

Spindletop

by **James A. Clark and Michael T. Halbouty**

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Review by Christopher G. Kendall

This book was first published in 1952 and has been reissued to commemorate January 10th 1901, the date on which the Spindletop salt dome became the site of the USA's first oil "gusher". The book details the special circumstances of this major discovery and how it essentially changed the way that oil exploration is now conducted in the United States and for that matter all over the world. The book catches the excitement of oil exploration in the early 1900's recording the effect Spindletop's discovery had on the economy of Texas, the United States, if not the world. It describes how a few men under trying circumstances were able to band together, acquire acreage, raise capital, and develop the technology to drill a completely new type of exploration prospect, and in so doing changed the course of history. It catches the doggedness persistence and actions of Pattillo Higgins, and Captain Anthony Lucas and their associates and explains why their oil discovery initiated the oil boom of the early 1900's that followed.

Clark and Halbouty describe how before the discovery of Spindletop the oil industry was stifling at the hands of the Rockefellers and Standard Oil but how, as a direct result of Spindletop, many well known oil companies were chartered and so starting the free enterprise that we have come to associate with the oil industry of the last century. For example Shell Oil Company, which started life as the Shell Trading Transport Company, requiring oil for its marine transportation entered the oil business because it recognized that money could be made from oil when the Mellon Bank was forced to negotiate a fair price with them for the petroleum from Spindletop. Numerous other similar events are recorded in this book and they explain how Texaco, Cities Service, Gulf Oil, Sun Oil, Magnolia Oil, Humble Oil (now Exxon), and many others were formed, triggered by the discovery of Spindletop.

The authors explain how Standard Oil saw the Spindletop discovery as a direct threat to Standard Oil monopolies but that Spindletop's development was so rapid and uncontrolled that their monopolies evaporated overnight. Before Spindletop, Standard Oil had directly controlled an annual production of some 48 to 58 millions of barrels of petroleum, most of it coming from some distance from the sea. Standard Oil and Russia, the world's leading oil producer, were neutralized because as few as three of the earlier Spindletop wells were capable of flowing more than the 68 million barrels annually or 185,000 barrels daily, the total Russian production. "Spindletop could produce more oil in one day than the rest of the fields of the world combined" so that with its proximity to the sea "Beaumont became the Mecca for every man who yearned for wealth." Tremendous variations in the price of petroleum from as little as three cents a barrel took a further toll on Standard's monopoly and on the companies intimately involved with the exploitation of Spindletop. Demand built-up and led to overproduction and the eventual decline of the field.

The book emphasizes how unconventional versus conventional geological reasoning can make or break new and successful hydrocarbon plays. It records the outrageous persistence of Patris Higgins and Captain Anthony Lucas leading to the eventual oil strike at Spindletop and

how Marrs McLean's later recognition of the potential inside play for this feature led to his determination to drill of flank of the structure so extending this great field. The book demonstrates how oil exploration, certainly in its early stages, can be thwarted by conventional thinking at hydrocarbon companies, the USGS or universities; all institutions where their experts often make a living from saying "No"! It highlights for a new play to be successful there needs be an openness to new ideas and the acceptance obvious geological evidence. For instance at Spindletop, Pattillo Higgins used a combination of geological evidence including: the occurrence of low hills with soils that exuded the characteristic odor of petroleum; the escape of gas and traces of oil from the crest of the structure; and other similar phenomena to promote his play. These observations coupled with Captain Lucas recognition that these low circular hills were the caps of salt domes similar to those of Louisiana and to the shale diapers of Baku led support to Higgins' contentions. Geological principles were developed that suggested that the salt domes punched up through the surrounding sediment concurrently developing the structures that trapped the oil.

Spindletop further led to the development of much of the terminology, and vocabulary of modern oil exploration and exploitation now used throughout the oil industry> These included "driller", "roughneck", "roustabout", and "boll weevil". Drilling technology developed at Spindletop included the use of: heavy mud to strengthen and plug the sidewalls of a drill hole; the use of check valves to confine and maintain drilling fluid pressure; large diameter pipes driven through smaller diameter pipes to prevent wall collapse; the injection of the air into non productive oil wells to make them flow again; and the Hughes drill bit for improved drill penetration. Spindletop also led to schemes to protect producing wells against fire, overpressure and techniques that enabled the tapping of uncontrolled wells.

Spindletop highlighted the industrial implications of unfettered hydrocarbon exploration and how an infra structure and market was needed and was built to exploit this large discovery and its huge potential. Spindletop also led to the recognition of the need to have a permanent supply and the acquisition of stocks. However Spindletop also showed how the centralized vertical control practiced by Standard Oil could lead to the demise of an industry, while the chaos and randomness of individual choice could lead to survival for some syndicates, as it did for that of Hogg-Swayne, while others, through unforeseen miscalculations met their ultimate demise. A delicate but hard to predict balance was needed, as with playing any commodity.

Banks played a prominent role in financing the exploration of Spindletop, its development and exploitation. For instance Mellon Bank acquired most of the acreage over the structure. Fortunately they failed to acquire scattered tracts across the crest of the structure, in particular the Hogg-Swayne Tract, and this led the chaos that drove the development of the oil industry as we know it through uncontrolled chartering of numerous corporations, many of which had no assets but provided an income to the brokers and swindlers who sold their stock. This frenetic exploitation eventually led to the development of Oil and Gas Journal, the "nemesis of fraud and the champion of legitimate oil men", which brought some order to the industry. Never the less Spindletop development benefited from the sale of small acreage tracts and kept the sellers from falling into debt. An example of the clever exploitation of small tracts was the purchase of the main rights for the streets and allies are of Gladys Cities and the formation of companies to exploit this patchwork. Many of the eclectic exploration, refining and service companies developed when Spindletop was discovered we still see today thriving in the current hydrocarbons market.

The reason that the unfettered exploration and exploitation of Spindletop and associated salt domes changed the oil industry overnight is that they reduced the costs for the concurrent

development of the railroads (cheap locomotive fuel), the shipping industry (the French Navy and the U.S. Navy contracted to purchase Spindletop oil, and British shipping interests were able to reduce the number of stokers used on steamships by close to a factor of 100, while ship turnaround changed from weeks to days), the automobile (the Fords, Oldses, Packard's, Duryeas, and Hayneses), the development of a black top road system, heating, and electric power, and the reduced the prices that Standard Oil were now forced to charge its previous customers, and reduced freight rates on coal. The legal profession also benefited from this boom, resolving many of the problems created by hydrocarbon exploration and exploitation. It is interesting while others like lawyers profited from the oil exploration and exploitation, many of the oil operators often failed and ended up broke. Similarly many contractors made the great deal of money while others failed.

This book should probably be on the shelves of anybody with an interest in the oil industry. It captures the flavor of hydrocarbon exploration and shows how any new technology flourishes when unfettered but is always in conflict with those in favor of measured control. Without the iconoclasts and rebels of this industry the USA would not have been projected into the modern industrial world with its obvious advantages over an almost completely agrarian community. The book is packed with anecdotal information and is written in an elegant narrative style. The reader can find detailed information to confirm most preconceived prejudices both for and against the oil industry. To me this book records another great adventure in the development of mankind and demonstrates that dogged human persistence in the face of insuperable odds can win through with spectacular results. The authors are to be congratulated on this very fine volume. I recommend it to you highly.