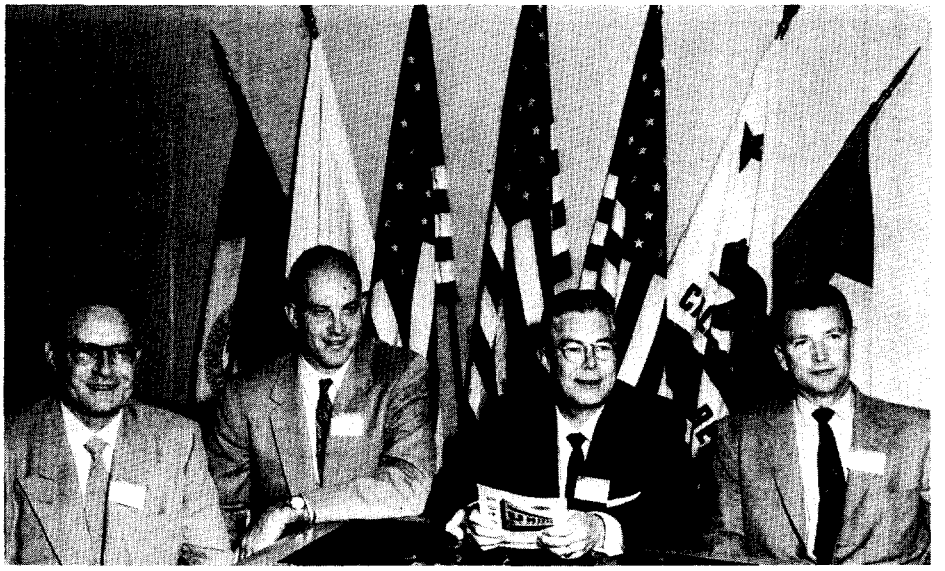
has been true always for some operators at the same time that other operators were reaping satisfactory rewards. It should be commented that continuation of the 27½ per cent depletion allowance and a crude-price commensurate with the risks involved are essential if exploration is to retain its important place in our oil-economy. The geographical location, time of discovery, type of oil discovered, depth of drilling, and subsurface conditions encountered are a few of the variables that affect the economics of exploration.

It is probable that some of us in exploration are spending a disproportinate share of our thought and energy in calculating the ultimate dollar value of possible oil not yet discovered. It is appropriate for us to know whether the prospect that we recommend is likely to produce a few thousand barrels or a hundred million barrels ultimately. It is a waste of an oil-finder's talents, however, to calculate exactly how much oil, gas, and liquids will be discovered, the gravity of the oil, the pay-out time,



A.A.P.G. Pacific Section, 1957 Officers. Left to right: Aden W. Hughes, secretary; Robert B. Kelly, vice-president; Harvey W. Lee, president; William E. Kennett, treasurer.

and the ultimate return to risk ratio—all on undiscovered oil. Such calculations tend to dull the sharp edge of enthusiasm of the oil-finder. The accountants are good at such figures.

OTTMAR F. KOTICK, United States Army, Memphis, Tennessee

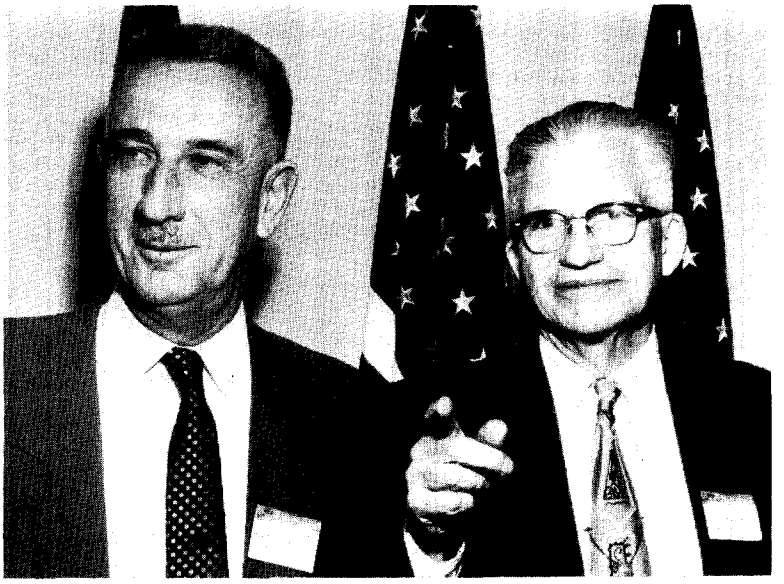
Military Petroleum

For the first time in history, purchases of petroleum products and services passed the one billion dollar mark in fiscal year 1956. This represents 223 million barrels of products, 125 storage contracts, and other services related to petroleum supply.

Of the estimated procurement for fiscal year 1957 in amount of $1,037,920,000, 61 per cent will be required by the Air Force, 27.7 per cent by the Navy, and 11.3 per cent by the Army.

Purchase of military petroleum by several types of joint-purchase agencies is briefly traced from War II to the present time. Normally, petroleum is purchased by a central agency using formally advertised open-end contracts of 6 months duration, for estimated total quantities only. Approximately 5,000 contracts are awarded annually, including those for commercial storage and operation of military bulk terminals.

Within the United States, petroleum is distributed by the contractor directly to military posts, camps, stations, including air bases, on call by the using agency. For overseas distribution, tanker loads from refineries in the United States, South America, Persian Gulf, and other places are lifted by military and commercial tankers direct to the overseas bulk terminals. From these terminals it is distributed direct to using agencies by tank trucks, pipe lines, drums, and cans, in accordance with periodic requisitions.



Left to right: Theodore A. Link, president, A.A.P.G.; Graham B. Moody, president-elect, A.A.P.G.

In each of eight logistic areas into which the world is divided, a jointly staffed area petroleum office compiles requirements, requests shipments from the purchase agency, arranges for receipt by petroleum depots, and coordinates all matters relating to petroleum in its logistic area.

On July 24, 1956, the Department of Defense designated the Secretary of the Navy as the Single Manager for Petroleum. He was directed to establish the Military Petroleum Supply Agency into

Left to right: Mason L. Hill, past-president, A.A.P.G. Pacific Section; Wallace E. Pratt, 1920 president, A.A.P.G.; Harvey W. Lee, newly elected president, A.A.P.G. Pacific Section; Edward J. Hamner, director in charge of exploration, Humble Oil and Refining Company.

which will be phased the Armed Services Petroleum Purchasing Agency and other miscellaneous service elements. Greater efficiency in Armed Services petroleum supply is the objective.

ALBERT F. WOODWARD, staff engineer, Union Oil Company of California, Whittier, California

Factors Relating to Fault Seals in Some California Oil Fields

The fault-seal problem is of particular importance in California because of the many significant regional and local fault systems affecting more than half of the known oil pools.

Fault seals are not only barriers to the migration of oil and gas in fault-trap fields, but are also important as secondary traps on anticlinal closures. The sealing effect of faults has complicated the field development, reservoir studies, pressure maintenance, and secondary-recovery programs, particularly in multi-block, multi-zone fields. Several factors which influence the effectiveness of fault seals include (1) lithologic type of sedimentation, (2) type of faulting, (3) depth of burial during faulting, (4) magnitude of fault displacement, (5) secondary cementation in fault zone, (6) differential fluid pressure across faults, and (7) time of faulting versus accumulation.

The lithologic type of the sediments appears to be one of the most important factors responsible for the formation of fault seals. The type of faulting and depth of burial during fault slippage are also significant. Other factors such as cementation are locally important. Post-accumulation faulting has affected the separation and readjustment of some pools; others have been partly depleted by leakage. Pressure barriers resulting from fault seals have caused abnormal reservoir pressures in some fields.

Major fault systems in the state can be related to local field patterns. This analogy has aided in the exploration of new fault-block accumulations within a proved field area as well as exploration for new fields.

INTRODUCTION TO GEOLOGY

RECORDED TALK AND FILM STRIP[1]

E. GAIL CARPENTER[2]
Wichita, Kansas

A little more than a year ago, the chairman of the Committee on Applications of Geology, of the American Association of Petroleum Geologists, requested that the Kansas Geological Society undertake the production of a recorded talk and film strip, for the purpose of awakening an interest in Geology at the High School student and parent levels. This project was referred to the Committee on Applications of Geology of the Kansas Geological Society.

This project is now completed. It consists of a recorded talk and a film strip in color. The talk is "beamed" at High School students and their parents. It is also suitable for P. T. A. groups, Civic clubs, Church groups, and others. Travel has been used as the common denominator between the High School student and parent levels. Geology and the Geologist are introduced. Illustrations are given to show a few of the many ways in which Geology can enrich the experiences of the traveler. It is also pointed out that Geology has made itself indispensable to Industry; and some of the industrial uses of Geology are shown, with emphasis on the Petroleum Industry. The training of a geologist is depicted, making use of pictures provided by schools which made slides available.

The film strip has 84 frames, on a 35-mm. strip. The talk is recorded on both sides of a 16-inch platter, 33 rpm, standard groove. The strip has audible signals for advancing the frames. It comes with a sheet of instructions and a copy of the script. The equipment required for showing is a projector which will take film strips and a record player which will play 16-inch records at 33 rpm, or a combination record player and projector. This equipment is to be found in almost every modern High School. It is also available on a rental basis in most communities.

[1] Manuscript received, January 14, 1957.

[2] Chairman, Committee on Applications of Geology.