

AIRLINE

CAREER

TRAINING



CENTRAL
TECHNICAL
INSTITUTE

KANSAS CITY, MO.

LESSON NO. 1

THE BEGINNINGS

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AIRLINE CAREER TRAINING

A comprehensive course of instruction designed for ambitious men and women seeking a successful career in the field of Air Transportation. Prepared and edited by members of the resident teaching staff, Airlines Training Division, Central Technical Institute.

THE BEGINNINGS

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OFF TO A GOOD START

Successful careers are decided one step at a time. You have decided on your career. You have taken the first step toward your successful career. One of the most important decisions of your life.

Do you know what Henry Ford said about any big undertaking? He said, "NOTHING IS PARTICULARLY HARD IF YOU DIVIDE IT INTO SMALL ENOUGH JOBS." We want you to consider your career training as a series of small jobs.

A statement of your immediate problem is important. Some people, after choosing a career field, might become discouraged when they think of the second, third and fourth steps in their program. Keep an eye on the goal — don't try to solve future problems until they exist.

If you apply the rules for straight thinking to each step as you progress, the solutions become relatively easy. Why? Because you are capable of handling problems as they occur. You are being led step by step in the proper direction. Your career objective CAN and WILL be attained if you will set your mind on solving and mastering each problem or step as you go along.

We know that you have a lot of enthusiasm for your training. You no doubt have lots of plans, ideas, and dreams for the future. Your first impulse will be to tell your friends of your plans. Remember this, no matter what a person attempts that is new, different, or better, there will be others to ridicule, belittle and paint pictures of obstacles and hardships of the undertaking. Take advice from successful people — people who are experts and know what they are talking about. Don't let someone discourage or influence you if they are not qualified to advise you. The person most prone to give advice is in all probability a failure himself.

The professional staff of Central Technical Institute, which has successfully guided thousands of men and women of every age and occupational group into successful, well-paying careers is behind you 100%. Use our services, confide in us when you need a friend. Let us help you master each new step as you go along — then you will really be **off to a good start**.



THE BEGINNINGS

The Start

IT was a cold, gray, windy day in December, 1903. It was the sort of day you'd like to spend before the warmth of an open fire — not at all the kind of day when you'd look for history to be made.

And yet, history was made that day.

It happened on the sands of Kitty Hawk, North Carolina, where Wilbur and Orville Wright had completed the building of a launching rail for a strange winged craft in which they hoped to escape from earth.

This was the Wrights' first airplane.

The fragile plane poised at one end of the single track, its engine sputtering softly. The brothers inspected it anxiously. They tightened a strut, checked the controls.

Now everything was ready.

Will It Fly?

His face pale with anxiety, Orville Wright climbed aboard and stretched flat along the surface of the lower wing. He nodded grimly to his brother, standing at the wing-tip. At his signal, the plane slid slowly down the launching rail.

Orville felt the plane leave the ground; he nervously fingered the controls. Was the plane gliding — or was this controlled flight?

Cautiously he inched back the controls and felt a wild exultation as he watched the ground fall away. He was in controlled flight; he was flying!

An Erratic Flight

It was a strange sight. With crude controls, Orville had trouble in regulating his flight. The weird plane, buzzing like a gigantic insect, rose

to a height of ten feet, then dropped dangerously to skim the sands.

Yet to him and to his brother, who was racing along on foot beside the plane, it was the supreme moment in a lifetime in which they had known failure and disappointment intimately.

Orville stayed aloft for 12 seconds; he covered 40 yards in that first flight. Yet, on that cold, windy day in 1903, a new era in civilization came into being.

Aviation was born.

It Wasn't Luck

It wasn't just luck that brought this wild success to the Wright brothers. Their first awkward flight was the climax of years of study, of painstaking experiments, of heartbreaking failure and disappointment before their final victory.

As they recalled it later, the germ of modern flying entered the minds of Orville and Wilbur Wright back in 1878, when their father brought home for them a novelty top called a "Helicoptere."

At first glance, it looked like some sort of top and they watched with some disdain while the elder Wright, exercising the privilege of fathers from the beginning of time, demonstrated how the toy worked.

A few twists of his wrist and the top was wound tight. He placed it on the floor, released it. The top flew, spinning, to the ceiling.

Eyes wide with wonder, the boys watched. American aviation was conceived at that very moment.

The Bug

From that day on, they plunged into flying with the enthusiasm that only small boys can generate. They read with interest — sometimes amazement — of the history of man's previous attempts to conquer gravity.

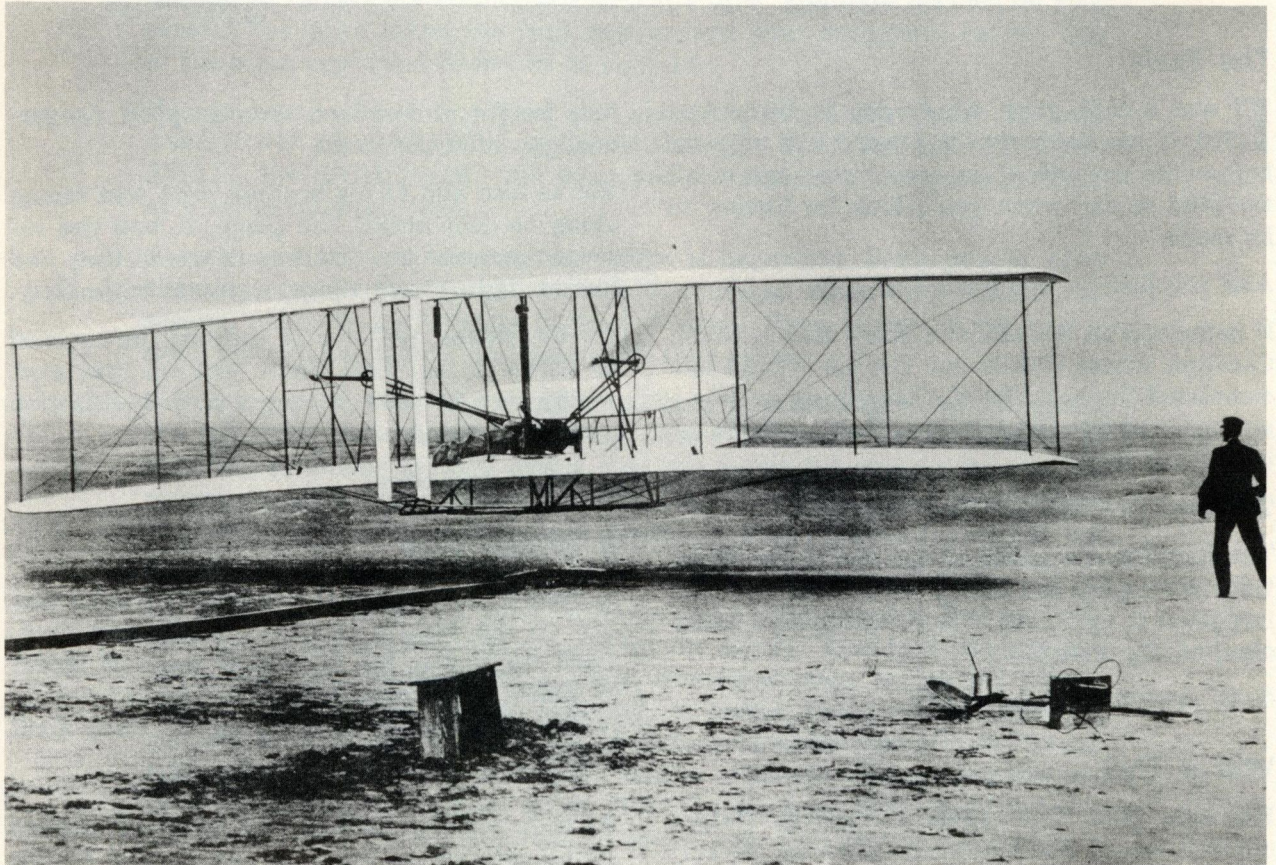
Back To The Beginnings

Back to the shadowy depths of mythology they explored the history of flight. They learned of

Vinci turned his enormous intellect to the possibility of man's flying through the air, he proposed a machine with fixed wings, powered with a screw. In this way, he reasoned, man could sustain flight by creating his own wind.

A pity, they felt, that this concept of flight had been neglected for 400 years!

Quite probably it was during this period, while they investigated the history of man's efforts to fly, that the Wrights were first seized by the



Here's how it all started. This is the Wright brothers' first plane.
Photo courtesy United Air Lines.

the brash young Icarus, who soared too close to the sun on wings of feathers in wax; of the monk, Oliver of Malmesbury, who fitted crude wings to his shoulders and cast himself from a tower; of Saracen, whose flowing robe, reinforced bat-like with reeds, carried him to his death.

Avidly they read about Leonardo da Vinci, brightest light of the Renaissance world, and his attack on the problem of flying. When da

overpowering fascination that has always been connected with flying. You'll find it in these lessons — you'll experience it during your Air-line Career.

Rigid Wings

They learned that as far back as 1678, for example, the Frenchman Besnier had made a valuable contribution to the scant store of aeronautical knowledge. He had watched birds,

gliding on outstretched wings and, as an experiment, he created a machine fitted with rigid muslin wings. In this contraption he made a



Daring balloonists risked their lives in contraptions like the London Graphic's balloon, shown ready for flight outside London about 1900. Courtesy Ewing Galloway Photo.

glide from a roof-top; his flight carried him over the top of a neighboring building.

A more enthusiastic addict, perhaps, would have developed this experience, but Besnier's interest in flying was purely for the adventure involved. He didn't make any more flights in his glider.

You can be sure, however, that when the Wrights read of his experience they carefully noted all the details, storing them up in preparation for the day when they would build their first plane.

The Balloonists

Their eager studies took them through the long history of balloon flying, from the first crude attempts to the days when courageous balloonists risked their lives in free balloon flight, completely at the mercy of the winds aloft.

Ballooning was of little practical interest to the Wrights. They wanted to fly in completely controlled flight, because only then could they feel that they had mastered the air. Balloons, like gliders, were slaves of the air. Orville and Wilbur wanted to be its masters.

That's why their interest in these allied fields was directed primarily toward acquiring every bit of available information on winds, designs, performance aloft.

Throughout the years, they went on acquiring information wherever they could. Flying was more than a hobby with them now; it was their entire lives.

The Odds

When you're judging the magnificent accomplishments of the Wright brothers, you've got to remember that they were completely self-educated in flying. In those days, of course, there weren't any schools of flying; even if there had been, they couldn't have afforded to attend. Desperately poor, they had to scrimp and save to build their first plane. They couldn't afford to buy an engine; they had to build their own.

Yet throughout their heartbreaking struggle to fly they were inspired by the constant conviction that it could be done. They had the will to succeed — and they succeeded!

Dr. Langley

The man the Wrights watched most eagerly during these years of early struggle was Dr. Samuel Pierpont Langley, who was at that time the eminent secretary of the Smithsonian Institute. Dr. Langley had been interested in flying for many years and the constant fear that haunted the Wrights was that Dr. Langley would fly before they did.

Everything seemed to indicate that he would.

In 1896, Langley had completed a model airplane, powered by steam, and had tested it along the Potomac river. The model stayed aloft for 90 seconds. The success of the flight, plus Dr. Langley's reputation in science, encouraged the United States government to give him a generous grant with which to continue his studies.

The Struggle

You can see what a dramatic struggle was taking place in this race to conquer the air. On one side stood Langley, the prominent scientist, recognized throughout the world for his achievements; he worked with almost limitless funds supplied by eager backers; he had the finest equipment at his disposal, skilled scientists to assist him. Apparently he had everything he needed for ultimate success.

On the other side stood the Wrights—unknown, untested; scarcely enough money to keep their makeshift equipment patched together; uneducated except for what they had taught themselves.

But they shared one characteristic almost overlooked by everyone — they had the indomitable desire to succeed.

Langley's Attempts

Langley and his assistant, Charles Manly, a propulsion expert who designed an engine remarkable for its day, worked to develop their first plane, the "Aerodrome." It was completed and ready for public test on October 7, 1903. Naturally, the fame of Dr. Langley and the publicity which had been given to his experiment brought crowds of people to the scene.

When everything was ready, Manly took his seat at the controls and prepared to take the machine into the air.

You can imagine how the Wright brothers felt now that it looked like their years of struggle to be first to fly were doomed to failure.

Perhaps their prayers for a miracle were answered. At the last moment, the Langley catapult failed and the plane dropped into the water. Langley's first attempt to fly had failed.

Gaining Time

In the meantime, the Wrights were working even more feverishly against time. The accident to the "Aerodrome" seemed to give them the reprieve they needed. They redoubled their efforts, but despite everything they did, Langley's rebuilt plane was again ready for test on December 8, 1903.

Again Manly took the controls and prepared to fly. Again the launching mechanism jammed and the plane collapsed into the icy waters of the Potomac.

This second failure was all that Orville and Wilbur needed. They raced their plane to completion. On December 11, they made their first test and failed, damaging a wing as the plane fell from the launching rail.

Hasty repairs and renewed determination had them ready to go again on December 17. This time, Orville took the controls and, despite the bad flying weather, the Wright plane rose from the ground.

In this rickety plane, Orville and Wilbur Wright flew into a new era — American aviation was born.

Reaction

If this were a novel, the Wright brothers would have been acclaimed by the world after their first flight — they'd have been rewarded richly — the public would have taken flying to its heart.

But that wasn't what happened.

In the first place, very few people believed that the Wrights had flown. There had been little advance publicity on their test flight and just a handful of people had witnessed their accomplishment. The public seemed to reason that if Dr. Langley had failed, it was highly improbable that the unknown Wrights had succeeded. People felt that they'd be better off concentrating on the automobile, which was just coming into its own at that time.

Then, too, it was difficult for the people to take a practical view of flying. The first planes were rickety affairs, built of bamboo, piano wire and bicycle parts. Engines were small, power was weak, control was difficult. Only the bravest of men would venture a flight in one of these primitive craft.

Slow Progress

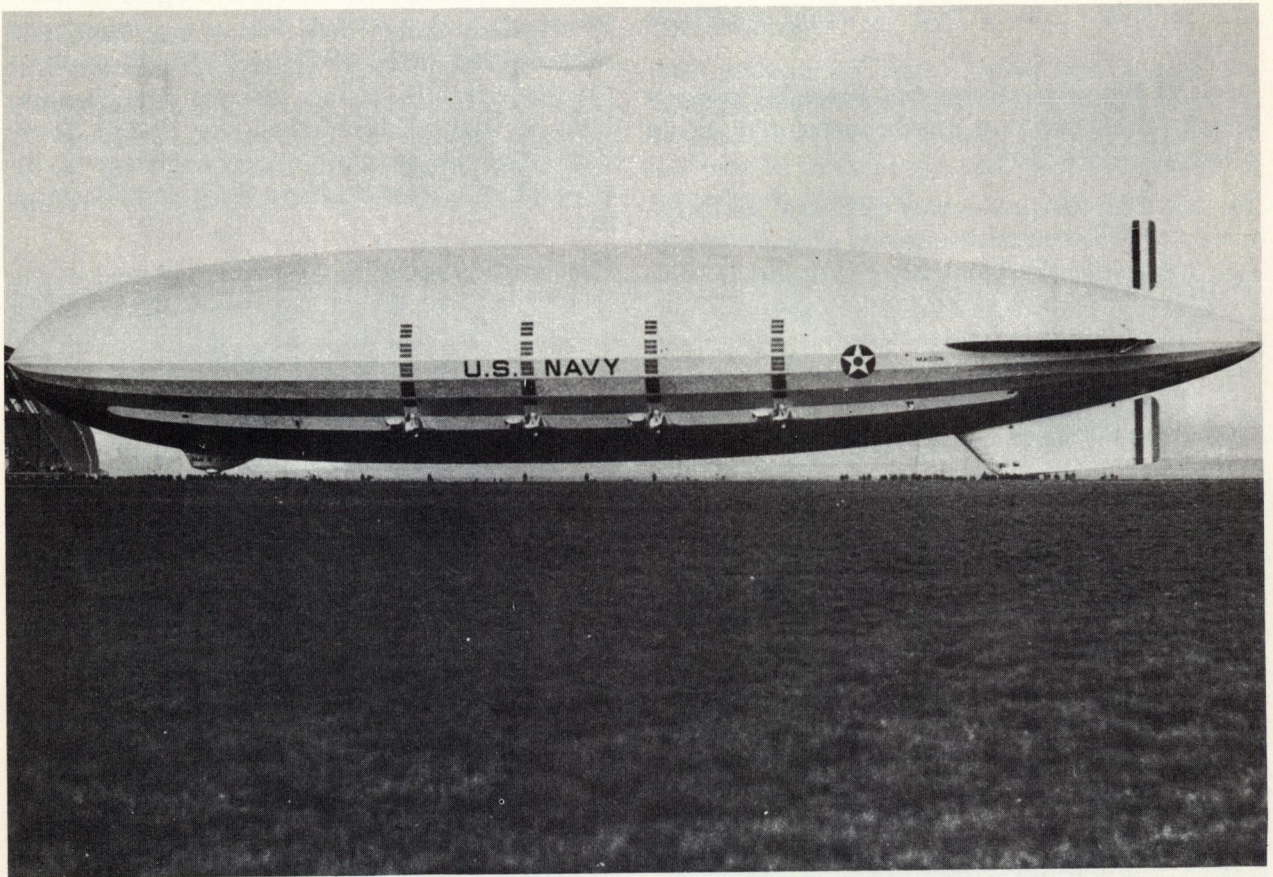
Progress was slow, understandably, in the face of this public antagonism, but resistance seemed to sharpen the determination of the pioneers and for the next ten years the foundations for

future development were established, even though there was little actual progress to show for it.

But let's look at the scene again in 1910, when the first significant developments in aviation were recorded.

that there might be something to this flying, after all.

In 1910, for example, Curtiss introduced the seaplane; a year later the courageous Eugene Ely took off from and successfully landed a plane on the deck of a ship at sea.



Development of the dirigible was an important step in aviation.
This is the U.S.S. Macon at its mooring mast in Akron, Ohio.
Courtesy Ewing Galloway photograph.

By this time airplanes had a more stable look and gave more dependable performance, even though they'd be considered ridiculous in comparison with the sleek giants in use today.

Glenn Curtiss, one of Aviation's real pioneers, developed a plane that reached the incredible speed of 50 miles an hour. It's interesting to note that at the same time, Barney Oldfield, the immortal race driver, set a record of 132 miles an hour in an automobile!

But Steady Development

Enough progress was being made to show a few far-sighted scientists, engineers and designers

A few years later, in 1913, an enterprising flier named Silas Christofferson originated flying-boat service from San Francisco across the Bay to Oakland, California. He was the forerunner of the modern airline; this was the first passenger service offered on a regular schedule.

And what happened?

He had so few customers for his flying service that he was forced out of business. America wasn't quite ready to accept the idea of passenger flying; flying was still reserved for the acrobats, the eccentrics, the exhibitionists.

Flying in World War I

World War I gave flying a strong boost for then the airplane developed into a significant new weapon for combat and reconnaissance. Methods and techniques of military flying were crude in those days, but the achievements of the daring World War I aces convinced military and political leaders that Aviation was here to stay.

Look at the present size and scope of military flying; think what a development has taken place just since 1918!

By this time the public was softening up somewhat, too. The romantic exploits of such famous flying teams as the Lafayette Escadrille and the Flying Circus caught the public fancy. Gradually the public was forced to admit that flying might have a future.

The Barnstormers

Quite likely you're too young to remember much about the barnstormers; they're almost extinct now. But shortly after World War I, young men who had learned flying during the war toured the country, bringing aviation to the American people.

They were a colorful group. Working in teams of two or three planes, they'd fly over a town, usually in the rural areas. Just the roar of the engines would be enough to get everyone in town looking skywards. When these daredevils would stunt and dog-fight high in the sky, businessmen would start to close up shop for the day. Every able-bodied person in town would race to the nearest open field to watch the fliers "buzz" a barn and put their planes down on a bumpy pasture.

These barnstormers sold passenger flights—that was their business. Usually at the rate of a dollar a minute, they'd take the more daring of the townspeople on short hops that would leave them gasping.

Then when they had coaxed every available dollar from the crowd, they'd hop into their planes—usually old "Jennies" or Wacos—and roar off into the skies for the next town.

Maybe these barnstormers were reckless. Maybe their planes were unsafe. Maybe they took unnecessary chances to attract a crowd. But you've always got to give them credit for one

thing: They sold flying to the American people at a time when public support was vital. Many a big name in aviation today owes his career to the day when the barnstormers first kindled his imagination for flying.

Experimental Air Mail

We've seen that World War I had interested military and political leaders in aviation. The practical results of this interest first came to light in May of 1918 when the United States Post Office Department experimented with air-mail service between New York and Washington.

The basic purpose of this first air-mail route, of course, was to provide rapid mail service between the two cities. But this first route was a proving ground as well; the Post Office Department wanted to acquire some first-hand experience in flying the mail.

The Post Office Department was looking ahead.

Taking all the factors into consideration, the first New York-Washington run was successful. After a year, the government started to build an east-west transcontinental air-mail route. The first leg stretched from New York to Cleveland; then New York to Chicago; then gradually westward until, by 1920, the route spanned the country: New York to San Francisco!

Night Flying

Coast to coast flying in those days, remember, was a completely different proposition from what it is today.

In the early days, pilots flew "contact" flight only, following their routes simply by watching for landmarks they knew. They didn't have any of the navigational aids we have now for "blind" flying; they flew only when they could see where they were going.

As a result, night flying was completely out of the question. Pilots flew from dawn to dusk, but nightfall always forced them back to earth.

You can see why this situation constituted one of the basic problems faced by aviation leaders right from the start. They wanted speed and more speed in flying the mail, passengers and cargo from one end of the country to another. Under the best circumstances, it took 33 hours

to fly mail from coast to coast along the first air-mail route.

Somehow the problem of night flying had to be licked!

Colonel Paul Henderson

Now the stage was set for the entrance of a man who made a dramatic contribution to the infant aviation industry — Colonel Paul Henderson.

Paul Henderson was truly a pioneer in aviation. Interested in flying from its earliest days, he served in World War I as Advisor for Air Operations on the staff of General John J. Pershing.

the position of Second Assistant Postmaster General. When the government's interest in flying developed to the point where they set up the experimental run from New York to Washington, it was logical that the vast project of developing Air Mail Service should be placed in the hands of Colonel Paul Henderson.

His Problem

The problem of night flying had always intrigued Henderson. Close to flying as he was, he realized that the obstacle of night flying would have to be overcome if aviation were to grow as he knew it should.



Here's one of the first air-mail planes. Compare this with the sleek planes in use today. Photo courtesy United Air Lines.

Even then he realized the tremendous potential in aviation — a belief that grew firmer as he watched the achievements of his fliers during the war.

He continued private flying after the war; at the same time he entered politics and rose to

His appointment as head of Air Mail Service put him in a position to do something about it.

His first step was to make survey flights from one end of the country to another, selecting the best routes that would fit in with his determination to fly the mail night and day.



This in itself was a monumental project, because once the route was established, he had to contract for emergency landing fields to provide the safety factor he demanded throughout the operation. Then these fields had to be cleared and put in condition so that pilots could use them safely when necessary.

Once the route was selected, Henderson and his staff ran head-on into the basic problems: How to light the course so that pilots could follow it at night when darkness shut out familiar landmarks?

His Solution

Colonel Henderson called in the General Electric Company, the Sperry Gyroscope Company and the American Gas Accumulator Company. Each of these firms assigned a staff of top-level experts to the project. Together they designed a system of light beacons to point the way and floodlights for the emergency landing fields.

At the same time, Henderson worked out and put into operation a system of wireless communications for transmitting weather reports and transmitting other information from one ground station to another along this transcontinental "air highway."

Cautiously he tested night flying over the beacon-lighted route. Gradually he extended the operation until he was convinced that his system was safe, sound and practical.

Success at Last

On August 21, 1923, Henderson tried the first transcontinental run. One plane flew east from Cheyenne, another flew west from Chicago. Each followed the new beacon system and used the floodlighted fields. It was a memorable occasion in the history of aviation.

The Post Office Department formally opened the New York to San Francisco through-service on July 1, 1924, with night flying between Chicago and Cheyenne. The public approved; air mail became big business overnight.

Next time you casually drop an air mail letter into a mail box, think back to the struggles of the pioneers in aviation and you'll realize what Paul Henderson and his staff have done for you.

Colonel Henderson continued his outstanding career in commercial aviation when, in 1924, he was named General Manager of the famous National Air Transport organization. This group had been set up to fly the mails under contract with the government. Under his direction, NAT eventually developed into United Air Lines, one of the country's largest.

Central Employee

Colonel Henderson, who died in 1951, was a former employee of Central Technical Institute. During 1942 and 1943 he served as Military and Aviation Advisor to Central's President. Here at Central we still feel the influence by this trail-blazer in Aviation.

The Commercial Airlines

This has all been background material, to give you the general picture of what had been accomplished in aviation at the time when the first commercial airlines were being established.

This is the part of the History of Aviation that will be of greatest interest to you — the Commercial Airlines. You'll be working for one of these lines; that's why we ought to find out now what they are, how they started, how they grew, where they stand today.

The story of the Commercial Airlines is one that's entwined in the very fabric of aviation itself. In one way or another, they grew as aviation grew. The rise of the Airlines of America is a typical story of how vision and foresight inspire a plan, how determination and resourcefulness overcome the obstacles and reward the effort with success.

To Begin—

In order to appreciate the growth and development of commercial aviation, we've got to go back to the days of 1925 and 1926.

At that time, when the efforts of Henderson and his staff had proved that night flying was practical and that air mail could be flown profitably, the government awarded the first contracts for flying mail to private fliers and flying organizations.

The government had no illusions at that time about flying the mail itself. It lacked the equipment and the experience and Henderson had

realized as far back as 1922 that the practical arrangement would be to allow private fliers to handle the mail under contract.

The first air-mail routes set up under this initial move extended from Detroit to Cleveland; from Detroit to Chicago; from Jacksonville to Miami; from Salt Lake City to Pasco, Washington; from Chicago to Memphis; from Salt Lake City to Los Angeles; from Chicago to Dallas; from Cheyenne to Albuquerque; from Chicago to

Air-mail aviation had grown up overnight.

Profitable, Too

The private contractors flying air mail in those early days had a good thing. They submitted bids before undertaking these contracts so that they could be sure that they'd be flying for a profit. The volume of air mail they were called



Here's one of the first commercial airliners, regarded in its day as the last word in air transportation. Photo courtesy United Air Lines.

Milwaukee; from Philadelphia to Washington; from Boston to New York; from Seattle to Los Angeles; from Cleveland to Washington; from Chicago to San Francisco; from New York to Chicago; from Chicago to Cincinnati; from Dallas to Galveston; from Atlanta to New Orleans; from New York to Atlanta; from Great Falls to Salt Lake City; from Chicago to Atlanta.

Plot these first routes on a map of the United States and you'll see that there was remarkably good air-mail coverage throughout the country even in those early days.

upon to handle far exceeded their wildest expectations; the income was steady.

There's no question but that's what accounts for the appearance of the first attempts at organized passenger service at this time. The enterprising onlookers—envious of the regular income from scheduled air-mail flying—had seen that there was an advantage to flying on a regular schedule. They reasoned—logically enough—that the time had come to get some of that steady income from flying passengers.

The Public Agrees

By this time, you see, the public had been won over to aviation. The feats of such men as Lindberg, whose solo flight across the Atlantic had electrified the world, gave aviation the impetus it needed. The public was willing now to think about flying as a means of transportation instead of just a thrilling novelty.

The Airlines of America

It would be difficult — even confusing — to attempt a broad history to show the development of all the airlines of America at the same time. Instead of trying that, let's examine each of the major airlines as they exist today; let's see how they got started; let's examine the important steps in their development.



The public gazed in awe at planes like this Boeing Twin-Wasp which carried 10 passengers at 155 miles per hour.
Photo courtesy United Air Lines.

Another thing to remember is that those were the lush days just before the stock market crash of 1929.

It takes plenty of money to set up an airline, even on a modest scale. There was plenty of money available then, and plenty of men willing to gamble large sums in the hope of getting more.

The combination of all these circumstances set the stage for the development of regular air-passenger service. The commercial airlines were ready to come into their own.

Here's the important part: You'll be working for one of these lines or for one of the smaller lines which are patterned in the same way. That's why it'll be interesting for you now to get a quick view of the commercial airlines which operate today.

American Airlines

To get back to the real beginnings of the gigantic American Airlines, we've got to go back to 1921 when the Robertson Aircraft Corporation first went into business, and to 1923, when the

Bee Line was organized. Bee Line was revamped in 1924 and called Colonial Air Transport; as such, they held the government air-mail contract between Newark and Boston.

In 1930, American Airways, as American Airlines was originally known, made its bow. It consisted of the combination of Robertson Aircraft Corporation, Colonial Air Transport, Southern Air Transport and Universal Systems Airways.

American Airways officially became American Airlines in 1934 and it has expanded steadily

American's routes stretch from New York to Los Angeles; from Toronto to Mexico City. Right now American serves more than 71 cities in the United States, Mexico and Canada — almost 11,000 route miles, and over 17,000 employees.

Braniff International Airways

In 1952, Braniff International Airways and Mid-Continent Airlines, two of the nation's important north-south airlines, joined together.



This is a luxurious American Airlines Douglas DC-7 in flight.
Photo courtesy American Airlines.

ever since. In 1942, American Airlines made its first flight to Mexico City; in 1945 it received approval for its purchase of the American Export Airlines for foreign flying, which it later sold to Pan American World Airways System.

At the present time American Airlines is a giant in the industry. It's the largest domestic airline in the United States.

The new consolidated company is identified as Braniff International Airways.

Paul and Tom Braniff organized the airline that bears their name back in 1930. Their original operation was sketchy; they covered only 116 miles from Tulsa, Oklahoma, through Oklahoma City to Wichita Falls, Texas. In the beginning, Braniff's passengers were mostly oil

men and cattle ranchers, men who had to get places in a hurry.

This restricted operation continued until 1934 when the Post Office Department granted them air-mail route #9, which included Chicago, Kansas City, Wichita, Ponca City, Oklahoma City, Dallas and Fort Worth.

This was the turning point in the growth of Braniff, which has developed steadily ever since. In 1942, for example, its routes had extended to include San Antonio and Laredo, Texas; in 1943, Amarillo, Texas to Denver, Colorado was added. Two years later Braniff moved easterly to include a new route from Oklahoma City to Memphis, Tennessee.

The story of Mid-Continent Airlines goes back to 1928, when A. S. Handford, Jr. organized Handford's Tri-State Airlines to fly passengers between Minneapolis, Minnesota and Omaha, Nebraska.

Tri-State acquired an air-mail contract in 1934 and expanded into three routes, linking Chicago, Minneapolis, Winnipeg, Sioux Falls, Sioux City, Huron, St. Paul, Omaha, Kansas City, Aberdeen and Bismarck.

Thomas Fortune Ryan III, the financier, had been watching the growth of Handford Airlines carefully. Obviously impressed with what he saw, he bought the controlling interest in 1936. He named it Mid-Continent Airlines.

Under Ryan's direction, Mid-Continent flourished. His first step was to inaugurate Kansas City-Tulsa service; then he added new routes connecting Minneapolis-St. Louis and Des Moines-Kansas City.

Mid-Continent then added New Orleans-Kansas City; Tulsa-Houston; Kansas City-St. Louis; and Des Moines-Milwaukee and Chicago. Just before the merger with Braniff, Mid-Continent operated a total of 3,463 route miles through 34 American Cities.

Braniff International Airways has expanded to the point where it now serves 59 midwest cities and eight Latin American Countries, over 15,500 route miles, with over 4,000 employees.

It's a typical example of the growth that has taken place in aviation in less than 30 years!

Capital Airlines

As far back as 1920, an enterprising airman named Clifford Ball organized the Pittsburgh-McKeesport Airport Company at Pittsburgh, Pennsylvania. As you can tell from its name, it was a limited operation!

Ball struggled to keep his airline going through the lean years of flying we've already seen. His first real break came in 1927 when he was awarded an air-mail contract between Pittsburgh and Cleveland. Like so many of the small operators during those years, his air-mail contract was a life-saver because it provided the steady income that he needed to stabilize his organization.

In April of 1929, he introduced passenger service over the original route — so successful that the route was extended from Pittsburgh to Washington, D. C. It was just at this time that control of the organization passed into the hands of Pennsylvania Airlines; in November, 1930, Pittsburgh Aviation Industries Corporation absorbed the entire organization.

This new corporation was equipment-conscious; they were among the first to use multi-engine planes.

Its first multi-engine planes were tri-motored Stinsons that carried ten passengers apiece; shortly afterwards the famous Ford Tri-motors were added to the fleet.

By 1934, passenger service extended to Detroit, Michigan. At that point, Kohler Aviation was taken into the organization and routes stretched still further to Grand Rapids, Michigan and Milwaukee, Wisconsin. Then, combining in 1936 as Pennsylvania Central Airways.

Pennsylvania Central routes extended from Detroit to Chicago in 1937; from Pittsburgh to Birmingham by 1941; from Pittsburgh to New York by 1945.

The company name was changed to Capital Airlines in 1947. Right now Capital has about 4,500 employees, flies 5,160 miles through 52 American cities — it's the success story of an aggressive airline that just couldn't be stopped!

Colonial Airlines

Colonial Airlines has had a rather complicated business history. It dates back to 1928, when General John F. O’Ryan founded Canadian-Colonial Airlines, which operated in a limited area throughout New England and Canada.

You can see how well he succeeded by the fact that in 1943, Canadian-Colonial changed its name to Colonial Airlines, established its routes between New York City and Montreal, Quebec.

Colonial has grown steadily ever since. Its importance now lies chiefly in the fact that it



A Viscount flown by Capital Airlines. The first Turbo-Prop commercial airplane in America. Photo courtesy Capital Airlines.

Eventually Canadian-Colonial became a subsidiary of Colonial Air Transport, which, you remember, was one of the lines organized into American Airlines.

In 1934 Canadian-Colonial worked under an intricate arrangement with American Airlines whereby American supplied the personnel, planes and facilities for operating Canadian-Colonial’s routes.

By 1939, Canadian-Colonial head, Sigmund Janas, realized that his airline was ready to operate under its own power; he began the enormous project of developing his own personnel and equipment.

links our Capital with the important cities of Canada—a friendly link between friendly neighbors.

Continental Air Lines

Back in 1934 the colorful Varney Speedlines operated over a route from Denver, Colorado, to El Paso, Texas. The route was split in a somewhat unorthodox manner.

The route from Denver to Pueblo, Colorado, carried passengers only; the line from Pueblo to El Paso carried both passengers and mail, flying through Las Vegas, Santa Fe and Albuquerque.

By 1937, Varney Speedlines, its name changed to Varney Air Transport, purchased the Denver-Pueblo air-mail route from the old Wyoming Air Service and added this important link to its routes. This move gave Varney air-mail coverage from Denver to El Paso.

Varney again changed its name, this time to Continental Air Lines, and started real expansion in 1939.

First they acquired the route from Denver to Wichita, Kansas; then extended the Denver-El Paso route to Carlsbad, New Mexico; finally they extended the Denver-Wichita route to Tulsa, Oklahoma.

In 1942, still growing, Continental won its third major route from Denver to Kansas City, Missouri. Two years later it extended from El Paso to San Antonio, Texas, and established a new route from Tulsa, Oklahoma, to Hobbs, New Mexico.

In 1954, Continental Air Lines acquired controlling interest in Pioneer Air Lines, thereby increasing its route mileage to over 5,000 miles, service to 48 on-line cities in the Central and Southwestern states, and over 1,200 employees.

It's this constant growth and expansion that makes the airlines industry the fastest-moving employment field in America!

Delta Air Lines

In 1953, two of the important airlines operating primarily in the south, Delta and Chicago and Southern (C&S), were consolidated. Their new name became Delta-C&S Air Lines. This merger was another step on the part of the Civil Aeronautics Board to strengthen the structure of domestic airlines. Two years later, in 1955, the name of the consolidated airline reverted to Delta Air Lines.

Delta Air Lines was founded by C. E. Woolman, an enterprising flier, who was dusting crops throughout the southern states back in 1929. From crop-dusting he went into passenger flying; his was the first organized company to offer passenger service throughout the southern states.

His first route stretched from Fort Worth, Texas to Birmingham, Alabama. After a short time he extended this route to include Atlanta, Georgia.

In 1934, Woolman obtained the air-mail contract from Fort Worth to Charleston, South Carolina, which, combined with its steady passenger routes, really put Delta Air Lines in business.

A major extension of Delta's routes took place in 1942 when it was awarded the Atlanta-Cincinnati route; another occurred in 1944 when it won the New Orleans-Fort Worth route. Later it acquired the choice Chicago-Miami route.

Chicago and Southern was originally a west-coast organization. Carlton Putman started it as the Pacific Seaboard Airline. Its first route linked Los Angeles and San Francisco through Santa Barbara, Santa Maria, Salinas and Monterey.

In 1934, when the Post Office Department cancelled all existing air-mail contracts and re-assigned them, Chicago and Southern made a bid for and obtained the contract for the Chicago-New Orleans route. This moved its center of operations to the mid-west, where it established headquarters at St. Louis, Missouri.

Pacific Seaboard officially changed its name to Chicago and Southern in 1935, when it moved to permanent headquarters in Memphis, Tennessee.

Chicago and Southern expanded constantly, winning such extensions as Memphis-Detroit; Memphis-Houston; and Memphis-Kansas City.

Now Delta Air Lines, after merging its routes with Chicago and Southern, operates a total of 9,508 route miles, and serves 52 important cities in the Heart of America and six Caribbean countries.

Eastern Air Lines

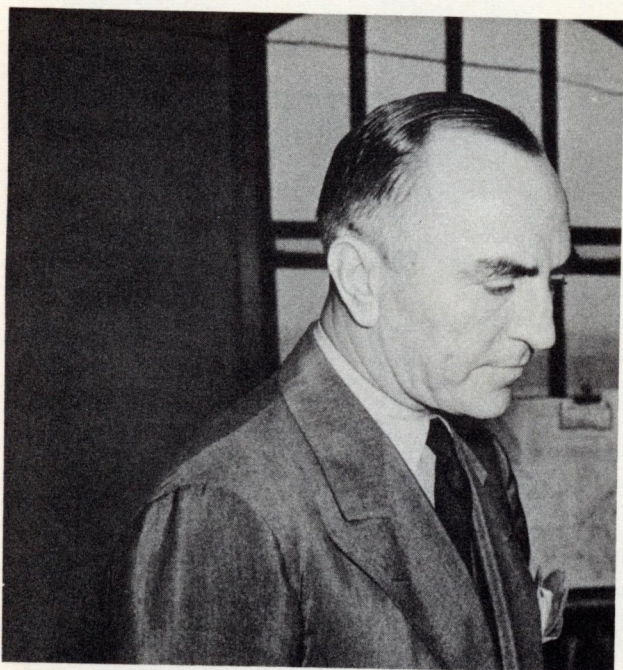
The history of Eastern Air Lines involves many of the famous names in aviation.

Harold Pitcairn organized a small air operation in 1928; he called it Pitcairn Aviation, Incorporated. Pitcairn Aviation was one of the early air-mail carriers, flying from New York City to Atlanta, Georgia over the lighted aerial "highways" we've already learned about. He added service from Atlanta, Georgia to Miami, Florida, and then undertook the whopping 1,411-mile route from New York City to Jacksonville, Florida.

In 1929, North American Aviation Company purchased the Pitcairn Aviation line, called it Eastern Air Transport, and then added passenger service between New York City and Miami, Florida. Still expanding, Eastern then bought New York Airways from Pan American Airways and started service between New York City, Atlantic City, New Jersey and Camden, New Jersey.

Eastern added New York to Washington, D. C. service when they took over the operation of the small Ludington Airlines in 1933.

When the air-mail contracts were re-assigned in 1934, the North American Aviation Company reorganized the line as Eastern Air Lines, in order to qualify under government specifications, and the name remains the same today.



Captain Eddie Rickenbacker, one of the pioneers of aviation.
Photo courtesy Eastern Air Lines.

Things were on the up-grade now!

In 1938, the North American Aviation Company sold Eastern Air Lines to the fabulous Captain Eddie Rickenbacker and his associates. Eddie Rickenbacker — one of aviation's immortals — has developed Eastern Air Lines steadily so that it now flies 9,174 route miles through 84 cities in the United States and employs over 12,000 people. Internationally, the routes of Eastern Air Lines now extend to San Juan, Puerto Rico, and Mexico City, Mexico.

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National Airlines

National Airlines is another of the aggressive airlines that came into being with the 1934 air-mail contract shake-up. National began operations in the state of Florida exclusively, providing service between St. Petersburg, Florida, and Daytona Beach, Florida. The original route covered only 292 miles.

National Airlines didn't stay in the minor categories for very long. The first step in its growth came with the extension of passenger service to as far north as Jacksonville, Florida.

Further expansion came in 1936 and in 1937 when National Airlines opened routes between St. Petersburg, Florida, and Miami, Florida, and between Sarasota, Florida, and Fort Myers, Florida. Only a year later, they opened a new route between Jacksonville, Florida and New Orleans.

By 1943 National Airlines was flying 954 route miles. In 1944, they added a run between Miami, Florida, and Key West, Florida.

In a surprise Civil Aeronautics Board decision in February, 1944, National Airlines was authorized to operate from Miami, Florida, to New York via Jacksonville, Savannah, Charleston, Wilmington, Norfolk, and Philadelphia. Service on this much-sought-after route between New York and Miami began on October 1, 1944.

In May, 1946, National Airlines was authorized to operate between the co-terminals Tampa and Miami, Florida, and San Juan, Puerto Rico.

These expansions gave National Airlines a total coverage of 2,829 route miles through 30 American cities and internationally to Havana, Cuba.

In ten years, National expanded from 292 miles to 2,829 miles of route flying — a typical example of the growth of aviation in this country!

Northeast Airlines

Northeast Airlines developed through a series of incidents peculiar to American industry — especially the Airlines industry.

In 1933, the gallant Amelia Earhart — perhaps the greatest woman flier the world has ever known — started the small Boston-Maine Airlines. This Airline's original route stretched from Boston, Massachusetts, to Bangor, Maine.

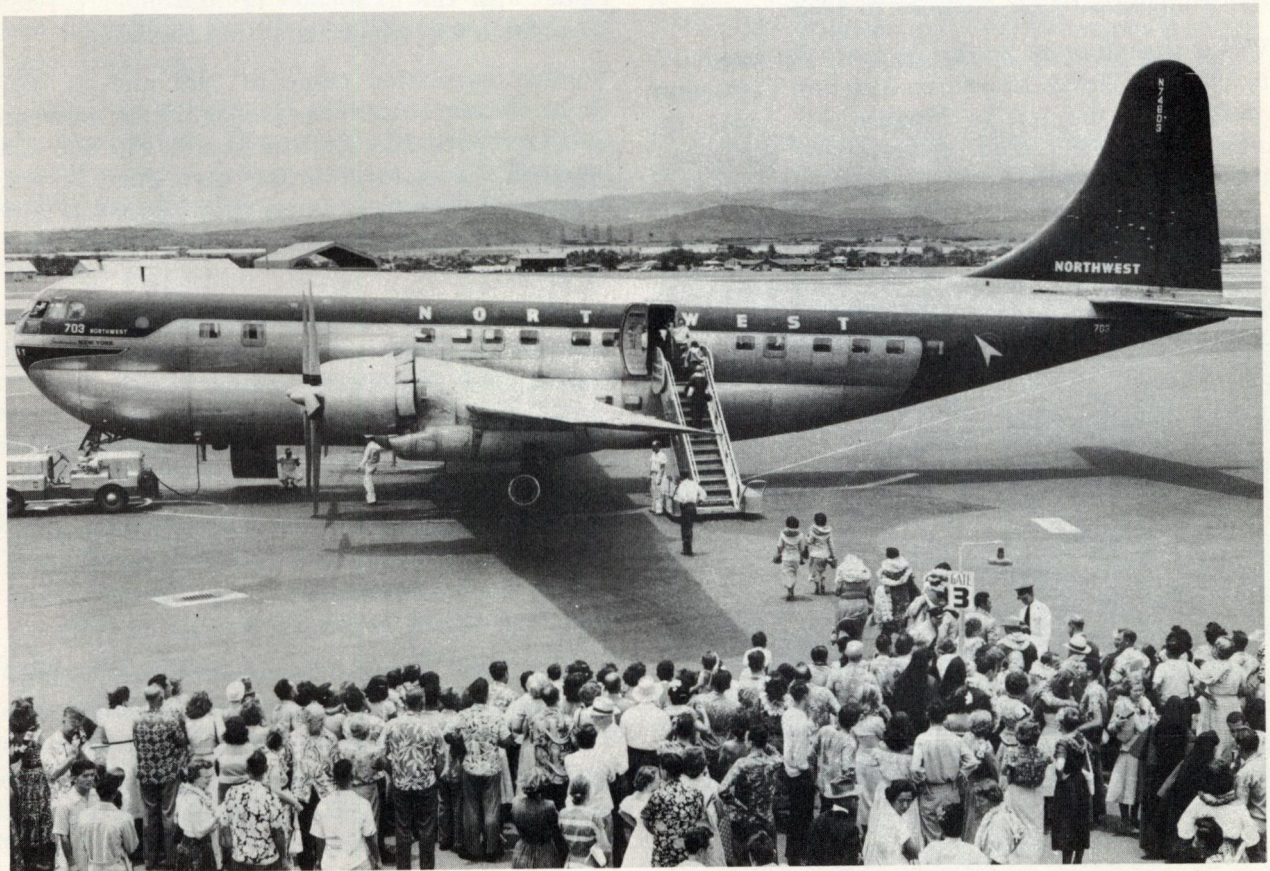
Boston-Maine joined Central-Vermont Airways in 1933 and started service from Boston to Montpelier and Barre, Vermont. The line expanded to international proportions in 1934 when they originated service to Montreal.

It's interesting to note at this time that their expansion enabled them to give overnight air-mail service to all points in Maine, New Hampshire and Vermont from as far west as Nebraska!

Even though it operates in a relatively limited area, Northeast has amassed a surprising total of 1,100 route miles and provides service to 34 on-line cities.

Northwest (Orient) Airlines

Back in 1926, Charles Dickinson, a man of remarkable vision and determination, was operating an experimental airline between Minnea-



Here's one of Northwest's gigantic Stratocruisers loading passengers for a trans-Pacific flight through the Islands.
Photo courtesy Northwest Airlines.



In 1940, Boston-Maine officially changed its name to Northeast Airlines. As such, it has been operating successfully ever since.

Northeast has increased its coverage to extend throughout all the New England States. Its newest route acquisitions are the Boston-New York-Newark route and the Boston-Nantucket run.

polis and Chicago. In those days, he carried only mail on this short route.

This was the beginning of Northwest Airlines.

In July of 1927, he was ready to start passenger service along the route, stopping at St. Paul, La Crosse and Milwaukee, Wisconsin.

He succeeded. In 1928 he opened a new passenger route between Minneapolis-St. Paul and

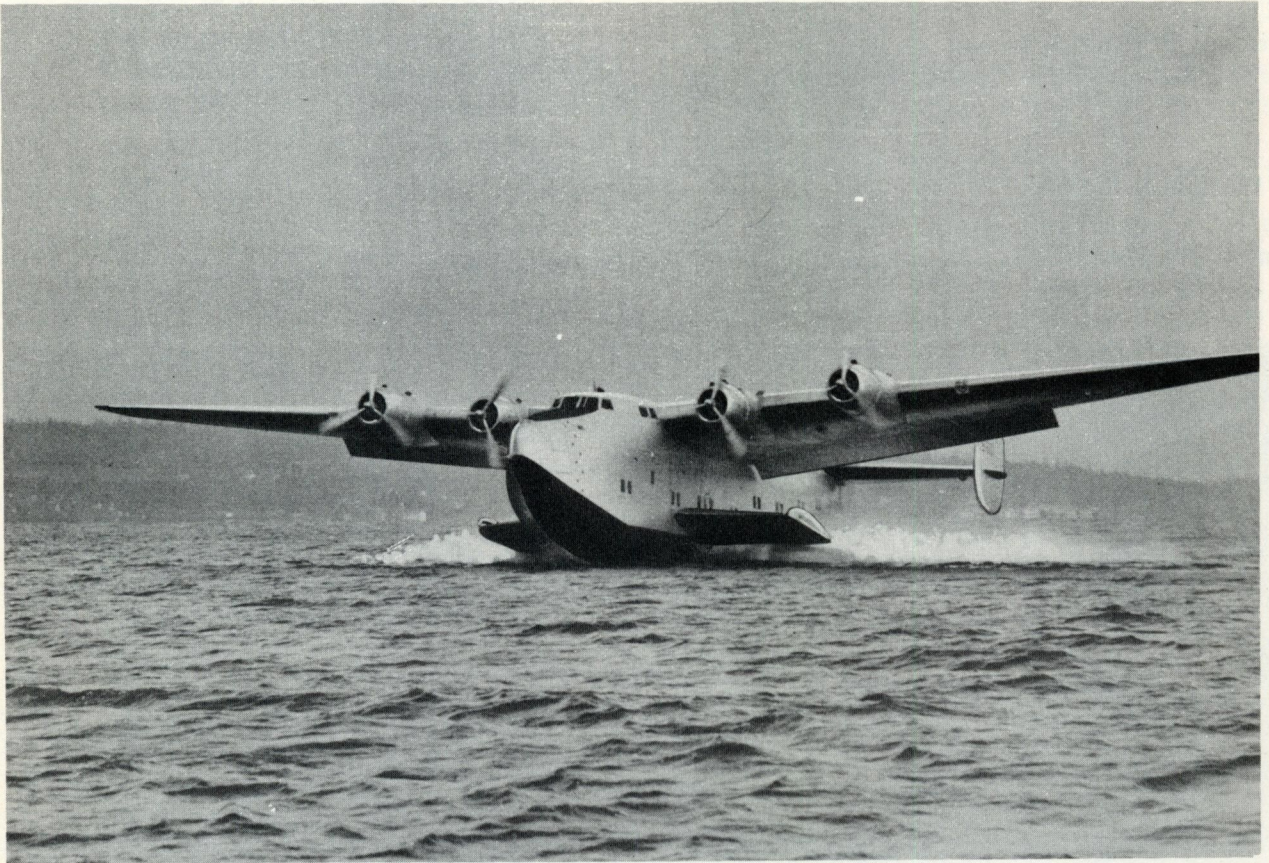
Winnipeg. Inspired by this venture, he began to make plans for passenger service to the West Coast. He started in 1931; by 1933 he had established through-service to Seattle, Washington.

Not satisfied with this remarkable achievement, Northwest Airlines started working eastward from Minneapolis. In 1945, Northwest offered service from New York City to Seattle and thus became the fourth transcontinental airline.

Pan American World Airways System

Pan American World Airways System started — in 1927 — from a short over-water hop from Key West, Florida to Havana, Cuba. Today it's the world's largest air-transport system.

From these humble beginnings, Pan American extended soon into Latin America, grew into South America and then burst out all over the globe with routes to Africa, Alaska, Europe, Australasia and China. Typical of the grand



Pan American originally used flying boats exclusively on its overseas flights. Here's a striking view of the bow of one of these colorful "Clippers." Photo courtesy Pan American World Airways System.

Internationally, Northwest is an important airline. They have extended service to Hawaii, Alaska, Japan, China, Korea and the Philippines.

With these international routes they have acquired, Northwest now flies an impressive total of 16,792 route miles.

scale thinking and performance of Pan American's President, Juan Trippe, is the fact that, as the line grew, it often built its own airports, hangars, passenger terminals and even hotels.

Right now, Pan American is a colossus among the commercial airlines. In addition to its Atlantic, Pacific-Alaska and Latin American di-

visions, it has large holdings in subsidiary airlines. Among these are Compania de Aviacion Pan American Argentine, Aerovias Nacionales de Columbia (AVIANCA), Panair de Brasil (PANAIR), Lloyd Aereo Boliviana (LAB), Uraba, Medellin and Central Airways (UMCA), Compania Cubana de Aviacion, S. A. (CUBANA), Compania Mexicana de Aviacion, S. A. (MEXICANA) and China National Aviation Corp. (CNAC). Pan American also owns a considerable portion of Pan American-Grace Airways (PANAGRA) which operates up and down the west coast of South America.

The spectacular growth of Pan American in this short time is typical of the opportunities that await you in modern-day commercial aviation.

Trans World Airlines

If you've ever thrilled to the sight of a gleaming silver Constellation moving high in a cloud-

less sky, you'll want to know something about the enormous Trans World Airlines with whom the Constellation is closely identified.

The beginnings of TWA lie in the Western Air Express line which was organized back in 1925 to provide passenger service between Los Angeles and Salt Lake City.

A little later, Jack Maddox started the Maddox Airline to cover the route between Tia Juana, San Diego and Los Angeles.

In 1929, Transcontinental Air Transport, working in conjunction with the Pennsylvania Railroad, offered coast-to-coast passenger service in a combination of air and rail travel.

In 1930, these three organizations merged. The new line took the name of Transcontinental and Western Air — the original meaning of the well-known initials: TWA.



The Super-G, the largest, fastest and most luxurious model of the famed Lockheed Constellation Airlines. Photo courtesy Trans World Airlines.



Passengers boarding a United Air Lines' Convair. As the photo shows, children are enthusiastic air travelers, too.
Photo courtesy United Air Lines.

Since then TWA has grown to gigantic proportions through constant additions to its domestic routes and through the acquisition of thousands of miles of foreign routes. Incidentally, shortly after World War II, when TWA acquired its first overseas routes, it officially changed its name to "Trans-World Airlines." Of course, the line is still popularly known by its famous initials: TWA.

They fly extensive routes through Europe, Africa and Asia. At the present time, TWA flies a staggering total of more than 45,380 route miles throughout the world. In the United States alone, TWA flies 15,655 route miles through 42 cities. All departments of TWA employ a total of over 15,000 people.

United Air Lines

We saw something of the origin of United Air Lines when we investigated the contribution to aviation made by Colonel Paul Henderson, pioneer of night flying.

If we look more closely, we'll see that United is the outgrowth of several early airlines:

Boeing Air Transport, which started by flying contract air-mail between San Francisco and Chicago in July of 1927.

Varney Airlines, which flew the air-mail route between Pasco, Washington, and Elko, Nevada, in 1926. Varney, incidentally, was the first air-mail contractor in the United States.

Pacific Postal Air Route, the air-mail carrier which operated between San Diego and Vancouver, B. C.

National Air Transport — Colonel Henderson's organization — which flew the New York-Chicago route.

In 1931, United Aircraft Corporation acquired these four airlines, merged them into one and established the United Airlines Transport Corporation.

Expansion has been steady ever since. In 1943, the company name was officially changed to United Air Lines; it was at this time that United began to add foreign routes to its domestic coverage flying to Honolulu.

Right now United flies a total of 10,809 route miles to bring excellent airline service to 67 cities.

Western Air Lines

America's oldest commercial airline, Western Air Lines is the indirect offspring of the West-

established a route from Cheyenne, Wyoming to Pueblo, Colorado; at the same time it launched passenger service between Los Angeles and San Francisco.

In 1929, Western started passenger service from Los Angeles to Kansas City; thus they were in position a year later to merge with Transcontinental Air Transport to provide the first coast-to-coast passenger service completely by air.

In 1934, Western Air Express resumed its original identity and operation until 1941, when its name was changed to Western Air Lines. At



This is a Western Air Lines' Convair in flight. To air travelers, panoramic views like this are common-place. Photo courtesy Western Air Lines.

ern Air Express line which, as we have already seen, figured prominently in the development of TWA.

Western Air Express was flying mail and passengers between Los Angeles and Salt Lake City back in 1925. Two years later Western Air

that time Western flew 1,365 route miles. A big step in expansion came in 1944 when Western purchased Inland Airlines and added 1,265 miles of routes to its system.

Western, constantly growing, now fly 5,525 miles through 42 cities.

Local Service Carriers

These brief stories of the major airlines of the United States — Domestic Trunk Airlines, as they're officially known — is helpful in sizing up the general growth and development in aviation up to the present time.

Yet, this doesn't give you the complete picture of commercial aviation in America today — not by a long shot!

No picture of modern commercial flying would be complete without the Local Service Carriers — the "feeder" airlines which are just as much a part of aviation today as the most powerful of the major lines.

Look at the Routes

If you were to plot on a map of the United States the approved routes of the major airlines, you'd realize two significant facts:

1. While they apparently blanket the country, their routes and stopping points are designed to cover only the larger cities of the United States.
2. There are a great number of cities, smaller in size and population, which are not included on these major airline routes.

That's where the Local Service Carriers come in. Flying limited routes, these industrious feeder airlines provide service between the lesser towns and cities and the "main run" stops of the major airlines.

For Example —

Suppose you lived in Ithaca, New York, and wanted to fly to Kansas City, Missouri. Ithaca is not a stop along the routes of any major airline which flies into Kansas City. The nearest stop is Syracuse, New York, where American Airlines' east-west flight takes on passengers.

But Mohawk Airlines operates between Ithaca and Syracuse; they'll fly you there to make your connection with American, which will fly you to Chicago where you can make connections for Kansas City.

Mohawk can't fly you from Ithaca to Kansas City, but it can get you to where you can board a major (trunk) airline plane that will take you where you want to go.

That's the basic importance of the Local Service Carriers — they bring aviation to people who might otherwise settle for rail or automobile transportation. They bring the advantages of air travel and air mail to communities off the beaten path of large airlines.

As such, the Local Service Carriers hold an unshakeable place in the picture of commercial flying as we know it today.

Local Service Carriers vary in size and equipment, but they are all models of industry and efficiency. Among the leading Local Service Carriers in the country are these:

Allegheny Airlines	Ozark Airlines
Bonanza Airlines	Piedmont Airlines
Central Airlines	Southern Airways
Frontier Airlines	Southwest Airways
Lake Central Airlines	Trans-Texas Airways
Mohawk Airlines	West Coast Airlines
North Central Airlines	

Why?

Maybe you've been wondering why we've devoted so much time to the stories of the major commercial airlines and the Local Service Carriers which back them up to cover the country.

There are three reasons — good ones. Here they are:

1. To show you the unbelievable growth that has taken place within the airlines industry in a relatively short time; to convince you right at the start that this career field is alive and growing; to show you that the end of the opportunities in aviation is nowhere in sight!

2. To acquaint you with the airlines to whom we have been supplying qualified personnel for many years. Central works closely with these airlines, especially through their Personnel Departments. Most of these lines are represented on our Airlines Advisory Board. They know the caliber and the ability of the Central graduate; that's why we have successfully placed over 12,000 of our graduates — Hostesses, Reservationists, Communicationists, Station Agents, Radio Operators, Flight Attendants, Passenger Agents, Ticket Agents — with these lines.

Central Technical Institute began training young men and women for employment with the commercial airlines in 1936 — Central is the

PIONEER school for trained airline personnel —and, Central is older than the majority of scheduled commercial airlines in the United States today.

3. Before long, you'll be a member of the or-

ganization of one of these airlines—get to know them in advance! Hundreds of Central graduates now hold executive and administrative positions with the commercial airlines—you may find your very own “boss” to be a Central graduate.



Aren't you anxious to learn what takes place in Reservations, Communications and actual Flight Duties when Mr. Jones goes from New York City to Los Angeles by air? Open Lesson 2 and start with Mr. Jones on his trip COAST TO COAST!

