zone of shearing, overturning, and impaired permeability found close to the fault plane, or because of re-entering the fault.

Forty-one wells are producing from a 300-acre area 2 miles long and averaging 1,200 feet wide. The pool is now producing a daily average of 7,600 barrels of 31° oil. Cumulative production to January 1, 1958, was 3,400,384 barrels.

(18) REVIEW OF CUYAMA OIL PROVINCE
R. K. Cross, Consultant

Cuyama, California's newest oil province, discovered January 1, 1948, has produced to June 1, 1958, 156,949,760 barrels of premium-grade crude oil valued at $471,000,000. Current production is about 42,000 barrels per day under controlled withdrawal.

Accumulations discovered so far have been confined to structural traps located on one structural trend. With one exception, they lie easterly of a prominent northwest-southeast-trending right-lateral fault zone of late Pliocene age. With one exception they are either partly or entirely concealed by major thrust faults of Quaternary age.

The productive trend roughly parallels a hinge position between a shelf area on the west and a depositional sag on the east. The depositional sag, elongate northwest-southeast, occupied a position in lower Miocene time somewhat similar to the existing Carriso Plains. It received in addition to other sediments, up to 13,000 feet of principally marine sediments of Oligocene and lower Miocene age as compared with none on parts of the shelf. Thick non-marine counterparts developed near the San Andreas rift and fanned out over a large part of the southeastern part of the province. The thick sedimentary section of the depositional sag was thrust westerly onto the shelf and hinge positions during the Pleistocene orogeny. Contemporaneously, a thick Cretaceous and Tertiary section on the southwest was thrust northeasterly over the shelf area. None of the anticlines on the hanging walls of the overthrusts is commercially productive to date. None of the known stratigraphic traps contains oil or gas.

It may be inferred from the evidence that the highly organic, marine shales of Mohnian, Luisian, and Relizian age may have yielded little if any hydrocarbons despite the appearance of satisfying the presumed requirements of source beds of oil and gas. The Soda Lake shale, Saucesian-Zemorrian age, may be the major source of hydrocarbon substances in this province. Its areal distribution with respect to structural traps may account for the prolific accumulation of oil in some traps and the absence of it in others. With one possible exception, accumulations of oil and gas in strata younger than upper Saucesian appear to be the result of leakage along fault planes from a common reservoir in the lower Miocene.

(19) NEW APPROACH TO DIPMETER COMPUTATION
T. H. Braun and G. Y. Wheatley, The Superior Oil Company

For some time the Superior Oil Company has been developing a simple electrical network analog instrument to calculate dip and strike from the Schlumberger continuous dipmeter logs. A new version of this instrument is described that is designed specifically for the CDM-P (poteclinometer) logs and it can be used with hole deviations up to 36°.

Every control on this instrument corresponds with one of the recorded parameters of the dipmeter log. It is thus easy to see the effect of any one parameter on the resolved dip and strike. The instrument requires no elaborate training in procedure, is portable, and can therefore be used at the well site if necessary to make on-the-spot decisions regarding further drilling operation after a dipmeter log has been run.

The rapidity with which the computations can be made also permits a larger number of levels to be computed. This frequently results in more accurate information and a considerable saving in computation expense.

(20) ALASKA—LEGAL CONSEQUENCES OF STATEHOOD
R. E. Patton, Shell Oil Company

I. Basis under Federal Laws (Mineral Leasing Act)
   1. As to uplands.
   2. As to water bottoms.
      Effects of 1958 Alaska Submerged Lands Act.

II. Lands Acquired by State of Alaska
   1. Upon statehood becoming effective.
   2. Under subsequent selections to be made by the State.
   3. Status of existing Federal government leases and lease applications (offers) on lands which go to the State.

III. Existing Alaskan Statutes Governing Oil and Gas Leasing.
   1. Territorial Land Acts.
   2. Problems arising under certain provisions; necessity of clarifying amendments.
   3. Regulations.