

HGS INTERNATIONAL GROUP DINNER MEETING—MAY 18, 1992

Post Oak Doubletree Inn

Social hour, 5:30 p.m., Dinner, 6:30 p.m.

Technical Presentation, 7:30 p.m.

WILLIAM F. BISHOP—Biographical Sketch



William F. Bishop received an A.B. degree in geology in 1954 from Miami University (Oxford, Ohio), after which he spent 2 years with the US Army Corps of Engineers in the US and Germany. Returning to Miami, he received a M.A. degree in geology in 1957.

Bishop's major company experience includes 10 years in domestic exploration with Marathon and Tenneco, 2 years in Canada with the latter, and

16 years in international exploration for Ashland (Far East, Central America) and Tenneco (Africa, Middle East). He has been a consultant since 1986, when he was sole subcontractor and coauthor of the Robertson Group's multi-client study of the petroleum geology of Iraq. He has evaluated areas worldwide for various clients and is the author of a "Computerized Bibliography of Middle East Hydrocarbon Geology," containing more than 4,000 annotated citations. As consultant to the Oil Committee in 1990, he evaluated and presented to groups of international oil companies data from southern offshore Malta.

Bishop has written numerous articles and presented papers on the northern Gulf Coast, Tunisia, Central America, Kalimantan, Iraq, and Malta. He was Field Trip Committee chairman, 2nd and 1st vice-presidents, and in 1981-82, president of HGS. With Carolyn Ross, he co-founded the HGS International Explorationists group, for which they shared the Distinguished Service Award in 1990.

GODWIN DEBONO—Biographical Sketch



Godwin Debono received a B.S. degree in physics from Malta University in 1971 and M.S. and Ph.D. degrees in geophysics from London University in 1973 and 1977.

From 1975-77 Debono was a processing geophysicist with Shell UK in London and in 1978-79 a research geophysicist with Shell International in The Hague. In 1980 he joined the Oil Exploration Division in Malta as an exploration

and in 1986 was promoted to Exploration Manager. He assumed his present position, Chairman of the Oil Committee, Office of the Prime Minister, in 1990.

HYDROCARBON GEOLOGY OF SOUTHERN OFFSHORE MALTA

The study area is 4.4 km. south of Malta, and encompasses 13,000 sq. km. Studies of over 4700 km. of new and reprocessed geophysical data were conducted in 1989-90. These data, supported by stratigraphic projections from the Ragusa basin of Sicily and the Pelagian shelf off Tunisia and Libya, indicate an entirely different facies from the continuous carbonate sequence of the Malta platform encountered by wells drilled to date.

Area 4 is part of the Pelagian block, a stable projection of the African continental margin, bounded on the east by the Ionian abyssal basin; on the west by the N-S axis of Tunisia; on the north by the Calabrian thrust zone; and on the south by the Djeffara flexure. Geologic structures in the study area range from a broad featureless rise to complex horst and graben systems. The latter are mostly of Miocene-Pliocene age, but one graben is believed to represent an early Mesozoic rift associated with breakup of the Pangaea continent.

Carbonates, mostly shallow-water, of Triassic and Jurassic ages were penetrated north of the study area, but source rocks similar to those of the Ragusa basin are postulated in the Mesozoic rift. Several wells encountered Upper Jurassic-Cretaceous carbonates, mostly restricted-shelf dolomite, but pelagic limestone beneath a tongue of dolomite at Aqualta-1 indicates this well to be near the southern edge of the Malta platform. During Cretaceous time most of the study area was transitional between platform and basin, and deeper-water strata, which are proven or potential source rocks and seals in Tunisia, should be present. Shelf-edge carbonates will provide good reservoirs, and rudistid reefs probably developed on bathymetric highs. A low-velocity interval at the base of Tertiary section, which wedges out in the southwestern portion of the study area, is expected to contain nummulitid bank facies in contact with deeper-water limestone and marl, which are the source of oil in the giant fields off Tunisia and Libya.

Based on the geothermal gradient at Aqualta-1, the top of the oil window may be about 3000m., and since the entire Jurassic section is below 3500m., it should be capable of peak oil generation. Cretaceous source rocks reached maturity in the southeastern part of the study area during Miocene time and elsewhere since the Pliocene. Restored seismic sections indicate onset of generation at the end of Cretaceous time, when many structures already were positive, others having developed since then. A variety of potential traps, including fault-block, horst, faulted and simple domes and anticlines, are present, together with the very impressive Lower Tertiary wedge-out. Thus, Area 4 is highly prospective and has potential for major hydrocarbon reserves.

