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# INTERNATIONAL EXPLORATIONISTS

## INTERNATIONAL EXPLORATIONISTS DINNER MEETING—OCTOBER 17, 1990

GERARD JULIAN GENIK—Biographical Sketch



Gerry started his geological career in 1947 working summers as a miner for Sherritt Gordon Mines Ltd., then as a field geologist for the Canadian and Manitoba government geological surveys. He obtained a B.Sc. in Honors Geology from the University of Manitoba in 1951 and an M.Sc. from the same school in 1953.

He joined Imperial Oil Limited in Calgary in 1952 working field geology and wellsite. From 1955 until 1983 he had broad ranging foreign experience holding various geological positions with several Exxon affiliates in Colombia, Canada, France, Algeria, Spain and England, working primarily the regional geology of circum-Mediterranean and African basins.

From 1983 to the present he has concentrated on African exploration with Exxon Company International in Houston. Currently, as Geological Scientist, he focuses on Niger, Chad, Gabon and Tanzania.

### RIFT BASINS OF CHAD

Ten Cretaceous-Tertiary rift basins in Niger, Chad and the Central African Republic (C.A.R.) are defined and their petroleum geology is overviewed. This paper is based on proprietary exploration results derived from more than one million square kilometers of aeromagnetics, 10,520 line kilometers of gravity profiles, 49,721 kilometers of reflection seismic and 50 exploration wells. The data were acquired by

Exxon with partners Shell, Chevron, Elf, Conoco, Texaco and Amax Oil Gas Inc. during the years 1969-1989.

The ten rift basins described make up a major part of the Western and Central African rift system which extends 4,000 kilometers from Mali to Kenya. This system is divided into two subsystems, West African and Central African. The former subsystem traverses Niger, Chad, Nigeria and Mali; the latter subsystem crosses Chad, C.A.R., Sudan and Kenya.

In Niger and Chad, the West African rift subsystem includes the extensional basins of Termit, Tefidet, Tenere, Grein/Kafra, N'Djel Edji and Bongor. These rift basins contain up to 15,000 meters of Cretaceous to Cenozoic continental and marine clastics. Key exploration elements are Tertiary and Cretaceous fluvial to tidal sandstone reservoirs, Tertiary and Cretaceous marine to lacustrine shale source rocks and seals, with traps in normal fault blocks and anticlinal closures. There are six oil discoveries in the Termit basin.

In C.A.R., the Central African rift subsystem incorporates the extensional Doba and transtensional Doseo and Salamat basins flanking the Borogop dextral wrench fault. These basins contain up to 7,500 meters of chiefly Cretaceous continental clastics. Key exploration elements are Lower and Upper Cretaceous fluvial to lacustrine sandstone reservoirs, Lower Cretaceous lacustrine shale source rocks, lacustrine to flood plain shale and mudstone seals, with traps in mainly faulted anticlinal closures. There are six oil discoveries in the Doba Basin and three in the Doseo Basin.

The studied petroleum geology in the rifts of Niger, Chad, and the C.A.R. indicates that potentially commercial volumes of oil remain to be discovered.