

First steps in flying

BY WILLARD E. EDWARDS, '29

My interest in flying began during the summer of 1909 when at the age of five I went with my mother and dad to one of the earliest international air meets in the history of aviation. This was held at the old Harvard aviation field, now the site of the United States Naval Reserve station at Squantum, Massachusetts. We watched, along with thousands of others, such flyers as Curtiss, Graham White and the Wright brothers. During one meet we saw Lincoln Beechey make his historic flight to Boston Light and return, twelve miles over the water in a land plane, with cap on backwards and trouser legs flapping in the breeze through the open cockpit. He was acclaimed a hero, and the following summer on a similar flight the crowd was astonished to see him circle the field and throw out coat, shirt, shoes and trousers before landing. Besides being an unusual stunt, this was to keep the curious from rushing up to touch him, clip off buttons, etc., as they had done the previous year, and was Beechey's way of letting them know he was not to be made a hero.

A few years later the family moved to a neighboring town, five miles from the air field, and after school hours, several of us would always ride over when any flying was going on. Finally in 1913, after we had been pestering one young inventor for several weeks, he took us up, one boy at a time for a short ride. This was our big day, and mothers surely would have turned grey had they known their sons were forty feet above the ground in a craft made of bamboo and doped bed-linen, and equipped with a motorcycle engine and bicycle wheels! We struggled terrifically in keeping the secret, feeling like members of a strange fraternity, banded together by a common experience which few had yet known.

It was ten years later before I again had a chance to fly with friends and another five years before I could take paid lessons. However, enthusiasm was kept up while a member of Tau Omega aeronautical fraternity at the university, and following graduation, I enrolled as a student pilot at the Pikes Peak Air

school in Colorado Springs, 6000 feet above sea level. Flying here was somewhat disconcerting after having been used to the heavier air encountered at sea level, and it was necessary to start again at the beginning.

One of the very first steps after passing the department of commerce medical examination, is to take a fifteen minute "joy-ride" as a passenger in one of the training planes. Most schools wisely provide for this, since no matter how many times the beginner has flown in other places, it is a natural tendency when first over a new country to look about and enjoy the scenery. This cannot be done during an actual lesson in the air, at least economically—at the rate of a dollar for each two minutes, so the sight-seeing should be done at the first and then forgotten about until after a few hours of solo flying.

Some schools prefer to give a more or less complete ground school course before any actual flying is done. This consists of the theory of flight, navigation (or aviation as aerial navigation is called), study of motors, meteorology, department of commerce rules and regulations, rigging of the airplane, etc., depending on the facilities available. Other schools, following the impetuosity of most youth, prefer to give actual flying instruction in the air at the very start, or along with the ground school study, both of which are necessary in order to obtain a government license. Obviously, both systems have their merits, but one who has the ability to master or at least obtain a good working knowledge of the ground school courses and the persistency to stick with them until completed, will be in a fair position more readily to grasp the situation and better to understand the individual instructions in piloting.

However, this does not require any superior intellect any more than does driving an automobile. The student must have good health, good judgment and eyesight and above all be alert. Whereas one may occasionally make left-hand turns or dash out from a parking place in a car without looking to

right or left or behind, this cannot always be done in the air with the same results.

Most any normal boy or girl under the teaching of an experienced instructor will soon grasp the fundamentals and the reasons why, for each of the various movements, and within a few hours get over the mistakes common to those first learning to drive a car or pilot an airplane.

It is of course the object of the instructor to stay with the student, coaching him until this period is over. Then follows the solo flights, constant practice and advanced instruction leading to expertness as in other fields and accomplishments.

It hardly seems necessary to name the functions of the parts of an airplane when the average twelve-year old boy talks glibly of "props" and "flippers" and knows more about aircraft than did the average father ten or twelve years ago. Yet, since there is always a first time for everyone, suffice it to say that the "stick" is the upright bar or lever in front of the pilot's or student's seat in the cockpit of the airplane.

Pulling back on this stick raises the elevators or "flippers," which are the horizontal, moveable airfoils at the tail of the plane. This depresses the tail causing the airplane to "nose up" and begin to climb. Pushing forward on the stick lowers the flippers, raises the tail and causes the plane to point downward. It is the degree of movement of the stick necessary to cause a desired angle of climb or diving which the student must learn to "feel."

The "rudder-bar" or foot pedals on the forward floor of the cockpit operate control cables connecting with the "rudder," which is the verticle, moveable airfoil at the rear of the airplane. Pushing forward with the left foot swings the tail of the plane to the right, in horizontal flying, thus causing the nose to swing around the horizon to the left as long as the foot is held against the rudder-bar.

Similarly, pushing forward with the right foot swings the tail of the plane to the left, as long as it is approximately in level flight, and thus brings the nose around the horizon to the right. Again it is the "feel" of this motion which the student must learn.

If he were to give the plane too much rudder, it would not turn gradually but would slide sidewise, or "skid" through the air, much as an automobile skids in attempting too sharp a turn on a slippery level street.

To avoid this, another control on the wing tips, called the "ailerons," allows the plane to be "banked" through a

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1928

Wayne Sanders, '28 arts-sc., '30 law, of Chickasha has been named by County Attorney Pruet as his assistant in Jefferson county.

T. Jack Foster, ex '28, mayor of Norman, and owner of the University Cleaners, has announced his candidacy for re-election on the democratic ticket.

Paul A. Dillard, '28 arts-sc., formerly of Waurika, has accepted a position as law clerk to Justice James B. Cullison of the state supreme court in Oklahoma City.

1929

Hugh Cunningham, ex '29, former Oklahoma wrestler, has entered the professional wrestling ring.

The address of Ransome G. Holland, '29 eng., is Care Creole Petroleum Corporation, Port of Spain, Trinidad, British West India.

Miss Charleim Opperman, '29 arts-sc., of Baxter Springs, Kansas, has received an appointment as city librarian of Knoxville, Tennessee.

Alice May Kistler, '29 fine arts, of Tulsa, was to play the role of Mytyl in the Tulsa Junior League production of *Bluebird* March 13 and 14 in convention hall, Tulsa.

Karl Ritter, '29 eng., now an internal combustion engineer at Langley Field, Virginia, talked before the university branch of the American Society of Mechanical Engineers recently on "The Possibilities for the Mechanical Engineer in Government Service."

The alleged slayer of Dec Foliart, '29 arts-sc., wrestling coach of El Reno high school, was sentenced to death in the electric chair at the trial recently held in El Reno. Mr Foliart was killed in the hold-up of a bank November 26. Henry Lovett of Chickasha was the man accused of the murder.

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AN ENGINEERING GALLERY

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Light and Power Co. at Lawton, Oklahoma. His address is 110 North 3rd, Lawton.

Stuart Milam, P. E., is with Phillips and Milam Company, Chelsea, Oklahoma.

Robert Church, E. E., is a results engineer with the O. G. & E. His address is 210 South Palm street, Ponca City.

Sylvan Cromer, is an instructor in M. E. in the University of Oklahoma.

David A. Yates, E. E., is a student engineer with General Electric at Schenectady, New York. His home address is Avant, Oklahoma.

Vester E. Willoughby, C. E., is an instructor in mechanics at the University of Oklahoma. His home address is 600 East 8th, Ada, Oklahoma.

Charles K. Itner, E. E., was president of the Engineers club last year. He is at present in the distributing engineering department of the O. G. & E. Co. Oklahoma City. His address is 129 S. W. 44th, Oklahoma City.

Warren B. Trout, E. E., is a student engineer with the General Electric Co. at River Road, Schenectady, N. Y. His home address is 516 Market street, Muskogee, Oklahoma.

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right or left motion of the stick. These ailerons are hinged airfoils on the trailing edges of the wings, and moving the stick to the right raises the right aileron and lowers the left aileron. This causes the right end of the airplane wing to

descend and the left end to rise, thus tilting the whole airplane to the right.

Similarly, moving the stick to the left tilts the airplane to the left, and this is done when making a left turn. The plane as a whole is thus banked at an angle just necessary to prevent skidding at that particular speed, and it is this angle which the student must learn to "feel" in the air. Likewise, since a driver cannot bank his automobile nor automatically change the banking of a highway curve, he must adjust the speed of his car to fit each curve he comes to and must be able to "feel" or "sense" the correct speed at which he may safely pass around these curves.

With these three control motions, the student must become so familiar that he always senses the correct combination to impart to each, and hand, eyes and feet must work simultaneously and in perfect co-ordination.

When he has learned the use of the controls, the student is allowed to take the stick, without help from the instructor, and to try and maintain a straight, horizontal course of flight. This is not as easy as it sounds, especially along the base of the Rocky mountains with occasional descending and ascending air currents and few horizontal ones in between. The student has to completely forget "joy riding" and must watch the altitude and the wing-tips and nose of his plane along the horizon, besides learning to sense whether he is skidding or not.

Of course there are many other things to learn besides straight flying, turning, climbing and diving, but for the beginner, these are the first steps.

Soon after he learns to take off and land correctly, to do vertical banks, study stalled-flight conditions and tail spins and then recovery from high altitudes, gliding with power off, forced landings and acrobatics. These require an even greater alertness, judgment and co-ordination of the faculties, which are necessarily so well exemplified in our most well known successful flyers.

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GREETINGS

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in chemical engineering, eight graduating this spring.

The personnel of the school includes Guy Y. Williams, director, C. T. Langford, professor of chemical engineering and C. R. Bailey, instructor.

Our purpose is to develop chemical engineers with sufficient fundamental and theoretical knowledge to solve new problems in chemical engineering as well as carry on the routine operation in this field.

FROM J. F. BROOKES

The annual St. Pat's occasion is at hand. It is opportune and natural to think of similar occasions of the past and associate with them the names and personalities of former students. Many interesting impressions remain as we think of this singular occasion when the engineering student comes into his own, so to speak. It is a time when scholastic work pauses and youthful enthusiasm holds sway. Truly the graduating engineer feels that his "college course" is complete if "St. Pat" has smiled upon him.

Now for a word about the school of civil engineering. The number of students enrolled is larger than in past years, indicating a satisfactory growth. This year a highway material laboratory was established for the testing and investigation of materials of this specific field. The curriculum has been revised from time to time in order to maintain proper correlation with the requirements of recognized educational policy and the demands of present day engineering practice. Scholastic work is reflected by the successful work being performed by the graduates in practice.

The engineer, by virtue of the kind of training he has received, may be a most valuable member of society if his attitude toward the community be one of service. It is hoped that former graduates are meeting this responsibility in a fine way as well as achieving success in the more technical and professional fields.

Acknowledgement is made of the assistance rendered by our former students and friends in pointing out the possibilities and advantages of a college education. Their efforts have resulted in many capable young men entering school and graduating with records of definite achievement.

Therefore, on behalf of the faculty and the students of the school of civil engineering, I wish to extend cordial greetings. And let me remind you that a message or, better, a visit is always acceptable. In this way the bonds of friendship are strengthened and the glory of O. U. kept ever bright.

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FROM F. G. TAPPAN

Though the zero hour is past and you are over the top and on your own, I would like mighty well to hear from you, one and all, occasionally. Write in and give us your new mailing address and tell us how it goes with you. Every few days some one drops into the office and asks, "Have you heard from