Chapter 4
The Early Oil Industry

As we have depicted in the previous chapters, the evolution of *Homo hydrocarbonum* is not the product of an ingeniously conceived plan to master nature or some natural result of economic progress but the outcome of an intricate and remarkable process that started long before modern times. In this chapter we will take a brief look at the birth of the oil industry and the political developments that contributed first to its unfolding and later to its economic and political power. Even though oil was known by other civilizations, only the North Atlantic powers of the late nineteenth and early twentieth century attached such importance to this substance, which has maintained an unprecedented role in the geopolitical order ever since.

4.1 From Antiquity to Industrial Times

Oil and gas from surface seepages have been known since antiquity. Oil was used as mortar in early Babylon, circa 4000 BC; the ancient Chinese described the scene of natural gas seepages on the surface of lakes and swamps, 3,000 years ago; Noah's ark and Moses' basket of reeds were caulked with tar; Nebuchadnezzar's fiery furnace and the burning bush in the Bible were, it may be assumed, located on gas seepages; and the eternal flames that were worshiped by the Zoroastrians near Baku, Azerbaijan, were flammable oil-impregnated shales on the shores of the Caspian Sea, a region that keeps reappearing throughout the development of this plot and will continue to do so in the decades to come.

Almost every culture has found a use for oil. Although rarely abundant, oil was used primarily for medicinal or ritual purposes, as well as for heating and illumination. Persians, Chinese, and Romans, just to mention the most obvious examples, were exploiting oil for these purposes before the time of Christ. As late as the 1960s, Colin Campbell witnessed the rite of the Papuan natives in the highlands of New Guinea who daubed their bodies with oil collected from seepages when they gathered for their ritual sing–sing dances, a custom that had been going on since time immemorial.

C.A.S. Hall and C.A. Ramírez-Pascualli, *The First Half of the Age of Oil: An Exploration of the Work of Colin Campbell and Jean Laherrère*, SpringerBriefs in Energy,
DOI 10.1007/978-1-4614-6064-0_4,

The technique for oil extraction evolved over centuries from skimming oil off the pools into which the natural seepages ran, to digging shallow pits to extract it more effectively, to early wells, to the very sophisticated techniques we use today. The early Burmese were the most advanced of their time in this regard, using bamboo pipes to case shallow wells and transport the oil. The ancient Chinese are credited with the development of a form of rig for drilling wells, consisting of a heavy stone on the end of a rope that was repeatedly raised and dropped, slowly punching a hole into the earth (Feng et al. 2012). It was the precursor of the cable-tool with which the early "modern" oil wells were drilled, nineteen centuries later. There has also been a very long history of constructing wells for water and salt brine, as salt came to be a very valuable commodity long before the Middle Ages. Even in the nineteenth century, in the USA, wells were drilled to get salt brine; oil came as a by-product that sometimes was kept for medicine or lighting.

During this time a trade in oil was established in both Europe and the USA; there was much demand for organic compounds including derivatives from lard, whale oil, camphene, oil from seepages and coal workings which were used as domestic illuminants. In the 1850s, there was a dramatic improvement in the technique for obtaining kerosene from oil—coupled with the decline in whale oil due to over-whaling—which stimulated the search for petroleum. The technique for drilling wells was already well established in North America for the production of brine, from which salt, needed for preserving meat, was extracted. There were even cases where such wells encountered gas, which was used to fuel the salt works (Yergin 2003).

The kerosene lamp by itself had been a great revolution in the way people lived, adding a usable evening to the working day, especially in rural areas. In fact, during its first 40 years, the business of the oil industry was illumination, not gasoline but kerosene. A second and greater revolution started on July 3 1886, when Carl Benz in Germany powered the first automobile with a single cylinder engine, based on the four-stroke cycle invented by Otto some years before (Eckermann 2001). At first, he used carbureted benzene distilled from coal, but soon he turned to gasoline refined from crude oil. Oil evolved from a humble by-product of salt brine to an indispensable resource for the Western society, first for domestic illumination and finally for the fuel engines that ran the industries.

4.2 The Birth of the Oil Industry

The birth of the oil industry is generally attributed to the famous well drilled specifically for oil in 1859 by the self-styled "Colonel" Edwin L. Drake at Titusville, Pennsylvania. Nevertheless, Canadians also claim the historical parenthood of the modern oil industry: James Miller Williams initiated a production well in Ontario, in 1858, followed 3 years later by John Henry Fairbank, also in Ontario. In Europe, production statistics in Romania go back to 1854; yet others claim that F.N. Semyenov actually was the very first pioneer to dig a commercial well on the

Apsheron Peninsula, near Baku in Azerbaijan, in 1848. In fact, the Russian tradition in oil goes back one century before; in 1757, the brilliant academician Mikhail V. Lomonosov had published essentially a correct assessment of the origin of oil: "rock oil originates as tiny bodies of animals buried in the sediments which, under the influence of increased temperature and pressure acting during an unimaginably long period of time, transform into rock oil" (Campbell 2005a, p.81).

However, oil sands were mined in 1745 in Merkwiller-Pechelbronn, northeastern France, a region with a rich mining tradition. The operation in the Pechelbronn field resembled a coal mine more than an oilfield: workers descended to the bottom of the main shaft where they dipped up the oil that dripped from the nearby galleries; they poured the oil into buckets which were lifted to the surface and taken to the refinery. It was here, in Pechelbronn, where the first drilling research was made, using a manual drill in 1813. Later, the first school of oil technology was created in the region, becoming the forerunner of the current *Institut Français du Pétrole*. In addition, Conrad Schlumberger performed the first electric logging also in Pechelbronn, in 1927.

As you can see, it is almost impossible to determine which was the very first modern oil operation ever, and in the end, it does not really matter who wears this crown. In any case the oil industry grew rapidly in the succeeding years first in Pennsylvania and along the shores of the Caspian from which it spread to many other places around the world.

4.3 From the Appalachian Boom to the Large US Companies

Drake's well, which encountered oil at a depth of 67 ft in an Upper Devonian sandstone, led to the first great exploration boom as the shallow oil reservoirs were tapped by an army of pioneers and speculators who descended on the petroleum lands of the Appalachian Basin in the USA. Stills were erected nearby to make kerosene, which, within the remarkably short span of 2 years, was being exported to Europe. Fortunes were made and lost and prices fluctuated wildly. From its outset, the industry has been plagued by "boom or bust." The reason is the special depletion pattern of oil, which flows rapidly under its own pressure from the wellbore as soon as it is tapped in a manner very different from, for example, the labor-intense process of mining coal. As a result, the market could be literally flooded in a short time by the oil coming from a few wells and then just as quickly dry up as the oil from a region was depleted.

Early explorers in Pennsylvania drilled by guesswork, although soon began to develop an empirical understanding of geology, identifying the characteristics of sites where drilling succeeded. The state of Pennsylvania appointed a geologist to investigate the nature of petroleum; his report of 1865 observed that oil tended to accumulate in anticlines, where the strata are folded into an arch, and also characterized petroleum as a "bituminous liquid resulting from the decomposition of marine and land plants."

The oil boom of the Appalachian Basin was already over by 1900. By 1885, the State Geologist of Pennsylvania stated that "the amazing exhibition of oil is only a temporary and vanishing phenomenon—one which young men will live to see come to its natural end." He was both right and wrong in his prognosis: he was right about the area he knew but wrong insofar as he did not know how much oil would be found subsequently in new areas. Now, more than a century later, we have a much better idea of that issue and can confidently repeat his words on a global scale. During the 40 years of the Appalachian oil boom, 183 oilfields had been found, yielding an ultimate recovery of 1.33 billion barrels (Gb). The Appalachian Basin, despite its early importance, is in fact quite a small province, as its total contribution would be enough to supply the world's present demand for less than a month. Nevertheless, it still has reported reserves of 28 million barrels (about 2% of the ultimate recovery), showing how reserves and production decline exponentially; old fields continue to produce a few barrels a day for a very long time during the tail end of their depletion and ever smaller fields continue to be found even in mature areas.

4.3.1 Standard Oil

In the same year that Drake drilled his well, a man by the name of J.D. Rockefeller went into partnership with a newly arrived British immigrant, Maurice Clark, to establish a trading company in Cleveland, Ohio. The Civil War of 1861–1865 created a demand for goods of all sorts so it was an opportune moment to open such a company in a place connected by two railways and the Great Lakes navigation system. Due to the boom in Pennsylvania, the new firm started to trade in kerosene and later it became profitable to enter the refinery business. They were very successful because they learned how to produce and market a uniform or "standard" product. This is how the great Standard Oil Company started, and, running on relentless business lines, it grew to become the world's largest corporation. It was the precursor of the modern company with its bureaucracy and driven solely by the motive of financial return on investment. It was basically a marketing company, seeking to control its market by both fair and foul means. It succeeded in doing so by placing a stranglehold on oil transport both by securing the pipelines and negotiating special rebates from the railways. The wild fluctuations in oil price were anathema to its orderly plans, and John Rockefeller believed that monopolies were far more efficient than competition. Even in these early years of the industry, a need for regulation had already arisen: Standard Oil was in fact exercising a function no different from that subsequently applied by the Achnacarry Agreement, the Texas Railroad Commission, or OPEC.

Standard was reluctant to enter the hurly-burly of exploration, although it eventually did so in the 1880s when another new oil province was found in Indiana. Its motive for doing so was to protect its existing market from competition, since the Pennsylvania fields were beginning to decline already. Standard Oil's ruthless capitalism was much reviled by the independent oil producers who regarded it as a creeping octopus that would eventually ensnare and devour them. It was particularly

disliked in Texas and the southern states, still smarting from the Yankee victory in the Civil War. Pressure against it grew, until in 1911 the government was forced to break it up under antitrust legislation, a democratic response to an overweening monopoly that went unrivaled, except perhaps for the unswerving centralism of the Soviet Union. After the breakup, some of Standard's daughters, Esso, Chevron, Mobil, Amoco, Conoco, Sohio, and Arco—to name only the largest of the 37—grew to become some of the world's most important oil companies in their own right; three of the famous "Seven Sisters" (the seven largest oil producers of the twentieth century) were indeed Standard Oil's "daughters."

Although these companies did practice successful exploration throughout the world, in some cases pioneering new projects in the best traditions of the explorer, it may be fair to say that they owed most of their growth to their great financial strength, inherited from Rockefeller's empire which allowed them to swallow their weaker competitors. Probably the major companies have always been traders at heart, with making money being their sole objective: nothing wrong with that of course—save when one comes to consider the depletion of a finite resource that should perhaps be governed by more sophisticated criteria to better respect the value of this irreplaceable resource to humankind.

Standard Oil's control was centered on the eastern states, but new oil lands were being explored in the south. California came in first with several important discoveries before the turn of the century. The complex geology of California, where the oil occurred in strongly folded and faulted tertiary rocks, partly affected by the famous San Andreas Fault, prompted a greater attention to scientific geology here than elsewhere, and the companies in California took on increasing numbers of professional geologists to guide their efforts. Standard Oil moved in, and its affiliate, Standard of California, now Chevron, has had an exceptional reputation in exploration, in due course bringing in the giant fields of Saudi Arabia. However, Unocal was the dominant producer in California at that time. Unocal, established in 1890, managed to preserve its independence for more than one century, but in 2005, it finally merged with Chevron.

4.3.2 Texas: Spindletop and Texaco

Oil was first found in Texas in 1893, when a water well at Corsicana unexpectedly encountered oil. It was followed in 1901 by the spectacular blowout at Spindletop near Beaumont, in which 75,000 barrels a day gushed high into the sky. It was a mighty roar that heralded another oil boom, opening up a new province and enormously accelerating the industrial revolution. It transformed the economic life of the USA and was a critical contributor to its global political power. Discovery followed discovery as the new "trends" were drilled, but eventually Texas production peaked in the 1930s. Today, only a few million barrels are found each year and they are extracted from very small fields. The total endowment of Texas, resulting mainly from the early discoveries, is about 60 billion barrels (Gb), about the same as the North Sea.

The discovery at Spindletop spawned two of the Seven Sisters family, Texaco and Gulf Oil, both taken over by Chevron in 1985 and 2001, respectively. The merger of Gulf Oil with Chevron occurred in a cumbersome way, after an unsuccessful assault by a clear thinking corporate raider, T. Boone Pickens. He correctly realized that Gulf's past was worth much more to its shareholders than its future. It is a reality that most other major oil companies now face, with varying degrees of frankness. On the other side, Texaco and Chevron have a long history together that goes back to the creation of Caltex in 1936, a joint venture to develop Chevron's recent discoveries in Saudi Arabia which marked much of Texaco's evolution as an oil company.

Many of the early oil pioneers were aggressive and colorful men. The early Spindletop discovery well was drilled by a one-armed self-educated mechanic, named Patillo Higgins, who was backed by Captain A.F. Lucas, an immigrant from Yugoslavia. They eventually sold out to what became Gulf Oil. Another man on the scene was Joe Cullinan, known as "Buckskin Joe" for his abrasive manner. He set up the Texas Fuel Company in Beaumont to trade in oil and oilfield equipment, backed by New York and Chicago investors. In 1906, the name Texaco with its logo of a green "T" overlying a red Texas Star was registered. Buckskin Joe ran the business with an autocratic style that did not endear him to his investors who eventually ran him off. Some say that the company has retained a characteristically autocratic manner ever since, which perhaps owes something to its founder. Later, Texaco would be directed by Torkild Rieber, a tough Norwegian seaman who admired and supported the fascist movements in Europe, a position held by a number of other businessmen all around the world. In Spain, Rieber supplied oil and credit to General Franco in contravention of the US Neutrality Law. Later, he swapped oil for tankers built by Nazi Germany. After the beginning of the Second World War, the British intelligence uncovered German spies operating in Texaco's New York office. The captain was forced from office in 1940.

Texaco had a rather indifferent performance as an international explorer, perhaps because the oil supply delivered by Caltex, a joint venture with Chevron, would meet Texaco's needs for a long time during the past century. Like most American companies, Texaco was operating in a cutthroat environment. Growth was achieved primarily by buying up competitors; litigation was the order of the day and little time remained for exploration endeavors. On the other hand, much of the US market was controlled by Standard, so Texaco paid special attention to overseas markets. In 1936, Texaco's global marketing strategy prompted it to join forces with Chevron in the Eastern Hemisphere, creating the Caltex group. As a result, it gained access to Chevron's rights in super-rich Saudi Arabia and later to the Minas Field in Sumatra, the largest in Indonesia, which had to wait until the end of the Second World War to be developed. Thus Texaco had no need to find more oil, save for strategic reasons to reduce its dependence on Saudi Arabia; its policy for obtaining reserves seemed to be the acquisition of other companies including Seaboard in Venezuela, Trinidad Leaseholds, and Getty (the latter landing it in an expensive lawsuit with Pennzoil). After a late attempt to focus on its key domestic fields, Texaco merged into the Chevron Corporation in 1985.

4.4 Beyond America: The Caspian and the Middle East

The early development of the oil industry in the USA had a lasting world influence. The large American companies expanded overseas taking their business and technical culture with them. In technical terms, the industry's American roots have left its legacy, including, for example, its units of measurement: the traditional well-casing sizes of 95″/8 (ninety-five eighths of an inch) and 133″/8 are still in almost universal use as are such colorful drilling terms as roughneck, rat-hole, and kelly bushing, not to mention a piece of equipment delightfully known as a "donkey's dick." But the USA was not by any means the only pioneering oil country. During the nineteenth century, there were already developments in many places including Baku in Russia, Ontario in Canada, Borneo, Burma, Sumatra, Romania, Poland, Trinidad, Peru, and Mexico.

4.4.1 The Shores of the Caspian

Of all the oil-rich provinces, the most important was Baku, a backward and poorly administered territory on the shores of the Caspian, on the southern fringe of the Russian Empire, in today's Azerbaijan. Oil extracted from hand-dug pits had been a state monopoly, but in the early 1870s, the area was opened up to private capital. One of the first entrepreneurs to arrive on the scene was Ludwig Nobel, a member of the inventive Swedish family, which made a fortune out of dynamite. The family is now remembered by the Nobel Prize, which it endowed. Since there was no sufficient oak to make traditional wooden barrels, the Nobels developed the world's first tanker, the Zoroaster, to transport oil through the Caspian.

The Rothschild bank came in later to finance a railway to Batumi on the Black Sea, opening an export route to the West. They in turn were followed by a new company by the name of Shell, which started exporting Baku kerosene in tankers to Europe and the Far East. Hastened by the growing power of Standard Oil in the USA, Shell merged with Royal Dutch in 1907, which had been pioneering oil production in the Dutch East Indies (now Indonesia) to become the giant Royal Dutch/Shell or simply Shell, as it is known today.

The Baku oilfields lie in a Tertiary basin in front of the Caucasus. The geology is characterized by complex folds and faults and multiple reservoirs. Seepages of both oil and gas were abundant. A peculiarity of the geology was the presence of numerous so-called mud volcanoes, as also found in Romania, Colombia, and Trinidad. These volcanoes are mounds of mud, up to several hundred feet in height, which form over active gas seepages. They explode and catch fire sometimes. Without doubt, most of the fields were found by hit-or-miss. It was evidently easier to hit than to miss in this prolific area that in 1900 produced as much as 75 million barrels from 1,700 wells less than 1,000 ft deep. It was a violent place of banditry and strife, with appalling operating conditions. No less a figure than Joseph Stalin was a workers' leader, masterminding strikes and disturbances in Baku in the early years of the century. Such pressures spread and culminated in the Bolshevik rising of 1917,

which, to put it mildly, transformed the world's political scenery. It was not to be the last occasion on which oil shaped human destiny, the most important of which is about to come. The Bolshevik Revolution effectively brought to a close the first Caspian oil boom. Hitler tried to capture Baku during World War II. He knew it was Azerbaijani oil what fueled the Red Army, and the Germans were running out of oil quickly (Yergin 2003). Had the Nazis succeeded in that mission, the outcome of the war may have been different.

Inheritors of the Russian tradition, the Soviets became very efficient explorers. Besides, they were able to approach their task in a scientific manner, being able to drill holes to gather critical information, whereas their Western counterparts had to pretend that every borehole had a good chance of finding oil. In the years following World War II, the Soviets found and brought into production the major oil provinces of the USSR, finding most of the giant fields within them; Baku had become a mature province of secondary importance. The Soviet Union had ample onshore supplies, which meant that it had no particular incentive to invest in offshore drilling equipment. The Caspian itself was largely left fallow, although the borderlands were thoroughly investigated. Of particular importance was the discovery of the Tengiz field in 1979 in the prolific pre-Caspian basin of Kazakhstan, only 70 km from the shore. The problem was that the oil had a sulfur content of as much as 16%, calling for high-quality steel pipe and equipment, not then available to the Soviets. Development was accordingly postponed. The fall of the Soviet regime in 1991 opened the region to Western investment.

BP took a pioneering role with Statoil, its Norwegian partner. Interest was at first aimed at the offshore extensions of the Baku trend, where a number of prospects, already identified by the Soviets, were successfully tested, finding some three billion barrels (Gb) of oil, which, however, was not enough to have any particular world significance; meanwhile, ExxonMobil had withdrawn from Azerbaijan altogether. It is unlikely that more than three billion barrels (Gb) remain to be found in the country.

Soon Kazakhstan also attracted interest. Chevron–Texaco, together with ExxonMobil, agreed to develop the Tengiz field. One of the problems has been the disposal of the huge amounts of sulfur that had to be removed from the oil by processing. Plans to increase production in the field are now shelved.

The greatest interest of all, however, was attached to a giant project named Kashagan, which was identified in the shallow waters of the northern Caspian off Kazakhstan, leading to the entry of a European consortium comprised of BP-Statoil, Agip, British Gas, and Total. The enthusiasm waned as the companies began to get into the details. The reservoir was composed of individual separated reefs and the integrity of the salt seal seemed weak in some parts of the structure. Operational challenges were also monumental: the waters were shallow, making it difficult to bring in and position equipment, while also posing environmental threats to the breeding grounds for sturgeon shoals supporting the Russian caviar fisheries. If that was not enough, a gruesome, chilling wind blows in winter, covering everything in ice. Nevertheless, the companies succeeded in drilling three testing boreholes at an astronomical cost, announcing that they had found between 9 and 13 billion barrels

(Gb). BP-Statoil decided to withdraw. In addition to these main projects, the Russian themselves have made a two billion barrel (Gb) discovery in the northwest part of the Caspian, and Turkmenistan has announced an oil discovery of uncertain size off its mainly gas-prone territory.

In short, it is now clear that the Caspian has been a great disappointment. Total reserves for the offshore probably stand at about 25 billion barrels (Gb), with new exploration offering potential to perhaps another five, a good deal less than the 44 billion barrels (Gb) mean estimate proposed in a study by the USGS in 2000, and much less than the 200 billion barrels (Gb) announced in some Western newspapers. Even in the unlikely event that the USA had exclusive call upon it, the Caspian offshore could provide only 10% of its needs for only a relatively few years.

4.4.2 Persia: The First Sample of the Middle East

The greatest oil province of all, the Middle East, was also attracting attention as the nineteenth century drew to a close, but to do business there was difficult. Most of the area was controlled by the Ottoman Empire as late as the first decades of the twentieth century, with its decadent and corrupt Sultan in a harem surrounded by eunuchs. The rest was in the hands of the Shah of Persia, today Iran, whose authority barely extended beyond his own capital. The Germans became interested in building a railway from Berlin to Baghdad as part of a foreign policy initiative aimed to catch up with the colonial expansion of France and Britain in other parts of the world. As a land power, it recognized the military mobility afforded by railways, which it conceived would be more effective than the slower British sea power. It secured to this end a concession in Anatolia and Mesopotamia, which included mineral rights for 20 km on either side of the track, presumably as a source of building stone. Its engineers soon reported the numerous oil seepages that they encountered in the Mosul area of what is now Iraq. Although the Sultan was alerted about the possibilities and tried to retract the rights from the German railway company, he was too idle and ill informed to do much about it.

At about the same time, the head of Persian customs, General Antoine Kitabgi, hearing of the growing oil interest in the vicinity, resolved to see if he could let an oil concession into his country. After one or two false starts, he managed in 1900 to bring it to the attention of William Knox D'Arcy, an entrepreneur who had just returned to London from Australia where he had made a fortune in gold mining. He saw the possibilities and eventually secured the rights: a £20,000 signature bonus being the main inducement to the impoverished Shah.

However, the oil was located in the territory of the Bakhtiari tribe, and drilling permission had to be obtained from the Bakhtiari Khans in addition to the concession of the Shah; throughout their relation with the British, the Khans proved to be intelligent negotiators. After reaching an agreement with them, drilling commenced under appalling conditions: donkeys and mules were used to carry heavy equipment, no roads or no port facilities existed, pipes had to be laid and maintained over

mountainous territories with summer temperatures of over 40°C (110°F), and success was slow in coming. D'Arcy was becoming overextended but was encouraged when the British government started to take an interest in his project. Britain had always sought to deter Russian expansion into the Middle East in order to protect its trade route to India and the Far East, and oil was now a new factor. D'Arcy's immediate problems were, however, partly solved only when the old established Burmah Oil Company, based in Glasgow, agreed to take a share in his company.

In January 1908, after six long years of travail and disappointment, the third well was spudded at Masjid-i-Sulaiman (the Mosque of Solomon) in the Zagros foothills: it was pretty much the last throw of the dice. By May, the well was down to 1,000 ft without results, and a cable to suspend operations was received from London. The local manager, G.B. Reynolds, however, decided to continue until he received written confirmation. His initiative was rewarded around 4 a.m. on the morning of May 26th, when the well blew out throwing a jet of oil fifty feet into the air.

In world resource terms, it was a climactic event. The world contains no more than about 30 significant petroleum systems with the unique set of geological circumstances to yield prolific oil, and this discovery in 1908 had found the largest. It was undoubtedly a turning point in history that gave birth to the Bakhtiari Oil Company in 1909, which immediately became the Anglo-Persian Oil Company (APOC), later Anglo-Iranian Oil Company (AIOC) in 1935, and finally, British Petroleum (BP) in 1954.

4.5 World War I: From Horses to Air Fighters

Another turning point of a different sort was about to unfold in 1914: the First World War. Britain's last major naval engagement had been the Battle of Trafalgar in 1805, a critical action in the Napoleonic wars. At the height of Empire, the British Navy was the corner stone of Britain's power, but by the turn of the century it had become more of a symbol, with polished brass, holystoned decks, and smartly dressed crews, than an efficient fighting machine. It was just this pageantry what may have impressed the mercurial character of Kaiser Wilhelm II, himself a grandson of Queen Victoria and honorary admiral in the British Navy, when he came to take part in his favorite sport of yacht racing at Cowes. Thus, by the late 1890s, Germany had launched a full-scale challenge for naval supremacy against England. And so began the Anglo-German arms race, as each new German warship had to be matched by a British one to maintain the balance of power. Gradually the emphasis changed from the pomp and splendor of the marine band on the quarterdeck to actually making the thing a lethal weapon, able to outspeed and outgun its competitor. The maverick Admiral Fisher was dedicated to this transformation. He realized that his ships would have to convert to oil fuel to obtain the performance he expected, but his proposals met resistance. For the first time, but certainly not the last, the issue was security of oil supply: Britain had no oil of its own and was reluctant to rely on

American oil or even on Shell oil with its Dutch connection. What England needed was its very own controlled supply of oil. Winston Churchill, then the First Lord of the Admiralty, concluded that Persia was the answer for two reasons: first, Persia had oil to supply the Navy; and second, a British presence in the Middle East would deter the threat of German or Russian expansion in that area. Thus, the government took up a 51% interest in the Anglo-Persian Oil Company; the royal assent was granted 6 days before war broke out.

The war opened with cavalry charges, as plumed Uhlan lancers galloped into action, and steam engines to mobilize troops along the rails, but it ended with tanks and airplanes driven by internal combustion engines that ran on fuel refined from crude oil. Oil became the great new driving force of the world, changing the meaning of the term "horsepower." But in terms of oil resources, perhaps the most significant feature of the First World War was that Turkey backed the losing side. Had that country been an ally or neutral, events would have turned out very differently. Turkey controlled the area that we know today as the Middle East, inhabited by multiple, dispersed Arab tribes. Therefore, Britain had a motive to encourage Arab nationalism, which effectively resulted in the breakup of the Ottoman Empire into new administrations after the war, of which Iraq, Kuwait, and Saudi Arabia are among the most important in terms of hydrocarbon reserves. This breakdown was to have far-reaching economic and political consequences that have still to be played out. Not far below the surface was the division of the region's oil rights to the three victorious allies, Britain, France, and the USA. Thus, the West came to exert wide political control over the region, that otherwise may have remained under the sphere of the Asian powers.

4.6 The Development of the Middle East

The first solution for the division of oil rights among the victorious powers was to share them. This was achieved by the formation during the 1920s of the Iraq Petroleum Company, owned by Shell, BP, Compagnie Francais des Pétroles (CFP, now Total), Mobil, and Esso, not to forget the legendary Calouste Gulbenkian, who got 5% as payment for putting the deal together. This group had what is called an Area of Mutual Interest (AMI) agreement. This agreement prohibited any independent activity undertaken by any and each of the partners in the area of the former Ottoman Empire. It became known as the Red-Line Agreement, covering all the productive Middle East territories outside Iran and Kuwait, and was the cause of bitter conflict for a long time.

Chevron, which was not restricted by the Red-Line Agreement, took up rights in Bahrain in 1929 and struck oil 2 years later. This find, coming from Tertiary sandstones at fairly shallow depth, was itself comparatively modest, but it was nevertheless of immense importance, for Bahrain lay only a few miles off the coast of Saudi Arabia. Up to that point, interest in oil had been concentrated on the huge folded structures of the Zagros Foothills in Iran and Iraq that were obvious surface features

visible for miles around. Many geologists, seeking analogues for this familiar type of prospect, were then skeptical of the "platform province" to the west of the Persian Gulf, where the strata were largely obscured below sand dunes and, where seen, were flat-lying or, at most, shallow dipping. At first sight, it seemed to lack adequate structure to provide large traps for oil. So, the discovery of oil in Bahrain on the edge of this new province carried immense implications, which were at once recognized. Chevron began negotiating for rights in Saudi Arabia, partly through an eccentric and disaffected Englishman by the name of Harry St. John Philby. He was trading in Jidda and was, remarkably enough, no less than the father of the infamous British double agent, Kim Philby.

King Ibn Saud, himself a British protégé from the War, was desperately short of money, and Chevron clinched the deal in 1933 with delivery of 35,000 gold sovereigns that were shipped to Arabia in seven boxes aboard a liner that belonged to the famous Peninsular and Oriental Steam Navigation Company (P&O) based in London. It was a substantial and risky investment at the time, for no one could have imagined that Saudi Arabia would become the world's most prodigious oil province, with an ultimate endowment of about 300 billion barrels (Gb), 16% of the world's total. Chevron, when it later found that it lacked the resources to develop the area single handedly, brought in Texaco, followed in 1947 by Mobil and Esso, the latter two in flagrant disregard of the famous Red-Line Agreement. This grouping formed the Arabian–American Oil Company (ARAMCO), the emphasis being on the second word. In prewar days, Britain under its imperial mantle had successfully exerted an almost exclusive influence throughout the Middle East, but in its weakened and socialist postwar state had loosened its grip in favor of the USA. Ibn Saud, absolute ruler of a feudal and primitive country that was little more than his private estate, effectively became an American satrap. The further evolution of this remarkable and extraordinary situation has yet to unfold with or without the House of Saud. We will return to the issue in later chapters.

While rights to Saudi Arabia were being negotiated, BP and Gulf turned attention to Kuwait, which lay also on the western shore of the Persian Gulf and outside the Red-Line Agreement. They eventually decided to join forces rather than compete for the territory and signed a lease for it in 1933. This agreement completed the primary carve-up of the Middle Eastern oil provinces by European and US entities and began their fateful serious financial interests in the region.

Although by far the most important, the Middle East was by no means the only oil territory being explored and developed. Exploration had expanded throughout the world, such that most of the world's onshore oil basins, and many of the giant fields within them had been identified prior to the Second World War. Most progress was in the Western Hemisphere, especially in the USA itself, which was already becoming a fairly mature province, but also in Venezuela and Mexico, where impressive finds were made. Shell, which had rather missed out on the carve-up of the Middle East, took up a strong position in the Western Hemisphere, competing successfully with the major American companies. Generally smaller scale operations were also taking place in many other countries. By 1935, 25 were in production. The USA was producing 64% of the world's oil needs. The Middle East was barely

represented: Iran, the largest producer, was in seventh place with only 2%. The other countries were, in decreasing order: India (including Pakistan), Poland, Peru, Colombia, Argentina, Trinidad, Japan, Sarawak, Brunei, Iraq, Canada, Germany, Egypt, Sakhalin, Ecuador, France, Italy, Czechoslovakia, and Bolivia. What a different world it was!

Seven major companies, comprising Shell, BP, Esso, Mobil, Chevron, Texaco, and Gulf, later dubbed the "Seven Sisters" by Enrico Mattei, the Italian oilman who built ENI, had already brought world supply under their control. With most oil coming from the USA, security of the supply was not a serious issue, although one not altogether without concern. The Soviet Union was closed to foreign companies, and those with rights from the prewar days in Baku were formally expropriated in 1928. Mexico also ousted the foreign companies 10 years later as a nationalist movement, somewhat akin to the populist movements of South America, gained political ascendancy, believing that foreign influences were becoming excessive, perhaps with some justification. Its oil industry was placed in the hands of a state enterprise PEMEX, the first example of the state oil company that was later to be copied widely. These expropriations were harbingers of what was to come, for by 2010 most of the world's oil production and reserves reside within national oil companies.

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