ENDING JUNE 30

1925-26
3,597

1928-29
14,406

1931-32
26,745

1934-35
28,884

1937-38
33,655

1940-41
44,623

1943-44
49,482

RATIO OF DOMESTIC AIR MAIL TO NON-LOCAL FIRST CLASS MAIL (1942)

ONE pound mile of domestic AIRMAIL

for every six of first class mail
### Air Express Pound Miles Flown (domestic)

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic Flown</th>
</tr>
</thead>
<tbody>
<tr>
<td>1936</td>
<td>3.6 Billions</td>
</tr>
<tr>
<td>1938</td>
<td>4.3 Billions</td>
</tr>
<tr>
<td>1940</td>
<td>6.9 Billions</td>
</tr>
<tr>
<td>1942</td>
<td>23.4 Billions</td>
</tr>
<tr>
<td>1944</td>
<td>34.3 Billions</td>
</tr>
</tbody>
</table>

**Domestic Flown (in Pounds):**

<table>
<thead>
<tr>
<th>Year</th>
<th>Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>2,145,483,711</td>
</tr>
<tr>
<td>1926</td>
<td>3,555</td>
</tr>
<tr>
<td>1936</td>
<td>3,652,441,457</td>
</tr>
<tr>
<td>1937</td>
<td>4,310,403,453</td>
</tr>
<tr>
<td>1938</td>
<td>4,347,411,261</td>
</tr>
<tr>
<td>1939</td>
<td>5,411,227,041</td>
</tr>
<tr>
<td>1940</td>
<td>6,985,058,170</td>
</tr>
<tr>
<td>1941</td>
<td>10,083,050,005</td>
</tr>
<tr>
<td>1942</td>
<td>23,456,208,925</td>
</tr>
<tr>
<td>1943</td>
<td>26,453,849,171</td>
</tr>
<tr>
<td>1944</td>
<td>34,285,335,651</td>
</tr>
</tbody>
</table>

**Domestic Flown (in Dollars):**

<table>
<thead>
<tr>
<th>Year</th>
<th>Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>19,983,711</td>
</tr>
<tr>
<td>1926</td>
<td>3,555</td>
</tr>
<tr>
<td>1936</td>
<td>3,652,441,457</td>
</tr>
<tr>
<td>1937</td>
<td>4,310,403,453</td>
</tr>
<tr>
<td>1938</td>
<td>4,347,411,261</td>
</tr>
<tr>
<td>1939</td>
<td>5,411,227,041</td>
</tr>
<tr>
<td>1940</td>
<td>6,985,058,170</td>
</tr>
<tr>
<td>1941</td>
<td>10,083,050,005</td>
</tr>
<tr>
<td>1942</td>
<td>23,456,208,925</td>
</tr>
<tr>
<td>1943</td>
<td>26,453,849,171</td>
</tr>
<tr>
<td>1944</td>
<td>34,285,335,651</td>
</tr>
</tbody>
</table>

**Source:** Civil Aeronautics Board

**Commentaries:**

- The growth in domestic air travel is evident from the early years of the 1930s to the peak year of 1942.
- The data reflects the significant increase in air transportation, highlighting the rapid expansion of the airline industry.
- The year 1942 saw a dramatic rise, possibly due to wartime necessities and increased industrial demand.
Cities Served by Air Express...

1927
26

1935
150

1940
250

1944
375

Time for Delivery... (NEW YORK–KANSAS CITY)

BY AIR EXPRESS
11½ hours

BY RAILWAY EXPRESS
3 days

BY PARCEL POST
3½ days

BY FREIGHT LCL.
4 days
WHERE THE REVENUE DOLLAR COMES FROM AND HOW IT IS SPENT—Calendar year 1944

Excess Baggage 
& Other 
1.8 cents
Express 
5.0 cents
Passengers 
72.5 cents
Mail 
20.7 cents

ONE DOLLAR

Flying Personnel 
All Other 
Wages & Salaries
Repairs & Material 
Fuel 
Rent 
Travel Expenses, 
Passenger Supplies, 
Depreciation
Taxes, Insurance, 
& Advertising 
Publicity

<table>
<thead>
<tr>
<th>Year</th>
<th>Mail</th>
<th>Express</th>
<th>Passenger</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1943</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1944</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fiscal Year Ending June 30</th>
<th>Passenger</th>
<th>Mail</th>
<th>Express</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935</td>
<td>$12,275,006</td>
<td>$ 8,837,650</td>
<td>$ 507,624</td>
<td>$ 903,950</td>
<td>$22,524,230</td>
</tr>
<tr>
<td>1936</td>
<td>17,415,360</td>
<td>12,179,266</td>
<td>796,171</td>
<td>1,098,896</td>
<td>31,687,593</td>
</tr>
<tr>
<td>1937</td>
<td>21,508,325</td>
<td>13,165,179</td>
<td>1,199,367</td>
<td>1,122,699</td>
<td>36,894,590</td>
</tr>
<tr>
<td>1938</td>
<td>23,201,376</td>
<td>14,719,927</td>
<td>1,218,230</td>
<td>774,969</td>
<td>44,914,444</td>
</tr>
<tr>
<td>1939</td>
<td>28,299,799</td>
<td>17,030,169</td>
<td>1,437,749</td>
<td>913,142</td>
<td>47,670,844</td>
</tr>
<tr>
<td>1940</td>
<td>34,438,464</td>
<td>19,425,723</td>
<td>1,855,812</td>
<td>1,077,373</td>
<td>55,727,763</td>
</tr>
<tr>
<td>1941</td>
<td>59,450,614</td>
<td>20,687,230</td>
<td>2,420,067</td>
<td>1,569,599</td>
<td>84,121,400</td>
</tr>
<tr>
<td>1942</td>
<td>70,697,048</td>
<td>23,450,404</td>
<td>3,538,234</td>
<td>1,443,580</td>
<td>111,191,262</td>
</tr>
<tr>
<td>1943</td>
<td>79,004,748</td>
<td>23,347,915</td>
<td>3,617,643</td>
<td>3,849,621</td>
<td>119,516,927</td>
</tr>
</tbody>
</table>

REVENUES
- Passenger: 77.54%
- Mail: 20.76%
- Express: 4.99%
- Excess Baggage, Charter and Other: 1.27%

EXPENSES
- Total Salaries and Wages: 47.19%
- Repairs and Material: 6.11%
- Fuel: 8.50%
- Advertising and Publicity: 3.50%
- Taxes, Insurance, Depreciation, Rent, Travel Expenses, Passenger Supplies and Miscellaneous: 11.27%
SOURCE OF REVENUES

PASSENGERS

MAIL, EXPRESS

1931

17.2%

1935

58.0%

1940

69.7%

1944

73.7%

Each coin represents 10% of total revenue in each year.

TOTAL NON-REVENUE MILES FLOWN (domestic)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Non-revenue Miles flown</th>
</tr>
</thead>
<tbody>
<tr>
<td>1938</td>
<td>3.1 million</td>
</tr>
<tr>
<td>1940</td>
<td>4.6 million</td>
</tr>
<tr>
<td>1942</td>
<td>4.0 million</td>
</tr>
<tr>
<td>1944</td>
<td>4.7 million</td>
</tr>
</tbody>
</table>

Alaskan Aircraft Operations

<table>
<thead>
<tr>
<th>Two-year period ending March 31, 1929</th>
<th>Planes in Service</th>
<th>Pounds of Freight</th>
<th>Pounds of Mail</th>
<th>Passenger Miles Flown</th>
<th>Passengers *</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year ending June 30, 1930</td>
<td>24</td>
<td>103,043</td>
<td>17,690</td>
<td>34,250</td>
<td>684,261</td>
<td>3,654</td>
</tr>
<tr>
<td>Year ending June 30, 1931</td>
<td>26</td>
<td>161,718</td>
<td></td>
<td>47,903</td>
<td>947,953</td>
<td>7,947</td>
</tr>
<tr>
<td>Year ending June 30, 1932</td>
<td>31</td>
<td>40,669</td>
<td></td>
<td></td>
<td>942,176</td>
<td>6,857</td>
</tr>
<tr>
<td>Year ending June 30, 1933</td>
<td>42</td>
<td>634,016</td>
<td>131,570</td>
<td>124,972</td>
<td>1,330,311</td>
<td>10,194</td>
</tr>
<tr>
<td>Year ending June 30, 1934</td>
<td>56</td>
<td>669,398</td>
<td></td>
<td></td>
<td>1,424,092</td>
<td>13,138</td>
</tr>
<tr>
<td>Year ending June 30, 1935</td>
<td>72</td>
<td>1,496,917</td>
<td>252,640</td>
<td>346,281</td>
<td>2,592,798</td>
<td>16,982</td>
</tr>
<tr>
<td>Year ending June 30, 1936</td>
<td>79</td>
<td>2,138,886</td>
<td>346,281</td>
<td>402,798</td>
<td>3,035,018</td>
<td>20,938</td>
</tr>
<tr>
<td>Year ending June 30, 1937</td>
<td>102</td>
<td>2,942,734</td>
<td></td>
<td></td>
<td>4,021,061</td>
<td>24,862</td>
</tr>
<tr>
<td>Year ending June 30, 1938</td>
<td>135</td>
<td>3,415,759</td>
<td></td>
<td></td>
<td>5,034,461</td>
<td>29,814</td>
</tr>
<tr>
<td>Year ending June 30, 1939</td>
<td>173</td>
<td>4,010,720</td>
<td></td>
<td></td>
<td>5,745,804</td>
<td>31,425</td>
</tr>
<tr>
<td>Year ending June 30, 1940</td>
<td>175</td>
<td>4,010,720</td>
<td></td>
<td></td>
<td>5,745,804</td>
<td>31,425</td>
</tr>
<tr>
<td>Year ending June 30, 1941</td>
<td>1</td>
<td>4,947,516</td>
<td></td>
<td></td>
<td>7,918,054</td>
<td>41,703</td>
</tr>
<tr>
<td>Year ending June 30, 1942</td>
<td>1</td>
<td>4,630,456</td>
<td></td>
<td></td>
<td>9,166,122</td>
<td>47,028</td>
</tr>
<tr>
<td>Year ending June 30, 1943</td>
<td>1</td>
<td>2,660,005</td>
<td></td>
<td></td>
<td>10,355,369</td>
<td>55,801</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12,065,139</td>
<td>83,823</td>
</tr>
</tbody>
</table>

*Mail and Freight co
AIRWAYS SERVICES TO INCREASE FLYING SAFETY

Radio...

Radio Range Beacon Stations
1928..............2
1929..............9
1930............33
1931............47
1932............68
1933............94
1934...........112
1935...........137
1936...........146
1937...........180
1938...........215
1939...........244
1940...........281
1941...........312
1942...........380
1943...........381
1944...........297
Figures as of December 31

Radio Marker Beacons
1930..............6
1931.............46
1932.............74
1933............77
1934.............84
1935.............57
1936.............57
1937.............55
1938.............50
1939.............48
1940.............43
1941.............48
1942.............41
1943.............63
1944.............84
Figures as of December 31

Radio Broadcast Stations
1926.............17
1927.............19
1928.............29
1929.............34
1930.............45
1931.............56
1932.............61
1933.............68
1934.............71
1935.............74
1936.............80
1937.............70
1938.............89
1939.............89
1940.............104
1941..............111
1942...........105
1943..............108
1944.............285

Weather & Traffic...

Weather Bureau First Order Stations Not at Airports
1926...........202
1927...........207
1928...........206
1929...........207
1930...........209
1931...........216
1932...........216
1933...........194
1934...........185
1935...........191
1936...........199
1937...........199
1938...........182
1939...........182
1940...........139
1941...........154
1942...........120

Weather Reporting Airway and Airport Stations
1929...........58
1930...........143
1931...........234
1932...........234
1933...........265
1934...........264
1935...........203
1936...........213
1937...........271
1938...........314
1939...........296
1940...........396
1941...........453
1942...........462
1943...........493
1944...........335

Teletype Mileage Weather Reporting
1929...........2,415
1930...........8,400
1931...........13,186
1932...........13,500
1933...........12,064
1934...........11,431
1935...........13,260
1936...........13,129
1937...........20,281
1938...........25,396
1939...........25,982
1940...........37,786
1941...........55,266
1942...........62,410
1943...........62,410
1944...........62,545

Teletype Mileage Traffic Reporting
1928...........4,002
1929...........10,961
1930...........12,360
1931...........12,621
1932...........9,008
1933...........9,272
1934...........36,755

Figures as of December 31
MEMBERS OF THE AIR TRANSPORT ASSOCIATION OF AMERICA

1515 MASSACHUSETTS AVE., N. W., WASHINGTON 5, D. C.

ALL AMERICAN AVIATION, INC.
DELTA AIR LINES
PAN AMERICAN AIRWAYS, INC.

AMERICAN AIRLINES, INC.
EASTERN AIR LINES, INC.
PAN AMERICAN-GRACE AIRWAYS, INC.

AMERICAN EXPORT AIRLINES, INC.
HAWAIIAN AIRLINES LTD.
HAWAIIAN AIRLINES, LTD.
PENNSYLVANIA-CENTRAL AIRLINES CORP.

BRANIFF AIRWAYS, INC.
INLAND AIR LINES
INLAND AIR LINES, INC.
TRANSCONTINENTAL & WESTERN AIR, INC.

CATALINA AIR TRANSPORT
MID-CONTINENT AIRLINES, INC.

CHICAGO AND SOUTHERN AIR LINES INC.
NATIONAL AIRLINES, INC.

COLONIAL AIRLINES, INC.
NORTHEAST AIRLINES, INC.

CONTINENTAL AIRLINES, INC.
NORTHWEST AIRLINES, INC.

ASSOCIATE MEMBERS
ALASKA AIRLINES
CANADIAN PACIFIC AIRLINES, LTD.
CARIBBEAN ATLANTIC AIRLINES, INC.
TRANS-CANADA AIR LINES