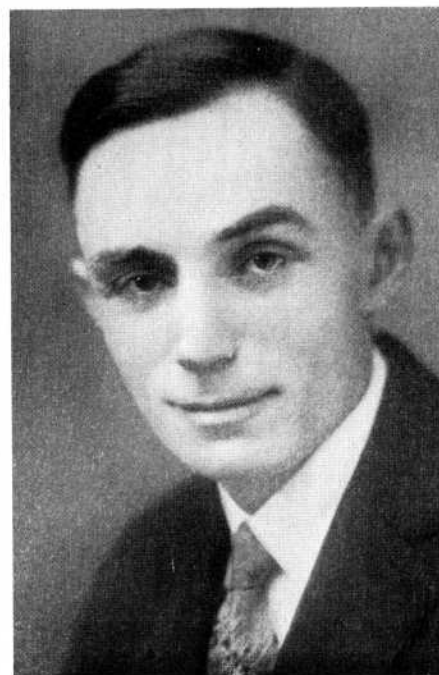
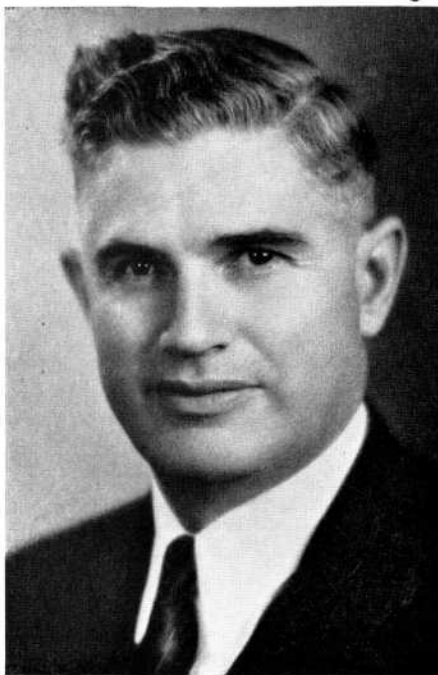


J. F. Brookes, director of the school of civil engineering, and Bruce D. Greenshields, '20eng, outstanding civil engineering graduate, are shown here. Mr. Brookes tells of Mr. Greenshields' outstanding work in the following article.

Civil Engineers

J. F. BROOKES, Director.

By M. S.



SINCE the first civil engineering student marched in the academic procession back in 1909, almost 200 graduates of the school have found positions in engineering work all over the United States.

And business has made a sharp upturn, if the demand for O. U. engineering graduates may be taken as an employment barometer. From the field of building to the ranks of teaching and research, scores of alumni are found in their chosen profession of civil engineering.

While C. L. Kaupke, '09, was the first university student to tuck away the B. S. degree in civil engineering, the spring class of 1935 boasted a membership of twenty highly trained graduates. And before the excitement of commencement had subsided more than half of these engineers were employed in choice positions.

Maintaining a close contact with activity in the field, the school of civil engineering has met little difficulty in placing graduates in some branch of the profession. Annually, the executives of leading companies name the O. U. alumni to carry on the work of designing bridges, developing water supplies, road building, and other types of construction.

A broad engineering course was offered to these graduates who have been placed in the many technical positions. The University curriculum includes surveying and geodesy; railroad, highway, structural, municipal, sanitary, and hydraulic engineering. In addition to the more specialized training, the school fits the student for executive positions with utilities and industrial corporations.

In fact, the whole field of civil engineering presents a challenge to the

young man who is considering a profession. Besides his own tangible returns, the civil engineer makes important contributions to the general welfare of the people. He directs the forces of nature into channels beneficial to mankind.

This line of engineering finds thousands of men busily engaged in the work of damming streams, storing water and providing for its purification and distribution for industrial purposes and human consumption. The safe disposal of waste from communities is their responsibility. They establish sewage disposal plants and sanitary regulations for cities and towns.

In the field of transportation, the civil engineer locates railroads and highways, supervising their construction, operation, and maintenance. He erects private, public and industrial buildings, and other structures such as elevators, retaining walls and tunnels. The civil engineer has built the Boulder Dam which if stretched in the shape of a highway would reach from the southern tip of Florida to the boundary of Oregon.

While the university student is learning the work of these many practical fields, he may develop his professional contact by membership in the student chapter of the American Society of Civil Engineers—the national body in this field.

Besides serving on the engineering faculty of Denison University, Dr. B. D. Greenshields, '20, has made a close study of the problems of highway traffic. He has divided his time between the field where he devised new engineering methods and the classroom where he taught them.

Since his first job as rodman for the

Santa Fe railroad in 1922, he has been on the teaching staff of three college engineering faculties. From Marquette University he went to Virginia Polytechnic Institute where he was associate professor of engineering for three years. In 1926 he became professor of engineering science at Denison University in Granville, Ohio.

In the field of highway engineering, Greenshields has directed his research to a study of both the problems of cost and safety. His article on *Motor Vehicle Transportation Cost and Its Relation to Highway Finance* appeared in the Denison Scientific Journal in 1929.

Soon other articles by the former university student followed:

Traffic Surveys to Solve Highway Problems was published in the Civil Engineering magazine, while Highway Magazine released his findings on the *Use of Automatic Traffic Signals*. Gaining a reputation for his numerous surveys, he was called to Michigan University in the summer of 1933 to make a study for the Dow Chemical company.

Since last June he has been research engineer for the traffic bureau of the Ohio State Highway Department. Here he has continued a photographic study of traffic which was his thesis subject for his doctor's degree in civil engineering at Michigan University in 1934.

With a movie camera connected to a timing device, he has worked out this unique system for taking pictures of highway traffic. By projecting the picture on a white screen ruled with parallel lines, he can estimate the average speed of cars on different types of highways.

Data on his photographic studies of automobile traffic was presented by

Greenshields in a paper before the Highway Research Board Meeting at Washington, D. C. in 1933. Abstracts from this paper, covering various automobile speeds, congestion, and density of cars, later appeared in the New York Times.

While carrying on specialized research, Greenshields has organized an unusually practical course at Denison. This program which includes cultural subjects to liberalize and broaden the engineering curriculum was discussed in an issue of the Journal of Higher Education.

It takes ability and courage to launch a construction company in the slump of the depression. But one Sooner engineer did it and made a success. J. J. Bollinger, '25, started his own company only three years ago and has been busy ever since on construction jobs for public buildings, schools, and other governmental constructions.

Contract for the \$215,000 dormitory at the A. & N. College, Langston, was awarded to Bollinger's company. Important construction jobs completed the past few years include the Masonic Temple at Ardmore, the United States Post-office at Anadarko, and a number of state school buildings.

Following his graduation, Bollinger worked as detailer and estimator for an Oklahoma City steel company, later going to the C. M. Dunning Construction company. His last position before he organized his own company was with the H. W. Underhill Construction company as manager of the Oklahoma branch office.

Out in Utah, another engineer member of the Bollinger family, Ralph, '33, is employed with the National Park Service. He conducts surveys in general park works and locates dam sites. Last year he worked on the \$77,000,000 Golden Gate bridge, connecting San Francisco with her sister cities across the bay.

Because she believed that women could give the engineers some pointers, Sally Collier enrolled in the school of civil engineering. Evidently she won her point. Because the college of engineering named her queen to reign over the annual St. Pat's festivities in 1930.

After receiving her B. S. degree in 1931, the second woman ever to achieve the ranking in the history of the school, she held a responsible position in the bridge department and right-of-way division of the state highway department. Her official duties were drafting and general office work.

One vacation found her travelling in England where she visited the British Institute of Civil Engineers. It is a large building equipped with club rooms, research laboratories, and a library. On this trip she was presented to the Lord Mayor of Cardiff, the capital of Wales.

Now she is Mrs. Raymond T. West, the wife of an Oklahoma City engineer. She writes, "My present employment is

housewife with the rank of straw-boss."

Building new roads all over the state, a large group of civil engineering graduates are employees of the Oklahoma Highway Department. In the field construction work of the department are J. Paul Crane, '22; Wayne Miller, '23; H. D. Brown, '24; Sam Griffin, '29; R. H. Haas, '32; W. W. Moore, '32; J. C. Horn, Jr., '34; Glenn Vogelein, '34; and Bill Marriott, '35.

A glimpse in the capitol offices of the department shows another group of civil engineering alumni. An expert on road surfacing and general construction, Dudley H. Jones, '17, holds the position of state maintenance engineer. The new post of state design engineer recently created called another O. U. engineer, James D. Powell, '23.

From one desk to another in the bridge division of the department are found numerous employees who got their technical training from Sooner professors. Marion W. Hefley, '27, can figure to the last pound just how much weight will fall on the different parts of a proposed bridge. Another university engineer, recently placed in this office, is young Thomas Field Thompson, winner of the American Society of Civil Engineers' honor membership in 1934.

The conservation program to replace the AAA has put another group of O. U. engineers into the political spotlight. And the adoption of such a program may find these graduates in key positions in the proposed setup. William Burtschi, '31, has been keeping state CCC boys busy in constructing water sheds and laying out terracing systems to prevent erosion.

At the Muskogee headquarters of the service, Jeff Ray, '35 has recently been stationed to carry on the conservation work. Others in this field of engineering include Roy G. Andrews, '32; Walter C. Kesler, '31; Thomas D. Snider, '32; and Raymond L. Fischer, '31.

Many Sooner engineers have entered various governmental departments both in Oklahoma and other states. Wells Dickinson, '31, is resident engineer with the North Dakota State Highway department, while Norman Hall, '33, designs low-head dams and other stream improvements for the Iowa Fish and Game Commission. George L. Dolph, '18, is located in Bismark, North Dakota, as associate highway engineer for the United States Bureau of Public Roads. Although one of the younger graduates, J. L. Forbis, '32, holds an important WPA position as regional district engineer at Chickasha.

An employee of the university utilities department for about seven years, Ben Schaefer, '27, is now St. Louis branch manager for Plibrico Jointless Firebrick company of Chicago. His work covers sales and installation of boilers and industrial furnace linings.

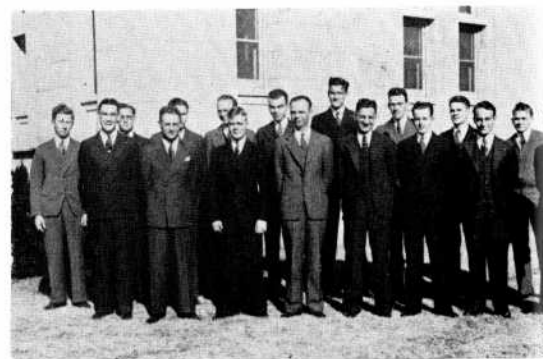
Every March when St. Pat holds sway on the campus, alumni who have made their marks in engineering gather from all sections of the country. At this annual celebration aspiring young engineers get a glimpse of what the future may hold for them. And the 1936 senior class of civil engineers will have their chance this spring.

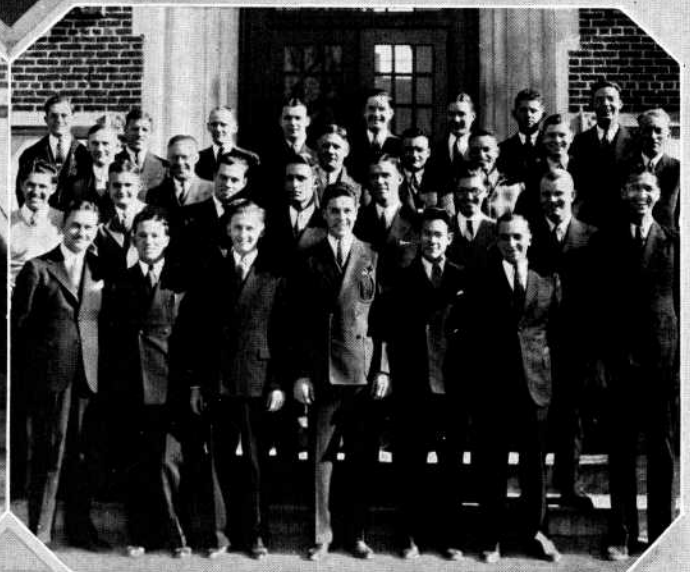
On the opposite page are seven outstanding student engineering organizations. The organization to the top of the page, left, is St. Pat's council. First row, left to right, Carpenter, Mayes, Bessie Kniseley, Weiland, Nowery; second row, Wood, Simpson, Fuller, Robinson, Mike Cochran; third row, Cowles, Himes, Wallace, Houssiers, Mack; fourth row, Strange, Mills, Brock O'Haver. To the top, right, is Tau Beta Pi. First row, Steinhoff, Carpenter, Weiland, Lentz, Chazanow, Suderman, Stearns; second row, Armitage, Hunter, von Elm, Strange, Campbell, Dlouhy, Caviezel; third row, Professor Luckens, Wainco, Dean Tappan, Instructor Comp, McCord, Massengill, Mack; Fourth row, Cowan, Professor Almqvist, Professor Dawson, Vance, Wallace, Barnes, Johnson, Simpson.

To the left in the center panel is Tau Omega. First row, Harlow, Feldstein, Macy, Mayes, Hirdler, Roberts, Wilford Pearce; second row, Bone, Pierce, Instructor Comp, Roark, Tauson, Massey, Eskridge. Third row, Gordon, Reeve, Cashion, Professor Liston; back row, Mills, Brady, Jensen, Instructor Cromer, Professor Davis, Instructor Cowan. In the center is Delta Beta Chi. First row, Taylor, Byrd, Small, Stephens; second row, Bowman, Pieratt, Himes, Instructor Sparks, Long. To the right is the student organization of the American Institute of Electrical Engineers. First row, Jemison, Ringer, Hildebrand, Hewitt, Smith, Frank, Mosey, Lyons; second row, Kolecki, Norris, Wood, Miller, Gallup, Redd, Long; third row, Cooks, O'Donnell, Woodward, Dorsett, Kirkhuff, Mathis, Karns, Wells, Norman; fourth row, Moon, Fuller, Powell, Davis, Peek, Richards, Benesh, Dlouhy; fifth row, Farmer, Professor Almqvist, Professor Farrar, Dean Tappan, Waller, Himes, Professor Page, Keck, Robinson.

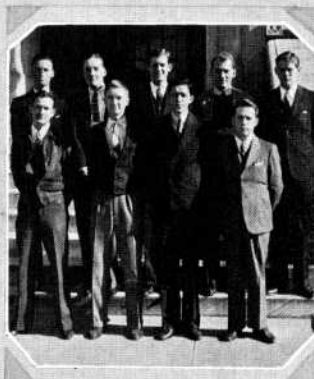
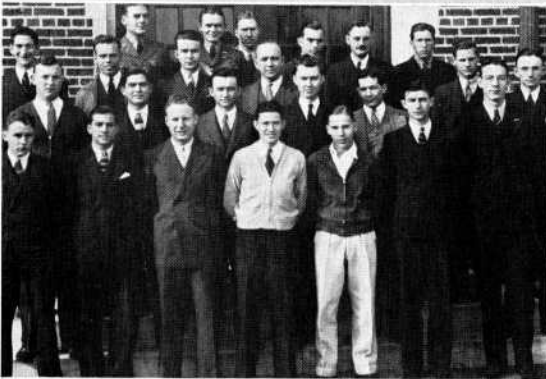
In the low panel, left, is Sigma Tau. First row, Instructor Comp, Hildebrand, Carpenter, Peek, Weiland, Chazanow, McDannald. Second row, Professor Liston, Francis Lents, Barsalow, von Elm, Caviezel, Cornell; third row, Barnhart, Wilmont, Strange, Livermore, Campbell, Dlouhy, Mack. Back row, Armitage, Patterson, Professor Almqvist, Mills, Dean Tappan, Barnes, Johnson, Cowan, Pearce. To the right is Sigma Gamma Epsilon. First row, Gwinn, Wallace, Williamson, Dickerson, Davis, Howes; second row, Loeblich, Brock, Newell, Klabzuba.

In the group on this page are members of Alpha Chi Sigma. Left to right, Weiland, Stover, Cowan, Burke, Barnes, Sickles, Lamb, Corneil, Professor Swearingen, Moyer, Patterson, Evans, Dean, Emert, Quigg, Dunten, Stahl.





UNIVERSITY *of* OKLAHOMA



ENGINEERING ORGANIZATIONS

