A HISTORY OF AVIATION IN LANCASTER COUNTY

By Hugh W. Nevin

Aviation, we hear on every side, is in its infancy. Although our modern transport ships fly through the air with the greatest of ease, crossing the continent between dawn and dusk, joining the north and the south by hours, crossing the Atlantic Ocean in a day or so, accomplishing the vast distance across the Pacific within a comparatively short space of time, poking their way into the by-roads of the world, the aviation of tomorrow, we are told, will be mere child's play compared with that of to-day.

Perhaps I am a little too expectant in my hopes for the future. We have a marvelous system of flying to-day, yet I doubt not that our airships of to-morrow will fly higher, farther, faster, and with greater comfort, ease and safety, than the planes of to-day.

With these views, it was with some trepidation that I approached the subject of "A History of Aviation," as it relates to our own Lancaster county. In the newspaper world, with which I am familiar, history is a thing of hours, or a day. Stale news is lost in the limbo of history; and, as history is being made every hour and every day, I believe that I am on safe ground.

As a matter of fact, the history of aeronautics, or aviation, if you please, dates back, in Lancaster county to 1835, just one hundred years ago, when that really distinguished citizen of this city, John Wise, placed himself in the small cockpit, or carriage, as he described it, of a half-inflated balloon and soared more than 5,000 feet above Philadelphia.

In another month, the actual hundredth anniversary date of that ascension will occur, for John Wise took his first flight on May 2nd, 1835. His first ascension in Lancaster was not until a year later. It is fitting to mention this, because I believe that he was one of our great citizens and that he has received too little recognition for his work.

There can be no doubt that in John Wise, Lancaster produced a man who, through his experiments in the air, his remarkable courage, his skill and knowledge and foresight, rank him as one of the great men in all aviation.

He began his spectacular career of balloon ascensions with the most meagre of facilities, and was a half century and more ahead of his time. Lancaster, it appears to me, is somewhat behind the time in paying just tribute due the man, who perhaps more than all others, advanced the exploration of the upper air in the last century.

Mr. Wise has left us a book in which he presented detailed descriptions of

his many ascensions up to the year 1850. He also included in the book a creditable history of ballooning, his own notes on the construction of balloons, the art of aeronautics, and its possibilities.

"In concluding this account," he wrote: "I would remark that ballooning is about a half century ahead of the age, but if the spirit of mechanical progress, necessarily requisite to a high attainment of scientific principles, keeps pace with the onward march of intellect, our children will travel to any part of the globe without the inconvenience of smoke, sparks and seasickness, at the rate of one hundred miles an hour."

The latter part of his statement is italicized.

How true are these words! Although airplanes are now our medium of air travel, and although it is several generations since the death of Mr. Wise, in 1872, the grandchildren and the great-grandchildren of his time are visiting the remotest corners of the globe, not at a speed of 100 miles an hour, but at twice that rate.

Mr. Wise was a man of science. His flights into the air were not joy rides, taken haphazardly. Although he made his first ascension before he had ever witnessed the rise of a balloon, the trip was made only after the most careful arrangements and mathematical plotting of his plans.

My grandfather, Dr. Theodore Appel, a teacher of mathematics at Franklin and Marshall College, conferred with Mr. Wise on many occasions during his career, checked his calculations, aided him in his mathematics, and proved an invaluable aid in the pioneer's work.

Although there were many who scoffed at the time and believed that Mr. Wise was mildly insane, my grandfather shared with many other people the belief that Wise was a great man, a man far ahead of his time. Any reasonable person who reads the book, "History and Practice of Aeronautics," by J. Wise, published in 1850, and who makes allowances for its quaint style, must see that here was a man who was experimenting in a world which was far behind him in his calculations. No wonder there were scoffers who failed to understand what he was doing.

I have referred to the remarkable courage of Mr. Wise. He seemed imbued with a fanatical desire to experiment, to explore the air strata, to advance the cause of ballooning. His impressions of what he saw and felt during his first air trip are almost epic in their descriptive power.

Never having seen a balloon ascend, he boldly stepped into a little contrivance of muslin, coated with a form of varnish and half-inflated, and soared to an altitude which he estimated at one mile above Philadelphia. At first, he thought that if only he once could make a flight, he would abandon his flying, but that unquenchable spark of genius, a power stronger than his own will, forced him to go on, and go on he did.

Several times he flirted with lightning storms, the bolts sometimes coming perilously near his hydrogen-filled machine. On one occasion he narrowly

escaped being shot by an ignorant farmer, who could not understand the arrival of this floating ball above his farm.

On a flight near Easton, the balloon exploded and gas issued forth until there seemingly was no supporting power, yet Mr. Wise calmly wrote his impressions. He admits that he was frightened; but even as he was descending, he noticed that the rent in the bag was closed by the upward force of air and the gyrations of the balloon, the bag then forming a sort of parachute.

Not content with this unexpected experience, he devised a way of actually and purposefully exploding the balloon and using it as a parachute. That, my friends, was courage.

He advanced the theory that a flight across the ocean could be made in a balloon, and although he received many favorable editorial comments on the plan and considerable publicity, a Congress, which pigeon-holed his request for the necessary $15,000 with which to finance it, prevented the trip. Scientists and editors had come to realize that Mr. Wise had an uncanny way of accomplishing the things which he set out to do and there were many who believed that he might have landed in England or on the continent.

During the Mexican War, Mr. Wise again came to the front with a plan to take a balloon to Mexico, and, as he put it "bomb Vera Cruz into submission." Only a stuffy, military oligarchy, which would not trifle with things which it did not understand, prevented this experiment, which had every possibility of success. War time bombing came into dreaded reality during the period from 1914 to 1918 and then on a grander scale than Mr. Wise ever dreamed, but it was proof that he was far ahead of his time.

Before mentioning some of his actual deeds, I would like to say that Mr. Wise, some years after his retirement to a farm in Louisiana was induced, at the age of seventy-two, to make one more trip. The balloon started at St. Louis, was last seen over Carlinsville, Illinois, and probably fell into Lake Michigan.

The body of one of the crew was found in the waters of the lake, the only clue to the probable end of a great career.

After considerable study of aeronautics, Mr. Wise decided that he would like to try his skill at ballooning. The first ascension had been made in this country in 1793 by a Frenchman, Blanchard,—a feat which had been witnessed by George Washington himself. A Mr. Durant, some years later, was the first American to ascend in a balloon.

"In the spring of 1835," Mr. Wise wrote, "living at that time in the city of Philadelphia, I resolved to build a balloon on a very economical plan."

He began a study of the atmosphere, pneumatics and hydrostatics. "The capability of the atmosphere in elevating bodies seemed to me of such enormous extent," he declared, "that I was almost led to believe that the very earth upon which we live was floating in an immense elastic medium, on the principle of a balloon."

He decided to build his balloon of muslin, and necessarily, he began a search for a varnish with which to stop the holes. He wrote:

"Although the receipt books abounded with prescriptions of elastic varnishes, and even a few especially for coating balloons, it was evident to my mind on perusing them, that they were mostly the productions of theoretical minds, or at least were not written by practical operators." He finally decided to use what he called "bird lime."

He said that he was conscious of a lack of confidence among the people in his plan and his friends "shook their heads in doubt as to its feasibility, indeed as to its possibility." Despite these doubts, Mr. Wise continued with his work and prepared to make his first flight on April 30th, at the corner of Green and Ninth streets, in Philadelphia.

"This announcement," he said, "brought down upon me from many of my friends, all the forebodings that timid souls could predict on the anticipation of a balloon riot.

"'You are going right in amongst the butchers,' said some, 'and they are a very determined, rough class of people,' besides many other imaginative terrors, which, had I believed one-tenth of them, I should have been appalled and driven from my determination. But I reasoned in this way, that if the butchers were so formidable a people, they would be equally effective in protecting me in my lawful calling in which I might be engaged."

To the everlasting credit and praise of the determined butchers, they not only did not harm Mr. Wise, but helped and encouraged him.

The day appointed proved blustery and the people whom Mr. Wise had been warned against were the first to urge that he postpone the trip, which he finally did, although he said he was loath to do so, for fear of disappointing the large crowd.

The next date selected was May 2nd and proved satisfactory. The balloon with car, weighed 186 pounds. The inflation was started and the work went on for three hours, but at the time for the flight, 4 p. m., the balloon was only half inflated. Mr. Wise concluded, however, that with the amount of gas which it contained, it had a suspensive power of 375 pounds, which he believed to be enough.

There was further delay in attaching the carriage to the balloon, but the formidable butchers held their peace and the feeling prevailed that, "He will go up, if he can."

Mr. Wise entered the balloon with fifteen pounds of sand, two small sacks, a barometer and thermometer and then made final preparations. The men holding the ropes apparently believing that he did not want to go up, were loath to let go and there was more delay. Finally, someone shouted, "Send him up!" and there was a movement to force the dropping of the cords.

Another faction, however, was determined to keep him down and a

struggle ensued, which, as he wrote, "terminated in a few minutes in favor of the ascendant party." The balloon was released and, "with considerable projectile power," shot up, grazing chimneys in the neighborhood.

In fact, the balloon struck one chimney, which forced it down in a vacant lot, about 400 yards from where it had started. The crowd rushed to the scene and while there was great excitement, there was no "disposition of violence towards the balloon." Mr. Wise handed out his instruments, and prepared for another essay. He wrote:

"The scene here presented a mixture of excitement and confusion . . . and yet of such a nature as to make it morally impossible to do anything with system or order, and it required an almost superhuman effort to make oneself heard in any words to that effect. After handing out my instruments, also my boots and coat, which together with the sand, amounted to at least eighteen pounds, I roared at the top of my voice, 'For God's sake, gentlemen, will you give me a chance to make the ascension?' "

This seemed to have had the desired effect, for a free space was formed in the crowd and Wise ordered the one man holding the balloon to let go. The machine immediately began to soar.

"Grandeur has ever been a delightful theme to me, but this was more than grandeur. All the higher faculties of the human mind became aroused, I was gently awakening from a magnificent dream, casting my eyes upon a scene of reality that appeared far more grand and magnificent than the dream, itself."

Perhaps those feelings and emotions were the forces which compelled Mr. Wise to go on with his work. It may be a little naive to leave the gentleman suspended in mid air above Philadelphia, but I might add that he remained in the air seventy-five minutes and that he landed in New Jersey, quite successfully. He made copious notes on his feelings and observations.

It is worthy of mention that in passing over the Delaware river, at the altitude of one mile, according to his estimate, he threw over the side of his carriage, the neck pipe of the balloon.

"It made," he said, "a rushing sound in its descent until it splashed in the water, which I heard distinctly, although I was over a mile above its surface." That sounds can be heard at some height above the ground, is a proven fact, although Mr. Wise's little note seems almost incredible. However, men who knew him, declared that he usually was accurate in his statements.

I have gone into this first ascent at some length, believing that it was the most important event in the career of the intrepid balloonist. Mr. Wise's description continues:

"Now followed a scene worthy the pen of a poet. The first second or two of the balloon's ascent caused a stillness in the immense mass of people below that seemed as though they were fixed immovably to the spot, when all

of a sudden the very air began to reverberate with the shouts that followed. . . . Up, up, I soared almost perpendicularly, to the distance of several thousand feet, when a gentle breeze wafted the machine in a southwesterly direction—the balloon still rising—until it reached a point at the intersection of Market street and the Schuylkill river, which is about one mile and a half from where it started.

"Having now lost sight of the great throng of people that surrounded me at the starting, and passing over a large city, at least a mile above it, solitary and alone, with a low melancholy murmuring noise rising up from it, the balloon slowly writhing and twisting, as it were, between two contending air currents, causing a fluttering breeze around me, while I was standing in the car without hat, coat or boots, looking around, below, above, and in every direction, strange emotions pervaded my mind."

The second attempt, which proved a failure, was made at Philadelphia. Mr. Wise made his third attempt at Lebanon, on July 4th, an ascent which almost proved fatal, when he narrowly avoided descending in a woods, near Reading. Two ascents were made at Reading during the summer and in the fall Mr. Wise returned to Lancaster and planned his first ascension in this city, for October 1st, 1835. It was an attempt, however, which failed.

The day was a gusty one, but all was well until the time for the take-off. Because of the strong wind, Mr. Wise saw the necessity for a quick ascent from Penn Square, for, otherwise, he feared his carriage might be dashed against the buildings before he had risen to open space. His ground crew, not well trained, finally released the cords when the balloon was near a building and as Wise had feared, the carriage was dashed against the side wall. He was tossed out on top of a house and stunned.

The balloon soared away without its owner and was later found at Bordentown, N. J., seventy-five miles away.

Wise now determined to experiment with silk, and, during the winter of 1835–36, secured silk known as Indian sarcenet. With this material he built the "Meteor," and on May 7th, 1836, ascended from what a newspaper described as "the common near the head of West Orange and Chestnut streets."

Although the day was bad, Mr. Wise entertained the crowd which had gathered, by releasing small balloons, "whose aerial gambols were productive of infinite diversion," while he was completing his arrangements.

The start was made at 5 p. m., and a newspaper noted: "As it rose, Mr. Wise was discovered standing very composedly in his little car, and acknowledging the salutations which accompanied his departure."

The balloon disappeared and Mr. Wise was not heard from for almost a week. According to his own record, he sailed south towards the Chesapeake Bay and landed near Port Deposit, in the dark. Most of the trip was made above low clouds and the aeronaut discovered that echoes could be heard

against the clouds. For his own amusement, he carried on quite a conversation with himself, after making the discovery.

He landed on a farm, where assistance was given him. However, as he was trying to deflate the balloon, gas escaped and spread; an oil lamp, held by one of the onlookers, caused a terrific explosion. Mr. Wise was badly burned. He went to Philadelphia the next day and recuperated there. He remarks that, on his return to Lancaster he was met with an "honorable reception"; and the citizens, by subscription, raised enough money to permit him to go on with his experiments.

It is impossible within the confines of this paper to do more than mention some of the outstanding events in the career of the aeronaut. In 1838, he ascended from Easton and encountered one of his most thrilling experiences. As he arose, he dropped off a cat, which he had taken along, to test a parachute; and a little later, a dog was dropped. Both landed safely, it was said.

At an altitude of 13,000 feet, Mr. Wise discovered that the balloon was very taut and tense. He decided to test a new device, which would explode the balloon. Preparatory to doing this, he pulled out his watch, to note the time and as he replaced the timepiece, the balloon exploded of its own accord. A mile below, a thunder storm was raging.

His calm description is of the greatest interest:

"Although my confidence in the success of the contrivance never for a moment forsook me, I must admit that it was a moment of awful suspense. The gas rushed from the rupture in the top of the balloon with a tempestuous noise, and in less than ten seconds not a particle of hydrogen remained in it. The descent at first was rapid, and accomplished with a fearful moaning sound caused by the air rushing through the network and the gas escaping above. In another moment I felt a slight shock.

"Looking up to see what caused it, I discovered that the balloon was canting over, being nicely doubled in, the lower half into the upper; it had fallen, condensing the air column upon which it was falling, until it had arrived at a point where it was so dense that the force of the whole weight pressing down on it was arrested, which caused the parachute to tilt over."

He gave further details of the effects on the balloon and the violent swaying of the carriage. The balloon finally landed, ten miles from Easton. Mr. Wise was thrown from the car, a distance of ten feet.

One might easily imagine that such an experience would be enough for any man. Not so, Mr. Wise. He remarks:

"The car had turned bottom upwards, and there I stood congratulating myself on the result of this exciting experiment—the perspiration rolling down my forehead in profusion, for the atmosphere below felt oppressive. Before many minutes had elapsed after this descent, I had resolved to repeat the experiment, in Philadelphia, at the first opportunity."

He made good his resolve and on October 1st, 1838, made what was described as a "beautiful ascent" by one paper; and "in the handsomest possible style," by another. The balloon was exploded, converted into a parachute and the descent was successful.

During the next twelve years, Mr. Wise made numerous ascents throughout eastern Pennsylvania and in other parts of the country. He made a short flight from the Lancaster prison yard in 1840, as well as other ascents from this city.

In 1843 he conceived the plan of attempting to fly across the Atlantic Ocean, and some Philadelphia friends at first offered to give him financial aid, but when they discovered that he was in earnest, they withdrew. He then resolved to secure funds from the next Congress.

While awaiting for this body to assemble, he decided to prove his theory that there is an "atmospheric current which always blows from west to east," a theory which to a large extent has been proven true by modern meterology.

Selecting Carlisle, due west of Lancaster, he made an ascent there with the promise that he would land in Lancaster. He left Carlisle at 3:30 p. m., and true to his promise, the balloon was wafted east, over Marietta and finally to Lancaster, where he descended at 4:45 p. m., amidst the strains of martial music and the ringing of bells. He was given a tumultuous reception.

He now issued a proclamation to the world, announcing his plan to cross the Atlantic Ocean. He asked his friend, Mr. John W. Forney, local newspaper publisher, to publish his plan "to the civilized world." The crew, he said, was to consist of three men and he gave a description of the balloon for "the people of Europe, Africa, Asia and all other parts, on the ocean or elsewhere, who have never seen a balloon," so that they might recognize it, if it came their way.

He asked for $15,000 from the Congress, but that body did not take favorable action, and Mr. Wise did not receive the funds. At a later date, after the completion of his book, he did start for Europe in a balloon, which, unfortunately, or fortunately, came down in Connecticut, thirty miles from the starting point in New York.

In 1846 he presented his plan to the War Department to "bomb Vera Cruz into submission." In his communication, he declared that he could build a balloon capable of carrying 18,000 pounds of explosives. His plan was to hover over Vera Cruz at an altitude of one mile, above the range of the enemy's guns, and if the city would not surrender, use his explosives. He felt, however, that Vera Cruz would surrender before it would become necessary to drop the bombs.

The War Department was chary of experiments and the plan was forgotten. Once again Mr. Wise had proved his vision into the future, far ahead of the men of his time.

Balloon ascensions were continued by Charles Wise, son of John, who

made a number of flights from Lancaster. Mrs. Louisa Wise, a local woman and the wife of Charles, went up with her husband in 1869, starting from Penn Square. She is believed to have been the first American woman to make an ascent. Her description of the flight is trenchant and to the point.

"I was not an advocate of women's rights, but having a notion to take a ride in the air, I accordingly became the highest bidder in my husband's offer to go up in the balloon, 'Jupiter.'"

"My husband said that he had two cash offers of $50 each, but I said that I had a claim against him for mending his stockings for ten years. He made no appeal from this and assigned me to a place in the balloon. We arose from Center [Penn] square at ten minutes past four. I had a flag which I waved as we arose, the crowd meanwhile cheering and a band playing a martial air.

"After a few minutes, I glanced out from the basket and looking down saw what looked to me like a Christmas garden. Mr. Wise told me it was the grounds of Franklin and Marshall College. We passed through a dark cloud, which discharged a cracking sound, which Mr. Wise said was electricity. We then partook of some luncheon which had been handed to me by our mutual friend, Mr. John Sides.

"We landed safely one hour and ten minutes afterward on the farm of Mr. J. Hoffman Hershey, nine miles northwest of Lancaster. Mr. John Herr invited us into his house, where we had supper."

Mrs. Wise also noted that Captain Boylan's Fire Zouaves kept order in Penn square during the ascension, and that Mr. Wise thanked him for the service.

In 1908, M. E. Lockington and Miss Minnie Applebach, of Philadelphia, went to Elkton by balloon—the purpose of the trip is not given—and claimed that this was the first flight made by a woman. The notes of the local flight in 1869, however, quickly disproved the claim.

Since the times of the Wise balloons, numerous ascents have been made at Lancaster, chiefly at the annual county fairs, and many Lancastrians have been given the opportunity to see the sights as John Wise saw them.

After the historic flights of John and Charles Wise, there seems to be a gap of a number of years in the aviation history of Lancaster marked only by later balloon flights and a slowly growing interest in the art of air transportation.

In the years 1908 and 1909, news of numerous airplane ventures were filling the papers, and the local newspapers were quick to sense the news value of these reports. In the summer of 1909, when another Lancastrian took to the air, the Wright brothers were giving their airplanes tests before government officials and were being honored by nation, state and their home city of Dayton, Ohio.

Bleriot, the Frenchman, crossed the English channel,—one of the greatest feats of early aviation, with heavier-than-air machines; and many leading fliers vied for honors at the great international races at Rheims, in France. Glenn Curtis, whose name, like that of the Wrights, is preserved to-day in the name of an airplane engine, set several records at Rheims and was duly honored in France and this country.

While one early flier was setting an altitude record of 5,000 feet at Atlantic City, Hamilton was winning $15,000 for his flight from New York to Philadelphia,—a distance now covered in about a half hour.

All these events were creating considerable interest throughout the land, and Lancaster was not exempt. Sometime in 1908, three young men began to build a biplane,—that is, a ship with two wings, as distinguished from the monoplane, or single wing type. The ship was modeled after those built by Farman, in France, great, crate-like structures which resembled a kite more than anything and which appeared capable of falling apart quite easily.

Farman planes later became famous during the World War as bombers used by the French army.

Inspired by the achievements in the air and especially Hamilton's flight, the young men, Allan Brinkman, Aaron Todd and E. S. Keiser, went to work on a flying machine in the garage of J. E. Snyder on South Queen street. Mr. Snyder, who later became a prominent official in the Hershey Chocolate corporation and W. A. Brinkman, a brother of Allan, provided funds for the construction of the ship.

It was a scorching hot summer day in the summer of 1909, according to Brinkman, that the young men loaded their flying machine on an automobile and hauled it to the farm owned by Mr. Snyder, south of Paradise.

Although the plane had no engine, and hence was a glider, it weighed 1,800 pounds, and the wing spread was thirty feet, comparatively small in comparison to some of the larger ships of to-day, which have spreads of 100 feet and over. The ship had no landing gear in the sense that we understand the term now. It was planned, rather than roll to a stop, to skid to a stop,—at best a hazardous operation. Only recently, Wiley Post, the great stratosphere and round-the-world flier, landed in this fashion in a desert dry-lake.

The young men planned to attach the plane to an automobile with an 100-foot tow rope and to run the car the length of the half-mile field. A large crowd, according to an old newspaper report, had assembled to watch the attempt.

With Brinkman at the controls, the order was given to start the automobile, but, after a series of desperate tugs, nothing happened; the car was unable to pull its heavy load.

Undismayed, Brinkman felt that he could operate the automobile, so he gave up what is believed to have been the honor of being the first man to fly

in a heavier-than-air machine in the county; his companion took the controls, while Brinkman drove the car.

This time there was a terrific lunge, the car started forward and the crate-like glider began to rise into the air. The machine, according to Brinkman, reached an altitude of from fifteen to twenty feet and was towed at a speed of about thirty to thirty-five miles an hour. The speed would hardly maintain a modern plane in flight.

I might divert from my story for a moment to explain that a plane is kept in the air by air currents pushing on the under side of the wings; and by the creation of a vacuum on the top side, which exerts a lifting power. These forces only may be secured when so-called sufficient flying speed is obtained. When the forward motion is less than flying speed, the plane will go into a nose-dive and fall until sufficient speed is again attained, or it hits the ground.

The flight was limited by the size of the field as fences at the end of the field forced the car to stop. With the motion of the car halted, the glider lost flying speed and began to descend. Unfortunately, Mr. Keiser came down with the plane unbalanced, and as he neared the ground, one wing caught in the earth. There was a crash, the wing crumpled and the flight was over.

As the three men surveyed the wreck of their glider, they showed no feeling of dismay. At first, it was decided to rebuild the plane, but Mr. Brinkman, who had worked at an airplane factory at Fort George, N. Y., and who was a close student of airplanes, said: "We can build a monoplane as cheaply as we can repair this thing."

When it was decided to build a monoplane, a ship of the "Queen" type was commenced in Mr. Snyder's garage. The men, as before, worked at night and in their spare hours, so progress was slow. At this point, their financial backers, fearing disaster, decided not to provide funds for the motor which the young men desired.

Besides the fact that the monoplane was a single-wing model, as compared to the double wings of the biplane, it also had what was called flexible wings, a type used by the Wright brothers. The biplane utilized a form of aileron, set between the two wings. Modern airplanes have ailerons attached to the back tips of the wings, at the outside edges.

The flexible wings were depressed and raised by a system of pulleys and cords. When one entire wing was pulled down, the other was raised. In a sense, this achieved the same result as ailerons, which are, of course, used to bank the plane for turns. The flexible wing construction was intricate, and, according to Mr. Brinkman, decidedly unsafe.

Through lack of funds or interest, the monoplane was never flown. The men who had built it, turned to other pursuits, and later it was sold to some youthful experimenters from Lititz, whose names Mr. Brinkman fails to re-

member. Before it ever got into the air, the new owners discarded it for a more modern plane, which they used at a much later date.

So far as can be determined, Brinkman and his companions were the first to experiment with heavier-than-air machines in Lancaster. Aside from their pleasure and excitement, they were beginning to make Lancaster air conscious. At that time, they had thoughts of making Lancaster an "airplane town."

While it was many years before Lancaster was to become anything resembling that dream and some fliers were to meet their deaths in the local "Flying profession," as one old newspaper put it, the community is becoming, and more so will become, an "airplane town."

The history of local aviation, following the Brinkman flight and until after the World War is sketchy. With the Wright brothers, Curtis, and other fliers, setting speed, distance and altitude records, local boys and young men were increasingly enthralled by the sport of flying.

The Lancaster newspapers of the day devoted considerable space to aviation news. In discussing this phase Mr. Charles S. Foltz, editor of the Intelligencer during that period, said: "Aviation was a hobby of mine and I did what I could to help it along."

Aviation was new, and hence newsworthy; but most newspapers of that time were a little dubious about flying and their general presentation of news was more deliberate. More editorial matter, as differentiated from strictly news matter, was to be found in the news columns. Hence the surprise of a present day newspaperman at the amount of aviation news carried from 1907 to the time of the war.

Prowling around in an effort to secure a connected story of what happened in Lancaster in an aviation way, prior to the war, I discovered that numerous attempts were made to fly, and that some flights actually were made.

One enterprising young gentleman rigged up a sort of ship with a motorcycle engine, hied himself to Buchanan Park and was able to separate his ship from the ground, which was quite a feat, considering the times and the equipment which he had. There were others who experimented with gliders, motorcycle engines and old automobile engines. The contraptions must have been strange affairs, when compared to our streamlined ships of the present day, yet they were the forerunners of the Douglass, the Boeing and the Vultee, to mention some of the modern types.

A Curtis plane, of the pusher type, that is with the engine facing to the rear and the propeller pushing the air backward, came to Lancaster about 1912, and it is believed that this machine was the first powered ship to visit the city. It made several landings, one near the site of the present Country Club, another near Neffsville.

With the coming of the War, the facilities and the people of this city

were dedicated to American participation in that struggle. Airplanes which could fly were pointed, not towards Lancaster, but to the Western Front. There were few visitors, if any here, from the skies.

In October, 1918, three ships came here to participate in the Fourth Liberty Loan campaign. They flew from a field in the rear of the Henry G. Long Asylum for Aged and Indigent Women. The city and county were busy with the prosecution of the war; millions of dollars were being sought here for the loan, and the community was afflicted with an epidemic of influenza. The airplanes did not cause a great furore.

In the following spring, six airplanes came to Lancaster during the early days of the Victory Loan drive. Under the command of Major A. H. Gilkerson, they arrived here on April 28th. Two passengers, Dr. Isadore Rosenthal and Sumner L. Brown were given short rides. It is amusing to note that in a newspaper account, printed some years later, it mentioned, to quote the paper, that "Mr. Brown went up 62,000 feet," which is slightly above, I believe, the highest stratosphere record claimed by Soviet balloonists.

The party included, besides Gilkerson, Lieutenants Karl H. Way, of York; and H. D. Merritt, E. V. Finter, S. D. Evans and Maurice Murphy. They flew Curtis planes, capable of a speed of eighty-five to ninety miles an hour, a swift speed for that time.

The greatest impetus was given local aviation on June 27th and 28th, 1919, when Eddie Stinson, the "king of the loopers," brought his flying circus here. The planes delivered the Lancaster newspapers, this being the primary purpose of the visit, but they also engaged in carrying passengers; and, as one newspaper remarked, the city became "flying mad."

Engaged for two days, the planes remained almost a week and it is estimated that 250 passengers took their first rides, despite the fact that rates of $15 per flight for straight flying and $25 per flight for stunt flying were advertised. One of the pilots remarked, "and the people like the stunts. Those who take a straight flight first, come back for stunts."

Nowadays, such rates would take a passenger to New York or Pittsburgh, or beyond. Stinson was accompanied by G. W. Shaw, Lieutenant Murphy and Ensign C. W. Shay.

During that fall, Lieutenant Floyd Wilson brought four machines to Buchanan Park, where he gave exhibitions of stunt flying and army combat formations; he also carried passengers. He was accompanied by Lieutenants Robert E. Selff, Joseph P. Hodges and C. M. Potter. They remained for several days.

It is interesting to note that Lieutenant Wilson, in an interview, urged Lancaster to secure an airport, so that it could become a station in the future air mail system. He suggested that the Aero Club push the project and put the city "on the air map."

One of the most damaging blows to local aviation occurred on June 10th, 1920, when Roy Musselman, a war veteran, of New Holland, and who had established an air field of his own near the Country Club, was killed when his plane went into a tail spin at an altitude of 1,500 feet. He was accompanied by Robert Behmer, of Lititz, who was injured in the crash.

His death proved a severe shock to the community and was the direct cause for a sudden lack of interest in the Aero Club, which had worked with Musselman in the establishment of the field. The flier was popular and his death saddened the city and county.

Behmer carried on, after his recovery, but eventually also met death in a similar accident.

Roy Geltz, who is still flying, took up aviation in the early 20's. He has been flying for over a decade and is ranked as one of the leading local pilots. During one of his early solo flights, his plane hit the roof of a house near the old Gun Club, but the pilot escaped with his life.

In 1925, J. Harry "Happy" Jones, of Willow Street, established a flying field of his own, near his home. He proposed to conduct a flying school and for a while had some students. Jones had learned to fly in four hours, which was considered something of a record.

He, too, met his death in an accident at Coatesville, not long after the establishment of his school.

I would like to digress for a moment to present a summary of the fields which have been used for aviation in Lancaster county. Musselman's field was located between the Gun Club and the Country Club and impromptu landings were made in fields in what is now Grand View Heights and at Neffsville, as well as in Buchanan Park, at the rear of the Henry G. Long Asylum and on grounds owned by Franklin and Marshall College. The Willow Street field was the predecessor of the Lancaster airport which in turn has been superceded by the new Municipal airport.

Fields near Columbia and Millersville are now used occasionally and landings have been made at numerous other points in the county, such as New Holland, Quarryville, Ephrata, and even on the A. B. Rote estate, between the two Philadelphia pikes, where an army plane was forced down in 1934.

Jesse Jones, former manager of the Lancaster airport and now manager of the Municipal airport came to this city in 1927 with a flying circus. He is a native of Pottstown and learned to fly after the War. He was one of that group known as "barnstormers," dare-devils of the air, who trouped around the country, showing off with their circuses and carrying passengers.

They were the forerunners of aviation as it is to-day, and although the ships which they flew were "crates," they were and still are among the finest fliers we have in this country. They were prepared for any emergency,

forced landings, unusual passengers, rough fields, night flying, night landings, accidents, and, I might add,—death.

Of my own experience with Jones, I might recall that last summer while far off our course, we were forced to land when our gasoline ran low. It was midnight, the moon was on the horizon and we were on the coast of New Jersey. Despite these difficult conditions, Jones found an open space and set the ship down in what proved to be a strawberry patch, with no more damage than a bent tail fin. It was a piece of excellent flying.

Jones has had more to do with the development of aviation in Lancaster than any other single person since John Wise. He came with a circus, but was attracted by the city and remained to carry on his work. He found a "happy landing" in Lancaster.

The circus was brought to Lancaster by the Shrine Club.

A year after Jones' arrival, he formed the Lancaster airport by which flying activity was considerably spurred. In addition to the carrying of passengers, he staged numerous air meets and conducted a repair shop and flying school.

His feats are too many to record. During his career at the Lancaster airport, he estimates that he instructed over 200 pupils, including three women, Misses Gladys Hickey, Viola Kamm and Mary Sirbeck.

Among his pupils were Rupert Herr, a lieutenant in the Air Corps Reserve,—the first man to "win his wings" under Jones's instruction and one of the leading pilots of the county; Stanley Keck, now manager of the Bethlehem field; Marion Gilbert, who built the Millersburg field; Richard Beckley, assistant manager of the Lewisburg field and Maurice Bowman, associated with the Penn-Harris field in Harrisburg.

During Jones's operation of the airport, over thirty airplanes have been locally owned and operated. Almost a dozen planes are now located here, many of them being located at the Municipal airport.

Jones has flown higher than any local man, having taken several passengers up to an altitude of between 19,000 and 20,000 feet, the greatest known altitude attained by an airplane over a Lancaster field.

A speed of 200 miles an hour has been attained by a plane in Lancaster, the ship being flown by Tony Little, of Norristown, in a race. Of course, it might be mentioned that the passenger planes which daily fly over the county cruise at about 200 miles an hour and are capable of a speed up to 250 miles an hour, with a tail wind.

Last summer, an altitude contest was conducted under the direction of Jones and the author for ships of less than fifty horsepower. A maximum altitude was reached at that time of almost 16,000 feet.

A large air derby was held at the Lancaster airport in July, 1928, and the city was treated to its first great exhibition of air races over closed

courses. This event was followed in November of the same year by a model airplane contest for young boys and girls.

One of the most important air meets held in the city occurred on July 26th and 27th, 1929, when local aviation paid its tribute to the two hundredth anniversary of the founding of Lancaster county. Local pilots staged a simulated air raid, by night, while National guardsmen played searchlights on the ships and 15,000 persons watched the spectacle. Radio announcements were made by Graham McNamee, the famous announcer of the times.

Numerous races were held and cups and other prizes awarded. Only one slight accident occurred, when a ship flown by S. P. Hopkins, of Conyngham, struck the ground with one wing. The pilot was uninjured.

This event was followed by the Pennsylvania Good Will Tour, which brought a fleet of twenty-five airplanes to this city on June 4th, 1930, the pilots remaining here for three days, despite a schedule which called for a halt of only a half day. The fliers appreciated the hospitality of this community.

The Tour was designed to increase the popularity of flying throughout the State. The fleet left Pittsburgh on May 25th and arrived here a week later, after visiting airports in western and northern Pennsylvania. Three women, Mrs. Louise Thaden, Miss Helen Ritchey, both of Pittsburgh and Miss Helen Vamos were in the Tour. Also included were George Dickson, of Pittsburgh, a recent graduate, at that time, of Franklin and Marshall College, flying the smallest plane in the fleet; and Benjamin Thaw, a son of Harry Thaw and Evelyn Nesbitt, a leading flier, popular in Lancaster.

The visit was effected by the Aero Club and the Chamber of Commerce. The committee included: Arthur B. Dodge, George P. Luckey, J. P. Jones, William S. Raub, William A. Brinkman, G. W. Birrell, Samuel C. Slaymaker, William Emery, Howard M. Hersh and Sumner L. Brown.

Another important air meet was held at the airport on June 25th, 1933, under the direction of the Aero Club. Merchants and manufacturers of the city donated twenty-five prizes, which were awarded to the winners of the various races and stunt acts.

In 1932, the Bricker Baking company offered a cup to the local pilot flying the greatest number of hours in the year of the award. The cup was won by Roy Geltz, who had a flying time of fifty-seven hours and eighteen minutes.

In the following year the cup was won by Virginio Marchetti, with approximately 140 hours to his credit. The cup was not awarded in 1934, but the Aero Club is planning to resume the presentation in 1935.

The chronological review of major events in the past ten or fifteen years brings us to a date which will become one of the most important events in the aviation history of Lancaster. At this time plans are being completed for the dedication ceremonies which will be held at the new Municipal air-

port, services which should mark the entry of this community in the field of national aviation. The ceremonies will bring to Lancaster evidence of the great forward steps which are being taken in aviation and they also should serve notice to the Nation that Lancaster is destined to become an important station in commercial flying.

The facts which I have recited show that Lancaster lacked an adequate airport for years, despite a growing demand for such a field. The fliers who came to Lancaster during the Victory Loan drive urged us to secure an airport. In May, 1927, Major H. A. Dargue, a noted army pilot flew over the city, but did not land. He later wrote to Mayor Frank C. Musser urging him to take the initiative in securing an adequate field and pointing out that the facilities here, at that time, were not suited for the larger ships.

In that same month a spectacular trip was made to Pittsburgh and return on the same day, by a number of local citizens, in an effort to arouse popular demand for a new field. During the Bicentennial air meet, Mayor Musser dedicated himself to securing a large airport, and on more than one occasion, Major William D. Grant, of Christiana, an army pilot, urged action.

In the fall of 1933, this demand was translated into action through the suggestion of Mr. E. George Siedle, a member of the Traffic Club. That organization immediately started to make plans and a committee was named "to get an airport for Lancaster" and warned that it would not "be discharged until it had accomplished its mission."

The Traffic Club decided to work in conjunction with the Manufacturers' Association, the Chamber of Commerce and the Aero Club, and each organization appointed committees. These committees were as follows: Traffic Club, H. H. Brenneman, Daniel Weinhold, C. B. Weiss and E. G. Siedle; Manufacturers' Association, S. E. Fraim, B. A. Boggs and R. F. Stauffer; Chamber of Commerce, A. C. Darmstaetter, W. R. Atkinson and J. H. Carter; Aero Club, Jesse Jones, Sumner L. Brown, Howard Hersh and Richard Beckley.

The Traffic Club decided to hold an "Aviation Night" program in November, 1933, and a dinner was held in the Young Women's Christian Association. The speakers included Miss Laura Ingalls, famous woman flier; T. Park Hay, public relations director of TWA; Jesse Jones and Miss Gladys Hickey, the first local woman flier. At this meeting it was decided to forward plans for a new airport and considerable impetus was given the project. Suitable publicity was provided in the local newspapers.

The first great obstacle was the winning of the city and county administrations, so that the airport might be municipal in nature. Both administrations took up the matter, decided on a division of the costs and lent their full aid to the project.

The next step was the selection of a site. Because of its nearness to the city, the Manheim pike airport was given considerable attention, but because of serious drainage difficulties, bad approaches, and lack of room for expan-

sion in the future, it was abandoned. After careful investigation, the site, which will soon be dedicated, was selected. It had the approval of engineers of Transcontinental and Western Air and the Department of Commerce. There were few, if any obstructions, drainage was comparatively simple, it was within reasonable distance from the city and it was located in a wide plain.

Ground was broken on March 15th, 1934, with Mayor James Ross representing the city, and County Commissioner Albert H. Fritz, the county. It was an appropriate occasion, the date also marking the centennial of railroading in Lancaster. The speakers included Mayor Ross, for the city; Colonel Daniel B. Strickler, for the county; and Mr. Siedle, for the citizens. Jesse Jones and five other pilots gave an exhibition of flying and made the first landing on the new field.

With work under way, the following commission was appointed to supervise the construction and operation of the airport and the following men were named: Mayor Ross, chairman; Mr. Seidle, secretary; city commissioner Harry J. Stumpf, county commissioner G. Graybill Diehm, Henry W. Brubaker and Edward Edgerley, the latter having been appointed supervising engineer.

The work was started with funds provided by the Civilian Works Administration, the city and the county, which also had purchased the fields from the owners. With the change from CWA to the Relief Works Division there was a temporary stoppage of work, but a conference with Harry L. Hopkins, Director of Federal Emergency Relief at Washington brought about a resumption of work, which has continued with only minor interruptions.

During the construction period conferences were held by the Municipal Commission with secretary of commerce Daniel Roper, postmaster General James Farley, Rex Martin, assistant director of aeronautics, Department of Commerce and Thomas Bourne, superintendent of the First Division of Airways, Department of Commerce, under whose jurisdiction Lancaster falls.

All of these conferences dealt with problems directly related to the field and brought helpful suggestions. Each step in planning the field was taken with considerable thought and care, so that Lancaster, as Mayor Ross put it, need have no apologies to make for its field, when completed.

The airport embraces approximately 180 acres of land. It has three runways, each about 3,000 feet long and running northwest-southeast, southwest-northeast and north-south. All approaches are clear and with a prevailing northwest wind in Lancaster, aviators should at no time have difficulty in landing. It might be said that the direction of the runways is important, as an airplane usually is landed and takes-off into the wind. Landings cross-wind and with the wind ordinarily are not the safest arrivals, though possible.

In a report dated January 7th, 1935, Mr. Edgerley pointed out that 82,356 yards of earth had been removed in the grading process and that ap-

proximately 18,000 cubic yards more remained to be moved. Approximately 17,000 tons of stone have been used in surfacing the landing strips, according to this report.

There remains to be told the story of miscellaneous trends in local aviation, the Aero Club, local industries dealing in aviation goods, the military phase and other interesting items.

The Lancaster Aero Club was chartered in 1919, almost a year after it had begun to function, and until 1920 it was active in air matters. There was a hiatus from 1920 to 1929, during which time the club was largely inactive. Since that time, it has again assumed prominence.

The death of Roy Musselman dampened the ardor of the club and many of the members lost interest. The organization, however, the second of its kind in Pennsylvania and hence a pioneer, was not disbanded.

The club was chartered on September 30th, 1919, with the following incorporators: Arthur B. Dodge, John F. Steinman, Herbert B. Weaver, Oliver J. Keller, William S. Raub, Charles B. Long, Sumner L. Brown. Mr. Dodge was elected president; Mr. Weaver, treasurer; Mr. Brown, secretary; and Mr. Raub, vice-president. Mr. Dodge served as president until 1929.

In that year Howard M. Hersh was elected president and was succeeded in 1930 by Mr. Jones, who has remained in that capacity ever since. Mr. Brown has served continuously as secretary and still maintains his active interest in the club and local aviation.

The club has been active in promoting air meets, in the presentation of the Bricker Trophy and in work among boys, at one time having started a junior club. It will have a room at the new airport which will be used for business and social purposes and with aviation becoming more important here each year, the future of the club seems assured.

Since the days of ancient history man has sought to fly in the air and Daedalus, the Grecian gentleman with wax wings, and his son, Icarus, were perhaps the earliest ancestors of that modern sport of gentlemen, soaring. The Grecian pair came to grief, according to mythology, when the heat of the sun in the upper reaches of the air melted the wax. Our modern searchers of the stratosphere, I feel sure, would welcome some of that heat.

The aeronaut who takes to gliding and soaring regards power planes in the same light that the sailboat master looks upon power launches and yachts —with the greatest of disdain. He claims that the only real sport in the air is to sail along silently, supported only by air currents, breezes and rising heat waves. It is an art which requires considerable knowledge of the air and its movements.

The sport blossomed forth in Germany, chiefly after the War and in the past decade has grown rapidly throughout the world. Lancaster has played

its part in gliding and soaring through the activities of the Intercourse Gliding Club which was established in 1931 and is still in existence.

Founded by a group of mere boys, the organization has held together, secured two gliders and one sailplane, and it is now interested in fostering wider activity in the sport in this section.

Members of the club have been active in establishing the South Mountain Soaring Ridge, near Newmanstown, in Lebanon county, a field located on a bluff south of the town and facing to the northwest, the direction of the prevailing wind. This site which is expected to become prominent this summer, may one day be an important center for soaring. It is one of three ridges in this country devoted to the art.

Most of the work of the Intercourse Club has been in gliding and I might pause for a moment to explain the difference between gliding and soaring. The former, as the name implies, is the mere coasting to earth from an altitude gained either by shooting off a ridge or through power generated by having an automobile tow the glider.

Soaring, on the other hand, is sustained flight in which the sailplane either goes up or down and maintains flight, so long as the pilot can find suitable air currents to keep him in the air. Flights of over 160 miles have been made in this fashion in this country, and pilots have soared to altitudes of over 6,000 feet, without benefit of motor power.

Elmer Zimmerman, of Intercourse, and Harold Huber, of Willow Street, have been leaders in the organization since its inception. Recently, a Lancaster Glider Club was formed with ten members.

Aside from the history of actual flying and men of the air, Lancaster's industries have played a part in the march of aviation, and two of the county's products are leaders in their lines.

It has been estimated that fully seventy-five per cent of the light planes of this country are equipped with propellers, — to aviation men known as "props," which were manufactured by the Sensenich brothers, of near Kissel Hill.

Some years ago, Harry and Martin Sensenich started to manufacture propellers for ice boats and power sleds. They found, however that there was not a large outlet for these products and they finally turned to the production of airplane "props."

Since that time, the barn in which they started their work has become a factory and their blades have been sold throughout the United States, in Canada and Mexico. They manufacture six government-approved types, all of which are in demand. They have in their factory a 160-horsepower engine which they use to test the "props" during the process of manufacture.

The pioneer parachute manufacturing concern of the nation is located in Lancaster and it is actively engaged in the production of these safety devices.

During the World War, the Follmer-Clogg company began to produce parachutes and supplied almost all those used by both the army and the navy. Flare parachutes, also used during the War, were made at the rate of 1,000 to 2,000 per day. These 'chutes were smaller in size than the voluminous billows used by aviators, but were made of the same material and built along the same general lines.

After the War, the firm dropped this type of work until 1927, when it started research work to discover a new and improved type of parachute. This work was undertaken by Sam Knight, an expert.

The firm is now developing what is known as the square, multiple-vent parachute, smaller than the conventional size, which resembles the upper part of a balloon, and it is the fastest opening 'chute yet made. The descent also is slower.

This parachute has been tested in Lancaster and at numerous other points and while the research is not complete, the 'chute itself is in use. Many of the tests have been made by Larry Jones, Lancaster parachute jumper. The parachute, loaded with a 150 pound weight, has been dropped from an airplane less than 100 feet above the ground and has opened in time to "save" the theoretical man.

While the standard parachute requires from 2.4 to 2.8 seconds to open and is hardly safe under an altitude of 250 feet, the square 'chute opens in from 1 to 1.4 seconds and is safe at an altitude of 100 feet. Since the majority of airplane accidents occur within 200 feet of the ground, the value of the 'chute is evident.

I hasten to say that I am not a salesman for the local parachutes, but I believe that this new development, remarkable for this period in the history of aviation, should be stressed, for because of it, Lancaster may well become a leader in the manufacture of parachutes.

Local industries have had their share in the development of the modern transport plane. Ships of the future probably will be so much faster, so much larger, so much more comfortable and so much safer, that our present day planes will appear like the "crates" of the post-war period.

However, one feature in the currently modern plane is soundproofing, by which much of the noise of the engines has been eliminated in the cabin. Passengers today fly in modern ships which noise measured at several decibles (the unit of noise, or sound) less than that of a Pullman car. Conversation may be carried on in a normal tone of voice.

The Armstrong Cork company produces insulation materials which are used in this soundproofing work.

Another great advance in modern flying is the variable pitch propeller, by which the angle at which the blade bites into the air can be changed, while in motion. Thus, at the start, the propeller can be regulated to give

more power for the climb, and after altitude has been attained, it can be changed to give greater speed. At altitudes where the air is thin, the blade can be regulated so that the propeller bites into the air more effectively.

While not widely used, motors which operate the pitch of the propeller are manufactured by the Fidelity Electric company, of this city.

The Hamilton Watch company formerly produced instruments for airplanes, specializing on tachometers, a device used to determine the engine speed of an airplane. The Lancaster Steel Products company, while still in operation, made certain equipment for airports and fields and at one time supplied the United States government with equipment of this type.

Lancaster has made increasing use of the air mail, especially for letters and parcels going to distant points. Through the use of the air mail, a letter mailed here late in the afternoon will be in the first delivery the next morning, in Chicago. Mail for the coast is delivered the second day after mailing, rather than four, or even five days, when sent by train.

Because of the fact that some of the air mail is sent out with regular postage rather than the air mail stamps, it has been difficult to determine the volume of air mail out of Lancaster. During the past year, however, Mr. Charles M. Howell, city postmaster, estimates, roughly $150 worth of air mail was sent out each month.

Another phase of aviation, air express, so far has proved of little value to Lancaster. This matter is handled in this country by what is known as General Air Express, or, to use the currently popular alphabet vernacular, GAE. Records of that company fail to show any express shipments into Lancaster recently and it is reasonable to suppose that there has been little or no outgoing express, because of the lack of an outlet.

Development of the new airport, however, will probably bring this service to Lancaster, enabling the transportation of parcels with the same speed, if not greater speed than the air mail.

Lancaster has had the opportunity of viewing almost every type of airplane, during the years since the War. John Wise, of course, brought the balloon to this city and before the War there were numerous contraptions called aeroplanes by their hopeful pilots.

The airplane itself, in its various types, has been most numerous here, the residents of the city and county having seen the open cockpit and cabin planes of many types. From the small Eaglets, three-cylinder ships capable of a maximum speed of perhaps 90 miles an hour to the large cabin plane, the sister of "The Spirit of St. Louis" in which Lindbergh flew across the ocean, Lancaster has viewed a wide variety of planes.

Most curious of flying machines, the autogiro is now thoroughly familiar to Lancastrians, many of whom were able to take trips in this strange ship with its "palm leaves" twirling lazily in the air, providing an important lift-

ing power to the ship. Besides the one which was located here for over a year and which was used extensively in air advertising, others from time to time have landed at our airport.

On several occasions seaplanes have flown over and landed on the Susquehanna river and hence, although an inland city, Lancaster also has seen this type of machine, which has been used for speed records and long overseas flights. Indeed, the world's speed record of slightly over 440 miles an hour is held by an Italian seaplane.

That mongrel type of machine, the amphibian, which can land on both sea and land, being equipped with pontoons and landing gear, also has been in Lancaster. Two years ago such a machine was brought here in connection with a commercial advertising project.

Many army airplanes and National Guard ships have landed in Lancaster, to attend air meets and on business. The Department of Commerce also has sent some of its ships here on many occasions in connection with the development of local flying.

On some occasions, several of the local planes have been equipped with skiis, which have enabled them to take off and land on snow and ice. The author remembers several trips in skii planes from the local airport and on one occasion with Mr. Jones at the stick, he landed on the Susquehanna river when it was heavily coated with ice.

The skii plane takes off easily and smoothly and the landing is almost silent, with the motor throttled down to idling speed and the skiis skimming over the snow with a soft hissing sound. This type of landing is as pleasant as one may experience in flying.

The city has seen gliders and "blimps," the latter large cigar-shaped balloons which resemble dirigibles, but are smaller and lack the intricate interior framework.

Most of the famous navy dirigibles have passed over Lancaster. The ill-fated "Shenandoah" crossed the county on the evening of its last trip, which ended with an explosion over Ohio. The "Los Angeles" has been seen here a number of times and the "Akron" which also fell, less than two years ago, sailed over Lancaster county.

During the World War, Lancaster county contributed 240 men to the air services of the army and navy. Few of these men did actual flying, but all of them were attached to air detachments. The author has prepared a list of the names of all Lancaster men so connected during the War.

First Lieutenant George H. Zellers, attached to the 20th Squadron, Royal Air Force, of Great Britain, was killed in action on July 30th, 1918, after bringing down two German airplanes. Second Lieutenant Benjamin Hiestand was killed in an airplane accident at Door Field, Florida, while in training on June 10th, 1918. In his honor, the airport later was renamed Hiestand Field.

Lieutenant (Junior Grade) Jacob F. Wolfer, attached to the naval air services, died on February 10th, 1921, in an airplane accident at Guantanamo, Cuba, after service in the War. I might also mention the name of Lieutenant Allison O'Daniel, of Oxford, who was killed when his plane fell at the front.

Lieutenant Colonel William D. Grant, of Christiana, an outstanding flier of this county, was killed in an automobile accident on December 19th, 1929, while returning from Philadelphia, where he had given an address on aviation.

Lieutenant Hugo Rush, of New Providence, is another Lancastrian in the Air Service as is Lieutenant Frank G. Jamison, of Kirkwood.

Once again stepping over the border of the county line, I would like to mention Commander C. P. Mason, of Honey Brook, who was appointed to Annapolis from Columbia and who distinguished himself by conducting the hunt over the Pacific Ocean in October, 1925, for Commander John Rodgers, in his famous attempt to fly to Hawaii. Rodgers' plane was found floating on the ocean, near his destination.

The art of aerial photography, although seemingly carried to a high plane—pun not intended—is probably merely in its infancy. Even now, photographs have been made at a distance up to 200 miles, with the use of infra-red lenses.

Walter F. Hallowell, of this city, has made numerous excellent air photographs over the city and county and is probably the leading expert in this work in Lancaster. Most of his pictures are taken at altitudes ranging from 500 to 2,000 or 3,000 feet. Charles Rice, of East Petersburg, also has done excellent aerial photographic work.

In 1926, a mosaic map was made of Lancaster. The sections, fitted together, hang in the Municipal building. The pictures were taken at an average altitude of 10,000 feet and the individual objects are not very distinct.

Similar maps have been made for the Pennsylvania Water and Power company, covering the Susquehanna river and the territory served by this company. Both the city map and the power company maps were made by out-of-town firms specializing in this type of work.

Lancaster has witnessed various forms of air advertising. It has seen airplanes and autogiros on numerous occasions flying streamers and sky banners, advertising various products. It also has been witness to the sky-writing feats of Art Davis, one of the most famous fliers engaged in this type of work. Sky-writing is the spelling out of a word by the evolutions of an airplane, releasing a heavy cloud of smoke.

We have not been without honor in the number of distinguished guests whom we have entertained here, guests who have made names for themselves in the field of aviation, men and women whose names are known by every little boy who ever gave a thought to flying.

Colonel Roscoe Turner, noted speed flier, who has crossed the country in many famous dashes and who was third in the great MacRobertson London-to-Melbourne air derby last year, flying what was believed to be the first multi-motor airplane to land in Lancaster, has stopped at the Lancaster airport on several occasions in the last decade. Clarence Chamberlin, the first pilot to fly from this country to Germany, without stop, also has been here.

A favorite guest in this city, mentioned above, is Miss Laura Ingalls, one of the best known of the women pilots, famed for her solo flight around the South American continent. Mrs. Louise Thaden, of Pittsburgh, a "powder puff" derbyist and endurance flier, came to this city several years ago with the Good Will Tour and was accompanied by Miss Helen Ritchie, one of the most attractive of all women fliers and the first woman to hold a transport license. She now flies regularly between Detroit and Washington.

In all aviation there are few names better known through the rank and file of flying men than that of Casey Jones, great pilot and instructor in the art of flying. Jones has been in Lancaster on many occasions, hopping here on brief business trips.

The city has entertained Lieutenant Appolo Soucek, of the United States navy, who for a while held the altitude record for airplanes, soaring over 45,000 feet into the sub-stratosphere—only, at that time the term stratosphere was rarely used and little known outside of scientists.

Eddie Stinson, one of the nation's pioneer fliers, a builder of planes and a hero of the air service during the World War was, as we have shown above, a guest in this city. Martin Jenson, second prize winner in the famous Dole race to Hawaii, also visited in Lancaster.

Lieutenants Lester J. Maitland and Albert F. Hogenberger, two army fliers blazed a pioneer trail across the Pacific Ocean, when they flew 2,400 miles to Hawaii and opened a new course in airways. Their flight, in 1927 was at that time the longest over-seas trip ever made; and Lancaster has had the honor of playing host to these intrepid fliers.

Perhaps less well known, but a great flier just the same, Jack Frye, one of the high officials of TWA has inspected the Lancaster airports. J. D. Hill, a trans-Atlantic flier and one of the first men to carry the mail from New York to Cleveland also has been in this city.

We have reviewed the past and shown that Lancaster has played an honorable part in the history of aviation. Lancaster has contributed to war service in the air, it has produced airplane equipment and in John Wise, it had a citizen who was distinguished in his work and a contributor to the advance of aeronautics.

In the years to come, Lancaster will occupy an important place in commercial and military aviation, because of its background, its "airmindedness" and its unique location. In times of peace it may become a link of great value in the myriad air lines which are destined to cross and re-cross this

nation. In times of war, because of its natural advantages and location, it may become a focal defense point for the Atlantic coast.

Our new field, now about to be dedicated, is located on one of the primary east-west transcontinental lines and also on a proposed north-south route, which would link Buffalo and the north with Washington and the south. The field will be ample to handle the airplanes which will be built in the future and it is capable of expansion. If necessary, 1,200 combat planes can be stored on the field, which may make it a vital coast defense point. This is the opinion of Brigadier General Oscar Westover, expressed when he inspected the field during the past winter.

If these dreams come true, if Lancaster grasps the opportunities, I can see this community being served by passenger, mail and express planes, which will carry passengers to the north and the south, to the east and the west. It will be a focal point for the collection of mail and express.

Passenger planes now are flying over 250 miles an hour and seaplanes are nearing the 450 mile per hour mark. Tests are being conducted in this country to develop a plane which will fly 500 miles an hour. Scientists say that this will be the maximum speed for planes, yet man has a habit of coming along with something better than the forecasts of the scientists. We may see planes coursing the air at 600, 800, perhaps 1,000 miles an hour.

Lancaster will be in easy contact with the Pacific coast, China, Europe, Asia, and almost every point in the air, as the men who are building this great aviation industry, now a mere infant, send their ever-advancing air lanes into the far places of the globe.

Aviation is advancing in history more rapidly than fly the most modern transport ships, the speedy combat planes of this country and England, the incredibly swift seaplanes of Italy. The opportunity to assume its place in this new world of aviation is before Lancaster and we are going to grasp that opportunity.

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In its efforts to develop an airplane which would be safe and economical for the average man, the Bureau of Air Commerce in 1934 and 1935 experimented with a number of different types of ships.

These included a rudderless plane, a wingless ship and an airplane with an automobile, rather than an airplane engine. The program envisioned a plane which would sell for $700, less by hundreds of dollars than the average low-priced machines of the day.

All of the planes, according to the first tests, were believed to be safer and simpler to operate than any plane so far developed. The Bureau of Air Commerce ventured the opinion that cheap, safe planes would grow out of the experiments, to the end that flying would become as popular as travel by automobile.

* * * *

The Bureau of Air Commerce, in summarizing the work of American commercial lines (domestic and foreign extensions) in 1934, stated that

561,370 passengers were carried. Air express amounted to 3,449,675 pounds. These figures compare with 568,940 passengers carried in 1933 and 2,452,812 pounds of express.

In 1934, the domestic lines carried 461,743 passengers while foreign extension lines (Latin America and Canada) accounted for 99,627 passengers.

Miles flown by scheduled operators in 1934 were 48,786,551 as compared with 54,642,545 in 1933.

American-operated lines had 6,455 persons in their employ on January 1, 1935, including 503 pilots, 248 co-pilots, 2,201 mechanics and ground crew men, 1,846 other hangar and field employees and 1,657 operations and office employees, according to the Bureau of Air Commerce.

The lines had 518 airplanes in operation on January 1. The gasoline consumption in 1934 amounted to 25,136,274 gallons.

On April 1, 1935, there were 13,886 pilots and 6,855 aircraft holding active Department of Commerce licenses, according to the same source. In 1933, on the corresponding date, there were 13,755 pilots and 6,600 licensed aircrafts.

Pennsylvania ranked fourth in the United States in the number of licensed planes, with 444. New York lead with 860, California was second with 795, Illinois third with 492.

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In the early spring of 1935, an experimental transport flight was made between San Francisco and Hawaii by a Sikorsky seaplane, the property of the Pan American Airways. The outbound flight was made in approximately seventeen hours.

The plane carried mail on the round trip, including a number of letters addressed to Lancaster philatelists and others interested in having envelopes bearing the cachet of this first long overseas mail carrying flight.

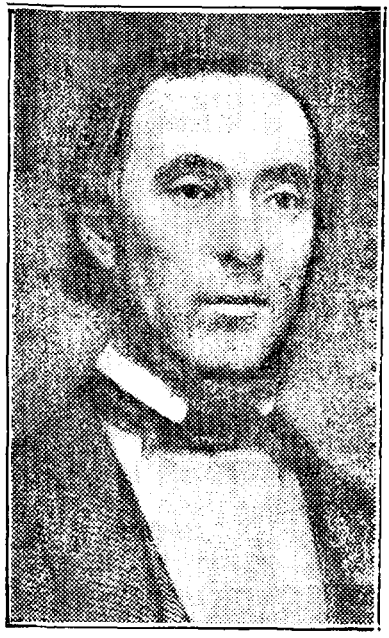
It might be mentioned that the flights were the prelude to the inauguration of passenger service to Manila, Philippine Islands, and China. The service was expected to be the greatest American venture in the impending battle for world air supremacy.

The United States, represented by PAA, England by Imperial Airways, Germany, France and Holland have for some time been preparing for the extension of their air lines around the world and air men have regarded the work as the beginning of one of the greatest romances in commerce the world has ever seen.

Planes equipped with automatic pilots, direction finding apparatus, radio systems and other modern features of flying have been and are being built to engage in this great struggle.

Far-seeing aviation leaders have predicted that the battle would serve to bring all sections of the world within a comparatively few days of every

other part. This factor, if accomplished, should bear out the predictions made in the paper proper, that Lancaster will be within easy communication by air with every part of the world.



JOHN WISE, AERONAUT, WHOSE REMARKABLE EXPERIMENTS IN THE AIR RANK HIM AS ONE OF THE GREAT MEN IN AVIATION. HE ASCENDED IN A BALLOON FROM PENN SQUARE, LANCASTER, ON MAY 7TH, 1836. IN 1850 MR. WISE PUBLISHED A BOOK ENTITLED, "HISTORY AND PRACTICE OF AERONAUTICS."