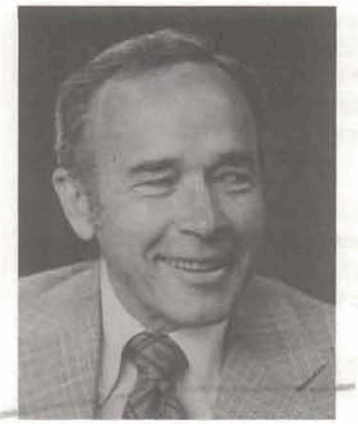
EVENING MEETING—NOVEMBER 12, 1979

JOHN D. HAUN—Biographical Sketch



John D. Haun is the current president of the AAPG. He was born in Old Hickory, Tennessee, in 1921. His education at Berea College (1939-41 and 1946-48) was interrupted by wartime service in the U.S. Coast Guard. His M.A. and Ph. D. in geology came from the University of Wyoming in 1949 and 1953.

He began his professional career with Stanolind (Amoco) in 1951, and with the Petroleum Research Corporation in 1952. In 1955 he joined the faculty of the Colorado School of Mines, eventually becoming a Professor of Geology. In 1957 he helped found a consulting firm, Barlow and Haun, Inc., of which he is now president.

His extensive publications cover such diverse topics as subsurface geology, history of the Rocky Mountains, estimation of hydrocarbon reserves, statistical methods in geology, the origin of petroleum, and environmental geology in public policy.

His professional affiliations are numerous, and his office and award list is extensive. Among them: AAPG Editor, 1967-71; AAPG Distinguished Service Award, 1973; AAPG President, 1979-80; American Institute of Professional Geologists, President, 1976; Rocky Mountain Association of Geologists, President, 1968, and Honorary Member, 1974; the American Geological Institute, Secretary-treasurer, 1977-78. He also received the Colorado School of Mines Outstanding Professor Award in 1973.

HOW MANY WILDCATS MUST WE DRILL? (Abstract)

Decline of U.S. oil and gas reserves could be moderated by increased exploratory drilling. In 1978 U.S. production was 3.0 x 10^9 bbl crude oil, 0.7 x 10^9 bbl natural-gas liquids (NGL), and 19.3 x 10^{12} cu ft natural gas (=3.3 x 10^9 bbl oil equivalent-BOE), for a total of 7.0 x 10^9 BOE. To continue production at this rate until 1990 (12 years) would require discovery of 84 x 10^9 BOE.

Annual estimates of ultimate recovery (past production + reserves) are made for each year since 1920 by API and AGA. To each of these estimates must be added an estimate of reserve growth from revisions, extensions, new-pool discoveries, in-field drilling and enhanced recovery. From the derived annual totals and AAPG estimates of footage drilled annually in new-field wildcat wells, the oil and natural gas discovered/foot were estimated. In the late 1940s the average discovery/foot was more than 350 BOE. By the late 1970s the average discovery/foot had dropped to 52 BOE. Projections of these decline curves determined the number of feet of new-field wildcats needed to find 2 x 10^9 BOE/yr, approximately the present rate of discovery in the U.S. Projected average drilling depth permits calculation of the number of needed wildcats/yr (12-yr total= 388,514 wells). Estimated discoveries are 7% oil and 8% gas.

Projected increases in drilling and completion costs (JAS) indicate a total cost of $179 billion. *Not included* are lease, geological and geophysical, development-well, and overhead costs.

A projected increasing role of natural gas and NGL in the total energy mix results from the relatively large proportion of gas, on a Btu equivalent basis, being discovered/foot of new-field wildcat drilled. At present finding rates it is not possible to replace the 7.0 x 10^9 BOE annual production.

Projected costs are so large that attainment of these limited goals does not seem possible. Total cost of the necessary new-field wildcats ($179 billion), however, is in the same order of magnitude as President Carter's estimated federal income from the "windfall" profits tax for 1980 to 1990. In any case, estimates of available oil and gas resources indicate that it *is* possible to moderate the decline in reserves and production.