

CONTOURS OF CHANGE: STANDARD OIL COMPANY  
(NEW JERSEY), 1882-1950

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Within less than a century, a type of business enterprise has developed which in its historical significance may well be compared to the commercial revolution of the Middle Ages and the industrial revolution of the eighteenth and the early nineteenth century. This is the vertically integrated, multinational company. It had its beginnings late in the nineteenth century and reached a high development in the second quarter of the twentieth. It has reached its broadest growth in the United States.

This type of concern has for decades been a dynamic factor in the administrative and technological evolution of the non-Communist world. It has utilized an advancing science and technology and functionally integrated operations to provide products at costs that have made them available to the market on an international scale. It has also stimulated the growth of a vast range of auxiliary enterprises. With extensive reserve capacities, it has expanded its output to meet unusual needs in emergencies brought by local disturbances and global war. In fact, in the economy of the free world, it has become the large planner and coordinator, the heavy risks taker, and the principal evener of supply and demand over periods of time and between distant places. It has created an exceedingly complex and sophisticated kind of administration and has become a training school for employees on all levels, especially in the industrially less-developed countries.

Those who have worked in the records of Standard Oil Company (New Jersey) have had an opportunity to observe the evolution of such an enterprise. This company and its predecessors cannot be said to typify the general development of this kind of enterprise. Nevertheless, this one company's growth as a large, vertically integrated concern operating in many countries has a general meaning. The Standard Oil combination pioneered in the rise of the large, multifunctional enterprise, and Standard Oil Company (New Jersey) has been among the leaders in the oil

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industry in developing the technologically advanced multinational concern.

In its early years—from late in the 1870s to about 1892—the Standard Oil combination created a virtually new type of business organization. It made the transition from one business era to another: from an old type of business organization to one that was radically different in structure and administration. The old was the functionally specialized concern, generally with one man dominant in its administration, and, if incorporated, under the prevailing system of corporate law limited mostly to operation within one state. This type of concern had developed after the demise of the mercantile capitalist and with the growth of industrial specialization that came in the United States early in the nineteenth century. The Standard Oil combination pioneered along three lines.

One innovation was the creation of a central administration for a large number of companies operating in many states. In the 1870s, several oil company executives, principally refiners, under the leadership of John D. Rockefeller and the Standard Oil Company of Ohio (already partially integrated), had formed a community of interest by a system of interlocking ownership. The alliance grew in the direction of large-scale, vertically integrated operations. By 1881 it had brought into its fold a substantial part of the American petroleum industry. Obviously, a central administration was needed for this large, diverse, and scattered group. It was not possible, however, under the existing state corporation statutes, to join the various concerns under one corporate ownership—the holding company was still of the future. In order to transcend this limitation of corporate law, the executives turned to a time-honored institution, the trust, to perform a new service.

In 1882 they organized the Standard Oil Trust. Forty-one participating owners turned over to the trust their shares in 40 companies—100 percent of the stock in 14 and 50 percent or more in all but three. They vested in a self-perpetuating board of nine trustees the authority to administer the companies under rules set forth in the agreement. Here was the essence of the holding company.

Under the trust, as Professor and Mrs. Hidy wrote in *Pioneering in Big Business*,<sup>1</sup> “a group of vigorous executives developed for the first time in American history an effective system of working cooperatively to manage a large integrated business enterprise producing goods for a wide market.” This was a system “intended to

<sup>1</sup> Volume I of *History of Standard Oil Company (New Jersey)* (New York, 1954). This volume deals with the history of Standard Oil to 1911

maintain a balance between centralized formulation of policy and local autonomy in field operations." The trustees were responsible for the central administration, for voting the shares held in trust in electing directors and officers of the individual companies, and for general supervision over the affairs of the companies except as limited by partial outside ownership. An executive committee of trustees performed the day-to-day administrative function. This committee was assisted by committees of specialists with staff groups, each of which had responsibility for supervising the operations of a particular function or auxiliary operation. The staffs received, collated, and analyzed a constant inflow of information from the companies or any other information that might be useful to the central administration. An extensive system of reporting by the individual companies and of personal consultation contributed to making centralized coordination and control of decentralized management of operations reasonably effective. Distance from headquarters or independent management based on a large outside ownership, however, weakened relations with some of the associated companies.

A significant aspect of the administrative process under the trust was the "consolidating, concentrating, and economizing" about which the Hidys wrote in such lively detail. The trustees were interested not only in strategy and finance. They were also interested in improving operating methods, in raising quality standards, in sharpening such management tools as accounting, in achieving economies of scale, in reducing costs through efficient operations, in establishing order and discipline throughout the whole range of the companies' activities, and in coordinating operations so as to utilize effectively the facilities of the various functions.

Under this administrative system, the Standard Oil combination carried forward the expansion and functional integration well established before the trust was formed. By 1882 the Standard Oil group already had gained unquestioned leadership in refining, in crude oil storage, and in the control of gathering lines in the oil regions of Pennsylvania and New York. It had also acquired auxiliary manufacturing, such as barrel-making; it had built a trunk pipeline to seaboard refineries; and it had entered extensively into wholesaling and jobbing. Under the trust the combination continued to expand both horizontally and vertically. In 1884 its plants processed 77 percent of the total crude runs of American refineries. In the second half of the decade the Standard Oil Trust moved substantially into the production of raw materials, first natural gas

and later crude oil production in the Appalachian and Lima-Indiana oil regions. Late in the 1880s also the combination adopted a more positive policy with regard to competition in foreign markets. In 1888 it began to acquire affiliates of its own in Europe to promote sales there, instead of selling to exporters in New York and through agents abroad. By 1892, according to *Pioneering in Big Business*, the Standard Oil combination had achieved full vertical integration.

By that time challenges to Standard Oil had begun to be felt. One challenge came from the growing reaction of the operators outside the combination against the giant, which first developed into a kind of "populist" movement in the oil regions. One result was a decision of the Ohio Supreme Court in 1892 which forbade Ohio Standard to be a party to the trust agreement and thereby caused the Standard Oil leaders to dissolve the trust. Again operating for a time as a community of interest, the combination finally in 1899 was legally joined in Standard Oil Company (New Jersey) as a holding company. This was made possible by the amendment of the corporate statutes of the state of New Jersey to allow a company chartered there to own shares in other corporations. The local movement against the combination soon became merged in a national effort to curb big business, with the pioneering Standard Oil as a principal target.

Another challenge was that of competitors, both at home and abroad, who developed large scale, functionally integrated operations similar to that of Standard Oil. They not only reduced the advantages of innovation from which the older concern had profited but also united to fight Standard Oil in the marketplace. Pure Oil Company, originating in Pennsylvania, attacked the combination through government channels as well. The rise of strong competition did not stop Standard Oil's growth, but it was undoubtedly an important factor in the reduction of the combination's percentage of a growing market, a growth that became especially strong in heavy fuel oils and gasoline. Competition would undoubtedly have continued to reduce Standard Oil's relative market position.

A rising crescendo of attacks on "the Standard Oil Trust," however—ironically fueled by the product of a Pure Oil-related journalist and the muckraker journalism of S. S. McClure—and a general movement against big business in the United States led to the dissolution of Standard Oil Company (New Jersey) in 1911. This left the parent company mainly a coastal refiner in the United

States with geographically limited operations both at home and abroad, extensive foreign outlets for products, and a truncated top management made up mostly of specialists in refining and sales. The dissolution virtually destroyed the Standard Oil system of administration and of integrated operations.

From 1911 to 1927, Standard Oil Company (New Jersey) continued to carry on commercial relations with its former affiliates and to do a profitable business.<sup>2</sup> But the affiliates were now independent; their former parent could hold their business only as long as it could serve them better than they could be served in other ways. For the long run, the situation was dangerous. Competition was growing stronger with the growth of large, integrated companies—such as Gulf Oil, The Texas Company, and Shell Oil in the United States, and Royal Dutch-Shell and Anglo-Persian abroad. For several years Jersey Standard was restrained by fear of antitrust action, but during and after World War I it began to become more aggressive. It reached out for new production in the Mid-Continent and Texas and also abroad, but it was still hesitant in the 1920s to adopt practices that competitors were using in the burgeoning mass-consumer market for gasoline.

When declining prices struck the oil industry in 1926, the company was in a very vulnerable condition. It had to purchase nearly two-thirds of the crude oil processed by its refineries and was depending for sales largely on contract buyers—two of whom were former affiliates looking for cheaper sources of products. In addition, it was selling nearly half its output abroad in competition with foreign companies processing lower-cost crude from foreign sources. Its weaknesses in production and marketing were no longer tolerable.

This critical situation brought a radical turning point in Jersey Standard's history. The company's Board of Directors in 1927 decided to enter upon vigorous campaigns to expand its production and its wholesaling, jobbing, and retailing in the mass-consumer market and also to go heavily into scientific research and development. At the same time it decided to reorganize the company's administration so as to achieve better coordination of policy-making, planning, and control in the general interest. The result was the creation, within the next quarter century, of the "modern" Jersey Standard, a large, vertically integrated, technologically ad-

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<sup>2</sup> George Sweet Gibb and Evelyn H. Knowlton, *The Resurgent Years, 1911-1927* (New York, 1956).

vanced, multinational concern. In those years the company experienced a virtual revolution in production, refining, and sales.<sup>3</sup>

Standard Oil Company (New Jersey) made dramatic additions to its production and its petroleum reserves. Within five years after 1927, affiliates in the United States added greatly to their properties, and the parent company obtained important holdings in Venezuela, mainly by purchasing companies with extensive producing properties. These made the company virtually self-sufficient in production, with adequate reserves for many years ahead. At the same time the company scaled the walls of Dutch and British influence in the Far and the Middle East by obtaining large concessions in the Dutch East Indies and a minority interest in Iraq Petroleum Company. After World War II—in a highly complex international situation with regard to the Middle East—it obtained a strong position in that great oil province by purchasing a 30 percent interest in the Arabian American Oil Company. Another important addition in the late 1940s came with the Canadian affiliate's historic discovery of oil in Alberta.

By the end of 1950 Standard Oil Company (New Jersey) had an estimated 14 billion barrels of petroleum reserves. Located in all the important oil regions in the non-Communist world, these reserves gave it favorable sources of raw materials for its worldwide markets. Significantly, 75 percent of the company's total crude output was produced outside the United States.

The company similarly succeeded in expanding and diversifying its contract sales and also sales in the mass-consumer market. It expanded its selling geographically, principally by purchasing already established companies at home and abroad and by merging its producing interests with another company's marketing in the Far East. It lost most of its old contract sales to large oil-company distributors, but it gained large customers—manufacturing and transportation companies and the military services—for fuel oils, gasolines, natural gas, intermediate petrochemicals, and other products. It greatly increased its wholesaling and jobbing around the globe. Also, where the demand was sufficient, its affiliates went heavily into retailing. Because of state statutes applying to retail chains, however, company service stations in the United States came to be managed largely by independent operators.

By 1950 Jersey Standard was supplying virtually a complete line of products in countries representing about 90 percent of the con-

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<sup>3</sup> The remainder of this article is based principally on the third volume—now in the press—of *History of Standard Oil Company (New Jersey)*.

sumption of petroleum in the non-Communist world. In nearly all countries where it sold the full range of products, it was essentially a nationwide marketer. The outstanding exception was the United States, where it had marketing operations in 27 states instead of only 10 as in 1927. In 1950 it sold a daily average of approximately 1,750,000 barrels of oil products—somewhat more abroad than at home.

Changes in the volume and location of the properties and operations of the company's other functions followed these developments in production and sales. Refining grew faster abroad than at home in order to process oil for foreign markets at favorable locations, or as required by the laws of various countries and made necessary by foreign exchange problems. Tanker routes and pipelines followed geographic shifts in production and sales. But the domicile of tankers came to be determined more than before by considerations of safety and costs. Jersey's transfer of its large German fleet from the Free City of Danzig to registry in Panama was motivated by the need for low-cost and safe registry in the Western Hemisphere.

A dramatic change came in Jersey Standard's and the oil industry's technology—an explosion of knowledge and its application to operations that revolutionized the oil industry. Here was teamwork on an industry-wide scale between theoretical scientists, researchers in company laboratories and oil fields, and engineers in operations. Jersey affiliates were among the leaders in this development.

Employing science, scientists, and engineers was not new to the company in 1927; what was new was the broad program undertaken. The original motivation was to reduce the cost and raise the quality of products. This increased emphasis on research was apparently in part inspired by the example of a German company. In 1926 a member of Jersey's Development Department visited that company's laboratories in Ludwigshafen—on an invitation arising from the friendship of a Jersey executive in Europe with the head of the German company's research. There, as Frank A. Howard later wrote, "I was plunged into a world of research and development on a gigantic scale [such] as I had never seen." He urged President Teagle, who was then in Paris, to come to Ludwigshafen. The president came at once, accompanied by another Jersey director. As recorded by Howard, after visiting the laboratories the three Jersey men in the lovely medieval town of Heidelberg "sat down together

there to ponder the effect the startling developments at Ludwigs-hafen, ten miles away, would have on the world's oil industry."

New methods were needed not only in refining. The American oil industry was suffering from extremely wasteful production. Competitive development and operation of oil fields under the Rule of Capture meant early flush production followed by a quick drop in volume which made pumping necessary. This succession of feast and famine made the oil industry in the United States very unstable and wasteful—it has been estimated that not over 10 percent of the oil in a reservoir was produced; this condition contributed to the high cost of American crude as compared to foreign oil. For several years, the United States Bureau of Mines and Henry L. Daugherty, an oil company executive, had worked on this problem. Their research led to the conclusion that production should be so regulated as to make the best possible use of a field's natural energy force—which at first was believed to be gas.

The president of Jersey's Texas affiliate had become convinced as early as 1926 that in order to bring about any basic improvement study of oil reservoirs in the earth was essential. He was influenced by the progress made by the research laboratory of his company's refinery, and also by the head of its exploration department, who was a strong advocate of the use of science in the search for possible oil-bearing structures.

Thus experience, observation, and problems made Jersey Standard's leaders cognizant of the great potential of the broader application of science to their company's operations. It was a very timely discovery; it put Jersey again in the vanguard of an important new development, the large-scale application of science and technology to the oil industry's operations.

From the late 1920s Jersey's Humble Oil & Refining Company was among the leaders in advancing the technology of finding and producing oil and gas. It pioneered in the use of geophysical techniques in the search for geologic structures favorable to the trapping of oil, and it contributed to the improvement of instruments used in exploration and to the interpretation of geologic and geophysical data. Humble was also an early leader in production research. Its basic assumption was that, in order to improve production methods, the fundamental laws of nature governing the movement of oil through reservoir sands and up wells must be understood. In the early years its most distinctive and valuable work was to make quantitative studies of individual wells as to the relation between underground pressure and variations in the volume of oil produced.



Together with other companies engaged in research in exploration and production, Humble and other Jersey affiliates added to the basic knowledge of oil and gas reservoirs, their contents, and their natural energy forces that was essential to the improvement of oil finding and production.

The Jersey affiliates generally applied new techniques and concepts as far as possible under the limitations of particular lease and concession contracts, government regulations, and economic conditions. They employed highly trained geologists and geophysicists in exploration and petroleum engineers in production. Geophysical techniques became invaluable in exploration, particularly in the search for geologic structures under deep waters. Translating the new knowledge of oil reservoirs into practice raised the efficiency of producing operations, reduced costs, and increased the volume of oil recoverable from oil fields and leases. At home, new knowledge and methods contributed to the understanding of oil reservoirs that laid the basis for government regulation to reduce underground waste and to promote equity among competing operators in individual fields. Everywhere, knowledge of the nature and contents of oil reservoirs and of the behavior of their natural energy forces under the production process was an important factor in building up known reserves in the earth.

Jersey laboratories made similar progress in refining research. With staffs recruited largely from Massachusetts Institute of Technology and aided at first by concepts and data obtained from the German I. G. Farbenindustrie Aktiengesellschaft, the laboratories of Jersey Standard affiliates soon made valuable discoveries. Especially significant was their application of the concepts of hydrogeneration, catalysis, and polymerization. In brief, their research helped lay the basis for a revolution in refining from the separation from one another of different types of molecules, or fractions, to breaking up molecules and out of the parts making altogether new products—a change to what was essentially manufacturing.

As soon as feasible the affiliates placed engineers in managerial positions in refining. These new managers, with the assistance of staff groups in engineering and economic analysis, brought about radical changes in refinery operations. A discovery of broad significance contributed by Jersey Standard laboratories was fluid catalytic cracking. Other important contributions were processes for manufacturing synthetic components of aviation gasoline, TNT, rubber, and lubricants—invaluable to the Allies during World War II. After the war the laboratories made refinements in their earlier

discoveries and worked on new problems. The refineries utilized their findings by further improvements and innovations. A particular interest was in developing new petrochemicals.

In the 1930s institutionalized research nearly displaced the lone inventor in the oil industry since only the largest companies had the necessary resources of men and capital. Four hundred men worked in Standard Oil Development Company on the research that led to the discovery and development of fluid catalytic cracking. For some problems teamwork within a large organization was not sufficient, and competitors even collaborated, notably during World War II. Commonly, companies gained from one another's discoveries. At all times, research in academic institutions was followed closely. Applying new discoveries to the problems of the industry, however, was the work of individual companies.

By the end of the 1930s research and engineering had penetrated all aspects of the company's operations. The practical man, who had created the company and had long been the manager of operations, upon retirement was replaced by the professionally trained man. Even the rank-and-file worker was a man of higher skills than his forerunners had been. In fact, the new technology in time penetrated all levels of operations.

The more complex equipment and processes brought by the new technology, together with the larger size of companies and operations in a turbulent world, made necessary fundamental changes in employee forces and in employee management. Both size and technology necessitated an upgrading of employees generally—in both skills and dependability. In addition, the growing influence of labor organizations, increasing regulations by governments, and a rising nationalism made employee relations in most countries increasingly difficult and sensitive. Jersey Standard's principles, policies, and programs adopted after World War I provided a foundation on which to build the management of and relations with employees to meet these changing needs and conditions.

Developments came along several lines. Special employee relations departments or staffs were gradually set up within the individual Jersey companies. In 1943 the parent company elected its leading authority on employee relations to its board and established a corporate department for employee relations. This group was designed to conduct research and to assist affiliates and advise the parent company's directors on employee matters. Plans for retirement annuities and for other benefits to assure employees and their families some financial security were adopted nearly every-

where, with employees as well as companies contributing to the supporting funds. Job classifications and standard wage scales became common. Some form of collective bargaining of the terms of employment and the rights and responsibilities of employees—both wage and salaried—became universal. Within the United States such bargaining came to be with independent unions of the affiliates' employees, except for a few groups in special trades who belonged to national unions.

Increasing attention was given to training and education. Everywhere, at home and abroad, training courses were given to improve operating skills. Special courses for supervisors emphasized the human relation aspects of their work. In underdeveloped countries nearly all new workers were illiterate and completely lacking in industrial skills and disciplines. They had to be taught the "Three R's" and the most elementary job skills. For example, in the decade after 1938 the Venezuelan affiliate raised the literacy rate of its national employees from 12 to 85 percent. Vocational courses were set up in camp schools after the war. In order to provide sufficient nationals with adequate training for managerial and engineering posts—even principals of camp schools—the affiliates sent young men abroad to study, mostly to the United States. After World War II they numbered hundreds per year.

Another significant innovation after World War II was the setting up of schools for members of employee relations departments and training staffs. The first was the Esso Training Center in New Jersey. There, employee relations executives and directors of training from affiliates at home and abroad were taught new concepts and methods and provided with appropriate teaching materials prepared by the center. Creole set up a similar training system in Venezuela.

As the years passed communication between management and employees became greatly improved. In all large operations means had to be provided to counteract the sense of isolation experienced by the individual employee. The supervisor, who was closer to the rank-and-file employee than any other representative of a company, was given responsibility for morale as well as for job performance. Companies also had to make special effort to hold employees whose loyalty to their job was weakened by outside organizations and political affiliations. In addition, the scientist and engineer needed a sense of personal accomplishment, which to some extent was met by participation in conferences inside the whole Jersey group as well as in outside professional meetings. The

need in a large organization to distribute authority downward also called for a kind of democratic relationship within management. Altogether, improved communication became a vital necessity, especially to inform the employee about the company and to give him some understanding of his contribution to the whole enterprise.

The results of Jersey Standard's employee relations policies were many. Significant changes had come throughout the whole company in the quality of the employee force; the level of competence had risen in all operations. Gone was most of the old paternalism and of the authoritarian ways of officers and managers. Gone also in large part was the feeling of "family" and the personal loyalty to the "boss" that had once prevailed. Instead had come more independent workers—employees who took pride in their own work and who at best respected the company only insofar as they thought it merited respect. Among the affiliates in North America, the wage workers, with few exceptions, chose to maintain their own independent unions instead of joining national or international labor organizations. On the whole—except in countries where politically-oriented labor organizations, with an underlying philosophy of class conflict and a strong anti-foreign attitude, were dominant—an employee-management relationship prevailed which resulted in excellent collaboration in achieving company objectives.

In the 1940s came another development that was as revolutionary in its implications in its particular sphere as technology had been in operations. The company's leaders in the 1920s had not foreseen the need for change in this area. There was a glimmering of it in connection with difficulties in Mexico in that decade—for example, an executive of the Mexican affiliate had advised the home office in 1926 that it might be well for the company to be flexible in its stand on a certain issue in order to help a reasonably moderate Mexican president; if he failed, he would surely be displaced by a more extreme radical. The administrators in New York believed, however, that if they conceded on one point of law, they would weaken the very foundation of their company's security in Mexico. Abroad, as at home, they continued to act on the assumption that a company's standing with public and government depended on how well it performed its industrial functions and observed the laws and regulations of governments.

Developments in the late 1930s and the early 1940s increasingly challenged this assumption. Several of the company's top leaders became cognizant that what they believed to be good industrial performance and strict compliance with laws was not enough. They

also saw that Jersey's traditional defensive reaction against specific attacks was generally ineffective. Two developments in 1942 raised the issue to a point of action: Venezuela's demand for a revision of the terms of the concession contracts of foreign oil companies in order to give the government a larger share of oil-company profits; and a series of attacks on Jersey Standard in Congressional hearings in Washington for allegedly not cooperating with the government's national defense efforts.

The Venezuelan issue raised a fundamental question of policy. The concession contract was regarded as the primary basis of a company's security in several foreign countries. Advised by a distinguished authority on international law, Jersey Standard's leaders were fearful that agreeing to a revision of the terms of the company's concessions in one country would lead to a weakening of such concessions everywhere. Justice, however, seemed to be on the side of Venezuela: the oil companies had been making good profits for several years, but the loss of outlets for Venezuelan oil in Europe and interference with shipping by the German submarine campaign on the Atlantic had caused high unemployment and a substantial reduction in Venezuela's income from oil exports. One Jersey director maintained that in the future oil operations in foreign countries would survive, not on the strength of contracts, but on the basis of recognition by both parties of a mutuality of interest and an equitable sharing of benefits. This position prevailed in the Board of Directors.

Negotiations with the Venezuelan government—in which the other foreign oil companies followed Jersey Standard's leadership because of the size of its operations in that country—led to a settlement which provided for an equal sharing of profits by government and the individual company. This experience crystallized for Jersey a lesson that had long been in preparation: that laws and contracts in a country are only as strong as the opinion and attitude of the public behind them. As a concrete expression of this change, the company replaced its former chief executive in Venezuela—one who had depended on his influence with the governmental elite—with a man who in retrospect can be characterized as a great industrial statesman. In implementing—and helping to shape—Jersey Standard's new policies, he set a new pattern of company relations in foreign countries.

The Congressional hearings at home precipitated another change by the Board of Directors. After some study and experimentation, the board decided in 1943 to make the company's rela-

tions with its socio-political environment a matter of high-level concern. To assist the administrators of parent company and affiliates in relations with their multinational public, it established a corporate department of public relations, and similar departments were subsequently organized by large affiliates. The parent company's Public Relations Department experimented with various means for establishing better communication with the public. The Executive Committee or Board of Directors acted on all policy matters and programs, and individual directors participated in public relations activities. Better relations were established with the press, and much was learned about ways and means to communicate with the general public.

Undoubtedly the most important early development was the company's self-examination—its attention to the effect of its actions on the public, at home and abroad. Out of this came a new concept of the parent company's and affiliates' responsibilities as corporate citizens to the diverse societies among whom they operated. Believing that a middle class was essential to company security in underdeveloped countries, they contributed in various ways to the growth of such a class. Perhaps the company's most significant achievement in public relations by 1950 was that many of its leaders had come to believe that good relations with the public were essential to the well-being and even survival of enterprise.

In all these developments within parent company and affiliates, the former's administrators bore the principal responsibility. Creation of the vertically integrated, multinational company that Standard Oil Company (New Jersey) became, however, was the work of an administration which itself underwent basic transformations. These, too, were initiated in 1927. President Teagle and his associates then decided that, in order to carry out their plans for improving the company's competitive position, it was necessary to overcome two major administrative weaknesses: first, that most of the directors were occupied principally with the management of the parent company's own refining and sales operations; second, that the existing coordination in the general interest of the whole company was inadequate.

Their first move was to make the parent company a holding company only. This was done by transferring its own operating properties and organizations to affiliates. Henceforth, the management of all operations was to be the responsibility of the officers and managers of affiliates. This freeing of top officers and directors from managerial responsibilities was designed to enable them to

raise the effectiveness of their central policy-making, planning, and control

To provide a suitable administrative structure for the performance of these holding company functions was in itself a problem, but to create an adequate design for a company growing and changing so rapidly was still another matter. Basic changes were made in 1927, 1933, and 1943. The first proved brilliantly successful in strategic planning and expansion—chiefly under the leadership of the superb strategist, President Teagle. That of 1933 was more effective in consolidating gains; but, with a proliferating administrative load, its coordination of the whole was still inadequate. The 1943 reconstruction finally created an effective system for coordinating the essentially holding company functions and decentralized management of operations.

The essence of this system was a wide distribution of authority and responsibility within the top administration. Directors who had no other regular assignments as officers or members of the top committees were given responsibility for continuous liaison with parent company departments or specific operating functions among affiliates. Thus, the executive function was shared by directors as a team, with the president as its leader. To assist the contact directors, a new group of executives—known as functional coordinators—was established. With their staff departments, they maintained close relations with the affiliates, assisting and advising them. These coordinators and the Coordination Committee—with their staff departments—constituted a highly effective system for keeping the contact directors, the Executive Committee, and the Board of Directors informed about affiliates and their operations and for helping these top governing bodies in planning the whole group's capital expenditures. This new system finally enabled members of the Board of Directors to devote themselves principally to matters of high policy and to the overall allocation and productive use of the whole concern's human and material resources.

The administrative process over the years was further strengthened by the development of more effective techniques and procedures for planning and control. These included: more soundly-based forecasting; more precise accounting methods, as far as feasible applied uniformly throughout the whole company; increasingly sophisticated economic analysis and cost control; and a comprehensive system for planning capital expenditures.

The process of preparing the overall capital budget illustrates how comprehensive the new procedures were. Preparing the indi-

vidual affiliate's budgets began on the lower levels of management and ended in its board of directors. The affiliates sent their budgets to the parent company. The functional coordinators and Coordination Committee gave particular attention to certain aspects of these budgets: the economic and technological soundness of the individual proposals; the requirements of the whole Jersey company for products and how those could be supplied at the lowest costs; and the resources for financing the proposed expenditures. The Executive Committee, which served as the parent company's investment committee, made the final examination of the individual budgets and the combined one for the whole company. The individual affiliates' budgets went back to the companies with comments from the committee, but their officers and managers had the authority to decide how far to follow the suggestions implicit in those comments.

Another development brought the far-flung affiliates into closer relations with the parent company and with one another. As the company grew in size and as means of travel and other ways of long distance communications were improved, a vast network of communication, horizontal and vertical, was developed. A comprehensive system of regular written reports and reviews kept the parent company informed. Two-way personal consultation tied the various departments and divisions of the parent company closer to their counterparts among affiliates. Annual conferences of high executives and gatherings of employees of a specialized interest among affiliates became an important part of the company's administrative process. Consultation and conference were vehicles not only for spreading new attitudes, new knowledge, and new ways of doing things throughout the whole group; they also served to bring about a greater community of interest and to broaden perspectives. They all contributed to raising the general level of performance to that of the more progressive units, and to the achievement of a more effective overall coordination in a decentralized system.

An important new departure from traditional ways was a comprehensive program for executive development adopted by the parent company and many affiliates in the later 1940s. Such a program included selecting promising younger men, assigning them to a succession of jobs in more than one company, and sending them to courses in management in universities on the graduate school level. This, then, was a program designed to provide men of high executive potential with the wide experience, professional



training, and broad perspectives required by a complex company in the turbulent world environment of the postwar period.

Behind all these developments in the company's administration was a changing leadership within the parent company itself. At the beginning of this period the members of its Board of Directors were typically men who had been educated principally in the school of experience and who had risen from the ranks; they were relatively narrow specialists who had worked mostly in one company and within our country. Only a few—notably President Teagle—had had an education on the collegiate level and broad experience both at home and in foreign countries.

The directors of the 1940s had far different qualifications and a different concept of their responsibilities from that of most of their predecessors. All but a few had earned one or more degrees in some special field, mainly in science and engineering. All had had a varied experience within the company, and several had served abroad as well as at home. All had been tempered by depression and war. These later directors represented a wider range of specialties than those whom they succeeded, but they were also generalists who had grown beyond their specialties. They utilized analytical approaches to the solution of problems and rational techniques generally. On the whole, they also had a high capacity for working with others. As a group, they were cognizant that Jersey Standard's future depended not alone on superior industrial performance—which was of course increasingly necessary in an intensely competitive industry operating on a high level of competence. They also recognized that the company's success depended more and more on its standing with the public and government wherever it operated. Good relations were necessary not only in the United States. As an officer of the parent company said in 1947, Jersey Standard's public was truly international.

There were elements of both strength and weakness in the multinational character of the company's interests and operations. There was some promise of overall stability and security in its wide distribution of resources and operations and scattering of risks. One risk was high: the heavy commitment of the company's resources under scores of sovereign governments against whose action there was no assured legal or other recourse. Administering the company successfully was no longer a matter of competitive strategy and industrial performance. It had also come to require industrial statesmanship of a high order.