

Petroleum Engineers Work To Improve Oil Knowledge

Efforts to tap oils of the earth have only scratched the surface, but in the Department of Petroleum Engineering, methods of deepening the scratch are being researched, developed and taught.

Petroleum engineers develop ways to reach nature-made steam, develop packages for lowering instruments into oil wells and at the same time answer space questions, work on fluid flow in the human eye and develop methods of making 25,000-foot deep oil and gas accessible.

The deepest "wildcat" well, near 25,000 feet, pierces only two per cent of the earth's radius. Other frontiers faced by petroleum engineers are offshore drilling, sound-proofed "downtown" rigs, airlifting 1,500 tons of deep-hole rig to Alaska, nuclear logging, liquifying gas and shipping it refrigerated, storing gas in former wells and drilling for geothermal steam.

Primary research problems at A&M seek producing techniques for known oil deposits. Two-thirds of the oil discovered is still in place, not producible through current technology.

"To get it will require engineering of the highest type," said Dr. Henry Ramey Jr., A&M petroleum engineering professor.

Techniques under research include combustion, water flooding, steam injection and miscible flooding along with old recovery

methods. A&M research projects also scrutinize fluid flow in porous rocks, physical properties of hydrocarbon fluids, pressure maintenance and natural gas engineering, producing and storage and drilling for geothermal steam. Volcanically produced steam has been harnessed by Italians to produce electricity to drive their trains.

Geothermal activity has been discovered near the Salton Sea in the U. S. The potential source of chemicals (salts) and energy bubbles out at 80 degrees Fahrenheit.

"The petroleum staff is researching this field at A&M," noted Robert Whiting, head of the department. "We are determining where to find it, how to get it and applying oil technology."

Sources of oil energy have been discovered in Colorado shale and Canadian Athabaska tar sands. Processes such as strip mining are required to produce the highly viscous oil. It can't be pumped in ordinary fashion. Similar deposits occur in Texas.

Petroleum engineers have an interesting job, said Ramey. He was involved in soundproofing a drill rig in downtown Los Angeles. Oil technologists were contacted by space people for instrument packaging methods. Petroleum engineers long ago solved problems of penetrating 450 degree conditions of deep holes. Space technologists have much the same problem in missile silos.

Oilmen in education and research must keep up with field developments. Through such travel as consulting engineers, his routes can trace through Canada, Alaska, China and all over the U. S.

A new petroleum student is entering the largest industry in the U. S., bigger than the next five combined. Three quarters of the energy used in the United States each year comes from oil, Bureau of Mines figures show. The percentage will increase along with rising demand. Providing more energy will require many more oil technologists than are being trained.

A&M presently is training 110 petroleum engineers. The undergraduate enrollment is 78, 45 of which are freshmen.

Texas produces 42 per cent of the nation's oil demand and has a strong interest in the industry.

A large portion of state and A&M revenue comes from oil production.

The Texas Petroleum Research Committee, chaired by Whiting, researches oil production and recovery. The department offers continuing education in short courses on reservoir and drilling engineering.

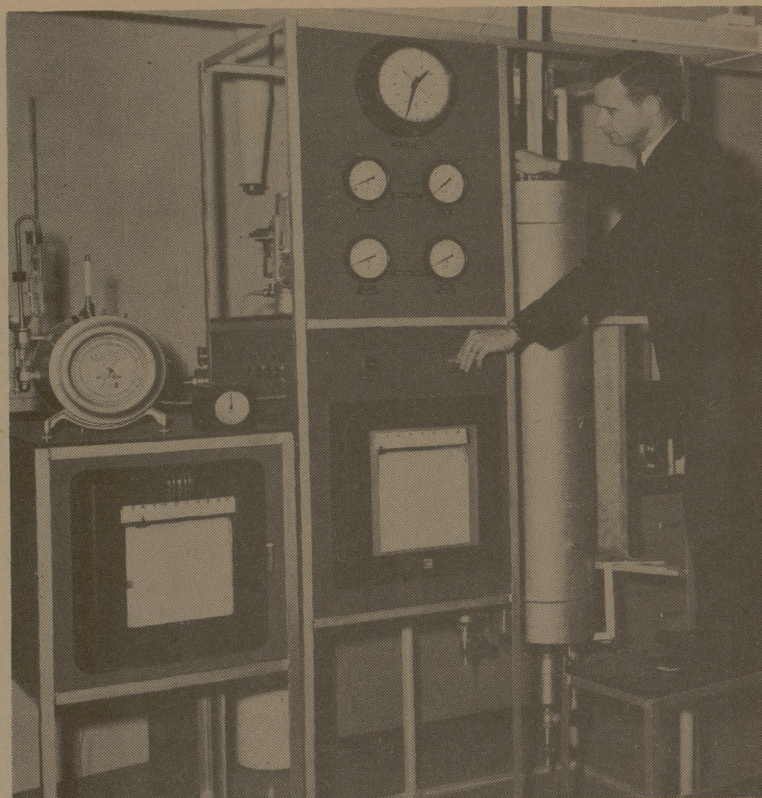
"The industry believes progress will come on the basis of technology. An oilman must continue to educate himself. We're trying to do our part to offer advance level work," the department head said.

A background in science and a strong mathematical mind is required of petroleum engineers.

"It takes all kinds, but particularly a mechanically-minded sort and a large population of doers," Ramey said.

The industry requires men willing to take financial risks — a "wildcat" has one chance in 30 of "coming in" a producing well. Many objects common to every day usage attest the need for more crude oil and its products.

A plastic toothbrush was once a hydrocarbon gas, a component of oil.



OIL RECOVERY RESEARCH

Walter L. Penberthy, studying for a petroleum engineering doctoral degree, prepares a combustion tube for a run. The apparatus is used in developing techniques of moving a "burning front" through an oil sand by compressed air, driving fluids ahead of the front into the vicinity of producing wells. Penberthy, graduate of Bryan's Austin High, put in three years with Mobil at Midland. Penberthy completely built the \$8,000 tube, through which 14 runs have been made.

Sewage Group Short Course Here This Week

Texas' Water and Sewage Works Association holds its 48th short school at Texas A&M through Friday.

About 800 persons from across the state registered, Sunday at the Memorial Student Center.

Attending classes, meetings, seminars, business sessions and a Wednesday night awards banquet will be operators of water and sewage plants, plant superintendents and businessmen of industrially affiliated firms.

Among feature speakers are Dr. J. E. Peavy, Texas Commissioner of Health, and G. R. Herzig, secretary of the association and state sanitary engineer.

Peavy will present awards at the Wednesday banquet.

To speak to the Texas Water Pollution Control Association at its business dinner Tuesday are Arthur D. Caster of Cincinnati, vice president of the national Water Pollution Control Federation, and Gordon McCallum, formerly with the U. S. Public Health Service. He is now assistant to the president of Infilco, a Tucson, Ariz., firm.

Participants will be welcomed by Dr. A. D. Suttle, Jr., A&M vice president for research. Association president is W. R. Hardy of Fort Worth.

The short school has been held at A&M since 1936. The Texas State Department of Health, Southwest Section of the American Water Works Association, Texas Water Pollution Control Association, Water Pollution Control Federation, Civil Engineering Department and Engineering Extension Service cooperate in the school.

A&M's Engineering Extension Service provides most of the instruction. Examinations for sewage works operators and water works operators certificates will be given Wednesday and Friday.

— Job Calls —

TUESDAY AND WEDNESDAY

Firestone Tire and Rubber Company — accounting, business administration, finance, management, marketing, agricultural economics, economics.

General Motors Corporation — mechanical engineering, accounting, finance.

McDonnell Aircraft Corporation — aerospace engineering, electrical engineering, mechanical engineering, mathematics, physics.

J. Ray McDermott and Company — civil engineering.

Otis Elevator Company — electrical engineering, industrial education, industrial engineering, mechanical engineering.

Central Intelligence Agency — chemistry, physics, aerospace engineering, electrical engineering,

mechanical engineering, mathematics, civil engineering, geology, economics, accounting, business administration, English, history and government, journalism, psychology.

WEDNESDAY

Haskins and Sells — accounting.

Hess Oil and Chemical Company — chemical engineering, industrial engineering, mechanical engineering.

Howard, Needles, Tammen and Bergendoff — civil engineering.

Lockheed-Georgia Company — aerospace engineering, physics, civil engineering, mechanical engineering.

General Motors Desert Proving Ground — mechanical engineering.

39 Police Officers Complete County Civil Defense Course

Thirty-nine auxiliary policemen received certificates Friday for completing a 20-hour Brazos County Civil Defense sponsored course.

Certificates were awarded by Wallace Beasley, chief of the Police Training Division of the Texas A&M Engineering Extension Service, in ceremonies at Stephen F. Austin High School in Bryan.

Beasley, Ira Scott, Bill Caffee and Ed Powell, Campus Security chief at Texas A&M, taught the course.

Bryan City Manager Fred

Sandlin, and College Station A&M Civil Defense Director John Hill spoke briefly, praising the men for their community interest.

Participants included auxiliary police who operate under the Sheriff J. W. Hamilton, Bryan Police Chief Joe Ellis, College Station Police Chief Lee Norwood, and Powell.

Curriculum included basic concepts of criminal law and arrest, techniques of traffic and crowd control, shelter duties, protection of property and prevention of looting and the role of auxiliary police in local emergencies.

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Evening School Registration Open

Registration is underway for the spring session of evening school at Stephen F. Austin High School, Director John Lucas, has announced.

Classes will begin Monday at 6 p.m. and meet each Monday, Tuesday, and Thursday until May 17.

Classes are open to any person 16 years of age or older not attending high school during the day and who wishes to earn high school credits or to further knowledge and skill.

Courses will be offered in English, history, government, science, mathematics, bookkeeping, typing, shorthand and art.

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