

# What's New in World of Airplanes and Air Transportation

COMMERCIAL flying today is a profession less than ten years old, and the airmen who pilot the planes over the country's 29,000 miles of federal airways are all members of the first generation of professional transport flyers.

Have you wondered about these men, about their training, physical condition, what part they play in their flying? Have you speculated about their personal histories, about what their futures may be? Some of these questions are answered in this story about a few of the pilots, chosen as typical of all.

The senior transport flyer of the country, stocky, tanned, a lover of big, black cigars, is E. Hamilton Lee of United Airlines. His comrades say he has flown more than any man in the world. His log books record 15,000 hours in the air, but Lee says he flew years before he began keeping his log.

Lee was born near Minneapolis in 1892. While in his teens he saw a barnstorming circus flying the Wright pushers of the 1910 vintage. Bitten by a desire to fly, Lee in 1913 took his first lesson from a Minneapolis man who owned a Curtiss pusher.

The most vivid memory of that flight, Lee confesses, is the fact that he paid for it at the rate of \$75 an hour. He says he took two hours' instruction and then ran out of funds.

Coming to Chicago the following year, he joined a group of would-be flyers at the old Checkerboard field in Maywood. Most of these novices were teaching themselves to fly, and "Ham," as he was soon called, joined them. The process was simple. Having rented or purchased an airplane, the pupil began his training by taxiing along the ground. Soon he was making straightforward flights ten feet off the ground. Then he learned to make longer flights, and finally turns were learned by the trial and error method.

When the United States entered the war "Ham" Lee became a civilian instructor in the army air corps. After the armistice he joined the postoffice staff in pioneering the air mail routes, and since then continuously has flown the transcontinental airway between New York and San Francisco.

Edwin C. Musick, captain of Pan American Airways Sikorsky S-42

## Commercial Flying an Exacting Profession

By WAYNE THOMIS

which has been making pioneering flights over the trans-Pacific airway, is probably the most experienced ocean flyer in the world. He has been flying boat type airplanes since 1925, most of the time over Florida waters or the Caribbean sea. With more than 10,000 hours' flying to his credit, he now is the chief pilot for the Pan American system.

Born in St. Louis, Mo., in 1894, Musick was 19 when he learned to fly in a commercial aviation school in Los Angeles. Three years later he joined the army air corps as civilian instructor. Part of his service was at Miami, Fla., toward the end of the war, and after the armistice he continued flying there.

When Pan American Airways was formed in 1927, Musick was one of the first pilots hired, and he piloted the first American trimotor airplane—a Fokker—from Key West to Havana, a 90-mile hop that was the first route of the now gigantic 32,500-mile network.

Eyer L. Sloniger, one of American Airlines' veteran pilots, was another of the war-trained flyers. Leaving the University of Nebraska, where he was studying, at the entrance of this country into the war, he trained with the army air corps in Texas and spent eight months in active service in France.

Returning to college after the war, he barnstormed to pay his tuition. In 1921 he went to Mexico and was one of the first exhibition pilots to fly south of the border. In 1925 Sloniger went to China, where he mapped an air route through the central part of the country, having many difficulties with the dust storms of the Gobi desert.

Others of the air veterans are D. W. ("Tommy") Tomlinson, Transcontinental Western Air, navy trained, but with ten years' experience in flying passengers (he set five world records with a Douglas DC-1 liner in New York recently); Charles Peoples, army trained, who now has 12,500 hours on United Airlines' logs; and W. D. ("Bill") Williams, now chief pilot of United mid-western division, who was an army pilot in the war.

"These men are among the best flyers of aviation history," says

Walt Addems, United's chief pilot for the eastern division and himself one of the army-trained airmen flying the mails and passengers since 1922. "More than merely knowing how to handle their ships, they know weather, engines, the country over which they fly, and radio, and they use all their knowledge in making the decisions which arise on every trip."

Now, he continues, they are passing their knowledge along to the second generation—the mates and co-pilots who have been flying with the lines only a few months.

"These old-timers can pass along their experience to an intelligent young pilot very quickly. Things it took us—the older men—years to learn are taught to the newcomers in weeks. A co-pilot who flies with men like 'Ham' Lee or Jack Knight, who flew the first night air mail in 1921 and has been flying ever since, has an opportunity to learn by observation what we had to pick up alone and through our own deductions.

"We like our new pilots to be college-trained men. We find their minds are generally better able to grasp the problems they meet in transport flying. Then we want steadiness, no reckless tendencies.

"What we are doing, of course, is preparing for the future. The splen-

did material we now have is getting older. We don't just know what the age limit for flyers will be—the oldest pilot we now have is in the upper forties—but we must be prepared. So we try to get intelligent, trained men to mold in our own way."

A typical young man is Harry R. Canaday, junior flight officer of Pan American Airways' trans-Pacific Clipper. He is 27 years old, was born in Des Moines, Ia., and is a graduate both of the naval academy at Annapolis and of four years of navy flying, two of which were with a squadron stationed on the airplane carrier Saratoga. Canaday has 635 hours on his log, is a licensed airplane and engine mechanic and a licensed radio operator, as well as holder of a commercial pilot's license.

Two other young pilots typical of the men who are training now for the future of commercial air transportation are Gerald H. Woolweaver and Emerson A. Austen of American Airlines.

Woolweaver is 28 years old, a native of Dundas, O., where he got his flight training in commercial schools. He joined the air line three years ago as a co-pilot and now has 1,200 hours on his solo log. Today he is flying between Chicago and New York.

Austen learned to fly in the U. S. naval reserve station at Great Lakes and at Hampton Roads, Va. He is 27 years old, has 1,530 hours after four years of commercial flying. He is a graduate of a civil engineering course at Washington university, St. Louis, Mo.

The air lines consider their pilots their biggest assets, pointing out that each flyer when he takes out



Edwin C. Musick



Harry R. Canaday



W. D. Williams



E. L. Sloniger



Emerson A. Austen



G. H. Woolweaver



Joe Westover



E. Hamilton ("Ham") Lee



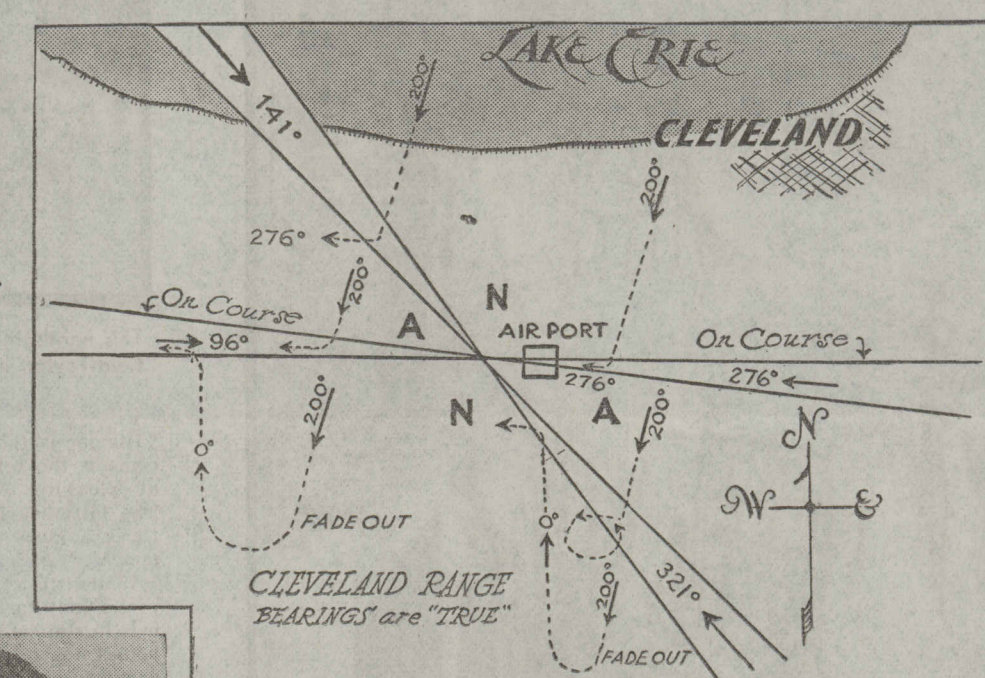
Jack Knight



(Tribune photos.)

Above: Charles Peoples, one of the country's veteran flyers, in the cockpit of a Boeing 247D liner. He is listening to radio range beacon signals through headphones.

At left: Diagrammatic statement of radio beam orientation problem. Solution is part of pilots' instrument flying training. Map shows radio range station and airport at Cleveland, O. "on course" corridors pilots receive constant — — — signal. In "A" quadrants they get — — — signal and in "N" quadrants they receive — — — signal. Not knowing where they are, and unable to see outside their cockpits, they must fly until they find the radio range station and then pass down the 96-degree leg away from station and over airport. It's done by the trial and error method.



if they have any worries which may detract from the fierce concentration which sustained flying demands.

At first this was resented by the pilots, but lately the men have realized it is a protection for them as well as the lines. Part of this change in attitude is due, perhaps, to the fact of the physicians. Those in charge of such examinations for several of the air lines flying between Chicago and New York are Drs. Herbert Fenwick and Herbert Wright. Both are flight surgeons of National Guard squadrons and both are experienced pilots themselves. Dr. Wright is stationed at Cleveland and Dr. Fenwick in Chicago.

One of the physical tests given pilots is called a Snyder test, named after the doctor who worked it out shortly after the war. The results give a numerical value to the pilot's condition, perfect being 18 and the minimum to continue flying 9.

The tests are based upon blood pressure and pulse count. These are taken after a ten-minute period of perfect relaxation and then again immediately after a measured amount of exercise. Finally the doctor determines the length of time for the heart to return to normal beat after the exercise. These various factors are compared with the chart shown in one of the accompanying illustrations, and the result is determined.

Vision, of course, is most important. Muscular accommodation of eyes, proper depth perception, and proper sight are tested at each examination. The doctors say that age generally does not detract from a pilot's eyes, since the general effect of age is to make humans far-sighted. So long as vision is not distorted, far-sightedness is not detrimental.

Dr. Wright says he believes that some of the men flying the lines today will be just as capable when they are 50 years old as at present. He says that just about that age a pilot is reaching the period when his judgment is perfect and his past experience makes him invaluable.

The doctor believes that these men, like the grizzled captains of ocean liners, probably will command some of the giant transport planes of the future, but will not be required actually to fly the ships. Dr. Wright says that their experience with weather, with airplanes, and with commercial flying in all its phases will fit them to command younger pilots who will be charged with the responsibility of landing and taking the big planes off the ground.

A. ROLLING PULSE RATE					
	POINTS	0-10	11-18	19-26	27-34
50-60	3	3	2	1	0
61-70	3	3	2	1	0
71-80	2	2	1	0	-1
81-90	2	2	1	0	-1
91-100	0	1	0	-2	-3
101-110	-1	0	-1	-3	-3

B. PULSE RATE INCREASE ON STANDING					
	POINTS	0-10	11-18	19-26	27-34
50-60	3	3	2	1	0
61-70	3	3	2	1	0
71-80	2	2	1	0	-1
81-90	2	2	1	0	-1
91-100	0	1	0	-2	-3
101-110	-1	0	-1	-3	-3

C. STANDING PULSE RATE					
	POINTS	0-10	11-20	21-30	31-40
50-60	3	3	2	1	0
61-70	3	3	2	1	0
71-80	2	2	1	0	-1
81-90	2	2	1	0	-1
91-100	0	1	0	-2	-3
101-110	-1	0	-1	-3	-3
111-120	0	0	-2	-3	-3
121-130	0	0	-2	-3	-3
131-140	-1	0	-3	-3	-3

D. PULSE RATE INCREASE IMMEDIATELY AFTER EXERCISE			
	POINTS	POINTS	POINTS
50-60	3	3	2
61-70	3	3	2
71-80	2	2	1
81-90	2	2	1
91-100	0	1	0
101-110	-1	0	-1
111-120	0	0	-2
121-130	0	0	-2
131-140	-1	0	-3

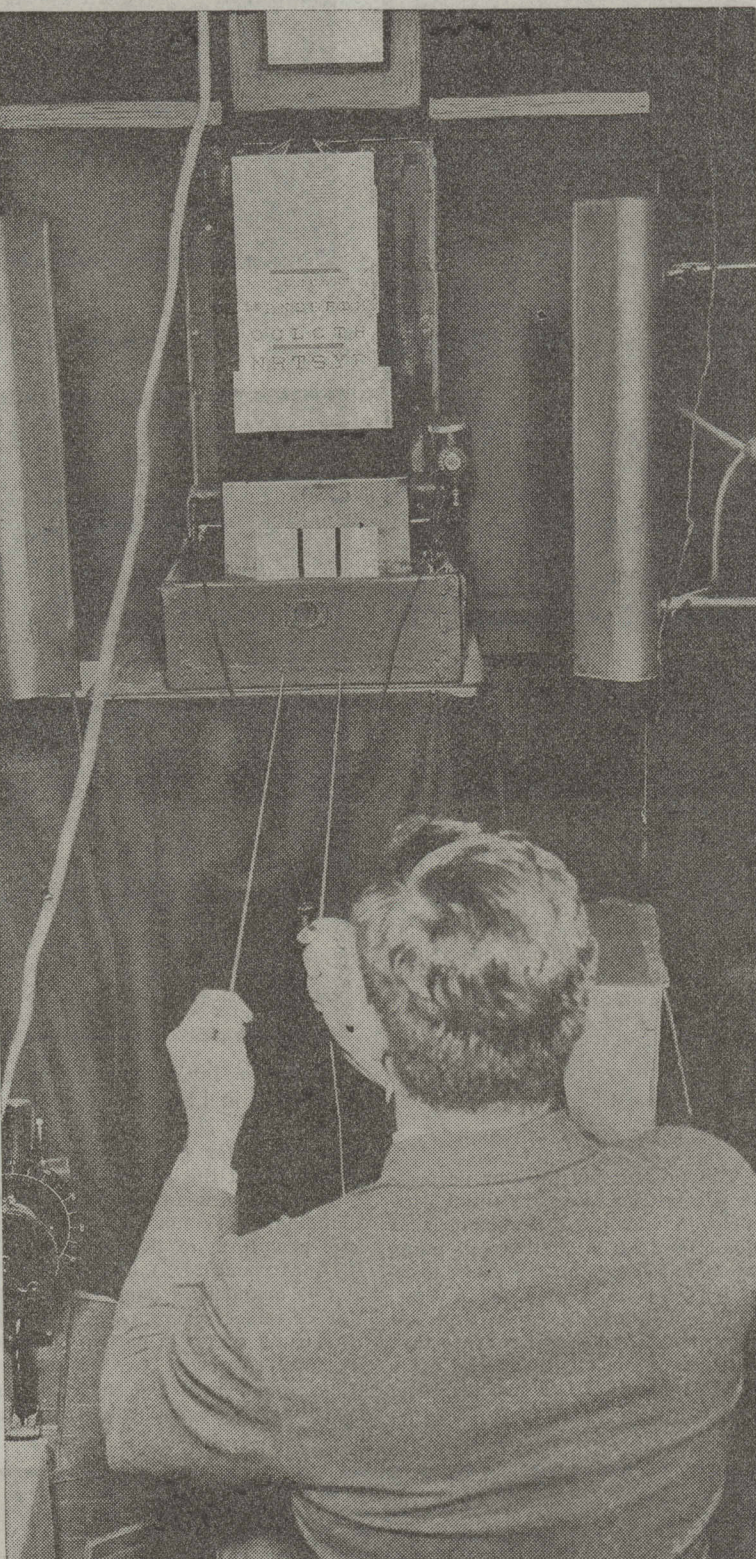
  

E. RETURN OF PULSE RATE TO STANDING NORMAL AFTER EXERCISE			
	POINTS	POINTS	POINTS
0-30	3	3	2
31-60	3	3	2
61-90	2	2	1
91-120	0	1	0
AFTER 120: 2-10 beats above normal	-1	0	-1
AFTER 120: 11-30 beats above normal	-2	0	-1

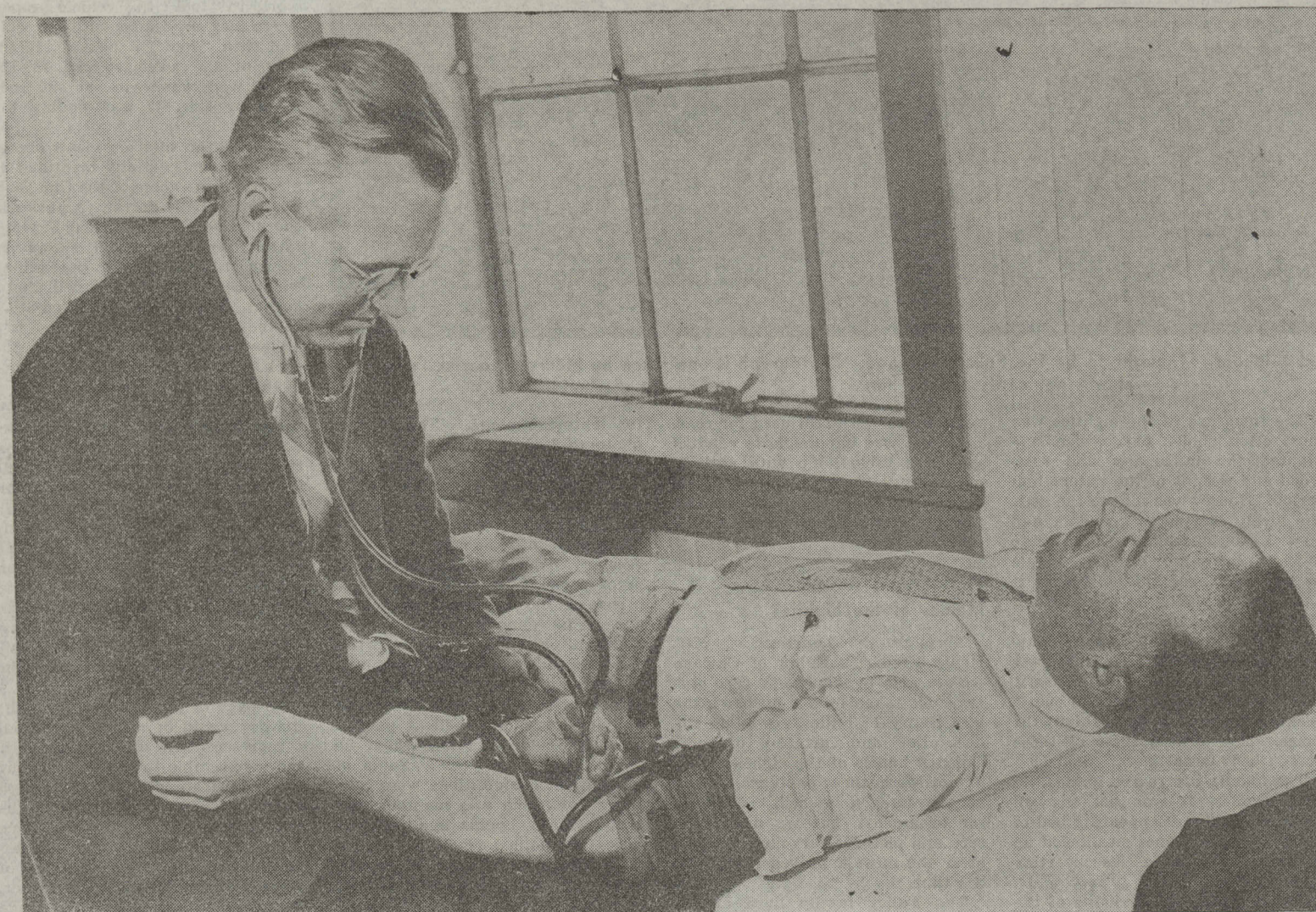
  

F. SYSTOLIC PRESSURE STANDING COMPARED WITH ROLLING			
	POINTS	POINTS	POINTS
CHANGE IN M.M.	POINTS	POINTS	POINTS
RISE OF 8 OR MORE	3	3	2
RISE OF 2-7	2	2	1
NO RISE	1	1	0
FALL OF 2-5	0	0	-1
FALL OF 8 OR MORE	-1	-1	-1

Chart from which flight surgeons calculate the numerical value of a pilot's physical condition in the Snyder test.



Depth perception rig and eye chart. The "subject" is attempting to bring exactly opposite each other the two rods fastened to the strings he holds. In an actual test he sits 25 feet away from the rig.



Flight Surgeon Herbert Wright giving Flight Surgeon Herbert Fenwick a Snyder test. Dr. Wright is taking Dr. Fenwick's blood pressure after the latter has relaxed for ten minutes.

a group of passengers is responsible for the safety of every person aboard, for the air liner, which is valued at from \$60,000 to \$100,000, and also for the good will of the nation toward air transportation. It is on this theory that the lines make every effort to maintain their men in the best spirits and in perfect health, and constantly supplement their training.

All first pilots must hold, in addition to their commercial licenses, scheduled air transport ratings. The department of commerce regulations for this rating demand that the pilot have 1,200 hours of solo time within the eight years prior to application for the rating, with at least 500 hours of that in cross-country flying. The department also demands that 75 hours of the 1,200 be night flying, at least half of which is cross-country.

The pilot must be able to pass tests in instrument flying by taking an inspector into the air and from under a hood bring his airplane to a normal flying position from moderate banks of 180 and 360 degrees turns either right or left and from

minimum glides and maximum climbs. He must approach stalled attitudes of flight and must recover from these, as well as skids, slips, spirals, and banks in excess of 45 degrees. In order to retain this license, which must be renewed each six months, the pilot must have at least 25 hours of transport flying and 2 hours of instrument flying within the period.

The air lines, however, set much stricter regulation for their pilots. Chief Pilot Addems explained that United Airlines flyers must have two hours of instrument flying a month, and constantly pass inspection tests during which they fly for the chief pilot of their division. Other lines have similar rules.

"You will note that in none of these tests are transport pilots required to do aerobatics," Addems said.

"We do not believe any conceivable emergency could arise in which such knowledge would be useful. Our pilots fly often enough to have

perfect control of their ships for emergency landings if these become necessary. We prohibit stunts because of the effect such maneuvers would have on passengers. We want no stunt flying, and if something goes wrong in the air we want our pilots to land rather than go on.

"One thing we don't have to do, and that is to keep our pilots alert. All of them have been flying long enough before they get into the company to know that is the first requirement. A good pilot is instinctively alert, and our men have nothing to do but to fly and watch weather and their machines."

The physical and mental condition of the pilots is under the care of company physicians, who give each flyer tests at least once a month, although the department of commerce demands such tests only four times a year.

These physicians not only are concerned with the physical condition of the men but also serve as psychiatrists. They inquire into the domestic affairs of the men and their financial conditions and determine