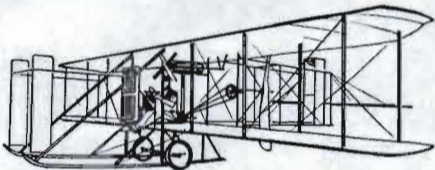


ORVILLE and
WILBUR WRIGHT'S

SCHOOL for EARLY BIRDS



By Bernard L. Whelan

A young man seeking flight training in this country today can choose among literally thousands of qualified flying schools, all of them staffed by competent pilot-instructors and utilizing, in most cases, only the most modern equipment.

But back in 1910 when I first started persuading my father to permit me to take flying lessons, there were only a few truly legitimate schools where an air-minded youth like myself could enroll for a flight course. The best of these, in my opinion, was conducted in Dayton by the Wright brothers who, through their inventive genius and mechanical ingenuity, had brought aviation to the world a few years before. From the humble birth of the Kitty Hawk plane, they started a training program that has ultimately turned out more than a million qualified pilots in the United States alone.

As a Daytonian, I observed the very beginnings of this program. Following final delivery in July, 1909, of the first Army plane on which Orville had flown the tests, Wilbur Wright trained Lieutenant Frank P. Lahm, now a retired brigadier general, and Lieutenant Frederick E. Humphreys. Lieutenant Lahm, who had the earlier distinction of being the first Army officer ever to fly in an airplane, received the first lesson, but Lieutenant Humphreys made the first solo just a few minutes before Lahm's. Another lieutenant who was destined to become head of the Army

Air Corps, Benjamin D. Foulois, also received some lessons at that time.

At a temporary winter base in Montgomery, Alabama, now the site of Maxwell Field, Orville trained Walter Brookins, a Dayton neighborhood boy the Wrights had known and liked for many years. When Orville returned to Dayton in May, 1910, Brookins became the first flight instructor, aside from the inventors of the airplane, to teach other men to fly. He began the training of Arch Hoxey and Spencer Crane. Then he joined Orville at Simms Station, near Dayton, an area now encompassed by the



These reminiscences of Bernard L. (Benny) Whelan carry back to the days when there were less than 250 licensed pilots in the world. Whelan himself was the holder of License No. 247. Now retired, he was formerly general manager of Sikorsky Aircraft and a vice-president of United Aircraft Corporation.

Wright-Patterson Air Force Base, and they jointly trained others, including Al Welsh, Ralph Johnstone, Frank Coffyn, Phil Parmalee, and Cliff Turpin, another Daytonian. Most of this group, along with Brookins, comprised the Wright exhibition team and also formed the nucleus of instructors who, in concert with the military men trained by the Wrights, have trained tens of thousands of pilots, who in turn will train our pilots of the future.

My interest in aviation was sparked by visits to Simms Station where I often saw one of the Wrights or their trained pilots take the air. It caught fire in 1910 when I watched from the roof of a downtown building as Orville Wright, in support of attendance at Dayton's Industrial Fair, flew the eight miles from Simms Station, circled over Dayton and returned. Looking back after 50 years, including 32 of active piloting, the memory of that flight still remains my greatest thrill in aviation, and I was only a spectator on the roof of a building. The romance of watching that airplane, its approach heralded by the combined sound of the engine and whirring propellers, traveling in the sky at an altitude of about 700 feet, under full control and with the operator in fairly plain view, is something difficult to describe but impossible to erase from memory. Remember, this was 1910.

It was then I decided to take up flying if possible but it required more than two years to convince my father

to advance the \$60 an hour for training at the Wright school. This may sound like a high fee for those days when the purchasing power of the dollar was much greater than now, but the Wright school was one of the few legitimate ones when I signed up in May of 1913. There were a number of doubtful schools with planes unable to get off the ground or capable at best of making only a short straight-away hop. The principal source of income for those in the latter category was a charge for "breakage" — an obligation almost certain to be incurred. I knew enough about the Wright school, though, to know their planes really flew and there was no charge for breakage. There was also the factory to back up the school.

Wright Craft Was Surprisingly Sturdy

By that time the Wrights had developed types much superior to the flimsy Kitty Hawk plane and the Army "A." The derrick-and-weight-launching device had given way to a combination wheel and skid landing gear, with the elevator in the rear. These "empennage in rear" types became known as "headless biplanes." Considering the nature of the machine, the construction was sturdy and workmanlike. Today's conception of planes of that era being built of baling wire and bamboo is entirely incorrect, at least as far as the Wrights were concerned, although we know such construction existed in many backyard "factories." New types of land planes and flying boats were under development.

The Model "B," listed by the company as an Exhibition and Reconnaissance type and its first production aircraft, was the workhorse at the school. For the sake of comparison with some of today's fantastic aircraft, today's young pilots might be interested in its general specifications and mechanical features, some of which were quite unique at that early stage of the art.

The biplane wings had a span of about 38 feet and a chord of about 6 feet. Total wing area was about 450 square feet. It was 28 to 30 feet long and 8 feet high and weighed loaded around 1,250 pounds. Its 35-horsepower engine, which could be run continuously at that power, turned a maximum of 1,400 r.p.m., driving two pusher propellers geared down through chains to turn about 450 r.p.m.

The engine had no carbureter. Gas flowed by gravity to a small gear pump which fed it to a calibrated air tube which functioned as a mixing chamber leading to the manifold. Ignition was by a French-made Mea magneto. There was no ignition switch, but a unique although complicated feature provided a means for stopping the engine quickly in case of emergency. The exhaust valve push rods had collars on their lower ends; a spring-loaded rod carrying four lugs ran the length of the engine adjacent to the push rods. When this rod was released by pulling a light, flexible cable that looped down in front of the pilots, the lugs registered under the collars on the push rods holding

the exhaust valves open and stopping the engine immediately.

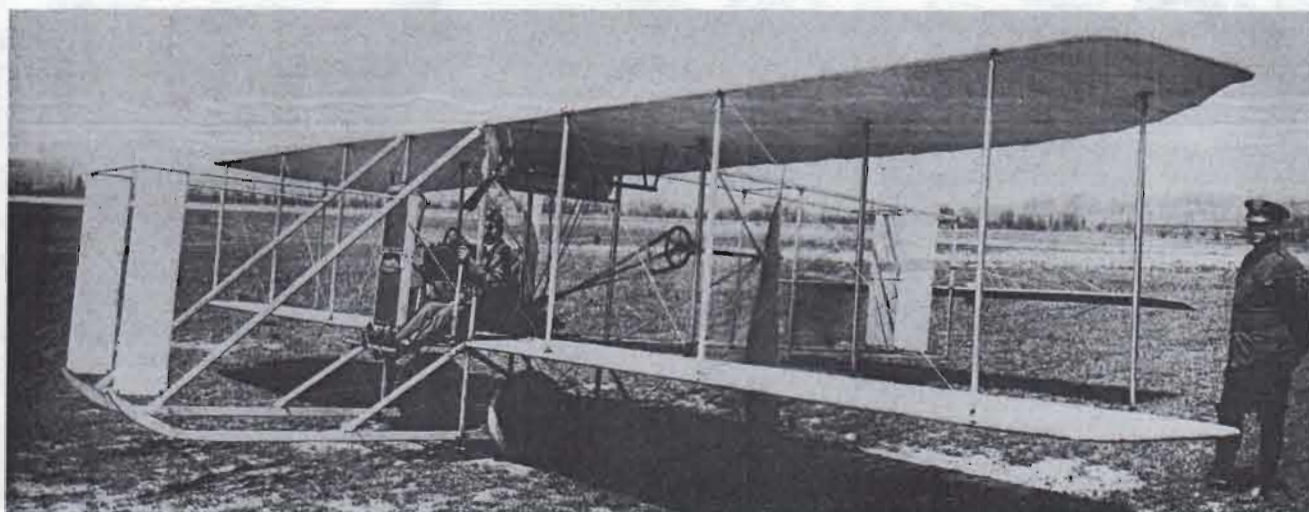
The chain drive to the props necessitated a small fly wheel. The chains ran in guides, one of the chains being crossed so that the props turned in opposite directions, thereby eliminating the effect of torque. The narrow range of power of the engine was controlled by a small spring-loaded foot pedal mounted on a light structure in front of the wings which supported the pilots' feet. A cable from this pedal, which had ratchet and pawl for intermediate settings, controlled advance and retard of ignition from the magneto, thereby controlling power of the engine.

Both Skids And Wheels Served

The landing gear consisted of two skids attached by struts to the central portion of the wing structure, extending well forward and two or three feet aft of the lower wing. Two rubber-tired wheels straddled each skid, attached by several heavy rubber shock rings. The weight of the plane at rest was supported by the wheels and the rear portion of the skids. In taking off, the elevator control could be eased forward, eliminating the drag of the skids. On landing, the same control could be eased back, after flying speed was lost, to put more weight and drag on the rear portion of the skids and shorten the run. It was an elementary application of braking effect. The skids also prevented a nose-over in the event of a bumpy landing.

Pilot and student sat side by side

Orville Wright, who often flight-tested new equipment at Simms Station, prepares to take off in an advanced "C" model plane.



on seats on the lower wing, their feet resting on the light structure forward. The engine was on the wing to right of center, the gas tank above and rearward, and a long narrow radiator was mounted vertically between the wings.

The "B" had two complete sets of controls for dual instruction, each set having two levers, one of which had two functions. The lefthand lever in each set was moved fore and aft, a normally instinctive motion, to ascend or descend. The righthand or wing warp (aileron) lever was not instinctive and actually consisted of two separate levers in one. To make a left turn, for example, this lever was moved forward, causing the plane to bank to the left. At the same time, left rudder was automatically applied through a linkage. However, if one wanted to apply more or less rudder in the turn, which is frequently the case, the top portion of this lever was attached in a manner that permitted movement right or left to apply more or less rudder independently to make a proper turn without slip or skid. In the meantime, you had to be handling the elevator control separately with the other hand. The principal effort in learning to fly the "B" had to be directed toward the coordination of the three movements described, involving both hands, especially in sharply banked turns when, as every pilot knows, the elevator becomes a rudder and the rudder an elevator.

Air Express Begins

I don't recall ever having seen exact performance figures on the "B" but the Army "A" delivered in 1909 was credited with a timed top speed of 43+ miles per hour (for which the Wrights received a five-thousand-dollar bonus for exceeding the contract guaranteed speed of 40 miles per hour). Since the "B" had a little more power, somewhat less drag, and more efficient propellers (Hamilton Standard engineers 50 years later computed the propellers on the original Kitty Hawk plane as being 66% efficient) it might have had a top speed of 50 miles an hour. I would estimate the landing speed at 25 to 30 miles an hour. Their practicality can best be appraised by the fact that Brookins, after participating in an air meet at Chicago in 1910, flew the

185 miles to his next exhibition date at Springfield, Illinois, with one stop en route (the first long cross-country). That same year Parmalee flew a 70-pound bolt of silk from Simms Station to Columbus, Ohio, some 60-odd miles, at better than a mile a minute. Incidentally, this cost the customer, a large department store, \$5,000 or \$71.42 a pound, about \$1.19 a pound mile, but the customer made a profit selling pieces as souvenirs for a total of \$6,000, plus other indirect advantages.

Air express was off to a flying start.

When a student signed up at the Wright factory and paid in advance for a stipulated number of 15-minute lessons, it was suggested that he spend some time there practicing the control movements on a "trainer" set up in a little-used section of the plant. This turned out to be a complete Model "A" or "B" less the tail section and engine. It was cradled so that it could oscillate laterally, an electric motor driving a cam which continuously changed the pattern of lateral movement. When the pilot moved the combination warp and rudder lever correctly, the attitude of the wings would be brought back to a level position. It was in effect an embryo Link trainer. A few hours on this, spread over a few days, and the movement to correct lateral unbalance became instinctive.

The next step was to go to Simms

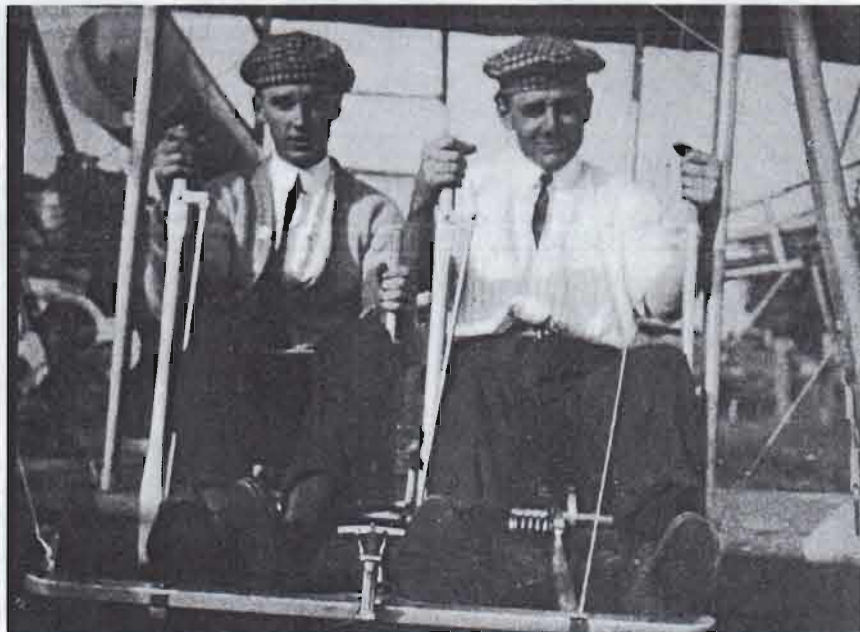
Station, which by that time merited a stop on the electric interurban running from Dayton to Springfield, Ohio. There the student met his instructor, in my time Oscar Brindley, who later became the first civilian instructor hired by the Army and who trained many of its early flight officers. Brindley explained the controls and the mechanical features of the machine. He also explained the "instrumentation." This consisted of a piece of light line about 12 to 14 inches long tied between two tiny collars soldered to the wire stretched between the forward ends of the skids. This was the only "instrument," if it could be so designated, on the engine or plane. Actually it served a very useful purpose. If turns were being properly executed, it would trail straight back. If you were skidding or slipping, it would so indicate by trailing off toward one side or the other.

Pilots Wore Checkered Caps

Then you had your first ride.

Instructor and student were dressed for flying when they had their caps on backwards. Black and white checkered caps were in vogue at the time and these later became the symbol of the Early Birds, an organization "limited to those who piloted a glider, airplane, gas balloon or airship prior to December 17, 1916." After you collided with a large bug in the air

Instructor Oscar Brindley, right, shows Benny Whelan how to operate the controls.



going in the opposite direction, you obtained a pair of automobile goggles. Flight training proceeded much the same as it does today, with the student gradually taking over the controls, first on straightaways, then turns, right and left, figure eights and landings.

Brindley inspired a great deal of confidence. After the student was able to handle the machine for full circuits of the field, the instructor would sit there with his arms folded. When you encountered a patch of turbulent air for the first time, he would only turn his head toward you with a broad grin on his face, not touching the controls. You couldn't help feeling relaxed and confident.

I can recall the six others who were taking training at the same time. They were Maurice Priest; John Bixler; M. Schermerhorn from Boston; R. M. Wright, son of an Indiana farmer; A. Bowersox, a postmaster from Colorado, and Al Bressman, a Navy seaman taking advantage of the off-duty time pending re-enlistment.

Students Often Slept In Hangar

To take advantage of the smooth early morning and late evening air, we frequently slept on cots in the hangar, going to a nearby farmhouse for meals. On bad weather days I would go to the factory and just hang around for what I could see. Learning that Orville Wright frequently made a late tour of the factory before going home, I waited for him on one occasion to ask about the possibility of a job later on. He seemed very willing to talk to students. While carrying on the conversation, he would be picking up the brass screws that had been carelessly brushed off the work benches during the day. Having shared with his brother the development of the world's first airplane financed by the meager earnings of their bicycle shop, he was well aware of the intrinsic value of such items.

Orville Wright also visited Simms Station a number of times to flight-test new things under development, among which, even in those early days, was an automatic pilot (the black box was there!). He received the Collier Trophy for demonstrating this in 1913. He always showed a genuine interest in the students' progress,

talking to Brindley about them. More than once I heard him ask, "Have you done any mushroom hunting?" Part of the flight field was somewhat marshy and covered with hummocks; it became known as a spot where wild mushrooms flourished. By "mushroom hunting" he meant very low flying. An expert pilot himself, he would sometimes circle the field with the low wing almost in the weeds on turns. In that type of flying even small errors are immediately apparent and he wanted the students to benefit by some of it.

Finally came that day when Brindley thought you were a fair risk to go it alone. After a short flight he stepped out and said, "Go ahead. Do two or three circles around the field and



land. Don't try anything else," and you had your first solo.

If Brindley considered you more than a fair risk he might also let you make a solo flight and land with a completely dead engine. On such occasions the other students would gather to watch the power-off "vol-plane" to a landing. The "B" might be called neutrally stable. With power off, it was necessary to promptly put it into a glide to avoid a "stall." One day either Bixler or Priest was taking this test and, after "hitting the cable" to shut off the engine, seemingly did nothing about going into a glide. It was apparent that the machine was going to stall. There was a deathly silence. Bressman, the Navy man, decided something should be done about it. Cupping his hands to his mouth and directing his voice towards the plane, he shouted as loud as he possibly could — "Nose her down! — NOSE HER DOWN!"

But alas, it was too late. Ground-to-air communications had failed dismally. The plane wavered and then pancaked heavily from about 100 feet, pieces of landing gear and other parts flying in all directions. When it was found that the student was only badly

shaken up, everyone was happy. Bressman's effort at accident prevention was the subject of humorous repartee for several days.

Then, as now, the Federation Aeronautique Internationale, organized in 1905 for the purpose of keeping records of flights of airplanes and balloons, was the governing body for the issuance of licenses, represented in the United States by the Aero Club of America. Students were encouraged to take a license test partly because of the questionable integrity of many "schools." The F. A. I. license was something of substance in the way of official recognition. On application, three observers were appointed to witness the tests which, as I recall, involved climbing to an altitude of 500 or 1,000 feet, doing a series of figure eights around two pylons a certain distance apart, and landing within 300 feet of a designated point. In my case the observers were Brindley, Lucerne Custer, an aviation enthusiast and balloonist of note, and a third person whose name I cannot recall and who failed to arrive. In his place, a boyhood friend who had come out with me just to watch the flying was asked to stand at one of the pylons, a pole with an improvised flag, to confirm that it had been rounded in doing the "eights." The other pylon was an old tree we had rounded many times in training flights and which had somehow survived the experience.

Whelan Qualified As Pilot 247

In due course I received what looked like an important document. It was F. A. I. Certificate number 247, issued July 13, 1913.

Almost 47 years have elapsed since the happy and carefree days at the Wright brothers' school. Someone has said that the romance of flying is rapidly being push-buttoned out of aviation but I believe it is still a romantic game for young men, offering challenging opportunities in many related fields. I'm sure that the training program started by the Wright brothers so many years ago will continue to provide competent pilots, even for the flight vehicles of the future — many of which I firmly believe, too, will be designed with the knowledge that there is no better mechanism to control a machine than man.