

Boeing School of Aeronautics Expansion 1940

by Kenneth E. Bourke



Boeing School aircraft in 1930, L-R Boeing 203, Stinson SM-2AA, Boeing 40-C2, Hamilton H-45, Boeing 81A. (Boeing School photo from author's collection)

On September 16, 1929, the officers of Boeing Air Transport (BAT) established a new division known as the Boeing School of Aeronautics (BSA) to be based at Oakland, Calif., Municipal Airport. The school was open to the public, its primary function to provide specialized commercial aviation trained employees for airlines.

BAT transferred its operating properties to United Air Lines (UAL) on July 20, 1934, and this included the BSA. BSA was a division of UAL until its termination on August 31, 1942. The UAL Board of Directors on January 8, 1943, changed BSA name to United Air Lines Training Center.

One of the divisions of BSA was the Tracy, Calif., school for training new UAL first officer pilots. The other division was the U.S. Army Air Corps Mechanics Training Center at Oakland, California.

UAL TRACY, CALIF., PILOT SCHOOL

In October 1940, UAL leased the Tracy Municipal Airport and established the Tracy school as an expansion of the BSA based at Oakland. R.T. Freng, UAL Director of Flight Operations, established the school using BSA equipment and instructors. The school was a solution to the industry problem of obtaining skilled flight personnel to carry on air commerce due to the national defense emergency, and also lack of prospective airline pilots from the military services. This was the only school set up by an airline for controlled and supervised training of future pilots by veterans of the business. The intent is to offer training that will approximate operations of a major airline.

LOCATION

Tracy (population 5,500) is about 50 miles east of Oakland, with the airport founded in 1929 and is two and half miles south of the city. UAL leased the airport for a five-year period with renewal options. UAL would pay one dollar a year rent and in turn would improve the gravel runways, repair hangers,

construct additional buildings, install radio equipment and lights for night landings.

FLIGHT EQUIPMENT

Beginning in October 1940, flight trainers were being transferred from BSA Oakland to Tracy for the beginning of the first class of October 14, 1940. At the end of the program Tracy school had the following aircraft.

Boeing 203B	NC13392	225hp
Waco VKS-7	NC29371	240hp
Waco VKS-7	NC29372	225hp
Waco JKS-7	NC29373	225hp
Stinson SR-9BD	NC17138	260hp
Stinson SR-10E	NC26212	350hp
Fairchild 24	NC15995	175hp
Fairchild 24R	NC25329	175hp
Fairchild 24R	NC28528	175hp
Fairchild 24R	NC28531	175hp
Link Trainer		
Boeing 247*		
Douglas DC-3*		

*The 247 and DC-3 were at BSA Oakland and available between commercial flights or when down for other reasons.

STUDENTS

Beginning in 1940, UAL used BSA Oakland as a tool to begin a new concept in the training of first officers. In 1939, the U.S. Government began primary and advance Civilian Pilot Training (CPT) at 12 colleges across the country. About 1,000 graduates of various CPT programs were interviewed by UAL for the new school at Tracy. Many had degrees from such universities as M.I.T., Purdue, Stanford, Denver and Wisconsin. All had at least two years of college. They had an

FLYING and GROUND SCHOOL

The school staff generally was composed of 15 flight instructors, five ground school instructors and 15 others to maintain the school and its equipment. The staff varied based upon stages of instruction.

Directly in charge was George Myers, who had been in charge of flight instruction at BSA Oakland since it started in 1929. In charge of flight instruction was George Willingham also of BSA Oakland.

The first three weeks of flying was familiarization work. Several hours a week were spent in the Link Trainer flying entirely by instruments. Then more difficult aerial navigation, longer cross-country flights and then solo night flying. After about 115 flying hours at Tracy the student took tests for commercial and instrument ratings. At this stage the student goes to BSA Oakland for 15 hours of advance instruction for detailed flights of 10 hours in the Boeing 247 or five hours in the DC-3 and 60 hours ground school on the DC-3. Upon passing government and UAL tests he received his wings as a UAL first officer. Of these 149 students only 10 percent were dropped out -- 121 graduated as first officers for UAL, some went to other airlines.

As the CPT programs progressed so did UAL requirements of completion of all phases of the CPT schedule, including cross country and review courses. The enrollees of Classes 6 and 7, upon entering Tracy school had about 160 hours flying experience and two or more years of college. Classes 6 and 7 were open to all pilots, commercial, military or itinerant who could meet the requirements. Candidates were called to UAL headquarters at Chicago for intelligence, temperament and physical examinations.

In March 1941, the entire Air Transport Pilot class at BSA Oakland was advised their training would be completed at the Tracy school. They had to sign a personal note for \$1,500 to UAL.

Students were paid \$60 a month and in return paid UAL \$47.50 per month for room and board. UAL paid two-thirds of training cost and student made up the balance in monthly payments after going to work as first officers. Starting salary was \$200 a month and every six months received a \$20 raise. They were not allowed to have a car while at school, and they had to maintain a UAL uniform for presentations at any time. These graduates earned the title "Tracy Aces" and are still called this in the Retired United Pilots Association news.

Ground school instructors were experts in meteorology, aerodynamics, engines, accessories, radio, civil air regulations, maintenance, UAL policy and station regulations and UAL dispatch and flight procedures. 425 hours were devoted to ground school.

On December 20, 1941, the Tracy school flying was moved to Cheyenne, Wyo., as flying could not be done within 150 miles of the west coast. Ground school continued for another month.

ARMY AIR CORPS at BOEING SCHOOL, OAKLAND, CALIF., 1940

In 1939, Gen. H. H. Arnold held a meeting in Washington,

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Different Types of Training Planes Operated at Boeing School of Aeronautics, Oakland Municipal Airport, Calif.

BOEING SCHOOL OF AERONAUTICS

With the general acceptance of the airplane as an important unit in our national scheme of transportation and communication, with the increasing use of the privately owned airplane, and with the demand for training of competent pilots and mechanics, the Boeing School of Aeronautics was established at the Oakland Airport in September, 1929. Today the Boeing School ranks as one of the outstanding institutions of its type in the world. It was one of the first schools approved by the Department of Commerce.

The Boeing School's purpose is to provide adequate facilities for flying and ground school instruction for the private plane owner, the student desiring training for commercial flying or preparation for entering the aeronautical industry as a trained mechanic, and for the man planning to prepare himself adequately for the responsibilities of the Transport Pilot. Its courses also provide instruction helpful to those planning to engage in the operating and executive sides of the industry.

Through association with United Air Lines, the Boeing School of Aeronautics is able to offer students flight instruction administered by a staff of instructors under the direction of a veteran pilot with thousands of hours of air mail flying for United Air Lines.

By reason of the background afforded by the Boeing Airplane Company as one of the largest aircraft manufacturers in the world, and United Air Lines as the greatest air transport operator in the world in point of mileage flown—with its 50,000,000 miles of experience—the Boeing School of Aeronautics has been able to assume a commanding position consistent with Boeing standards.

COURSES

PRIVATE PILOT—15 hours of ground school. In the air 12 hours of dual, 8 hours of solo. Requires approximately six weeks.

LIMITED COMMERCIAL—150 hours of ground school. In the air 25 hours dual and check flying, 35 hours of solo. Requires approximately three months.

TRANSPORT PILOT—195 hours of ground school. In the air 50 hours dual, 154 hours of solo. Requires approximately nine months.

MASTER PILOT—924 hours of lecture and shop covering 29 different subjects including business and executive branches. 250 hours of flying, 50 dual, 200 solo, in five types of planes, ranging in weight from 2,000 pounds to 6,000 pounds, including instrument flying with radio beacon instruction. Requires ten to eleven months.

SPECIAL MASTER PILOT—Ground school of 150 hours to fit individual's needs. Training in operation of large transports, approximately 18 hours dual, 32 hours solo. Open only to Transport pilots.

MASTER MECHANIC—8 months' training for manufacturing and operations. 15 subjects covered by lecture and shop work including theory of flight design, strength of materials, welding and actual construction.

AIRPLANE MECHANIC—190 hours lecture and laboratory covering airplanes, welding, fabrications, instruments, air law. Requires six weeks.

ENGINE MECHANIC—190 hours lecture and laboratory covering airplane engines, welding, instruments, airplanes, air law. Requires six weeks.

For detailed information write Boeing School of Aeronautics, Oakland Airport, Oakland, Calif.

(Left) Airplane Laboratory at Boeing School; (Right) Engines Laboratory at Boeing School

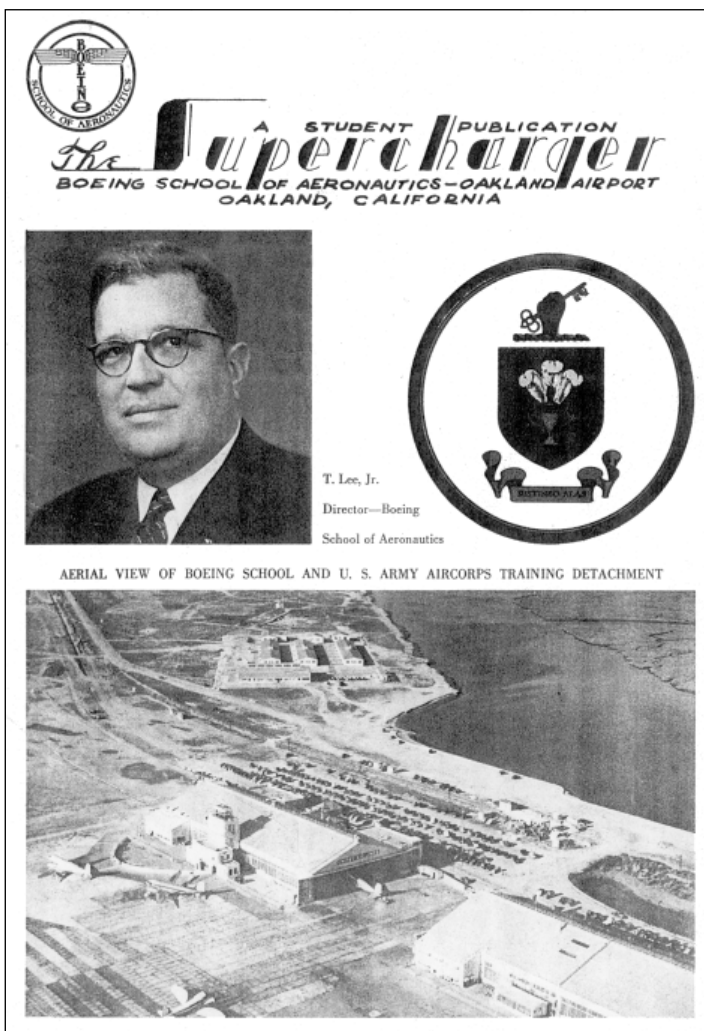
Boeing School of Aeronautics advertisement, circa 1930. (Image courtesy of the Oakland Aviation Museum)

average of around 90 flying hours to their credit. They had to pass physical and mental examinations to be accepted.

Following is a summary of class dates and number of students in each.

Class	Date	No. of Students
1	October 14, 1940	20
2	November 18, 1940	20
3	December 16, 1940	25
4	April 14, 1941	14
5	May 19, 1941	15
6	November 16, 1941	26
7	December 1941	29
	Total	149

Students lived at the Tracy Inn and the ground school classes including the Link Trainer instruction were in the Old Central School building. The students' average stay at Tracy was five to six months. In the winter of 1940-1941, 80 percent of days up to two o'clock in the afternoon were not suitable for VFR flying, so flight training scheduled for three months actually took eight months or more for some.



The Supercharger, BSA student newsletter, circa 1942-43, showing the expanded facilities built to support the government training contracts. (Image courtesy of the Oakland Aviation Museum)

D.C., of the representatives of the seven leading schools of aeronautics, to confer on the problem of training ground personnel for the vast expansion of the Air Corps. There were orders for 74,000 military aircraft by the United States and Great Britain. Production of aircraft was up to 1,500 per month and that eight to 10 mechanics are required to keep one aircraft in service. An aircraft could be built in a relatively few days. Six months are required for the minimum essentials of aircraft and engine maintenance and overhaul, and at least one year to train a student adequately for his aircraft and engine ratings.

It was estimated 19,170 enlisted men would have to be given training to become mechanics. Of this number, 1,000 would be trained in civilian schools. The rest would be training in Air Corps schools at Chanute Field, Rantoul, Ill., and at Lowry Field, Denver, Colorado. Training at civilian schools was to start August 1, 1939.

The first contract for BSA was W535 ac-15475 of August 12, 1940, for the period October 7, 1940, to June 30, 1941. The payment not to exceed \$192,000 based on \$0.40 per hour for 960 hours of training per trainee. Total number of contemplated trainees was 500. BSA was to provide lodging and board, which was to be paid for by the trainee of not more than \$11 per

week. Later this was increased to \$12.50 per week.

The second contract was W535 ac-19820 of June 19, 1941, for the period August 4, 1941, to June 30, 1942. The payment not to exceed \$358,090 based on \$0.385 per hour for 880 hours of training per trainee. Total number of contemplated trainees was 1,175.

The third contract was W535 ac-27738 of April 4, 1942, for the period April 4, 1942, to June 30, 1943. The payment not to exceed \$500,094 based on \$0.385 per hour for 720 hours of training per trainee. Total number of contemplated trainees was 1,724.

The fourth contract was W535 ac-30831 of July 1, 1942, for the period July 8, 1942, to June 30, 1943. The payment not to exceed \$596,848 based on varying rates of \$0.30 to \$0.46 according to number of trainees per instructor for 896 hours of training per trainee. Total number of contemplated trainees was 1,860.

TRAINING CENTER

After BSA signed its first contract a rapid expansion in facilities and staff took place. A six-acre site one-quarter mile northwest of BSA was leased from the Oakland Port Commission for building facilities. Between September 7 and November 7, 1940, three barracks 45 by 290 feet, a mess hall 60 by 100 feet, a large hanger 100 by 290 feet and other buildings were built. The hanger contained class rooms, shops and administrative offices. A total of 14 buildings had been built by the time the school closed in 1945. The hanger since 1988 has been home of the Oakland Aviation Museum (8252 Earhart Road, Oakland International Airport, Oakland, Calif.). The buildings and vocational equipment cost was approximately \$165,000.

The military training facility was operated as an independent organization. Capt. E. J. Krenz of BSA was placed in charge of the training programs. Maj. F. H. Barker and Capt. F. Rose, both noted Army pilots, were in charge of military personnel.

Training was for six months, in general principles of aircraft construction and repair, engine maintenance and repair, the care of material and tools, and maintenance and inspection of the whole aircraft. There were 50 instructors who were mostly BSA graduates. On June 30, 1942, the BSA was awarded a pennant - a mark of distinction - by the Army Air Forces Technical Command for "outstanding services."

STUDENTS

Men selected for the special training were selected from regular Army ranks on the basis of intelligence tests and general mathematical knowledge. The first group of 25 came from McCord Field, Tacoma, Washington. As the training facilities were in the process of being built, the training was done at the BSA hangers, and lodging and board was at the Oakland Airport Inn on the airport. After two months training began at the new facilities. The Army groups of 25 came to the Oakland airport at intervals of two weeks until a maximum of 300 were received. The training period was six months. There were three shifts until July 1942 when training was reduced to 16 weeks with two shifts.



Captain Franklin Rose



Major Frank H. Barber



Captain E. J. Krenz

GRADUATING CLASS—REAR ROW, LEFT TO RIGHT: Pfc. E. E. Cuywood, Sioux Falls, S. D.; Pfc. C. V. Burnett, Council Grove, Kansas; Pfc. J. F. Selgado, San Diego, California; Pfc. R. A. Kohl, Lawrence, Kansas; Pfc. G. O. Krahstad, Sioux City, Iowa; Pfc. O. K. McReynolds, Abilene, Texas; Pfc. S. M. Sevier, Shreveport, Louisiana.

MIDDLE ROW, LEFT TO RIGHT: Sgt. R. W. Lovelace, Portland, Oregon; Pfc. S. J. McLaughlin, Memphis, Tenn.; Pfc. D. L. Lynch, Tulsa, Okla.; Pfc. D. A. Hanson, Lugo, Idaho; Pfc. C. B. Wooten, St. Louis, Mo.; Pfc. G. H. West, Aloha, Oregon; Pfc. L. J. Walcott, Sand Springs, Okla.; Pfc. M. P. Faria, Lawrence, Kansas; Cpl. W. D. Tyler, Omaha, Neb.

FRONT ROW, LEFT TO RIGHT: Pfc. C. A. Skidmore, Rock Rapids, Iowa; Pfc. H. W. Trantham, West Plains, Mo.; Pfc. J. A. Campbell, Drummond, Miss.; Pfc. F. L. Hamilton, South Greenwood, S. C.; Cpl. H. C. Copeland, Lewiston, Idaho; Pfc. E. E. Wolden, New Leipzig, N. D.; Pfc. K. S. Taylor, Shawnee, Okla.



Class I-41 graduation photo. This would have been one of the first graduating classes from the BSA government training program. (Image courtesy of the Oakland Aviation Museum)

In addition to aeronautical studies, students received “commando” work outs. When the call “Air Raid” comes on the students do their course in “commando.” They scale a seven-foot wall, hurdle a fence, dive under barbed wire entanglements and other obstacles. After running the grueling course, they spring to the task of getting aircraft under cover or ready for takeoff. This is part of training for action wherever they might be assigned.

TERMINATION and NAVAL AIR TRANSPORT MECHANICS

The Army mechanics training contracts were not renewed, therefore, all training ended June 30, 1943. In all approximately 5,000 mechanics were trained under these contracts.

On September 1, 1943, a contract NO_p 310 was awarded for training naval personnel to that outlined previously for the Air Corps personnel. Payment was a rate of \$0.50 per student hour, also to receive \$0.65 per man per day for quarters and \$1.30 per man per day for subsistence. The contract terminated November 10, 1945. A total of 1,395 naval trainees were graduated.

The Oakland Training Center closed November 10, 1945.



Army Class 20-43 graduation photo March 1, 1943. Army training ended in June 1943, so this class was one of the last trained at BSA. (Image courtesy of the Oakland Aviation Museum)

About the Author



Kenneth E. Bourke is a 25-year AAHS member, and this is his first submission. He was born December 1920 in Sedalia, Mo., and reared in Milwaukee, Wisconsin. While in high school in Milwaukee he soloed in a Rearwin Sportster. After completing high school he enrolled at the Boeing School of Aeronautics in January 1940 at Oakland, Calif. His course was Airline Operations and Engineering with a major in Airline Meteorology.

Upon graduation in December 1941, he was employed as a meteorologist by Pennsylvania Central Airlines in Detroit, Michigan. Due to the Air Force taking most of the airlines aircraft he was furloughed. He was then employed by Consolidated Aircraft as a meteorologist at Elizabeth City, N.C., at the Coast Guard base. This employment terminated for security reasons. In the latter part of 1942 he was employed by Continental Airlines in Denver, Colo., as a meteorologist and in 1943 was recalled by Pennsylvania Central Airlines to Washington, D.C. In 1945, Northwest Airlines offered employment as a meteorologist at Seattle, Wash. He accepted this employment in order to reside on the west coast. He retired from Northwest Airlines as a Senior Upper Air Meteorologist in 1982.

In retirement he has traveled and collected an extensive amount of Boeing School material. This article complements an earlier article on the Boeing School published in AAHS Journal Vol. 52, No. 4. He has an apple orchard and lives in Sebastopol, Calif., with his wife Barbara.

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