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# Changing Concepts in the World's Mineral and Petroleum Development Laws\*

Northcutt Ely\*\*  
and  
Robert F. Pietrowski, Jr.\*\*\*

## INTRODUCTION

The modern systems of laws governing mineral and petroleum development are simply the current phase in the centuries-old evolution of relationships between the consumer, the ruler, the landowner, and the miner. In 1912, Herbert Hoover and his wife, Lou Henry Hoover, described these relationships in a footnote attached to their translation of Agricola's classic mining law treatise, *De Re Metallica*;<sup>1</sup> their comment is particularly apropos today to the problems faced today by the international mining and petroleum industries:

There is no branch of the law of property of which the development is more interesting and illuminating from a social point of view than that relating to minerals. Unlike the land, the minerals have ever been regarded as a sort of fortuitous property, for the title of which there have been four principal claimants—that is, the Overlord, as represented by the King, Prince, Bishop, or what not; the Community or the State, as distinguished from the Ruler; the Landowner; and the Mine Operator, to which class belongs the Discoverer. The one of these that possessed the dominant right reflects vividly the social state and sentiment of the period. The Divine Right of Kings; the measure of freedom of their subjects; the tyranny of the land-owning class; the rights of the Community as opposed to its individual members; the rise of individualism; and finally, the modern return to more communal view, have all been reflected promptly in the mineral title. Of these parties the claims of the Overlord have been limited only by the resistance of his subjects; those

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1. G. AGRICOLA, *DE RE METALLICA* (H. Hoover & L. Hoover transls. 1912).

of the State limited by the landlord; those of the landlord by the Sovereign or by the State; *while the miner, ever in a minority in influence as well as in numbers, has been buffeted from pillar to post, his only protection being the fact that all other parties depend upon his exertion and skill.*<sup>2</sup>

The miner's position vis-a-vis the overlord, the state, and the landlord has changed very little since the Hoovers wrote the above-quoted passage.

### I. EARLY SYSTEMS OF MINING LAW

In order to understand the changing concepts of the world's mineral development laws, it is useful to review the antecedents of those laws. We do not know when man first learned the use of metals, but we know that mining dates back at least to the Neolithic age. Durant writes:

[I]n the ruins of a neolithic mine at Brandon, England, eight worn picks of deerhorn were found, on whose dusty surfaces were the finger-prints of the workmen who had laid down those tools ten thousand years ago. In Belgium the skeleton of such a New Stone Age miner, who had been crushed by falling rock, was discovered with his deerhorn pick still clasped in his hands; across a hundred centuries we feel him as one of us, and share in weak imagination his terror and agony. Through how many bitter millenniums men have been tearing out of the bowels of the earth the mineral bases of civilization!<sup>3</sup>

Very little is known of mining in the ancient civilizations which predated Greece. We know, however, that in ancient Egypt mines were the property of the pharaoh, and mining was a government monopoly. The Egyptians operated mines in Arabia and Nubia, and worked these mines with slave labor. It is also known that oil pitch was mined in ancient Babylonia and that silver was minted into coins in Assyria. But it is not until the Greek civilization that we have any record of mining laws. A mining industry flourished in ancient Greece from 700 B.C. to 200 B.C. Mineral ownership was governed by the "regalian system," that is, minerals were considered to be the property of the state, regardless of who owned the overlying surface.<sup>4</sup> Mining rights, however, were

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2. *Id.* at 82 (emphasis added).

3. W. DURANT, 1 *THE STORY OF CIVILIZATION: OUR ORIENTAL HERITAGE* 100 (1954).

4. A distinction is often made between ownership of minerals by the state and control of exploration and production by the state. Where this distinction is made, the former is referred to as the "dominal system;" the latter, the "regalian system."

granted to private individuals. The area of the mining right was defined by vertical boundaries, and the term of the right was from 3 to 10 years, depending on whether the mine had been worked previously. The miner was required to meet certain work obligations and to pay the state a royalty of one twenty-fourth of the net profits from his operation; the surface owner received nothing. The Greeks had an elaborate (for the times) mining administration. A director of mines considered applications from individuals seeking mining rights and determined where such individuals might prospect for ore. Matters such as location with reference to the direction and extent of veins and the proper distance between different claims in the same area were governed by regulations.

In early Roman law, a fundamentally different form of mineral ownership prevailed. Ownership of the surface carried with it the ownership of any minerals beneath the surface. This theory of mineral ownership is generally known as the "accession system." This term is derived from the concept of minerals "acceding" to the surface owner upon discovery. Notwithstanding the fact that the accession system existed under early Roman law, the legacy of the Roman Empire for mining systems in the modern world was not the accession system, but rather the regalian system. This resulted from the fact that the great majority of mines and known mineral deposits outside of Italy were acquired by conquest, and hence became the property of the Republic, and later the Empire. Due to this extensive state ownership of mines, the underlying theory that the state holds primary control over all mineral resources became accepted. Many of the Roman Empire's state-owned mines were worked by private individuals and companies operating under licenses granted by the state. Other mines were worked directly by state enterprises. As in Greece, there was a formal administrative system to handle mining matters. Mining districts were established and placed under the authority of an official called the *Procurator Metallorum*, who was responsible for the granting of mining rights within his district.

The fall of the Western Roman Empire in the fifth century A.D. occasioned the breakdown of central government in Western Europe with an accompanying breakdown of European mining law systems. During the Middle Ages, Europe was governed by hundreds of feudal lords who generally claimed ownership of the minerals within their respective areas of authority. Warfare among these feudal lords was common, and was often caused by disputes over mines. Because of this deterioration in mining law and administration, mining as an industry was generally neglected during the Middle Ages.

By the 12th century, however, mining "communities" had developed in Germany; by the 13th century, in England. The customs that evolved in the mining communities of these two nations would play an important part in the mining law of the United States and, ultimately, in the laws of numerous other modern nations.

The customs of the German mining communities, confirmed in the communities' charters, gave rise to the concept of "free mining," under which a miner was "free" to enter the land of another to prospect for or exploit mineral resources. The system of mineral ownership was regalian, and the miner could acquire a lease from the overlord to develop an ore body by compliance with certain rules. These rules provided several incentives for discovery. First, the discoverer was given a right to work the ore body which was superior to the rights of anyone else. Second, the discoverer was granted a larger area within which to exercise his mining rights than were other miners.<sup>5</sup> In return for the right to mine, the miner paid a tribute or royalty to the Crown and, if he was operating upon private lands, he paid an additional tribute to the landlord. He was also obligated to work diligently and continuously; failure to do so could result in the forfeiture of his mining right.

Another important development in mining law originating in these early German mining communities is the "apex" concept of title. Under the apex concept, the miner is permitted an "extralateral right" to pursue a vein in its downward dip, regardless of the surface boundaries. This concept flows logically from the idea that the surface and mineral estates are two quite different things.

Customary rules of mining law also developed in certain English mining communities. In England, the general rule, under the common law, was that minerals were the property of the surface owner, except for gold, silver, and minerals beneath navigable waters (including the seas), all of which belonged to the Crown. In certain parts of England, however, such as Cornwall, Derbyshire, Devon, and the Forest of Dean, ownership of *all* minerals was considered to vest in the Crown, subject to long-established customs which created certain rights in the miner. As to the origin of these customs, Lindley writes:

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5. A discoverer was awarded a "head meer," which measured approximately 294 feet along the length of the vein by 42 feet. Other miners were granted a "regular meer," which measured 84 feet by 42 feet.

These customs undoubtedly had their origin during the Roman occupation; but they were recognized and established by acts of parliament upon the theory that they existed by virtue of some antecedent grant or concession made by the crown.<sup>6</sup>

These mining communities developed unique rules of mining law. For example, in Cornwall, tin miners were given a free right of entry. A "free tinner" could establish his "bound" by marking an area (usually about an acre) at the four corners with stones or pieces of turf. This bound was then announced in the stannary courts;<sup>7</sup> if no objection was heard, the court issued a writ of possession. The miner was then entitled to search for and extract ore within the area of his bound, subject to certain regulations. He was required to maintain continuous operations, to renew his bound annually, and to pay a royalty called a "dish" or "toll" to the owner of the surface. Tin bounds could be sold or demised, and were liable for the payment of debts. Similar customary rules developed in Devon (tin), in Derbyshire (lead), where the apex concept was recognized, and in the Forest of Dean (coal and iron).

Until the end of the 18th century, the civil law of Spain was similar to that of common law England. It was stated by Gamboa as follows:

By the civil law, all veins and mineral deposits of gold or silver ore, or of precious stones, belonged, if in public ground to the sovereign, and were part of his patrimony; but if in private property, they belonged to the owner of the land, subject to the condition, that if worked by the owner, he was bound to render a tenth part of the produce to the prince as a right attaching to his crown; and if worked by any other person, by consent of the owner, the former was liable to the payment of two-tenths, one to the prince and one to the owner.

Subsequently, it became an established custom in most kingdoms, and was declared by the particular laws and statutes of each, that all veins of the precious metals, and the produce of such veins, should vest in the crown, and be held to be a part of the patrimony of the king or sovereign prince.<sup>8</sup>

Then, on May 23, 1783, King Charles III of Spain issued a royal ordinance that declared *all* mines to be the property of the Crown,

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6. C. LINDLEY, 1 A TREATISE ON THE AMERICAN LAW RELATING TO MINES AND MINERAL LANDS 9 (3d ed. 1914).

7. The mining communities were chartered as corporations called "stannaries" and granted legislative, executive, and judicial powers. The courts of the communities were known as "stannary courts."

8. F. GAMBOA, COMMENTARIES ON THE LAWS OF MINING 15 (1830).

without regard to the type of mineral or the location thereof. This ordinance brought nearly all of the Spanish colonies in America under the regalian system.

Under this later Spanish system, a subject of the Crown could "denounce"<sup>9</sup> a mine upon the property of any individual, provided that adequate compensation was paid to the surface owner. A grant by the Crown vested in the grantee the right to possession and occupation, with a further right to dispose of the grant on the same two conditions as those under which it had been received: (1) payment to the Crown of a royalty of one-fifth of the minerals produced, and (2) compliance with relevant regulations prescribed by ordinance. Failure to comply with these regulations resulted in forfeiture of the property, after which it became subject to denouncement. Further, the Spanish system protected the surface owner from potential damage to his property to the extent that he was entitled to compensation for its use. Also, judicial proceedings were provided to resolve conflicting claims as to priority of discovery or registration.

In France, a somewhat different theory of mineral ownership developed. Prior to the French Revolution, the accession system prevailed. During the Revolution, however, the landowners were forced to renounce their rights to minerals beneath their lands to the state, and the law of July 28, 1791 reserved to the state the right to regulate mineral exploration and production. This right was reaffirmed in the mining law of 1810 and incorporated in the Napoleonic Code. Under the French system, ownership of the mineral deposit does not vest in the surface owner; rather, the deposit is *res nullius* until discovered and reduced to effective possession. The state retains the absolute right to determine who shall develop the mineral deposit. A vestige of the landowner's former right to subsurface minerals remains in the form of a right to a royalty.

## II. MINING AND PETROLEUM LEGISLATION IN THE UNITED STATES

Much of the world's mineral wealth has been developed by American companies operating in foreign countries under agreements with the host governments. Most of these agreements reflect some aspect of U.S. mining or petroleum legislation, because the terms were bargained for by American companies accustomed to operating under that legislation. Therefore, before considering

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9. A "denouncement" is a type of tenure similar to the American mining claim.

the various forms these agreements may take, let us first look briefly at mining and petroleum legislation in the United States.

Systems of mineral ownership in the United States are rather complicated and not at all uniform. As a general rule, the mineral estate is part of the surface estate and passes with it, unless and until severed. Title to minerals may be held by the federal government, a state government, or an individual, initially as a consequence of ownership of the surface.

When the Thirteen Original Colonies achieved independence from England in 1776, they individually took title to large tracts of public land, some within their established boundaries but most of it far to the west. The colonies ceded to the federal government upon the signing of the Articles of Confederation all lands claimed by them west of their established borders. These lands were the beginning of what came to be known as the public domain. The Ordinance of 1785,<sup>10</sup> the first land legislation adopted by the Continental Congress, provided for the fee simple sale of lands within the public domain. Following the enactment of the Federal Constitution in 1789, Congress reaffirmed in a 1796 act the principle that public domain could be transferred in fee simple.<sup>11</sup> This act made no provision for the reservation of mineral rights to the federal government, and Congress made no change in this policy until the Pre-emption Act in 1841.<sup>12</sup> Between 1796 and 1841, vast areas of land were added to the public domain as a consequence of territorial acquisitions by the United States, namely, the Louisiana Purchase of 1803 and the Treaty with Spain of 1819. During this period, the policy of the United States was to sell public land to individuals for revenue, and numerous sales were made without reservation of minerals to the federal government.

Reservation of minerals to the federal government commenced with the Pre-emption Act of 1841, which provided that "no lands on which are situated any known salines or mines shall be liable to entry under and by virtue of the provisions of this act."<sup>13</sup> It is important to note that the reservation provided for in the Pre-emption Act was not simply a reservation of minerals or mines, but rather a reservation of lands on which mines or miner-

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10. 28 JOURNALS OF THE CONTINENTAL CONGRESS 375 (1785).

11. Act of May 18, 1796, ch. 29, §§ 1-12, 1 Stat. 464 (codified in scattered sections of 30 U.S.C.).

12. Act of Sept. 4, 1841, ch. 16, §§ 1-17, 5 Stat. 456 (codified in scattered sections of 30 U.S.C.).

13. *Id.* § 10.



als exist. Thus, Congress rejected the separation of the mineral estate from the surface estate that characterized European systems of mineral development.<sup>14</sup> Although the severance of the mineral estate from the surface estate was common on nonfederal lands, Congress refused to recognize the severance of the two estates until 1916, when it passed the Stock-Raising Homestead Act.<sup>15</sup>

Subsequent to the Pre-emption Act of 1841, more land was added to the public domain by the Treaty of Guadalupe Hidalgo with Mexico in 1848, the Gadsden Purchase from Mexico in 1853, the Northwest Compromise with Britain of 1846 and 1872, and the purchase of Alaska from Russia in 1867. Congress granted large portions of this public domain to states and to railroads as a bonus for construction of their lines. Lands known to contain minerals at the date of the grant were excluded and remained under federal ownership, but if minerals were subsequently discovered, the grantee was recognized as holding title to both the surface and the minerals.

Notwithstanding the reservation of mineral lands to the federal government in 1841, Congress failed to pass any general legislation for the development of the reserved minerals until 1866. Consequently, when gold was discovered on federal lands in California in 1848, there was no positive law to regulate the thousands of miners who flocked to the Sacramento Valley. These miners occupied federal land technically as trespassers but with federal acquiescence. The miners themselves soon recognized the need for some form of regulation. Mining districts were organized and local rules were adopted. These rules reflected customs reminiscent of those developed centuries earlier in the mining communities of England and Germany, but efforts to trace a direct line of descent have not been altogether successful. The right of property in mines was made dependent upon discovery and development; discovery was the source of the right, but its continuance was conditioned upon working and developing the mine. The rules adopted by the California miners also recognized the apex principle, that is, the right to work a vein down the dip to an indefinite depth without regard to lateral surface boundaries.

In 1866, Congress enacted the first general mining legislation

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14. The Continental Congress, however, recognized the mineral estate and surface estate as separate estates. 28 JOURNALS OF THE CONTINENTAL CONGRESS 375, 378 (1785).

15. 43 U.S.C. §§ 291-301 (1970) (originally enacted as Enlarged Homestead Act of 1916, ch. 9, §§ 1-11, 39 Stat. 862).

in the United States.<sup>16</sup> This act announced three important principles: (1) all mineral lands in the public domain should be free and open to exploration and occupation; (2) rights to mineral deposits in the public domain acquired under local rules, where there was apparent acquiescence by the government, should be recognized and confirmed; and (3) title to these mineral deposits might ultimately be obtained upon compliance with certain statutory procedures. In 1872, Congress passed additional mining legislation dealing with the patenting of lode and placer mining claims.<sup>17</sup>

The Acts of 1866 and 1872 are still in effect. These, together with the Mineral Leasing Act of 1920,<sup>18</sup> which governs the acquisition of rights to nonmetallic minerals on the public domain, still form the basic federal mineral legislation in the United States. Under the 1866 and 1872 Acts, any person may enter upon public land to explore for minerals. Upon discovery (valid discovery is the basis of mineral rights), the miner is required to "locate" his discovery by marking the location on the ground so that its boundaries can be easily traced. The precise manner of location is prescribed by statute and differs for lodes and placers. The number of mining claims that may be located by an individual, corporation, or association is unlimited, provided each location contains a discovery. Once a valid discovery and location have been made, the miner has acquired a vested interest in the mining claim and may extract minerals therefrom. If he wishes to obtain title to the lands covered by his location, the miner must seek a patent from the United States. Patent applications are processed by the Bureau of Land Management of the Department of the Interior. A payment is required to secure the patent, but it is not related to the mineral value of the lands. There is no royalty payment requirement. In the event of an adverse claim of right by another party, the respective rights of the claimants may be determined in any federal or state court having competent jurisdiction. As a general rule, priority of discovery governs as between claimants. After the miner has complied with the procedural requirements and has paid the purchase price for his claim, he receives a certificate which has the effect of vesting equitable title

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16. Act of July 26, 1866, ch. 262, §§ 1-11, 14 Stat. 251 (codified in scattered sections of 30 U.S.C.).

17. Act of May 10, 1872, ch. 152, §§ 1-16, 17 Stat. 91 (codified in scattered sections of 30 U.S.C.).

18. Act of Feb. 5, 1920, ch. 85, §§ 1-38, 41 Stat. 437 (codified in scattered sections of 30 U.S.C.).

to the property in him. Subsequent issuance of the patent vests complete title, legal and equitable, in the miner and relates back to the inception of the right, that is, to the date of discovery and location. The patent conveys title not only to the mineral estate but to the surface estate as well.

The location system provides the individual miner with an incentive to undertake exploration activities. This system was largely responsible for the development of the vast mineral wealth of the Western United States, and it remains the basis of American mining law relating to hard minerals. Outside of the United States, however, the location system is seldom encountered today.

Oil, gas, and other nonmetallic minerals located on federal lands are regulated by the Mineral Leasing Act of 1920. On the public domain, such minerals are not subject to location and patent and may be developed only under a lease. If land lies within the known geologic structure of a producing oil or gas field, a lease may be awarded only by competitive bidding. Otherwise, no competitive bidding is required, and the lease will be issued to the first applicant. Competitive leases may be issued for areas not exceeding 640 acres and for a primary term of 5 years and so long thereafter as oil and gas is produced in paying quantities. The primary term will not be extended unless at the time of its expiration actual drilling operations are being conducted, in which case the term may be extended for 2 years and as long thereafter as oil and gas is produced in paying quantities. Royalties payable to the United States under competitive leases may not be less than one-eighth of the amount or value of production, and may be higher if specified in the notice of sale and the lease. The annual rental is \$2 per acre prior to discovery, unless a different rate is specified in the lease. Special royalty and rental provisions apply to leases in Alaska. Bids are on a cash bonus basis, and leases are awarded to the highest qualified bidder.

Noncompetitive leases, which are issued for lands that do not lie within the known geologic structure of a producing field, may be acquired by filing an application with the Bureau of Land Management. A noncompetitive lease grants an exclusive right to conduct operations in an area not exceeding 2,560 acres for a primary term of 10 years and as long thereafter as oil and gas is produced in paying quantities. Absent discovery in commercial quantities, the primary term will not be extended unless actual drilling is taking place at the time of expiration, in which case an extension may be allowed for 2 years and as long thereafter as oil

and gas is produced in paying quantities. The federal government receives a one-eighth royalty on a noncompetitive lease, payable on any oil or gas production under the lease. Annual rentals for noncompetitive leases are \$0.50 per acre. Special provisions apply to noncompetitive leases issued prior to September 2, 1960.

Under both competitive and noncompetitive leases, the lessee acquires ownership of the mineral production of the lease. The lessee's rights to the surface area are limited, however, to the use of the area necessary to his mineral operations, and the United States reserves the right to dispose of the remaining surface area by sale, lease, or other manner. The Secretary of the Interior is authorized to provide in the lease for due diligence and the prevention of waste.

The Mineral Leasing Act does not apply to federal lands acquired after February 25, 1920. In 1947, however, Congress enacted the Acquired Lands Act,<sup>19</sup> which authorized the Secretary of the Interior to lease "acquired lands," that is, lands acquired by the United States not subject to the Mineral Leasing Act, under the same terms and conditions as provided for in the Mineral Leasing Act. The Acquired Lands Act applies only to those minerals covered by the Mineral Leasing Act, that is, nonmetallic minerals. Nevertheless, leases of mining rights for hard minerals on acquired lands may be obtained if provided for in either the statute under which the particular lands were acquired or the statutes applicable to the federal agency having jurisdiction over the particular lands. The location laws do not apply to acquired lands.

With respect to offshore mineral development, the Submerged Lands Act of 1953<sup>20</sup> vests mineral jurisdiction in seabed areas beneath the territorial waters of the United States in the adjacent individual state. Beyond these territorial waters, the jurisdiction is federal<sup>21</sup> and mineral development is regulated by the Outer Continental Shelf Lands Act of 1953.<sup>22</sup> Under that Act, leases in offshore areas beyond United States territorial waters are awarded by competitive bidding. The Secretary has authority to either (1) fix the royalty at not less than 12.5 percent and

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19. 30 U.S.C. §§ 351 & note, 352-59 (1970) (originally enacted in 1947 as Mineral Leasing Act for Acquired Lands ch. 513, §§ 1-10, 61 Stat. 913).

20. 43 U.S.C. §§ 1301-1303, 1311-1315 (1970) (originally enacted in 1953 as Submerged Lands Act ch. 65, §§ 1-11, 67 Stat. 29).

21. *United States v. Maine*, 420 U.S. 515 (1975).

22. 43 U.S.C. §§ 1331-43 (1970) (originally enacted in 1953 as Outer Continental Shelf Lands Act ch. 345, §§ 1-17, 67 Stat. 462).

accept bids on the cash bonus, or (2) fix the cash bonus and accept bids on the royalty. Leases are awarded to the highest qualified bidder. Leases may be awarded for an area not exceeding 5,760 acres and for a term not exceeding 5 years and as long thereafter as oil and gas is produced in paying quantities, or for as long thereafter as drilling or other operations approved by the Secretary are conducted.

With respect to seabed areas that are beyond the jurisdiction of the United States and other nations, there is presently pending in both houses of Congress legislation that would permit and regulate mining operations by United States companies.<sup>23</sup> The jurisdictional bases of this legislation are the freedom of the seas doctrine and the universally recognized principle that a sovereign state may regulate the activities of its nationals on the high seas.

Under the Multiple Use Acts of 1954<sup>24</sup> and 1955,<sup>25</sup> the development of mineral resources on public lands may go forward on the same tract of land under both the mining laws of the United States and the Mineral Leasing Act. Thus, the Acts opened up some 60 million acres of public lands previously under oil and gas leases to location for hard minerals. At the same time, the Acts authorized operations for leasable minerals on lands which previously had been opened to location under the mining laws.

Although most federally owned land is subject to mineral entry and development under the various laws described above, certain types of federal land are not. For example, Indian reservations may not be entered under the general mining and leasing laws; minerals on Indian lands must be developed under a special system of federal laws relating to such lands. Other types of federal land subject to restrictions or special provisions relating to mineral development include military reservations, national parks, national forests, reclamation withdrawals, and reservations made under the Federal Power Act.

The methods of acquiring mineral interests in state lands are prescribed by the respective state legislatures.<sup>26</sup> In most cases,

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23. S. 713, 94th Cong., 2d Sess. (1976) (reported by the Oceanography Subcomm. of the House Comm. on Merchant Marine and Fisheries on March 16, 1976); H.R. 11,879, 94th Cong., 2d Sess. (1976) (reported by the full Senate Interior Comm. on March 18, 1976).

24. 30 U.S.C. §§ 521 *et seq.* (1970) (originally enacted as Multiple Use Law of 1954, ch. 730, §§ 1-13, 68 Stat. 708).

25. 30 U.S.C. §§ 611 *et seq.* (1970) (originally enacted as Act of July 23, 1955, ch. 375, §§ 1-7, 69 Stat. 367).

26. It should be noted that none of the federal mining legislation in the United States applies to areas within Texas. Unlike other territorial acquisitions of the United States,

state lands have been disposed of without any reservation of minerals. In some instances, however, states have granted leases for lands believed to contain valuable minerals.

On privately owned lands, ownership of the mineral estate vests in the owner of the surface estate, unless and until severed. Thus, a prospective mineral developer on privately owned land must negotiate with the private owner for any rights he wishes to obtain. Transfer of mineral rights and titles among private owners is accomplished within the legal framework of each state relating to property titles, sales and conveyances, leases, licenses, and contracts.

Most of the onshore oil and gas in the United States has been discovered on private lands and, hence, is not subject to the federal Mineral Leasing Act. Oil and gas operations on nonfederal private lands are, however, regulated by state laws. Authority to regulate such operations is derived from the states' police power. State regulation is usually based on the concept of "prorationing," under which an administrative determination is made concerning the quantity that a field may produce per day. That quantity is then apportioned among the wells in the particular field.<sup>27</sup> States, as an exercise of their police powers, may also regulate the spacing and drilling of wells. The purpose of such state legislation is to prevent waste and protect the correlative rights of the common owners of an oil and gas pool.

### III. THE DEVELOPMENT OF PETROLEUM CONCESSION AGREEMENTS

Most of the world's proved petroleum reserves have been discovered by companies operating under some form of petroleum concession. A concession is essentially a contractual agreement between a company and a government that confers certain rights and corresponding obligations upon both parties. A concession is also a document of title against which money can be borrowed. But most of the concessions in force today bear little resemblance to those which opened up the vast oil fields of the Middle East, North Africa, and Latin America during the first half of this century. And, as we shall see, the present trend is toward quite

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the acquisition of the Republic of Texas produced no federal public domain. When Texas entered the Union, it retained title to all the public land within its boundaries. Consequently, the vast mineral resources of that state—including the oil and gas resources—have been developed entirely under state law.

27. Of the major oil-producing states in the United States, only California has no prorationing system.

different relationships between host country and foreign investor.

The first successful petroleum concession in the Middle East was the famous D'Arcy Concession, which was granted by Persia to William Knox D'Arcy, an Englishman, in 1901. Under the terms of this concession, D'Arcy was given the exclusive right to explore for and exploit the petroleum resources of Persia, except for five northern provinces, for a period of 60 years. D'Arcy was also granted the exclusive right to lay pipelines in the concession area, and was given exemption from all Persian taxes. In return, D'Arcy agreed to form an exploitation company within 2 years, and to pay the Persian government a royalty of 16 percent of the company's profits. D'Arcy also paid a cash bonus of £20,000, and agreed to give the government a £20,000 interest in the exploitation company. The parties further agreed that, upon expiration of the concession, title to all of the company's immovable property would pass to the government without charge.

Although these terms are modest by present-day standards, they must be judged in the context of the investment climate that prevailed in Persia in 1901. It was not known at that time whether marketable quantities of oil even existed in Persia. The Persian government was weak, corrupt, and heavily in debt. Large parts of the country were controlled by local tribal chiefs who did not recognize the government's authority. In nearby Mesopotamia, concessions owned by Germany's Deutsche Bank had recently been nationalized by the Turkish government without compensation. Consequently, Western financiers were not interested in risking capital in Persian oil ventures. It is doubtful that concession terms significantly more favorable to the government would have induced anyone to attempt to develop Persia's petroleum resources. Indeed, even under the terms of the 1901 concession, D'Arcy's operations were plagued by financial crisis on more than one occasion. D'Arcy spent over £200,000 of his own money on exploration efforts without success. When he was unable to raise additional capital, he formed a joint venture with Burmah Oil Company, which agreed to provide the capital required to continue operations under the concession agreement. Oil was finally discovered in 1908, and a new exploitation company called Anglo-Persian was formed to develop and produce the discovery. Even the capital resources of Anglo-Persian proved insufficient to exploit Persia's oil, however. It was not until the British government agreed to provide £2,000,000 in return for a majority interest in Anglo-Persian that the company was able to raise the capital necessary to develop the Persian resources.

In the meantime, a revolution had occurred in Turkey and several companies had begun to negotiate concession rights with the new government. These negotiations were terminated by World War I, which resulted in the dissolution of the Turkish Empire. Following the war, the companies began negotiating with the newly formed government of Iraq, which now had jurisdiction over the area of interest. In 1925, Iraq entered into a concession agreement with a consortium called the Turkish Petroleum Company (later, the Iraq Petroleum Company), owned by an American group, Anglo-Persian, Shell, CFP (French), and the Gulbenkian interest. This concession agreement is of particular importance because it served as a model for other concession agreements in the Middle East and elsewhere. As amended in 1931, the concession granted the company the exclusive right to explore for and exploit petroleum resources in an area of approximately 35,000 square miles for a period of 75 years. In addition, the company was exempted from all Iraqi taxes. The company agreed to pay a royalty of 4 shillings gold on each ton (approximately 7 American barrels) of oil produced, with a minimum annual royalty of £400,000 gold. (After 1932, payments were made in sterling, based on the prevailing price of gold in the London market.) The company also agreed to make tax commutation payments of £9,000 gold per annum until exports began, and thereafter payments of £60,000 gold for the first 4 million tons of export, and £20,000 gold for each additional million tons of export. The company agreed to commence exploration within 8 months and to build a pipeline system with a capacity of not less than 3 million tons per year. The company further agreed that the pipeline and all other immovable property would be surrendered without charge to the government upon termination of the concession.

Subsequent to the 1925 agreement between Iraq and the Turkish Petroleum group, there was a proliferation of concession agreements in the Middle East and north Africa. These concessions were generally quite simple and were characterized by the following terms:

- (1) The rights granted were exclusive, and usually included the right to explore for, develop, produce, transport, refine, sell, and export petroleum and natural gas.

- (2) The principal form of compensation to the host government was a royalty, which was usually fixed at 4 shillings gold or 3 rupees per ton of crude produced and saved. Some of the concessions also provided for rents, bonuses, and tax commutation payments. The company was usually exempt from all taxes.



(3) The concession area was generally quite large, sometimes covering the entire country.

(4) The duration of the concession was typically from 60 to 75 years.

(5) The company was allowed to import into the host country all machinery, materials, and other property necessary to its petroleum operations free of import duties and restrictions.

(6) Failure to meet contract obligations resulting from the occurrence of *force majeure* was not considered a breach of contract.

(7) Disputes were settled by arbitration. One arbitrator was appointed by the government and one by the company. The two appointed arbitrators would attempt to agree on a third. Failing agreement, the third arbitrator was selected by a designated individual, typically a judge on the World Court. Arbitral decisions were by majority vote.

These conclusions did not make provision for production levels or prices of crude oil. By implication, the rights to control production and prices vested in the companies. This situation—company control of production and prices—would, in the years to come, cause such discontent among oil-producing nations as to ultimately bring about an end to the concession system.

#### IV. JOINT VENTURE AND PARTICIPATION AGREEMENTS: THE DEMISE OF THE CONCESSION SYSTEM

Almost from the start, the governments of the oil-producing countries sought to improve upon the terms in their concession agreements. Persia, for example, became disenchanted with the royalty provision in its agreement with Anglo-Persian since the royalty, although a generous (for the times) 16 percent, was tied to the company's profits. If the company was unable to make a profit on its Persian operations, the government received no royalty income. In Iraq, the government attempted to insert a 20 percent participation provision in its concession agreement with the Turkish Petroleum Company. The host governments, however, lacked the bargaining power necessary to impose more favorable terms on the companies. During the 1930's, there was a surplus of oil on the world market, so a threat to curtail production lacked much of the force it would have today. Furthermore, there were relatively few companies holding oil concessions in the 1930's, and competition between those companies for concessions was minimal. Consequently, the governments were unable to ob-

tain better terms by playing the companies off against one another. Also, these companies controlled downstream operations, and a government that nationalized its concessions ran the risk that it would be unable to market its oil.

The first successful government demand for greater revenues from an existing concession came not in the Middle East but in Venezuela. Company-government relations in that country began to deteriorate in 1936 following the death of General Juan Vicente Gomez, who had originally granted the concessions to the companies. During World War II, the government's bargaining position improved as the allies became increasingly dependent on Venezuelan oil, and in 1943, Venezuela began imposing taxes in addition to royalties on the companies. In 1948, a new income tax law was passed which taxed the companies' profits at the rate of 50 percent.

The other oil-exporting nations quickly followed Venezuela's example. In 1950, Saudi Arabia became the first Middle Eastern government to implement a 50-50 scheme. Within two years, the 50-50 profit-sharing principle had been grafted onto almost all of the world's oil concession agreements.

The 50-50 profit-sharing scheme was implemented in various ways, but the result was essentially the same in each concession arrangement. Gross income was generally computed on "posted prices," that is, prices published by the companies for f.o.b. sales in single-cargo lots. In a few countries such as Libya and Algeria, however, gross income was based on realized prices. The company's profit was determined by subtracting production costs from gross income. Fifty percent of the profit was then paid to the government. Any royalties, rents, or other exactions were credited against the 50 percent payment, except in Venezuela, where royalties were treated as an expense rather than a credit against taxes. In some states, such as Saudi Arabia, the companies were allowed to deduct taxes paid to other governments for purposes of calculating their taxable profits.

During the 1950's, a number of nations enacted comprehensive petroleum legislation. This legislation prescribed the terms upon which various rights relating to hydrocarbon resources would be granted. Many of these petroleum codes provided for concession agreements—sometimes called an "exploitation license" or a "lease"—only in the production stage of operations, and limited their duration to 30 or 40 years. In such cases, separate rights were defined and required for surface reconnaissance ("reconnaissance permits") and for exploration ("exploration licenses").

A new method of royalty payment that allowed the government to take its royalty in "cash or kind" was introduced in the Middle East in 1952. In February of that year, Iraq and the Iraq Petroleum Company renegotiated their concession agreement to reflect the 50-50 profit-sharing principle. The new agreement also gave the government the option of taking either 12.5 percent of the net oil production, or its cash equivalent based on posted prices. This form of royalty soon became standard throughout most of the world.

Several other provisions became commonplace in petroleum concession agreements during the 1950's. These included relinquishment provisions, whereby the company agreed to give up unexploited parts of the concession area after a stated period of time, and provisions requiring that the company make minimum expenditures on operations. Also, bonus provisions became more substantial and more sophisticated during this period. Typically, the newer provisions provided that bonuses be paid (1) at the time the concession agreement was signed, (2) when commercial discovery of oil occurred, and (3) when the company reached prescribed levels of production.

The first break from the 50-50 profit-sharing principle occurred in 1957, when ENI, the Italian state oil company, formed a joint company with Iran's NIOC and agreed to pay a 50 percent tax on ENI's one-half share of the profits. This arrangement resulted in an effective 75-25 profit-sharing, with Iran taking the larger share. In return, the government agreed to reimburse one-half of the exploration and development costs in the event that exploration was successful, and to forego the traditional cash bonus on the signing of the concession. Shortly thereafter, a Japanese organization operating as the Arabian Oil Company signed a joint venture agreement with Kuwait and Saudi Arabia. In 1958, Standard of Indiana signed a joint venture agreement with Iran, and in 1961, Shell entered into a joint venture agreement with Kuwait. A 1965 agreement between Saudi Arabia and a subsidiary of ERAP, a French state-owned concern, introduced government participation in intergrated operations, including refining, transportation, and marketing.

The 50-50 profit-sharing principle was further eroded when the world market prices for refined petroleum products plummeted in 1957, and the oil-exporting nations opposed a corresponding adjustment in posted prices. At first, the companies agreed to keep posted prices at existing levels, and sales to distributors were made at artificially high prices, but in 1960, the companies lowered posted prices to reflect world market conditions. As a

result of this action, a meeting of oil-exporting nations convened in Baghdad on September 5, 1960. This meeting gave birth to OPEC, the Organization of the Petroleum Exporting Countries. Article 2(A) of the Organization's statute sets forth the reason for creating OPEC:

The principal aim of the Organization shall be the coordination and unification of the petroleum policies of Member Countries and the determination of the best means for safeguarding their interests, individually and collectively.

Within 15 years, relentless pursuit of this objective by OPEC's members would totally and unilaterally refashion the legal relationships between oil companies and governments of producing nations.

In 1964, OPEC succeeded in its efforts to have royalties treated for tax purposes as an expense rather than a credit. As a result, the effective profit-sharing ratio increased from 50-50 to 58-42 in the governments' favor. Nevertheless, the producing governments still recognized in principle 50-50 profit-sharing. Then, in 1970, Libya unequivocally abandoned the 50-50 concept by declaring a 55 percent tax and threatening to nationalize any company that did not cooperate. At the same time, Libya demanded that the companies increase their posted prices. When the companies attempted to negotiate these demands, the government imposed production cutbacks and ordered them to increase exploration activity or surrender unexplored parts of their concessions. In September of 1970, the companies capitulated to the government's demands and, in December of 1970, representatives of the OPEC nations convened in Caracas to formulate new policies based on the Libyan experience. In the same month, legislation was introduced in Venezuela to increase the tax rate to 60 percent and give the government authority to set tax reference prices unilaterally. The Caracas conference was followed by the Teheran and Tripoli agreements of 1971, whereby companies operating in the Middle East and north Africa—threatened with joint reprisals by OPEC members—agreed to a 55 percent tax rate and substantially increased posted prices.

After effectively discarding the 50-50 principle, the oil-producing nations moved to achieve participation interests in existing concession arrangements. At its September 1971 conference in Beirut, OPEC passed a resolution that called upon all members to "take immediate steps towards the implementation of effective participation in existing oil concessions." On January 1, 1973, Saudi Arabia, Abu Dhabi, and Qatar signed agreements

with their concessionaires whereby the governments acquired a 25 percent interest in the operations of the concessionaires, with options to increase this interest to a maximum of 51 percent by 1982. By 1974, however, these three governments and others had exacted a 60 percent interest from their concessionaires. Aramco recently acceded to Saudi Arabia's demand for a 100 percent takeover, and Venezuela is in the process of implementing the complete nationalization of all foreign petroleum and mining investments. The list is constantly lengthening.

## V. WORK CONTRACTS AND PRODUCTION-SHARING AGREEMENTS

Concession agreements are being replaced by "work contracts" and "production-sharing contracts." Under both of these new government-company relationships, the company, rather than being a property owner, is simply a contractor providing the capital and expertise necessary for exploration, development, and production of the host country's oil reserves. Under the work contract, the company is granted the right to purchase a certain percentage of the oil produced. Under production-sharing contracts the company receives a percentage of the oil produced, rather than the right to buy such a percentage, as under the work contract. Title passes to the company at the point of export.

### A. *Work Contracts*

An example of the work contract is the agreement entered into by ERAP and Iran's NIOC on December 12, 1966. Under this agreement, the company is given the exclusive right to act as general contractor for NIOC in the areas specified, but title to all petroleum produced vests in NIOC. The company supplies all funds necessary to finance exploration operations and, if no commercial discovery results, bears the full costs of exploration. Further, the company undertakes minimum expenditure obligations, which differ for onshore and offshore areas. If the company fails to meet these obligations, NIOC may terminate the contract. In addition, the company agrees to relinquish certain parts of the original contract area during the exploration phase. The relinquishment provisions, like the minimum expenditure provisions, differ for onshore and offshore areas.

In the event of commercial discovery, the company must provide the funds necessary to develop the particular field and must continue to meet exploration commitments in other parts of the contract area. Once commercial production (as defined in the agreement) is achieved, however, NIOC is obligated to reim-

burse the company for costs incurred in exploration and development operations. Development costs are reimbursed with interest, but exploration costs are not. Reimbursements of both kinds of costs are made over a period of years according to formulas prescribed by the agreement.

Commercial production also obligates NIOC to pay for a percentage of the operating costs out of an operating fund established when commercial production is achieved. This fund is financed by contributions from NIOC and the company, each party contributing amounts in proportion to the percentage of production to which it is entitled.

Fifty percent of the recoverable reserves discovered by the company are set aside as national reserves on a field-by-field basis. These reserves are then excluded from further development by the company under the terms of the agreement.

The principal benefit accruing to the company under its agreement with NIOC is a guaranteed right to purchase for 25 years a certain percentage of the oil produced from fields other than those set aside as national reserves. This percentage varies from 35 percent to 45 percent depending on the distance between the particular field and the export terminal. The price paid is the sum of (1) the amortized per barrel cost of exploration, development, and production, (2) 2 percent of this amortized cost, and (3) 50 percent of the difference between the cost per barrel and the realized price per barrel based on current f.o.b. prices in the Persian Gulf.

Under the terms of the agreement, the company does not pay taxes, although the price increment amounting to 50 percent of the difference between cost and selling price may be likened to a tax, since it is paid to NIOC, a government agency. NIOC itself is liable for taxation in accordance with the provisions of its statutes.

With respect to NIOC's share of the production, the company is obligated to sell certain amounts as specified in the contract. General management responsibility vests in the company, but production levels are determined jointly by the company and NIOC. The NIOC-ERAP work contract also contains standard import, arbitration, and *force majeure* clauses similar to those contained in most concession agreements.

#### B. *Production-Sharing Contracts*

An example of the production-sharing contract is the 1973 agreement between Indonesia's PERTAMINA and Mobile Petro-

leum Indonesia, Inc. This 30-year contract covers an offshore area in the Macassar Strait. Under this contract, as under the work contract discussed above, the company is granted the exclusive right to act as a general contractor for the state oil company within the contract area. PERTAMINA holds title to oil in the ground and at the well-head and is responsible for the management of operations undertaken pursuant to the agreement. The company agrees to furnish all funds, equipment, and technical expertise necessary to conduct exploration, development, and production operations. In return, the company is entitled to receive a share of the oil produced and to recover all of its operating costs—including exploration, development, extraction, production, transportation, and marketing costs—out of a percentage of the production which may not exceed 40 percent of the crude oil won and saved. Of the production remaining after the reimbursement of operating costs, the company is entitled to take—not purchase, as in the work contract—35 percent of the daily production where such production does not exceed 100,000 barrels per day; 32.5 percent of daily production greater than 100,000 barrels per day but not more than 150,000 barrels per day; and 30 percent of daily production in excess of 150,000 barrels per day. Title to the company's share of the production passes at the point of export. PERTAMINA's corresponding shares of production after reimbursement of operating cost are 65 percent, 67.5 percent, and 70 percent. PERTAMINA is obligated to pay the company's Indonesian income tax out of PERTAMINA's share of the production.

The agreement limits the company in several other significant ways. For example, the company is obligated to sell to PERTAMINA part of its share of production for the domestic market in Indonesia at a price of \$0.20 per barrel. The amount of oil that the company must sell to PERTAMINA is determined by a number of variables and may in some cases exceed 41 percent of the company's share of production. Also, if the company's share of production reaches 200,000 barrels per day, it is obligated to refine 10 percent of its production in Indonesia if requested to do so by PERTAMINA. If there is no refining capacity for this purpose, the company must establish such refining capacity in Indonesia or, with PERTAMINA's permission, make an equivalent investment in another project related to the petroleum or petrochemical industries. Further, at any time within 3 months from the date of the first discovery in the contract area, PERTAMINA may demand that the company offer a 10 percent undivided in-

terest in the rights and obligations accruing under the contract to an Indonesian entity, in return for which the company will receive a specified compensation. Finally, the company agrees to undertake certain minimum expenditures for exploration during the first 10 years. The company also agrees to relinquish large parts of the contract area during that same period. In the event that commercial production is not achieved, the company must bear the entire loss, as under the work contract.

## VI. FUTURE ARRANGEMENTS

To the extent that the oil-producing nations do not establish their own oil-producing industries, they will remain dependent upon foreign oil companies for the expertise and, in many instances, the capital required to develop their petroleum resources. In order to attract this expertise and capital, the oil-producing nations will have to offer the companies some reasonable incentive. The incentives and terms under which the companies will continue to operate are considerably different, however, from those which prevailed during the first half of this century.

The trend has been away from the concession concept and toward joint ventures, participation arrangements, or outright government ownership with the company acting as a service contractor. Putting form aside for the moment, however, there is little practical difference between the concession concept, the joint venture, the participation arrangement, the work contract, and the production-sharing contract. This is especially true when the government has the power to unilaterally alter whatever arrangement is in force. In all five types of arrangements, the company contracts with the government to provide the capital and expertise required to develop the host country's petroleum resources in return for a right to a share of the production. It is true that concessions generally contained terms more favorable to the companies than do the joint venture and participation arrangements, work contracts, and production-sharing contracts in force today. This results, however, from the change that has occurred in the relative bargaining positions of the companies and the governments, not because the concession concept is inherently any more favorable to the companies than the other kinds of agreements.

It is also true that the concession vested in the company a property right, and that this property right was diminished by the advent of joint venture and participation arrangements, and entirely eliminated by the work contract and the production-



sharing contract. As a practical matter, however, this property right proved to be largely illusory, since it could be effectively defeated by the host government by the enactment of increased tax rates on the company's operations.

In the final analysis, what is important is how much oil the company is allowed to take away from its operations and at what cost. Whether its right to this oil is characterized as a "contract right" or a "property right" is less important than the amount of profits that the right produces. These profits do not depend on the nature or the type of agreement as much as they depend upon the specific terms of the agreement; one company operating under a work contract may have higher profits than another company operating under a concession.

Why, then, was there a shift away from the concession concept? The answer appears to be that oil-producing nations operating under the concession system desired to achieve *de jure* as well as *de facto* control over their natural resources. Under the concession system, the company was given control of the development of resources within the concession area; the company could produce as much or as little oil as it wanted and had title to all of the oil it produced. The property right that vested in the company under the concession concept implied the absence of a property right in the government and a corresponding absence of control. This apparent absence of control on the part of the government, however, proved to be just as illusory as the company's property right, as illustrated by the unilateral tax increases and production cutbacks in Libya in 1970.

Nevertheless, the ostensible relinquishment of control of natural resources had an adverse psychological effect on those governments operating under the concession system. The importance to the oil-producing countries of retaining control over their natural resources is evidenced by the Charter of Economic Rights and Duties of States, passed as a resolution of the United Nations General Assembly in 1975.

Article 2 of this charter provides:

- (1) Every State has and shall freely exercise full permanent sovereignty, including possession, use and disposal, over all its wealth, natural resources and economic activities.
- (2) Each State has the right:
  - (a) To regulate and exercise authority over foreign investment within its national jurisdiction in accordance with its laws and regulations and in conformity with its national objectives and priorities. No State

shall be compelled to grant preferential treatment to foreign investment;

(b) To regulate and supervise the activities of transnational corporations within its national jurisdiction and take measures to ensure that such activities comply with its laws, rules and regulations and conform with its economic and social policies. Transnational corporations shall not intervene in the internal affairs of a host State. Every State should, with full regard for its sovereign rights, co-operate with other States in the exercise of the right set forth in this subparagraph;

(c) To nationalize, expropriate or transfer ownership of foreign property in which case appropriate compensation should be paid by the State adopting such measures, taking into account its relevant laws and regulations and all circumstances that the State considers pertinent. In any case where the question of compensation gives rise to a controversy, it shall be settled under the domestic law of the nationalizing State and by its tribunals, unless it is freely and mutually agreed by all States concerned that other peaceful means be sought on the basis of the sovereign equality of States and in accordance with the principle of free choice of means.<sup>28</sup>

Taken literally, such policies would bring foreign investments to a halt. The oil-exporting and mineral-exporting nations have expressed similar sentiments in numerous other forums. Obviously, the notion of a property right vesting in a foreign oil company, with corresponding rights of control, is not compatible with this kind of sentiment. The elimination of the company's property right—the theoretical cornerstone of the concession concept—was an effort by the oil-producing nations to reassert control over their own natural resources.

If the transition from the concession concept to other forms of government-company relationships was, in and of itself, one of form rather than substance, what were the underlying substantive changes that accompanied this transition? As already indicated, the major change occasioned by this transition was a shift in control of the development of the natural resources from the companies to the governments. More specifically, it was a shift from the companies to the governments of the power to (1) control production, and (2) control prices. Under the concession system, the governments for many years enjoyed neither of these powers.

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28. G.A. Res. 3281, 29 U.N. GAOR Supp. 1, at 50, U.N. Doc. A/9631 (1974).

But by the beginning of the present decade, the situation had changed. Joint venture agreements had been in effect since 1957, and work contracts and production-sharing contracts were implemented during the 1960's. The OPEC resolution calling for members to take immediate steps toward the implementation of effective participation in existing oil concessions was passed in September of 1971, and participation was implemented in early 1973. Even prior to this time, certain of the OPEC nations had demonstrated their power to effectively control both prices and production. For example, in 1970, when Libya unilaterally increased its tax rate to 55 percent and ordered the companies to increase their posted prices, the government successfully imposed production cutbacks in order to force the companies to comply. This exercise of control over prices and production occurred under a concession system in which the Libyan government had no participation interest.

In light of the foregoing, several observations can be made with respect to the probable form that future government-company relationships will take. First, it is clear that the concession system is being phased out. The property rights and control of operations traditionally associated with that system are inherently at odds with the nationalistic sentiment that characterizes the developing nations. Future relationships will almost certainly be in the form of joint ventures or participation agreements, with the government holding the controlling interest, or service contracts. But, as already mentioned, the type of agreement is not nearly as important as the specific terms, and these terms will be a direct reflection of the respective bargaining powers of the companies and the governments. Where competition among foreign oil companies for oil rights in a particular area is high, it can be assumed that the terms offered by the host government will not be as favorable to the company as where there is little or no competition. Also, where the oil-producing nation has an established national oil industry and indigenous sources of capital, the need for foreign assistance will be less, and the terms offered to foreign companies will be correspondingly less favorable than those offered by a country that does not have an established national oil industry or the capital necessary to develop its resources.

## VII. CONCLUSION

This essay has discussed changes. One unchanging reality merits emphasis, however: until such time as the oil-producing

nations of the world acquire the technology to develop their petroleum resources, they will remain dependent on foreign oil companies for that purpose. In the meantime, the Hoover's prophetic words of 60 years ago describing the ebb and flow of the forces at work between the state, the community (the consumer), the landowner, and the miner remain true today—the miner is buffeted among them all and is saved only by the need of the other three for his expertise.