Energy for Generations

Saudi Aramco 75th Year Anniversary

Supplement to
Saudi Arabia oil & gas

EPRASHEED
signature series

ارامكو السعودية
Saudi Aramco

PRESENT

ارامكو السعودية
Saudi Aramco

FUTURE

PAST

Energy for Generations

Saudi Aramco 75th Year Anniversary

Celebrating 75 Years

Supplement to
Saudi Arabia oil & gas

EPRASHEED
signature series

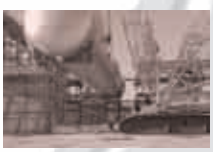
Table of Contents

Saudi Aramco 75th Year Anniversary









In the Founder's Footsteps

Introduction

Throughout its 75-year history, Saudi Aramco has always relied upon the judicious guidance of the rulers of Saudi Arabia. In turn, the Kings have placed their trust in Saudi Aramco to derive the maximum benefit from the country's rich natural resources for the people of Saudi Arabia. Together, the Kingdom and its national petroleum enterprise, Saudi Aramco, have met the challenges posed by boom times and lean times alike, and their shared history is a success story of progress, development and transformation.

Since its inception in 1933, the Company has been granted the flexibility to manage its own affairs. The creation of Saudi Aramco in 1988 as a commercial enterprise to be operated on a for-profit basis solidified the Company's unique status as a stateowned oil company but one that operates with a high degree of autonomy – a living symbol of the wisdom of the country's rulers.

Within these generous boundaries, Saudi Aramco has transformed itself from an oil producing company into a fully

integrated international petroleum enterprise, with operations in exploration, producing, processing, refining, shipping and marketing of crude oil, natural gas, refined products and soon, petrochemicals.

All six Kings of Saudi Arabia have shown their support, in part, by visiting Company operations and by meeting the employees who have contributed so much to the well-being of the people of Saudi Arabia – and to the well-being of people around the globe. Many of these visits are described within this supplement.

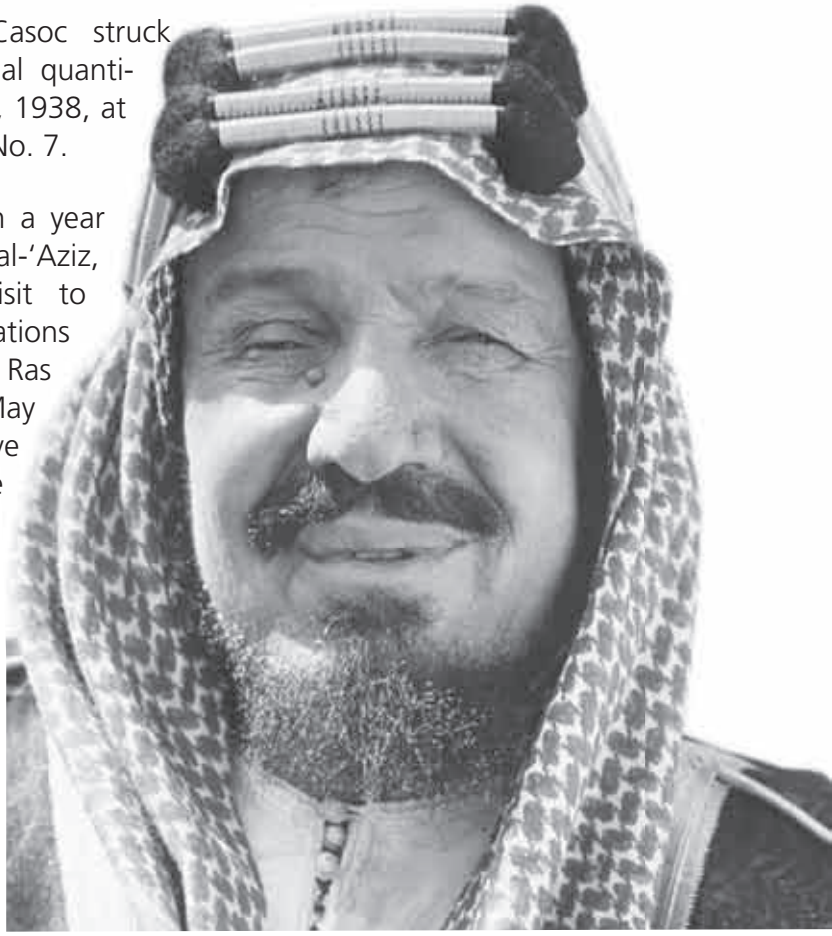
There is no other petroleum company on the planet quite like Saudi Aramco and its success is a combination of the blessings of God for its petroleum reserves, the wise stewardship of the rulers of Saudi Arabia, and the efforts of its employees who understand that the people of Saudi Arabia – and billions of people around the world – rely on Saudi Aramco to provide them with the energy they need to live fuller, more productive lives.

King ‘Abd al-‘Aziz

Reigned 1902 - 1953

The story of Saudi Aramco begins with the vision of King ‘Abd al-‘Aziz who, aware of oil discoveries elsewhere in the region, sought the expertise of an international oil company to explore his kingdom for the natural resources that would allow him to guide the development of his young country. On May 29, 1933, after months of negotiations, the King’s minister of finance signed the Concession Agreement with Standard Oil of California, or Socal, an act that would eventually transform Saudi Arabia and the global petroleum industry.

King ‘Abd al-‘Aziz had to wait nearly five years for his bold move to yield results, as the California Arabian Standard Oil Company, or Casoc, as the Company was now called, endured hardships and difficult conditions, suffering setbacks along the way until, on the verge of pulling out of the arrangement, Casoc struck oil in commercial quantities on March 3, 1938, at Dammam Well No. 7.



King ‘Abd al-‘Aziz, on his first visit to Company operations in Ras Tanura, turned a valve that sent the first tanker load of Saudi oil to the world.

Little more than a year later, King ‘Abd al-‘Aziz, on his first visit to Company operations in Dhahran and Ras Tanura, on May 1 turned a valve that sent the first tanker load of Saudi oil to the world. The next year, Casoc discovered the Abqaiq field, the first sign that Saudi Arabia could contain vast petroleum reserves and that the Company, renamed the Arabian American Oil Company, or Aramco, in 1944, had the potential to become one of the most important oil companies in world history.

Both the Government and Aramco endured lean times during World War II, as exploration was curtailed and production cut back, but once the war was over, Aramco began expanding rapidly, one example of which was the start-up of the Ras Tanura Refinery in late 1945.

King ‘Abd al-‘Aziz paid his last visit to Aramco in January 1947, when, among other activities, he personally received about 200 American employees, their wives and children. In a sign of Aramco’s growing significance to the global petroleum industry, in 1948 Standard Oil of New Jersey and Socony-Vacuum Oil (both now ExxonMobil) joined


Reading congratulatory cables, Ras Tanura, 1939


Coming aboard the D.G. Scofield, Ras Tanura, 1939


Receiving Aramco families, Dhahran, 1947

Socal and Texaco (now Chevron) as owners of Aramco, providing distribution networks and international markets for the enormous reserves and production potential of Aramco.

Two important cross-country projects were completed under the guidance of King 'Abd al- 'Aziz in the first years of the next decade. The Trans-Arabian Pipeline, or Tapline, completed in 1951, delivered Saudi crude oil faster and more economically to European markets. The following year, Aramco completed the Saudi Government Railroad from Dammam to Riyadh, linking the capital city to the port of Dammam, which Aramco also constructed.

In 1952, the year before the death of King 'Abd al-'Aziz, in a move symbolic of the growing importance of Saudi Arabia to the world's oil business, Company headquarters was moved from New York City to Dhahran.


Inaugurating the Dammam-Riyadh railroad, Riyadh, 1950

King Sa'ud

Reigned 1953 - 1964

As Crown Prince, King Sa'ud visited Company operations in December of 1937 and again in 1950, visiting a trade school where he witnessed young Saudis learning the skills needed for the petroleum trade – an early example of the transformation taking place in Saudi society, as the sons of pearl fishermen, merchants, farmers and Bedouin began to climb the ladder that would take them to the top of Aramco within two generations.

In January 1953, King Sa'ud, then Crown Prince, issued a royal proclamation granting Saudi workers substantial increases in benefits, helping address the disparity between Saudis and expatriate employees of Aramco. The next month, he sealed an agreement with Aramco whereby the Company would build and pay the expenses of 10 public schools in the Eastern Province – the beginning of the Aramco-built Government Schools Program. The program was championed by a young King Fahd, then Education Minister.

The first school opened in Dammam, in December 1954, and King Sa'ud presided over the ceremonies. Three days later, he opened the second Aramco built Government School in al-Khobar. Ultimately, 139 boys and girls schools were built under the program, and Saudi Aramco maintains the schools in top shape to this day.

During the reign of King Sa'ud, significant achievements were made by Aramco both in the development of the Saudi workforce and in Saudi society.

During the reign of King Sa'ud, significant achievements were made by Aramco both in the development of the Saudi workforce and in Saudi society. On the societal front, in 1953 Aramco launched Al-Qafilah (The Oil Caravan) at a time when Arabic publications were few and far between in Saudi Arabia. Many contemporary authors in the Arab world were inspired by Al-Qafilah to become writers and for many others, the magazine was a source of intellectual fermentation. Four years later, Aramco TV went on the air, becoming the first Arabic-language station in the Kingdom and the second in the Middle East. Aramco broadcast a variety of educational programming, including mathematics, chemistry and language skills.

Great strides were made in the advancement of Aramco's Saudi workforce, including building the first training centers for Saudis in 1955. In 1959, Aramco


Visiting a trade school, Dhahran, 1950


Visiting Aramco, Dhahran, 1950


Opening the first Aramco-built Government school, Dammam, 1954

began sending promising young Saudi employees to study at U.S. colleges and universities. That same year, in October, King Sa'ud announced his support for the creation of schools for girls nationwide and in 1961, Aramco agreed to extend its commitment to building schools for sons of Saudi employees to include daughters as well.

Change was occurring at the top of Aramco as well. In 1959, the first two Saudis – Abdullah H. al-Tariki and Hafiz Wahbah – were appointed to Aramco's Board of Directors. In the last few years of King Sa'ud's reign, two significant milestones in the history of the petroleum industry were reached, one on the global stage and one at home. In 1960, the Organization of Petroleum Exporting Countries (OPEC) was formed.

Three years later, King Sa'ud issued a Royal Decree creating the College of Petroleum and Minerals in Dhahran. The university, now known as King Fahd University of Petroleum and Minerals, and Saudi Aramco have enjoyed a long and mutually beneficial relationship, with the university conducting research vital to the Company's success and many of its graduates enjoying long careers with the Company.

Departing Dhahran, 1957

King Faysal

Reigned 1964 - 1975

The eleven years of King Faysal's rule were marked by big changes in the world, the region, the country and the Company. Both Saudi Arabia and Aramco emerged stronger from these trying times.

In 1965, King Faysal inaugurated the College of Petroleum and Minerals in Dhahran. Aramco has been committed to the school's success since its inception. In 1969, the first Saudi employees of Aramco enrolled in the college. The following year, Aramco contributed millions of dollars to the school's expansion program and in 1971, the university issued its first degrees.

During King Faysal's reign, the program to build and maintain schools for the daughters of Saudi employees became reality, with the first two schools, in al-Khobar and Rahimah, turned over to the Government in September 1964. Aramco also agreed to support the recruitment and training of female teachers.

Aramco, under the guidance of King Faysal, completed major exploration, production and distribution projects to bolster the Company's place among international oil companies. The Berri field was discovered in 1964, followed by a string of significant finds, including Zuluf in 1965, Marjan, Karan and Jana in 1967 and Shaybah in 1968.

That same year, Aramco became the first oil company in history to produce 1 billion barrels of oil in a year.

To better deliver vital supplies of oil to the world, the first two loading berths at Ras Tanura's Sea Island Terminal opened in 1966, with two more berths coming on-line in 1972. Two years before, Aramco's shipments of oil and petroleum products from Ras Tanura surpassed 1 billion barrels for the year for the first time, and in 1971, oil production increased more than 25 percent over the previous year. Another offshore terminal, Ju'aymah, began operations in 1974, with an initial shipping capacity of 1 million bpd.

Under King Faysal, the Saudi Government began negotiations that

Aramco, under the guidance of King Faysal, completed major exploration, production and distribution projects to bolster the Company's place among international oil companies.


Visiting Socal headquarters, San Francisco, 1943


Examining rock samples, Rub' al-Khali, 1951


Visiting Ras Tanura, 1963

resulted, in 1973, in the acquisition of a 25-percent participation interest in Aramco. The next year, participation increased to 60 percent. These were the first steps to complete ownership of the Company, which came in 1980. The negotiated purchase of Aramco was yet another symbol of the relationship, based on mutual respect and trust, between the Saudi Government and the U.S. owner-companies of Aramco.

The release of the Kingdom's Second Five-Year Plan in February 1975 was one of the last official acts of King Faysal. One of the cornerstones of the Plan was the call for Aramco to design, build and operate the Master Gas System to provide fuel for a national network of diversified industries.

The Master Gas System, a legacy of both King Faysal and Aramco, remains the backbone of Saudi industrial development.


Visiting Safaniya, 1963

King Khalid

Reigned 1975 - 1982

The time of King Khalid saw tremendous economic and industrial growth in the Kingdom, driven in large part by the expansion of Aramco's oil and, increasingly, natural gas production capacity. This growth was highlighted in 1976 when Aramco became the only Company in the world to produce more than 3 billion barrels of crude oil in a single calendar year.

The Government and Aramco together embarked on a capital program in the mid to late 1970s that was unprecedented in industrial history – a program that was unmatched until the current capital program that was launched in 2005. In 1977, Aramco had three of the world's largest projects under way at the same time: the Zuluf GOSP-2, the Qurayyah Seawater Treatment Plant and the Master Gas System (MGS).

The MGS was designed to provide fuel or feedstock for electrical power plants, cement and desalination plants, and for petrochemical, fertilizer and steel-making facilities. In November 1977, King Khalid commissioned the Berri Gas Plant, the first plant completed in the MGS.

The next year, a major component of the MGS was completed when Aramco built an NGL pipeline across the country from Shedgum to Yanbu'. As part of the overall MGS, two vast industrial cities were constructed at Jubail on the Gulf and at Yanbu' on the Red Sea. The latter, which included several major Aramco facilities, was formally dedicated in 1979.

The MGS had a dramatic impact on domestic contractors as well as on industries ranging from earth moving to construction, steel, cement and welding, with Aramco awarding hundreds of contracts worth billions of dollars to Saudi firms.

Acting upon King Khalid's Royal Decree creating the Saudi Consolidated Electrical Company, or SCECO, in August 1976, Aramco worked out a plan to combine 26 local power companies with its own power plants, thus creating a

The Government and Aramco together embarked on a capital program in the mid to late 1970s that was unprecedented in industrial history.


Inaugurating Berri Gas Plant, 1977


Visiting Jubail, 1980


Visiting Yanbu', 1980


Visiting Ju'aymah, 1980

unified electrical grid in the Eastern Province.

The MGS and SCECO projects demonstrated the supreme trust placed in Aramco by the rulers of Saudi Arabia who recognized the Company's ability to handle the biggest industrial and engineering challenges in the Kingdom. At the end of the decade, in 1980, King Khalid oversaw the Government's acquisition of the remaining interest in Aramco, setting the stage for the Company to become a fully Saudi-owned and managed enterprise.

King Fahd

Reigned 1982 - 2005

The reign of King Fahd included both boom times and lean times for Aramco, which weathered its gravest challenge and emerged as the world's leading petroleum enterprise, a position it retains to this day. Early in his rule, King Fahd oversaw the appointment in November 1983 of Ali I. Al-Naimi as the first Saudi president of Aramco, effective January 1984. The rise of His Excellency Al-Naimi through the ranks of Aramco was a testament to the potential of the Saudi people, nurtured by the Company's world-class training programs.

King Fahd visited Dhahran on the occasion of the Company's 50th anniversary, in May 1983, and inaugurated the Exploration and Petroleum Engineering Center, or EXPEC, a facility which allowed Aramco to perform many of the geoscience and petroleum engineering tasks previously performed by outside companies.

The final act in the transformation of Aramco took place on 8th November 1988, when King Fahd issued a Royal Decree that established Saudi Aramco.

The following year saw the creation of the Company's international shipping subsidiary, Vela International Marine Limited. By 1995, a program to build 15 advanced supertankers was completed. Today, Vela is recognized as one of the premier tanker fleets in the world, transporting millions of barrels of crude oil and petroleum products safely around the globe.

During a December 1986 visit by King Fahd, the University of Petroleum and Minerals was renamed King Fahd University of Petroleum and Minerals, or KFUPM. The following year, the new Aramco Exhibit opened to the public, and through the years, it has hosted thousands of school children who learn about the petroleum industry and the legacy of Arabic science.

The final act in the transformation of Aramco took place on 8th November 1988, when King Fahd issued a Royal Decree that established the Saudi Arabian Oil Company, or Saudi Aramco. Ali I. Al-Naimi became CEO at this time. Seven years later, in 1995, Abdallah S. Jum'ah was named President and CEO and Al-Naimi was appointed Minister of Petroleum and Mineral Resources, positions they retain today.

Also in 1988, under the guidance of King Fahd, Saudi Aramco took its first steps on the path to becoming a truly integrated international petroleum enterprise when a Company subsidiary and


Inaugurating EXPEC, 1983


Visiting Yanbu', 1983


Visiting Yanbu', 1980


Inaugurating Aramco Training Center, Ras Tanura, 1986

Texaco established Star Enterprise, the Company's first joint refining and marketing venture in the United States. Star Enterprise later evolved into Motiva Enterprises, LLC, a joint venture between Saudi Refining Inc. and Shell. The Star Enterprise venture was followed in 1991 by an equity venture with SsangYong Oil Refining Co. Ltd. (today's S-Oil) in the Republic of Korea and in 1994 by an equity venture with Petron in the Philippines.

In 1989, Saudi Aramco made the first oil discoveries in central Saudi Arabia, followed in 1992 by discoveries on the Red Sea coastal plain. These discoveries were a result of a Government mandate to expand exploration beyond the limits set in the original Concession Agreement.

Confronted with its severest test in 1991, Saudi Aramco successfully contained and then cleaned up one of the largest oil spills in history, a tragic result of the Gulf War. During the crisis, the Company did not falter in its production of petroleum, helping stabilize world energy markets. No Company production facilities or Government installations such as desalination plants were shut down as a result of the spill – a proud testament to Saudi Aramco's ability to perform at the highest levels under any circumstance.

The trust placed in Saudi Aramco by the rulers of the country was again demonstrated in July 1993 when King Fahd issued a Royal Decree merging all of the Kingdom's oil refineries, product distribution facilities and interests in three joint-venture refineries into Saudi Aramco. With this act, King Fahd had transformed Saudi Aramco into the world's third largest refiner. Under the leadership of King Fahd, Ali I. Al-Naimi and an expanding Saudi management, Saudi Aramco was transformed from an oil producing company into a fully integrated petroleum enterprise, with operations spanning the globe.

King ‘Abd Allah

Reign 2005 - Present

As Crown Prince and then as King, ‘Abd Allah guided Saudi Aramco into a higher profile in the global petroleum industry, expanding the Company’s international ventures and extending the Company’s reach into downstream activities, including petrochemicals and associated industries. Under his leadership, Saudi Aramco forged in-Kingdom joint ventures in natural gas, embarked on the largest capital program in its history and took the lead on the creation of a world-class graduate research university.

In a stunning display of technology and human ingenuity, Saudi Aramco brought the Shaybah project on-line and in March 1999, Crown Prince ‘Abd Allah inaugurated the facility, and in April, he inaugurated the Dhahran-Riyadh-Qasim multiproduct pipeline and the Ras Tanura Refinery upgrade project.

Additional oil production capacity was added with the completion of the 800,000 bpd Qatif-Abu Sa‘fah project, inaugurated by Crown Prince ‘Abd Allah in December 2004. The following year, the Saudi Government and Saudi Aramco unveiled the most ambitious capital project in the Company’s history: a slate of crude oil production expansion projects that, by 2009, will raise the Kingdom’s maximum sustained output of crude oil by 2 million bpd to about 12 million bpd – an increase roughly equal to the output of some leading oil-exporting nations.

Saudi Aramco, under the direction of King ‘Abd Allah, has entered into long-term partnerships abroad that will ensure future markets for Saudi Arabian crude oil.

With domestic demand for natural gas increasing, Saudi Aramco placed greater emphasis on finding and producing non-associated gas. One of the first tangible results of this strategy was the Hawiyah Gas Plant, inaugurated by Crown Prince ‘Abd Allah in October 2002. This was soon followed by the Haradh Gas Plant, inaugurated by the Crown Prince in January 2004. Under the direction of the Government, Saudi Aramco entered into discussions with international petroleum companies for possible gas exploration and production joint ventures in the Kingdom. In 2004, the last of four joint venture agreements was signed for upstream gas projects in the Rub’ al-Khali.

The natural gas strategy does not end with the production of gas, but extends to associated downstream industries, thus further diversifying the national economy and creating new jobs for Saudi citizens. To this end, in March 2006, ground was broken on a joint venture with Sumitomo Chemical Co., Ltd. of Japan,


Inaugurating Hawtah, 1997


Inaugurating Shaybah, 1999


Inaugurating the Hawiyah Gas Plant, 2002


Inaugurating Qatif, 2004

to build an integrated refining and petrochemical complex in Rabigh.

The following year, in May 2007, Saudi Aramco and Dow Chemical Co. agreed to conduct a feasibility study for a world-scale chemicals and plastics production complex integrated with the Ras Tanura Refinery.

In addition to forging international partnerships at home to strengthen the national economy, Saudi Aramco, under the direction of King 'Abd Allah, has entered into long-term partnerships abroad that will ensure future markets for Saudi Arabian crude oil. In 2004, a Company subsidiary acquired a strategic shareholding in Showa Shell in Japan, and in 2007, agreements were signed with Sinopec, the Fujian provincial government and ExxonMobil for the first fully integrated Sino-foreign projects that involve refining, petrochemicals and marketing of fuels and chemicals.

King 'Abd Allah and Saudi Aramco are not only focused on the economic development of the Kingdom, but on its human development as well.

For decades, Saudi Aramco has operated one of the largest industrial training programs in the world and has sponsored thousands of Saudi employees to study in universities at home and abroad. Recognizing the need for advanced science and mathematics skills to tackle the energy and environmental challenges confronting all the people on the planet, King 'Abd Allah announced the creation of a graduate research university: the King Abdullah University of Science and Technology, or KAUST. As a sign of continued trust in the Company's capabilities and expertise, King 'Abd Allah called on Saudi Aramco to develop and build the university. Ground was broken on 21st October 2007, and the first classes will be held in the Fall of 2009.

Abdullah Al-Tariki: First Saudi Board Member

Engaging, dynamic, courageous and outspoken, Abdullah H. Al-Tariki is widely remembered as a world figure in the politics of oil and energy.

A Saudi native, Al-Tariki originally came from Zilfi, the son of a camel owner who organized caravans between Saudi Arabia and Kuwait. At an early age, Al-Tariki was noted for his intelligence and was sent to schools in Kuwait and Cairo. He later earned a scholarship to the University of Texas, where he studied chemistry and geology.

Al-Tariki was responsible for many firsts in Saudi Arabia. He was one of the first American-educated Saudis and is believed to be the first Saudi trained in both chemistry and geology. At 35 years of age, his role with the Directorate of Oil and Mining Affairs was to process petroleum statistics from Aramco and provide these to the Royal Family with his analyses.

In 1954, he became director general of Petroleum and Mineral Affairs. In 1959, Al-Tariki was the first Saudi elected to Aramco's Board of Directors. Upon creation of the Ministry of Petroleum and Mineral Resources in 1960, Al-Tariki was appointed the first oil minister.

Al-Tariki was pivotal in supporting both the nationalization and the Saudization of the company.

Among his other accomplishments, Al-Tariki was instrumental in the founding in 1960 of the Organization of Petroleum Exporting Countries (OPEC), and in his later years, served as an oil consultant and an activist in Arab affairs.

Abdul Aziz M. Shalfan: Bridging the Gap

Abdul Aziz Muhammad Shalfan joined California Arabian Standard Oil Company (Casoc) in 1934 as Employee No. 4 and continued to work, declining retirement for nearly 49 years, until his death in 1983.

During his lengthy tenure with the company, Shalfan served a variety of functions within the organization and a key role in the Public Relations Department. Shalfan worked at the Aramco Oil Exhibit and quickly developed a strong reputation for his warm and engaging treatment of exhibit visitors.

Originally from the Najd, Shalfan as a young boy was brought to Bahrain where he encountered two Western geologists in pursuit of oil. Although quite young, Shalfan offered his expertise as a native of Saudi Arabia, to accompany the gentlemen in their exploration efforts. Such began his adventures in the search for oil, which led Shalfan ultimately to the well called Dammam No. 7, where Max Steineke and his geological team reached their goal for commercial oil discovery in 1938.

Shalfan experienced first-hand this momentous period in history, important both for the Kingdom of Saudi Arabia and the world. Describing the rapid pace of transformation within Saudi Arabia as a result of discovering oil, Shalfan proclaimed, "We have gone from nothing to everything."

Fahmi Basrawi: To Teach is to Learn

With only a sixth-grade education, Fahmi Basrawi began an exciting journey with Aramco, obtaining a job as one of the first teachers at the company's Jabal School in Dhahran.

A resident of Jeddah who worked as a clerk in the local police station, Basrawi responded to an ad for Aramco employment. Because he could read and write Arabic he was quickly hired. He was told he was going to be an English teacher! Basrawi did not actually know English, but he soon taught himself the language, learning as he went, only a lesson or two ahead of his students.

At the time Basrawi taught at the Jabal School, there were 3 or 4 teachers and over 100 students. His work was cut out for him, and he quickly found himself to be a natural teacher with a penchant for organizing youth sports and field trips. Basrawi remembered teaching Ali Al-Naimi for two years during his time at the Jabal School. Al-Naimi, he recalled was a very prepared student.

Following his years at Jabal, driven by his own educational goals, Basrawi attended college in Beirut. He was among the first group of Aramco students to study in Lebanon. He later returned to Dhahran for a job in the company's Government Relations division.

Basrawi is also well known as a personality on Aramco Television, where he hosted educational programs for 17 years. Through this programming, women in the Eastern Province in Saudi Arabia learned to read and write during an era when there were no schools for girls. He later hosted a popular quiz show where Aramco contestants competed on the subjects of math, history, geography and religion.

One of Aramco's important pioneers, Basrawi reflects back on his time with Aramco and thinks it is wonderful that the Saudi employee of today has even more opportunities for education than during his era.

Floyd Ohliger: Getting the Job Done

Surprisingly Floyd Ohliger, who was present during the very early days of Aramco, would have been reluctant to consider himself a "pioneer." In Ohliger's eyes, the true "pioneers" of the company were the early geologists, including Max Steineke and others. Ohliger said in a 1983 interview with "The Arabian Sun" that his team did not see themselves as "pathfinders" but rather as just men who were there to work.

Educated in petroleum engineering at the University of Pittsburgh and Stanford University, Ohliger began his career in the oil fields of Venezuela and Colombia. In 1934 he was approached by Standard Oil of California (Socal) about working in Saudi Arabia. He jumped at the chance, and immediately headed to al-Khobar, where his first assignment as a petroleum engineer was to oversee construction of a pier and supervise the unloading of equipment. He went on to hold many positions with Aramco, developing a strong reputation for "getting the job done." One of Ohliger's more interesting jobs was with Government Relations, where he had frequent contact with King Abdul Aziz. The two men developed a very positive, respectful relationship and Ohliger reflected fondly on his close interactions with the King.

Additional positions Ohliger held included resident manager, general manager, vice president and chairman of the Aramco Board of Directors. He retired from Aramco in 1957 and subsequently returned to the United States with his family.

On the 50th Anniversary of Aramco, Ohliger returned to the Eastern Province and other areas in Saudi Arabia, met with management and toured the new Exploration and Petroleum Engineering Center (EXPEC). He commented to "The Arabian Sun" during that return visit to the Kingdom that his work and time with Aramco brought him a "satisfaction more inward than anything else." He also talked about the overwhelming transformation of the Kingdom in the years he had been away and said the developments "for the country as a whole, including Aramco in the last 10 years, have been greater than all the preceding years." Much of the transformation was the result of a highly successful oil industry built through the hard work of Aramco's early pioneers, and Ohliger, whether he would admit it or not, played a significant role in this success.

Fred Davies: Early Explorer, Dedicated Leader

Spanning a 37-year career in the oil business, Fred Davies was one of Saudi Aramco's earliest pioneers and geologists. Originally from Aberdeen, South Dakota, Davies studied engineering at the University of Minnesota before serving in World War I. He became a geologist in the United States and started his career in the oil business at the California Oil Company in Texas.

It was 1934 when Davies visited the Arabian Gulf on his first trip. On behalf of Socal (Standard Oil Company of California) and its subsidiary Bapco, Davies worked with the team that located the first wildcat well in Bahrain. Based on this discovery and his superior instincts, Davies recommended efforts to obtain a concession agreement in Saudi Arabia. He was convinced of the Kingdom's great potential for oil exploration.

This instinctive knowledge led to a tremendous future for Davies with the company, including his presence in 1939 when King 'Abd al-'Aziz turned the valve that permitted oil to flow onto the first export tanker at Ras Tanura. Davies' career with the company flourished after the momentous entrance of Saudi Arabia into commercial oil production.

Davies' career path included President of Casoc (California Arabian Standard Oil Company); Aramco Vice President of Exploration and Production; Executive Vice President of Aramco; and eventually CEO and Chairman of the board. He also served on the senior leadership team during the season that Aramco relocated its headquarters from New York to Dhahran. He relocated his family to Dhahran and resided in the Kingdom for the remainder of his Aramco career.

In a display of honor, Aramco's first floating storage vessel was named the "F.A. Davies." Liston Hills, President of Aramco at the time, described Davies as a man "whose vision, professional skills and persistence were instrumental in the uncovering of vast petroleum reserves in the Gulf."

Frank Jungers: Pioneer of Saudization

He held what Fortune Magazine called "One of the Most Delicate Positions in all Industry."

Undisputedly a key figure in the company's history, CEO Frank Jungers oversaw momentous growth during his time with Aramco. Originally from North Dakota, Jungers was educated in Oregon and Washington State in engineering. He served in the U.S. Navy and then immediately went to work for Standard Oil of California in San Francisco. It was 1947, and Jungers was just 23 years of age when he was sent to Saudi Arabia for the first time. He was immediately given a permanent assignment in the Kingdom to work on a construction project. He quickly developed a reputation for maintaining very positive relations with the Saudi workforce. This is the reputation that Jungers carried with him throughout his career and an attribute that made him a great success with the company.

Unlike some of the earlier pioneers who built the company and its facilities from the ground up, Jungers joined a going concern, and worked hard to enhance and improve its operations. The course had already been laid out by his predecessors. Jungers, however, faced equally daunting challenges, as he was running Aramco during an era of massive change.

A natural problem solver, Jungers was tapped early on for managerial roles in Ras Tanura and then in Dhahran. In his desire to communicate better with his Saudi workforce, Jungers became fluent in Arabic. In 1971, Jungers was appointed as President of Aramco and served as Chairman of the Board and CEO from 1973 to 1978. During his time of senior leadership, Jungers oversaw the creation of the Kingdom's Master Gas System, the negotiations surrounding the Saudization of the company, and the OPEC oil embargo. A key figure during a critical time, Jungers today is recognized for his 30 years of service with Aramco and his dedication to the growth and professional development of the Saudi workforce during his tenure.

George Rentz: Senior Arabist, Superior Scholar

"Senior Arabist" is one of several titles bestowed upon Dr. George S. Rentz, Jr., during his tenure with the company.

Originally from Pennsylvania, Rentz's interest in Arabic culture occurred while teaching in Syria in 1932 at the age of 20. In his three years there, Rentz developed a profound love for the Arabic language which he pursued after returning to the United States. Rentz attended the University of California at Berkeley. He was studying classical Arabic and Near Eastern history at Berkeley when World War II broke out. He left the university to run the U.S. Office of War Information in Cairo.

In 1944, Rentz was invited to Jeddah by Karl Twitchell, an American mining engineer who was instrumental in the signing of the Concession Agreement in 1933. With his superb command of the Arabic language, Rentz was recruited as a translator for a mere 9-month opportunity, but went on to serve 17 years with Aramco.

With his comprehensive grasp of the language and culture, Rentz provided a critical role in Aramco's Government Relations Department. He also served as Chief of the Arabian Research and Translation Division, and Supervisor of Arabian Research. Rentz established high standards for Arabic translation and research. He is also recalled for his contributions to a series of Aramco handbooks detailing the history of Saudi Arabia, the petroleum industry and of Aramco itself.

Like other Americans who served with Aramco, Rentz was able to return to Dhahran later in his life to see how the country had changed. At the age of 71, Rentz was struck by the size of the buildings and the overwhelming accomplishments of the company. Rentz's contributions in research, scholarship and service were a significant part of that success.

Max Steineke: Geologist and Icon

Chief geologist from 1936 - 1946, Max Steineke arrived in Saudi Arabia after 13 years as a Socal (Standard Oil Company of California) geologist with experience in Alaska, Colombia and New Zealand. Steineke is described by author Wallace Stegner in his book Discovery!, as "Burly, big-jawed, hearty, enthusiastic, profane, indefatigable, careless of irrelevant detail and implacable in tracking down a line of inquiry, he made men like him, and won their confidence." The early pioneers agreed, and Steineke was highly respected by both his American and Saudi colleagues. Despite their limited communication in broken Arabic and English, Steineke developed a close friendship with chief guide, Khamis ibn Rimthan. The two worked side by side for many years in the early exploration days.

Steineke is well known for his efforts at Dammam Well No. 7, which in 1938 produced oil in commercial quantities for the first time in Saudi Arabia. With no promise of success – and previous unsuccessful drilling attempts – the teams kept drilling at Steineke's urging, which led to the discovery that ultimately transformed the Kingdom. It was no surprise that Steineke was awarded the prestigious Sidney Powers Memorial Medal in 1951, the highest honor for a petroleum geologist. Steineke's perseverance and commitment to Aramco give him a very special place in both the company and world history.

Najat Husseini: First Saudi Female Professional

Aramco's first Saudi female employee with a college degree, Najat Husseini holds a significant place with pioneers in the company's history. The daughter of a Saudi diplomat, Husseini's experience with education occurred outside the Kingdom, first in Rome, Italy, where she attended Marymount High School and subsequently at the University of Damascus in Syria.

It was 1964, and Aramco had not yet hired an educated Saudi woman. Husseini, determined to put her education to work, applied to the company. Aramco lacked a precedent in this matter and sought special permission from King Faisal, a great supporter of women's education, to hire Husseini.

Upon gaining approval, Husseini took part in a health education outreach program where she contributed directly to Aramco's communities. With other Aramco employees, Husseini traveled and educated Saudi families on personal care, health practices and sanitization. Her impact on Aramco and its female work force – as well as on the improved health care of the surrounding communities – has left a lasting mark on the company.

Nassir Al-Ajmi: 'The Legacy of a Lifetime'

"I wasn't looking for a career. I was looking for a living", Nassir Al-Ajmi says in a 2007 interview about his 42 year experience with Aramco. Al-Ajmi represents a remarkable story of a humble teenager who started his path at Aramco as an auto-mechanic trainee in Dhahran in the 1950s. Eventually, Al-Ajmi grew to occupy the role of Executive Vice President, leading the company through its evolution to a state owned enterprise in 1988.

Al-Ajmi is honored as one of the most successful leaders in Saudi Arabia, in transitioning a company and a Kingdom from the pre-oil discovery era to industrialization and growth. With his leadership skills shining through at an early age, Al-Ajmi was selected by Aramco for an out-of-Kingdom education in Lebanon and the United States. He completed a high school degree in Beiruit, and a University degree at Milton College in Wisconsin. Upon returning to Aramco, Al-Ajmi took on several leadership roles within the company and was ultimately sent for further advanced education at Columbia University and Harvard University. With his education, ambition and determination, Al-Ajmi served in the roles of Vice President, Senior Vice President and an eventual election to the Board of Directors. Colleagues describe Al-Ajmi as hard working and always available.

Al-Ajmi is currently retired, and is a published author of "The Legacy of a Lifetime". In a 2007 interview, Al-Ajmi recounts his experience in the early days of Aramco. He provides thoughts on the future of Aramco and says he hopes to see managers who are able to grow and learn beyond what the founders were capable of. In speaking to a group of new engineers at Aramco, Al-Ajmi tells them he is glad to not be competing with them. "That's the kind of organization that we hope to maintain in Aramco", Al-Ajmi says, "…as a generation leaves, they leave people better than themselves".

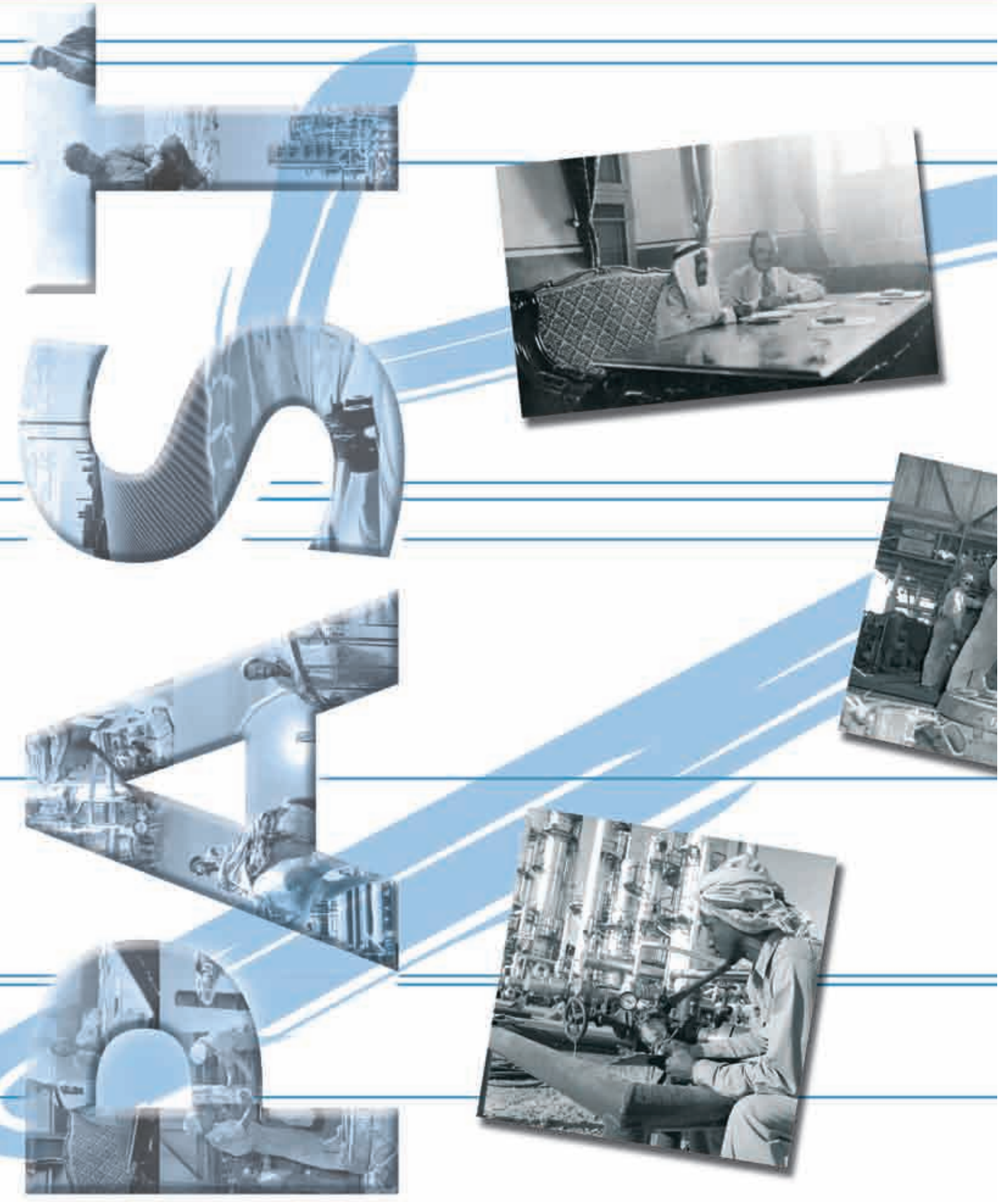
Richard Kerr: Geologist, Engineer and Photographer

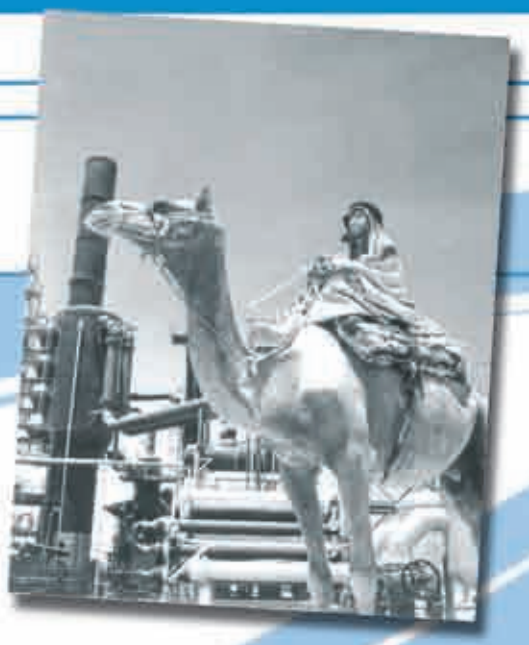
After working with Shell Oil in Mexico and Canada, Richard Kerr was approached with an opportunity to travel to Saudi Arabia in 1933. Because of his expertise in geology, Kerr was asked to provide aerial geological reconnaissance for Standard Oil of California (Socal).

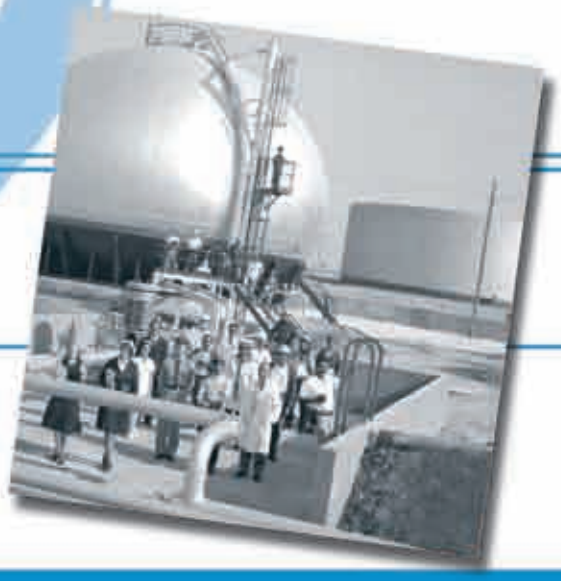
Kerr and colleague Charles Rocheville ordered a Fairchild 71 airplane and began their aerial journey. There were no roads in Saudi Arabia at that time, nor any maps or communications tools to help them find their way. Kerr and Rocheville relied on markers left by other explorers who dug trenches in the sand, filled them with gas and set them on fire to leave blackened messages and words to other travelers. Kerr studied, sketched and photographed the Arabian terrain, and played a great part in the development of the country's maps. Today, many of Kerr's photographs remain in Aramco's historical archives.

After his first airborne mission, Kerr returned to Saudi Arabia for permanent employment with the company from 1937 – 1950. Described by colleagues as 'insatiably curious', another important accomplishment Kerr made is the design of a low-pressure sand tire for desert driving. He received recognition by the U.S. Secretary of Defense for this contribution which enabled longer distance driving in desert areas and made greater exploration efforts possible in Saudi Arabia.

Kerr's later years with Aramco were spent in the New York office where he hosted many associates from Aramco and Saudi Arabia. His lasting marks as an Aramco "pioneer" were the innovative contributions borne from his spirit and dedication to the country and company.







'Put your trust in

King 'Abd al-'Aziz Al Sa'ud to Finance Minister 'Abd Allah al-Sulayman on 29th May 1933'.

The Kingdom of Saudi Arabia was unified in 1932 by King 'Abd al-'Aziz Al Sa'ud. On 29th May 1933, the Kingdom signed an oil exploration concession agreement with Standard Oil Company of California (Socal). This contract marked the beginning of a new era in the Kingdom's history. Since then, the pace of change in the company and in local communities has been spectacular. The sons of Saudi herdsmen, farmers and fishermen became geologists, engineers and technicians. Their sons are now the managers and executives of an international energy company of more than 52,000 employees. Today, Saudi Aramco manages the world's largest conventional reserves of crude oil, leads the world in crude oil production and natural gas liquid exports, and is one of the world's largest producers of natural gas and refined petroleum products.

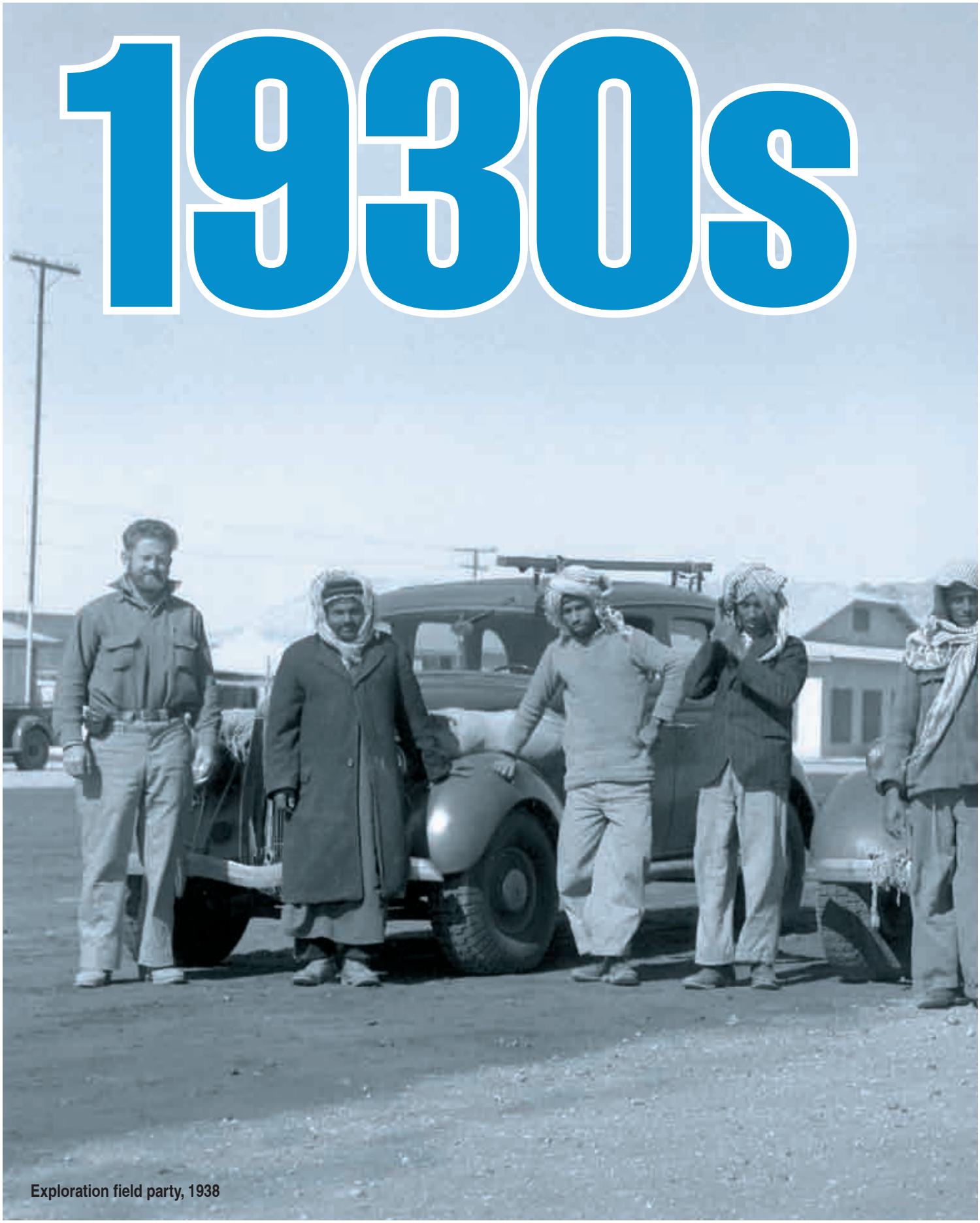
Al-'Uqayr in 1934, four years before the discovery of oil

God and sign!’

1933 - May 29, oil concession agreement is signed between Saudi Arabia and Standard Oil Co. of California (Socal, today's ChevronTexaco). The concession was later assigned to Socal affiliate California Arabian Standard Oil Co. (Casoc).

1933 - November, Socal creates a subsidiary, the California Arabian Standard Oil Company, or Casoc, to manage the concession.

1930s

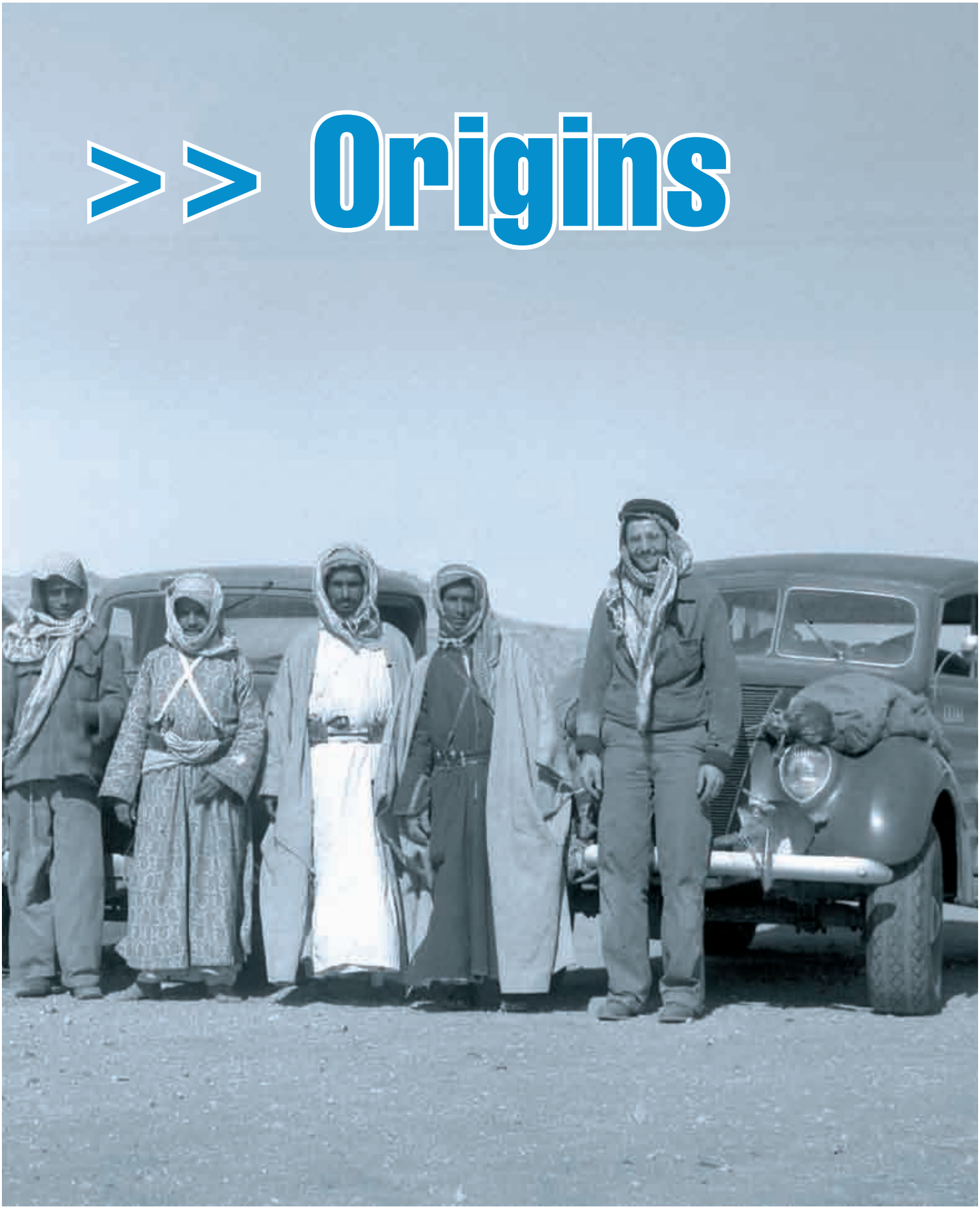


Exploration field party, 1938

1934 - There are 13 Americans in the camp. One of them is Max Steineke, who will play a critical role in the discovery of oil in the Kingdom. He teams up with Khamis ibn Ramthan, a guide who will also have a leading role in the search for oil.

1935 - The first test well is drilled into the Dammam Dome.

>> Origins



1936 - The Texas company (later Texaco) acquires a 50-percent interest in Socal's concession to help finance the construction of new facilities.

1937 - Company geologist Max Steineke crosses the Arabian Peninsula both ways, gaining a comprehensive idea of the structure and stratigraphy of the peninsula upon which all subsequent geological knowledge is built.

'Drill deeper'

Chief Geologist Max Steineke to Casoc executives in San Francisco in 1938.

Max Steineke is widely recognized as the geologist most responsible for the discovery of oil in Saudi Arabia. Steineke was a senior geologist with Socal, arriving in Dhahran in the Fall of 1934. In March and April 1937, he crossed the Arabian Peninsula both ways, gaining a comprehensive idea of the structure and stratigraphy of the peninsula, on which all subsequent geological knowledge is based. Prior to the success of Dammam No. 7, Casoc had suffered a string of expensive setbacks. Casoc executives asked Steineke if it was worthwhile to continue operations. His advice: "Drill deeper." The oilmen drilled down 1,441 meters into the Arab formation where Dammam No. 7 finally struck oil, and by 22nd March 1938, was producing 3,600 barrels per day.

Early photo of Dhahran, *1938*

Casoc's first payment of £35,000 being counted at the Dutch Bank, Jiddah, Aug 25, 1933

1938 - Dammam Well No. 7 at Dhahran strikes oil in commercial quantities. First crude oil from the Kingdom shipped by barge to Bahrain.

1939 - King 'Abd Al-'Aziz Al Sa'ud inaugurates first export tanker shipment of oil at Ras Tanura.

Tom Kock examines hail stones while a Saudi boy watches.

Calarabia leaving Al Khobar pier for bi-weekly trip to Bahrain, Arabian Gulf, 1936

Exploration party using a plane table near Wadi Ansab, 1936. Photo by: Max Steineke

Early photo of Dhahran, 1938

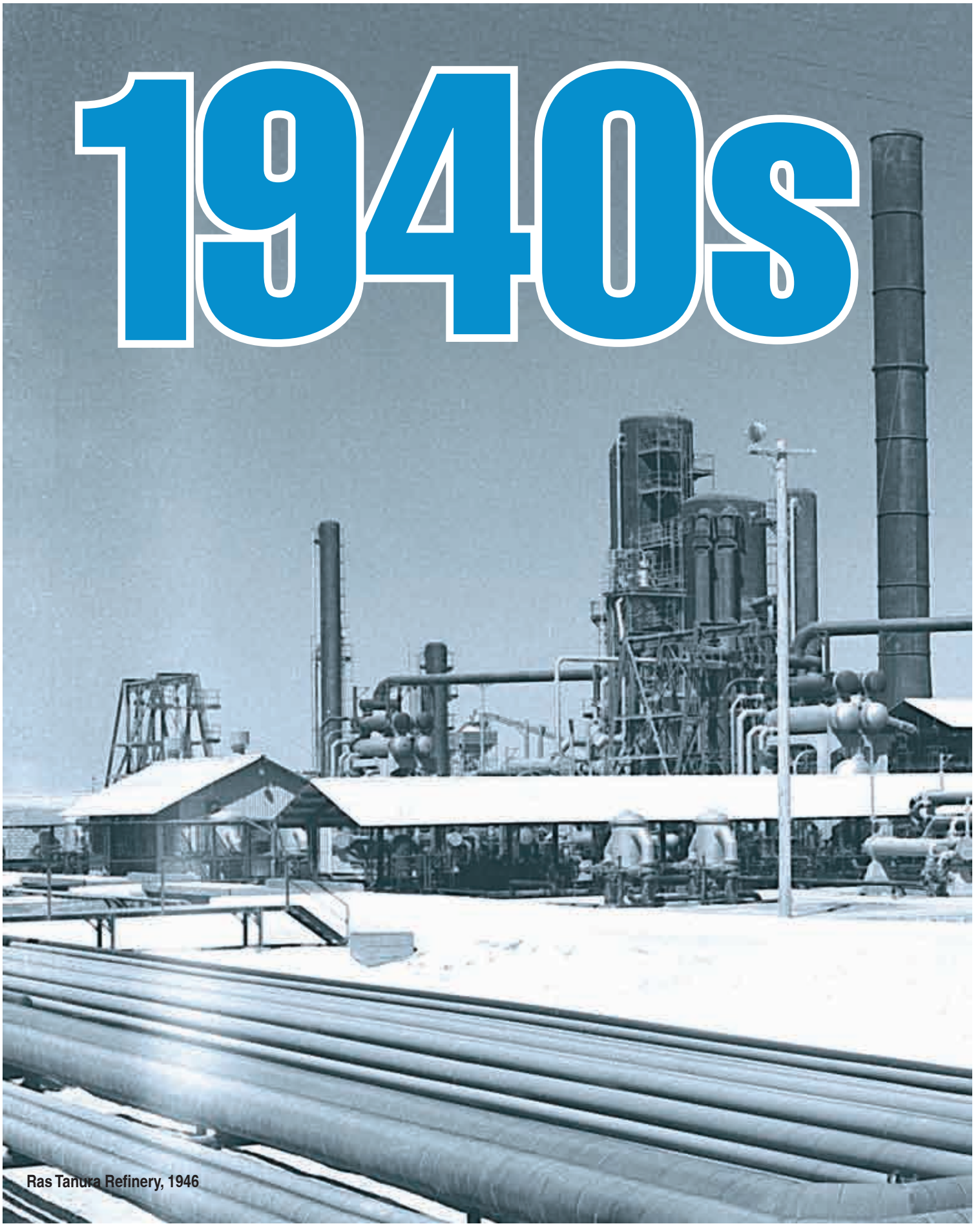
HM King Abd Al Aziz takes the salute aboard the D. G. Scofield during his visit to Dhahran and Ras Tanura. This was his first visit to Socal. The Scofield was the first tanker to take on oil from the Ras Tanura terminal, Ras Tanura, May 1, 1939

1940 - Crude production totals 3,933,903 barrels for year.

1940 - May, 11. The first company school opens in al-Khobar. Classes in English and arithmetic are open to everyone, employee or not. The company provides teachers, desks, benches, blackboards, chalk and lamps.

1941 - 3,000-bpd refinery opens in Ras Tanura and is closed six months later due to shortages caused by World War II.

1940s



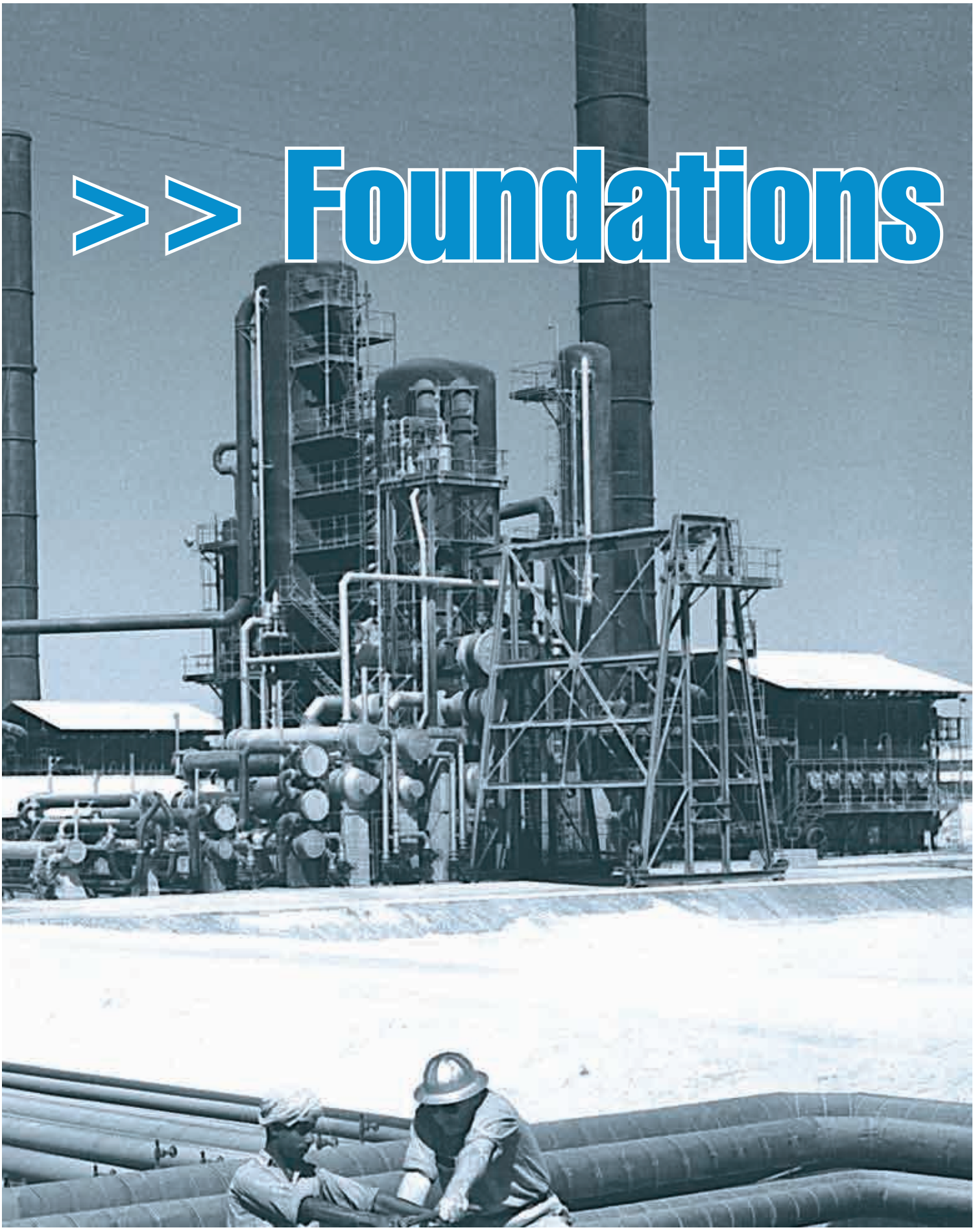
Ras Tanura Refinery, 1946

1942 - Despite a decline of manpower due to World War II, production averages between 10,000 and 12,000 bpd, all of it shipped to Bahrain for processing.

1942 - Field mapping is suspended due to wartime limitations of manpower and equipment.

1943 - Due to the difficulty of obtaining automotive parts, camel transport is used to supply the distant Jauf camp with diesel oil, gasoline, drilling muds and cement.

>> Foundations



1944 - Company name changed to Arabian American Oil Co. (Aramco).

1945 - The new 50,000-bpd Ras Tanura Refinery begins operations. The project is completed on schedule, a remarkable achievement under the circumstances. It replaces the 3,000-bpd Ras Tanura Refinery that opened in 1939.

1946 - The first increment of the permanent administration building (now the South Administration Building) is completed and occupied in Dhahran.

‘We came out here to do a job and, by God, we plan to do it.’

Casoc employees in Saudi Arabia during the period 1941-1943.

In 1940, there were signs of a big oil field at Abqaiq and a major new discovery at Abu Hadriya. The drilling location for Abu Hadriya No. 1 had been partly based on seismographic evidence, a new development in exploration. When the well struck oil in March 1940, at twice the depth of Dammam No. 7, it was an early vindication for exploration geophysics. This significant strike also showed that similar deep geologic structures in Saudi Arabia might yield oil. In January 1944, when the company was renamed the Arabian American Oil Company, or Aramco, oil was critical for post-war industry, aviation and the recovery of wartorn Europe.

HM King Abd Al-Aziz confers with President Roosevelt on an American cruiser U.S.S. Quincy in the Suez Canal on February 14, 1945. Photo by: Int'l News Photo U. S. A. Signal Corps

Backed by his royal guards as he surveys the scene at the Dhahran Tennis Court on January 25, 1947, HM King Abd Al-Aziz is flanked by Aramco executive James Macpherson (left), by T. V. Stapleton and American Consul Waldo Bailey (right). Courtesy of Evelyn (Mrs. Bill) Squires

1947 - King 'Abd Al-'Aziz visits Dhahran. New 50,000-bpd refinery at Ras Tanura completes its first full year of operation.

1948 - Standard Oil Company of New Jersey and Socony-Vacuum Oil Company (later renamed Exxon and Mobil, respectively) acquire shares in Aramco.

1949 - Saudi Arabia becomes the fifth largest oil-producing nation. It has 80 producing oil wells, 44 in the Abqaiq area, 30 in the Dammam Dome and the rest scattered among the areas of new discovery.

View of Aramco's Dhahran stabilizer installation at Twilight. Dhahran, 1949. Photo by: T. F. Walters

Ready to run a bit into the well hole, two Saudi Arabian employees of Aramco guide the drill pipe and bit down through rotary table on the platform of their rig near Abqaiq. May 1949. Photo by: T. F. Walters

Date garden with two riders on donkey in the center, Umm Sabah, Hofuf, 1949.

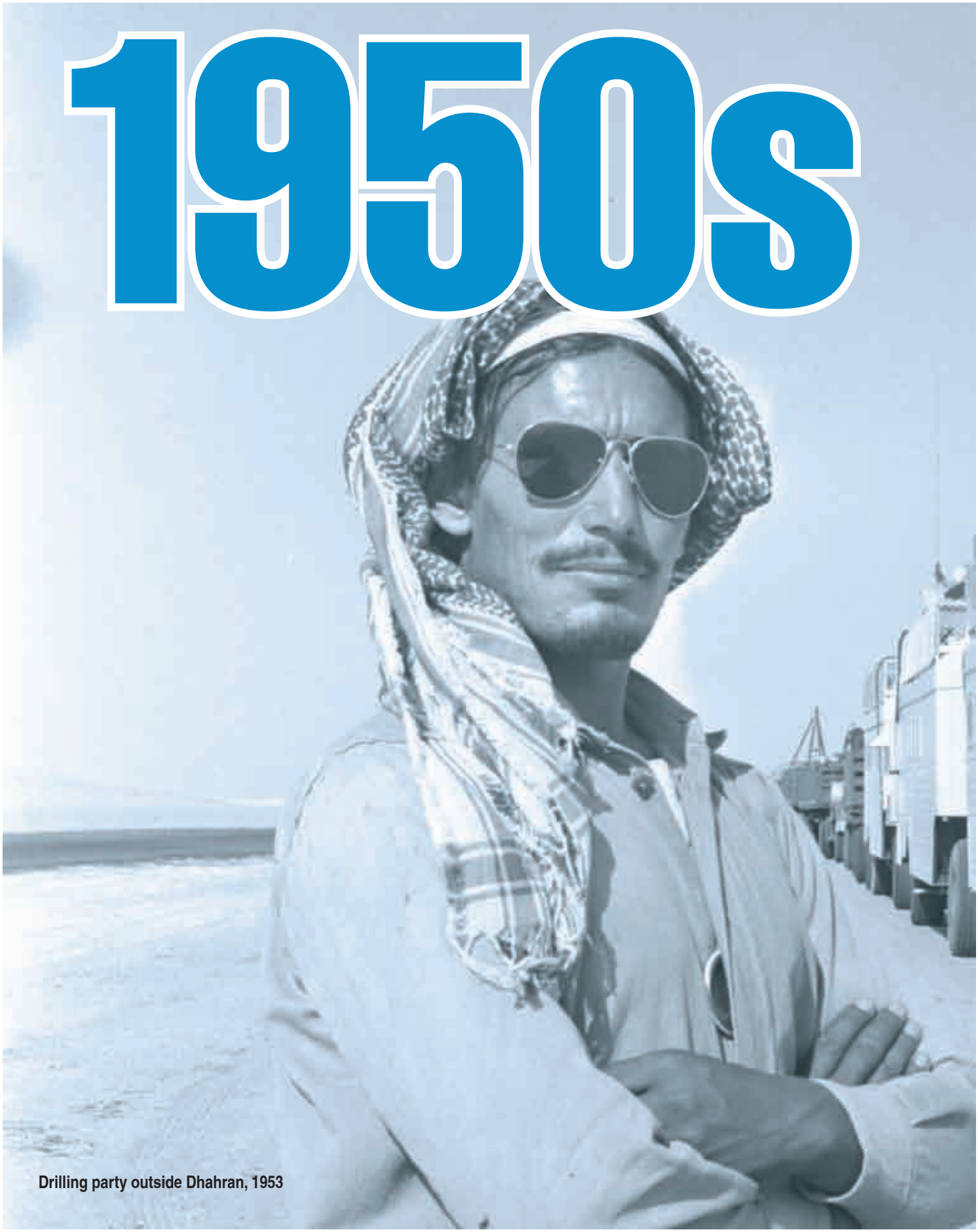
Aviation's Aramco airplane unloading passengers and cargo, 1940. Photo by: B. H. Moody

Saudi man and his camel infront of Ras Tanura refinery. Photo by: R. Y. Richie

1950 - The Trans-Arabian Pipeline, the world's longest oil pipeline, is completed so oil can travel 1,719 kilometers (1,068 miles) from the Abqaiq oil field to the Mediterranean Sea port at Sidon, Lebanon.

1951 - Safaniya field, the world's largest offshore oil field, is discovered. The company completes the 357-mi (575 km) Saudi Government Railroad from Dammam to Riyadh.

1950s



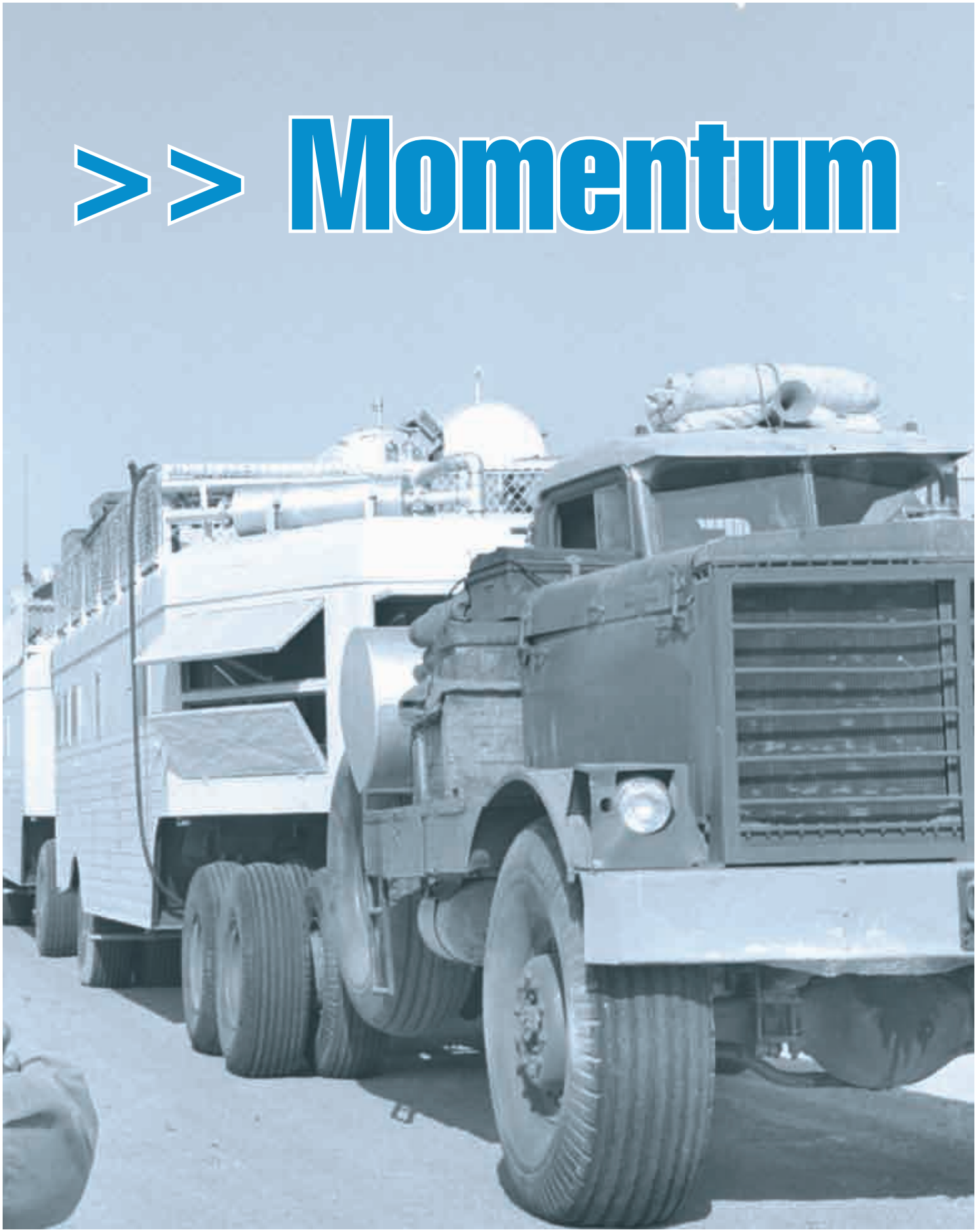
Drilling party outside Dhahran, 1953

1952 - Indications of Ghawar, world's largest oil field, detected. Company headquarters transferred from New York to Dhahran.

1953 - Company undertakes the construction of 10 primary schools in the Eastern Province.

1954 - Crude-oil production exceeds 1 million bpd in May.

>> Momentum



1955 - Crude-oil reserves estimated at 30–35 billion barrels due to drilling in the Ghawar and Safaniya fields.

1956 - Discovery of the Khursaniyah field, together with other drilling operations, increases proved reserves of crude oil to 34 billion barrels.

‘The Saudi contingent working with us were mostly young men from Bedouin tribes. … It was marvelous to see these men learn and develop. …’

John Kelberer, in the early 1950s, a communications engineer in Tapline’s early days and later Aramco Chairman of the Board.

The world demand for petroleum took a sudden upward trend in the 1950s. Aramco reached new oil production milestones during this decade. The Dammam Field produced more than 29 million barrels of oil from 30 producing wells in 1951. By May 1954, crude oil production topped 1 million barrels per day, earning Aramco the title of “world’s largest oil producer” for that year. In 1958, crude oil production exceeded 1 million barrels per day for the entire calendar year – a major achievement for Aramco. Aramco announced two spectacular finds in the 1950s: Ghawar, the world’s largest oil field, and Safaniya, the world’s largest offshore oil field.

Saudi man laying down for an x-ray at Aramco Dhahran Health Center, 1950's

Susan Kelly, American, and Faridah Sowayigh, Saudi. Dhahran, January 1952. Photo by: T. F. Walters

Khamis Ibn Rimthan, Saudi pioneer guide. Photo by: Russell Lee

1957 - Cumulative crude-oil production reaches 3 billion barrels, making Saudi Arabia fifth country to reach that mark.

1958 - Crude oil production exceeds 1 million bpd for a calendar year.

1959 - Aramco publicizes worldwide the availability of non-associated gas as an inexpensive fuel.

A young Saudi with some camels having rest. (The camels were a common means of transportation in the early days). Buildings in background. Jiddah, 1950s. Photo by: T. F. Walters

Abdullah Ibn Hassan, Plant Supt. of GOSP no. 4 for 12 Years, lives and works in Hofuf. Photo By: R. E. Bright

Survey exploration party on desert in Eastern Saudi Arabia. Geologist communicates with headquarters via walkie-talkie as his companion sights through a transit. Exploration surveying. Abqaiq, September 1952. Photo by: T. F. Walters

Falcon hunting is still practiced in Arabia. These birds are trained to hunt rabbits and hubara - while others are highly trained in the hunting of gazelles. Desert, November 1955. Photo by: Khalil Nasr

Mohammed Hazza, no 010696, fire station leadman checks pressure of hydrant no. 185 which serves the south plot limits of the hydroformer in the Ras Tanura refinery. Ras Tanura, November 1956. Photo by: T. F. Walters

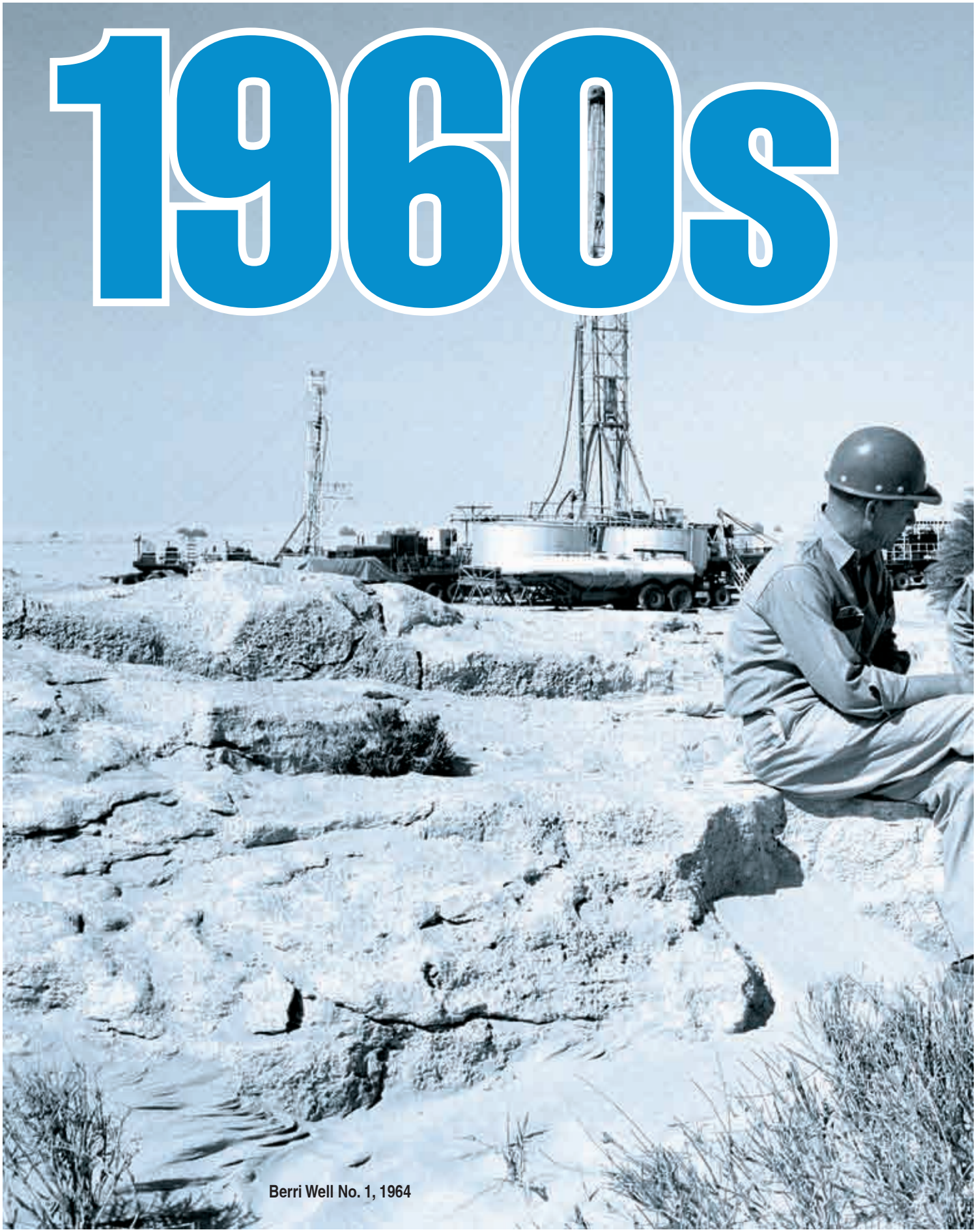
Ain Dar no. 57 looms above a herd of watering camels while herdsman smile. Located approximately 68 kms (41 Miles) north and west of Abqaiq, Aramco's producing headquarters, no. 57 is situated in the north Ghawar field, 8 kms (5 miles) due south of Ain Dar no. 56., Ain Dar no. 57, September 1957. Photo by: V. K. Antony

1961 - Aramco's first shipment of liquefied petroleum gas (LPG), the equivalent of 75 million cubic feet of gas, is loaded onto a specially designed tanker at Ras Tanura.

1962 - Cumulative crude oil production reaches 5 billion barrels.

1963 - Crude oil reserves total 57.8 billion barrels; gas reserves total 24.1 trillion scf.

1960s



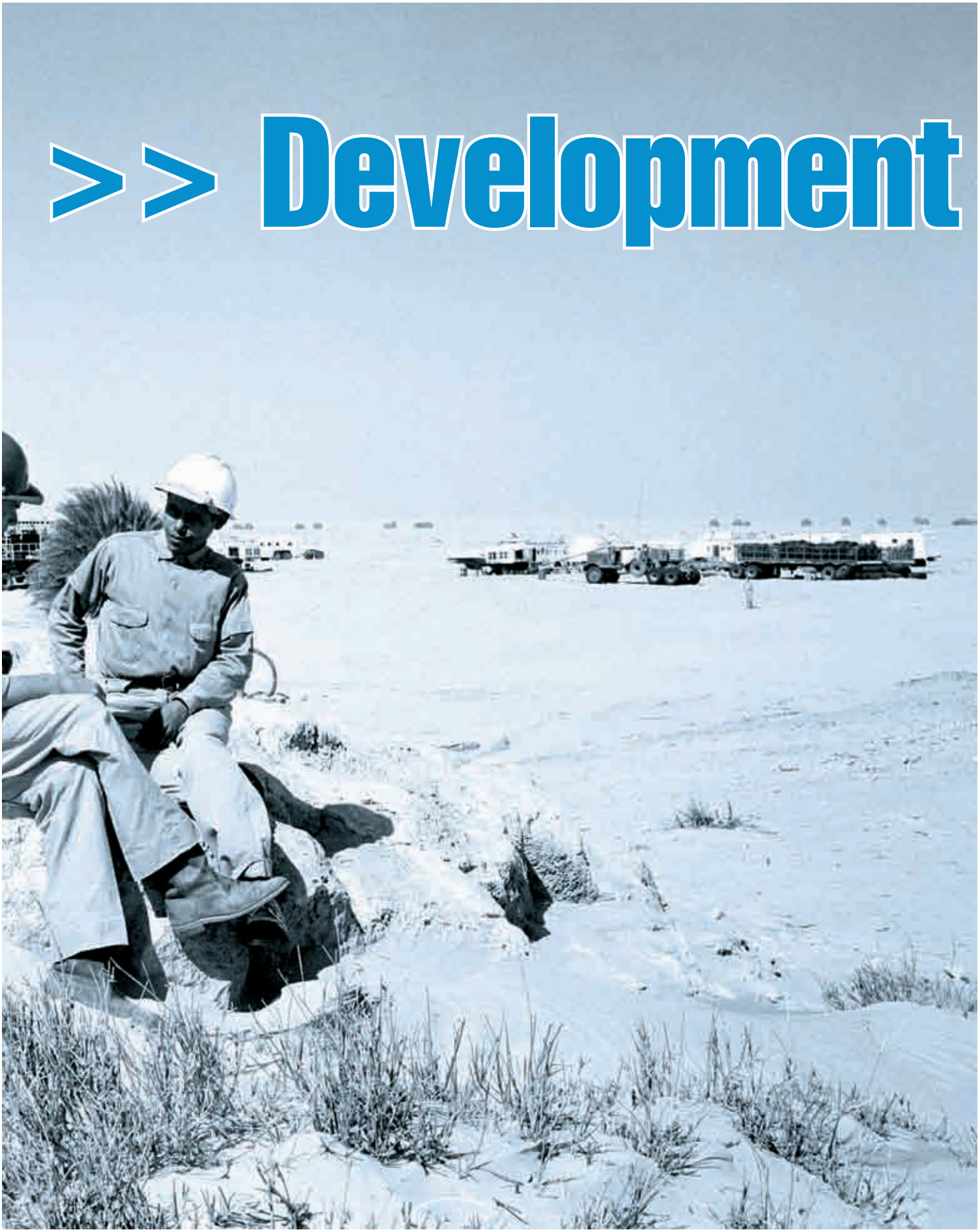
Berri Well No. 1, 1964

1964 - Berri oil field is discovered. Proved petroleum reserves increase to 59.2 billion barrels.

1964 - Najat Husseini is the first university-educated Saudi female employee. She is a health educator for Eastern Province families.

1965 - Crude oil production for year exceeds 2 million bpd.

>> Development



1965 - The Company and the Government plant some 3 million trees in a successful effort to save villages and farms in al-Hasa from being buried under encroaching sand dunes.

1966 - Two-berth Sea Island loading terminal, built for largest tankers afloat, begins operation off Ras Tanura.

1967 - Cumulative crude oil production reaches 9 billion barrels.

‘On the steeper hills we had to slow down and we had to use all five Caterpillar tractors for towing, but still we managed a speed of four miles an hour.’

Crew foreman in 1967, on moving a 140-foot tall oil derrick to a desert site south of Abqaiq.

Aramco’s exploration efforts during the 1960s led to the discovery of 16 oil fields. Crude oil production continued to soar in this decade. In 1965, Aramco exceeded production of more than 2 million barrels per day, and on 22nd November 1967, the 9 billionth barrel of crude oil was produced. Aramco became the first company to produce 1 billion barrels of crude oil in less than one year in 1968, its 30th year of commercial oil production. In 1969, production reached nearly 3 million barrels of oil per day. Saudis comprised slightly more than 75 percent of Aramco’s workforce, and 76 percent of those Saudi employees held semi-skilled, supervisory or professional jobs.

Buggies used by exploration parties in Rub Al-Khali. Photo by: B. H. Moody

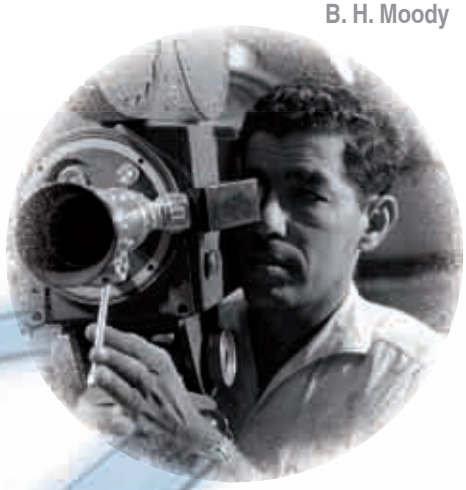
A bedouin hunter proudly poses with his prize hunting falcon in the bleak vastness of the eastern Rub' Al-Khali. Sept. 1967. Photo by: S. A. Al-ghamidi

1968 - Shaybah field is discovered in the northeastern Rub' Al-Khali. Company becomes the first to produce 1 billion barrels of oil in less than a year.

1969 - Over 1,300 Saudis attend courses in company training centers; 209 Saudis have out-of-Kingdom study and training assignments.

Medical: Assa Muslim, health educator from Aramco's Health Center, shows preventive medicine films and lectures to class in company built school for sons of employees. Thuqba, Dec 1960. Photo by: V. K. Antony

Mohammed Khatib uses single-system sound and film camera for locally produced TV programs. Dhahran, July 1963. Photo by: B. H. Moody



Baba Hattab telling stories on TV story hour. (Baba Hattab is Jamil Hattab. He retired Nov. 1, 1986). Dhahran, May 1965. Photo by: A. L. Yousif

Saudi employees preparing gm/v-12 marine engine for dynamometer test. Dhahran, November 1968. Photo by: S. M. Amin

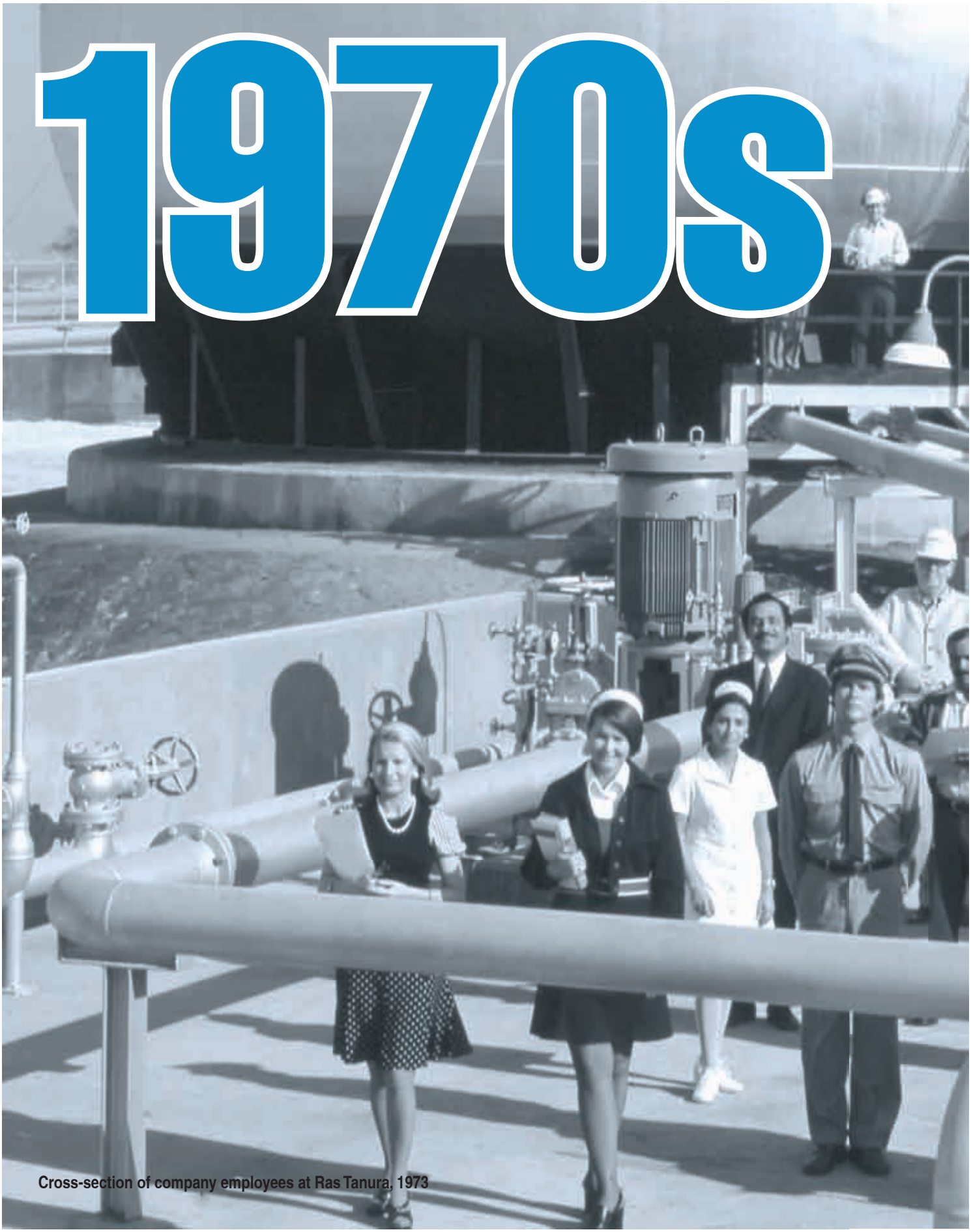
Saudi operators sewing in the Dammam cooperative industries garment factory, March 1966. Photo by: A. Latif Yousif

1970 - Company's first 1 million barrel crude storage tank is completed at Ras Tanura.

1971 - Crude oil production increases by more than 25 percent over 1970, averaging 4.5 million bpd.

1971 - Saudi Arabia is recognized by the international petroleum press as the leading oil-exporting nation in the world.

1970s



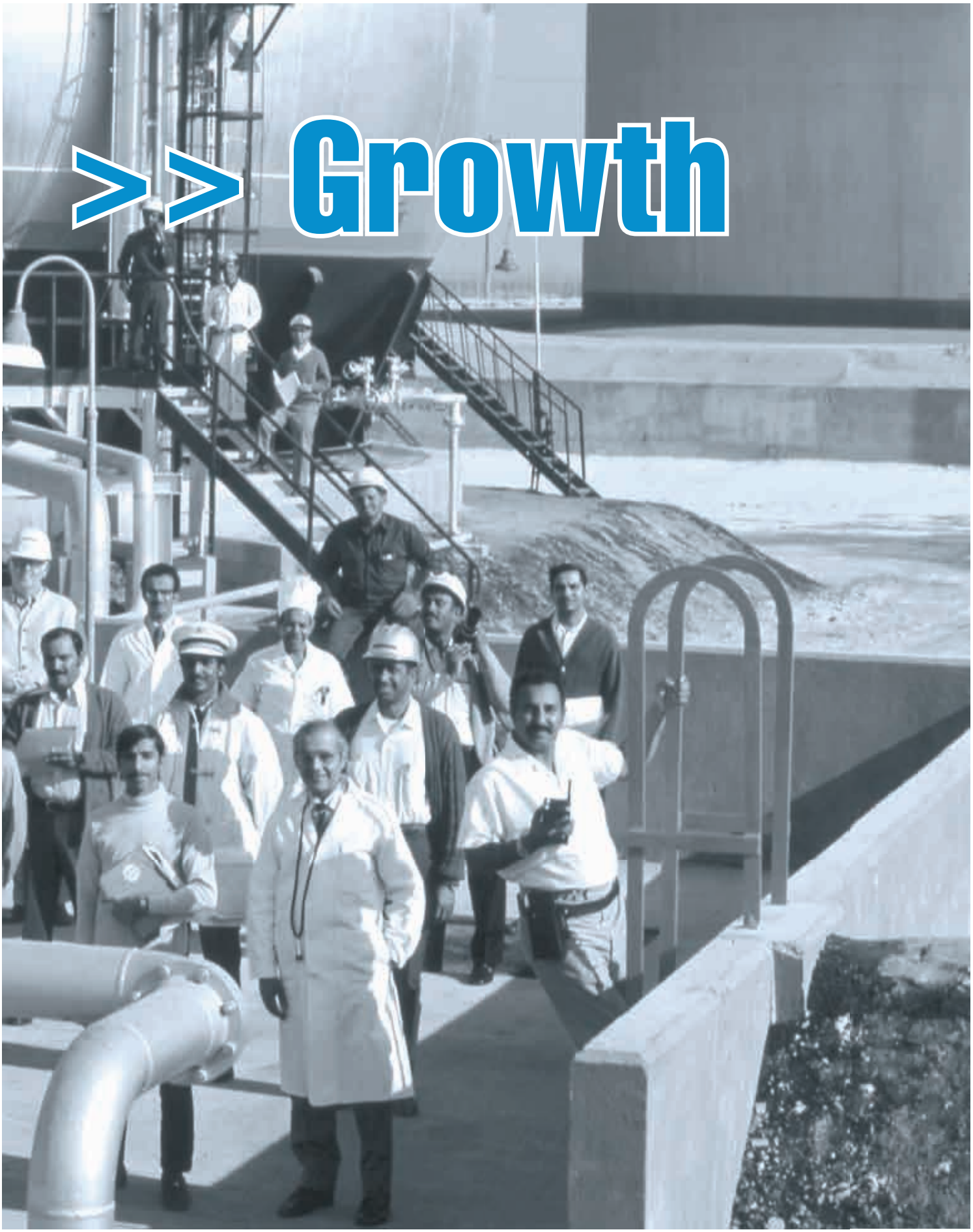
Cross-section of company employees at Ras Tanura, 1973

1972 - Crude oil production increases by more than 25 percent over 1970, averaging 4.5 million bpd.

1973 - Government acquires a 25 percent participation interest in Aramco.

1974 - Tankers load at Ju'aymah, newest Arabian Gulf oil-shipping terminal. Government participation interest in company increases to 60 percent.

>> Growth



1975 - Government asks Aramco to design, build and operate Master Gas System.

1976 - Aramco becomes only company in world to produce more than 3 billion barrels of crude oil in a single calendar year.

1976 - A Royal Decree creates the Saudi Consolidated Electric Company (SCECO) by unifying Aramco's electrical network and 26 private power companies in the Eastern Province. The Saudi Government reaches an agreement with Aramco to develop, manage and operate SCECO for five years.

'It was very exciting. Going across Saudi Arabia we had to drill our own wells for water supplies and build our own roads for transportation, especially in the West.'

Saleh Redaini, on the construction of the NGL Pipeline, begun in late 1978.

The 1970s were a decade of explosive growth and development for Aramco and the Kingdom. These were years of the biggest growth in the company's operations since the post-World War II boom. The Kingdom burst into the '70s as the single most important source of potential oil production in the world, and one of the four top oil producers. Oil production rose 70 percent from 1972 to 1974. Average daily crude production reached the rate of 8.2 million barrels of oil per day by 1974. In 1976, Aramco was the only company in the world to produce more than 3 billion barrels of crude oil in a single year.

1977 - King Khalid ibn 'Abd Al-'Aziz inaugurates the Berri natural gas liquids (NGL) center, to be integrated into the Master Gas System.

1978 - Qurayyah Seawater Treatment Plant begins to supply approximately 3.7 million bpd of treated seawater for injection into the Ghawar field to enhance oil recovery.

1979 - Aramco becomes the world's largest producer of natural gas liquids.

Date harvest. Qatif, 1974. Photo by: Dorothy miller

Hamad Ali Najrani a geologist in Aramco's Exploration department, Dhahran, January 1970. Photo by: S. A. Al-Ghamidi

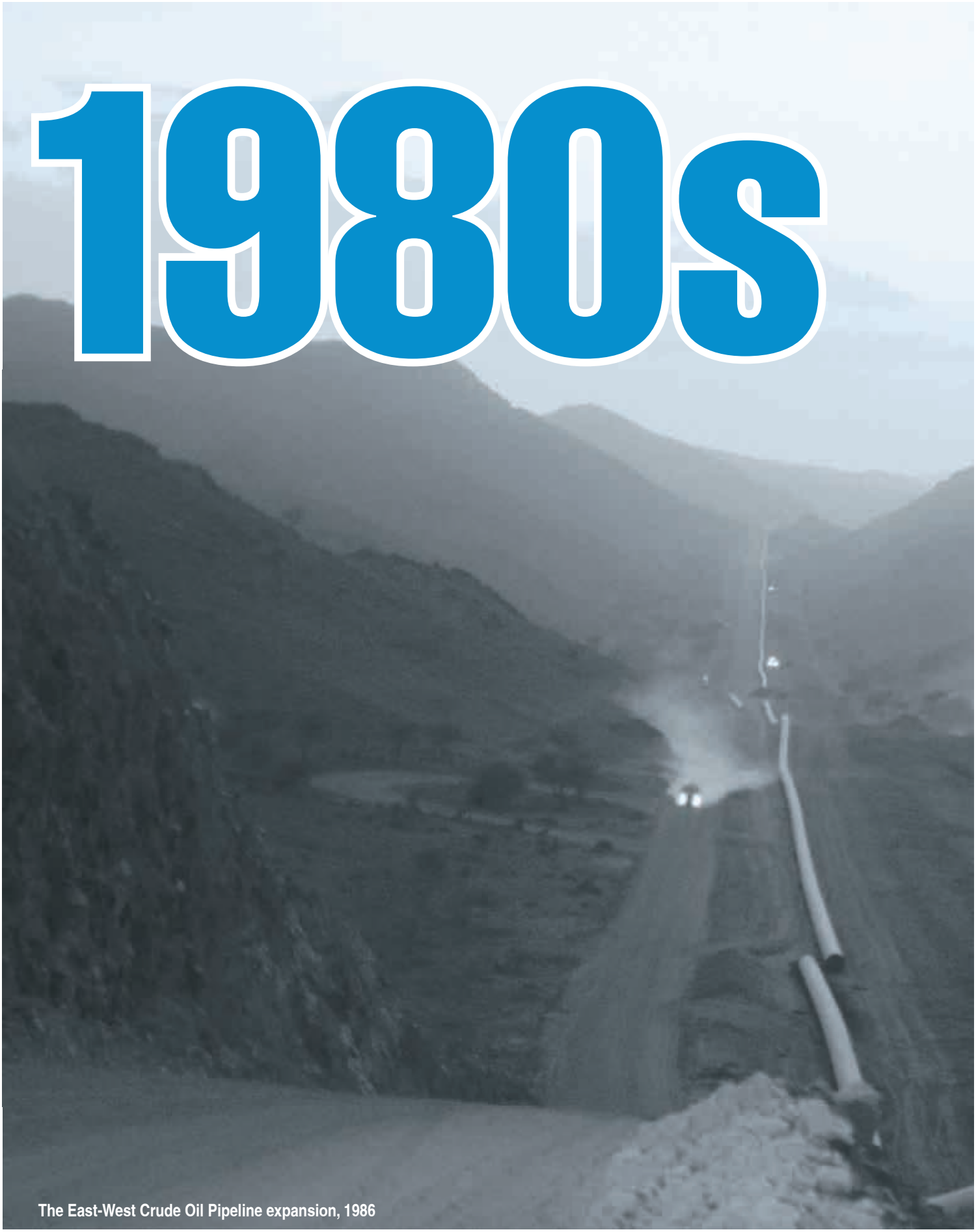
Topography spring water, Asir, 1972. Photo by: A. M. Al-Khalifa

Village houses in South West Saudi Arabia. Abha, June 1972. Photo by: Sa'ida. Al-Ghamidi

1980 - Government increases its participation interest in Aramco's crude-oil concession rights, production and facilities to 100 percent, with retroactive financial effect to 1976.

1981 - Key parts of Master Gas System fully or nearly finished. Data processing begins at the Exploration and Petroleum Engineering Center (EXPEC) Computer Center, one of the world's largest geoscience computing facilities.

1980s



The East-West Crude Oil Pipeline expansion, 1986

1982 - The discovery well, Dammam No. 7, is shut-in after producing almost 32.5 million barrels of oil over 45 years.

1983 - King Fahd ibn 'Abd Al-'Aziz visits Dhahran on the company's 50th anniversary and inaugurates EXPEC. Production of nonassociated gas from the deep Khuff zone begins.

1984 - Company assumes operation of the East–West Crude Oil Pipeline. Company acquires its first four supertankers.

>> Transformation

1985 - Nonassociated gas production and processing capacity reaches 1 billion scfd.

1986 - Government asks that exploration activities expand Kingdom-wide, to the limits of the original concession area.

1987 - East-West Crude Oil Pipeline capacity is expanded to 3.2 million bpd. New Aramco exhibit opens in Dhahran.

‘Working together, we can preserve the many Aramco accomplishments of the past, ensure the success of Saudi Aramco and continue to contribute to the future prosperity of the Kingdom.’

Ali I. Al-Naimi, President and CEO, in November 1988.

In 1980, the Saudi Government signed an agreement for full ownership of Aramco. Aramco began its transformation from a booming, oil-producing concern into an integrated international oil company. In 1988, the company’s name became Saudi Aramco, and in 1989, it undertook a multibillion-dollar program to reach a maximum sustained crude oil production capacity of 10 million barrels per day. As the decade closed, Saudi Aramco celebrated its 50th year of crude oil exports on 1st May 1989.

Data analysis. Dhahran, February 1982. Photo by: R. Rosengarten

Sulfur stacks, utilities and gas treatment plant no: 3 (sunset picture) Uthmaniyah, May 1982. Photo by: S. M. Amin

1988 - Saudi Arabian Oil Co. (Saudi Aramco) is established. Star Enterprise, a joint refining and marketing venture in the eastern and Gulf Coast United States, is established with Texaco.

1989 -High-quality Arabian Super Light crude oil and gas are discovered south of Riyadh, the first find after the establishment of Saudi Aramco and the first outside the Company's original operating area.

General view of classroom of elementary and secondary school, a Saudi teacher is listening to a Saudi student. Dammam, May 1982. Photo by: S. M. Amin

Aramco mobile library, Dhahran, March 1983. Photo by: J.E. Champney

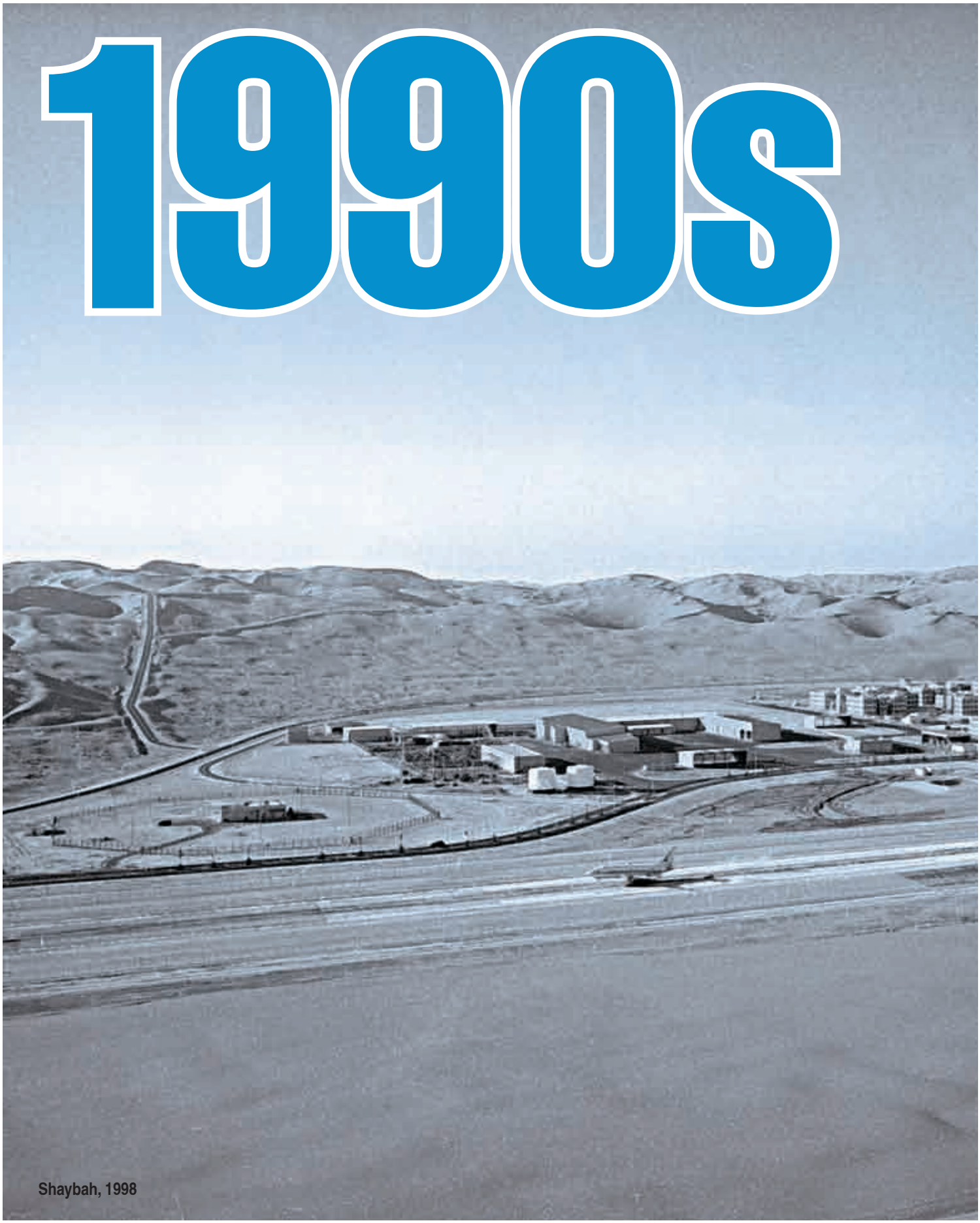
Sulfur Stacks, Utilities and Gas Treat No: 3 (Sunset Picture) Uthmaniyah, May 1982. Photo By: S. M. Amin

Saudi Arabian children at Aramco-built government school in Al-Khobar, 1981. Photo by: S. M. Amin

1990 - Oil production increased dramatically to stabilize world market in response to Gulf crisis. Exploration extended to include the Red Sea coastal plain and territorial waters.

1991 - Company helps successfully combat Gulf oil spill. Saudi Aramco subsidiary buys 35 percent of Ssang Yong Oil Refining Co. Ltd. (now S-Oil Corp.) in Republic of Korea.

1990s



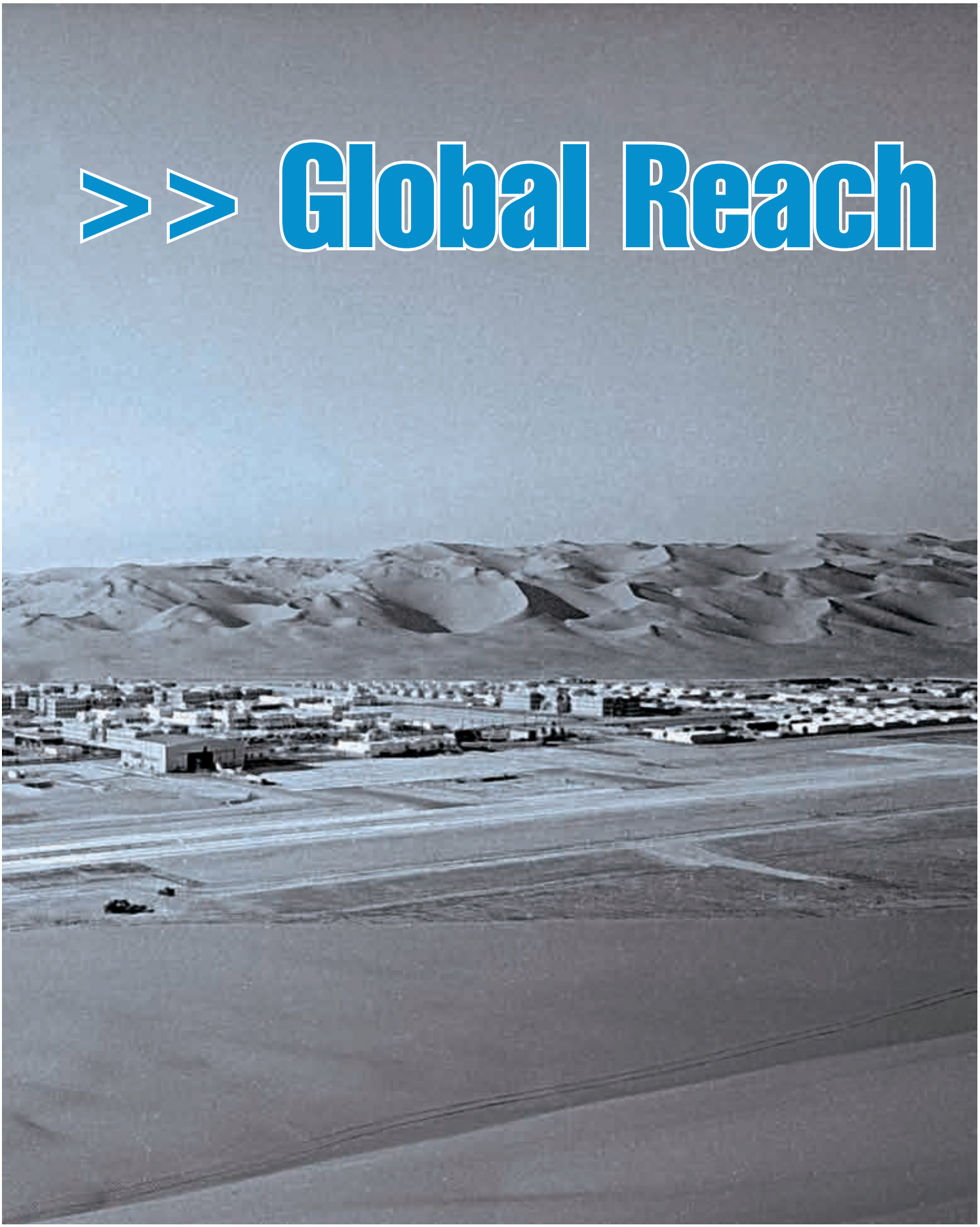
Shaybah, 1998

1992 - A Saudi Aramco subsidiary buys 35 percent of SsangYong Oil Refining Co. Ltd. (now S-Oil Corporation) in the Republic of Korea.

1993 - Royal decree consolidates virtually all of the Kingdom's refineries, petroleum product distribution facilities, and Government's share in joint ventures, into Saudi Aramco.

1994 - Maximum sustained crude oil production capacity is returned to 10 million bpd. The company acquires a 40-percent equity interest in Petron, the largest refiner in the Philippines.

>> Global Reach



1995 - Program to build 15 advanced supertankers for Vela International Marine Ltd. is completed. Saudi Aramco CEO and President Ali I. Al-Naimi named Minister of Petroleum and Mineral Resources. Rabigh Refinery integrated into company operations.

1996 - Saudi Aramco enters its fourth joint venture, purchasing 50 percent of Motor Oil (Hellas) Corinth Refineries S.A. and Avinoil Industrial Maritime Oil Co. S.A. in Greece.

'To succeed in the global economy we must continue, all of us, to cross new boundaries, both philosophical and geographical – some familiar, some difficult, all challenging.'

Hisham M. Nazer, Minister of Petroleum and Mineral Resources, in 1992.

In the 1990s, Saudi Aramco continued to evolve from an oil producer to a fully integrated oil and gas company, with operations in exploration and production, and in refining, marketing and international shipping. The company developed a truly global reach during the decade, forging partnerships in North America, Europe and Asia.

The exploration program initiated in the '80s was a continuing success. In the 16 years following the Hawtah field discovery in 1989, there were 41 more oil and gas discoveries across Saudi Arabia.

1997 - Crown Prince 'Abd Allah ibn 'Abd Al-'Aziz inaugurates the company's newest producing center at al-Hawtah, south of Riyadh.

1998 - Saudi Aramco, Texaco and Shell establish Motiva Enterprises LLC, a major refining and marketing joint venture in the southern and eastern United States.

1999 - HRH Crown Prince 'Abd Allah inaugurates Shaybah field. The Dhahran-Riyadh-Qasim multi-product pipeline and the Ras Tanura upgrade project completed.

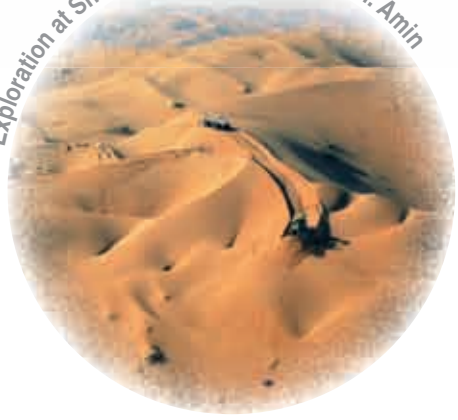
Saudi artist Fawziah Al-Abdelatif working on her painting. Jiddah, July 1998. Photo by: A. Y. Al-Dobais

Driller at the offshore drilling platform with the moon and birds at the background. Abu Ali, September 1990. Photo by: S. M. Amin

View of two young Saudis looking at the sun dial in the Aramco oil exhibit. Dhahran, 1990. Photo by: S. M. Amin

Saudi Aramco aviation maintenance crew on routine maintenance work at Dhahran hangar, February 1995. Photo by: A. G. Waine

Exploration at Shaybah, 1993. Photo by: S. M. Amin



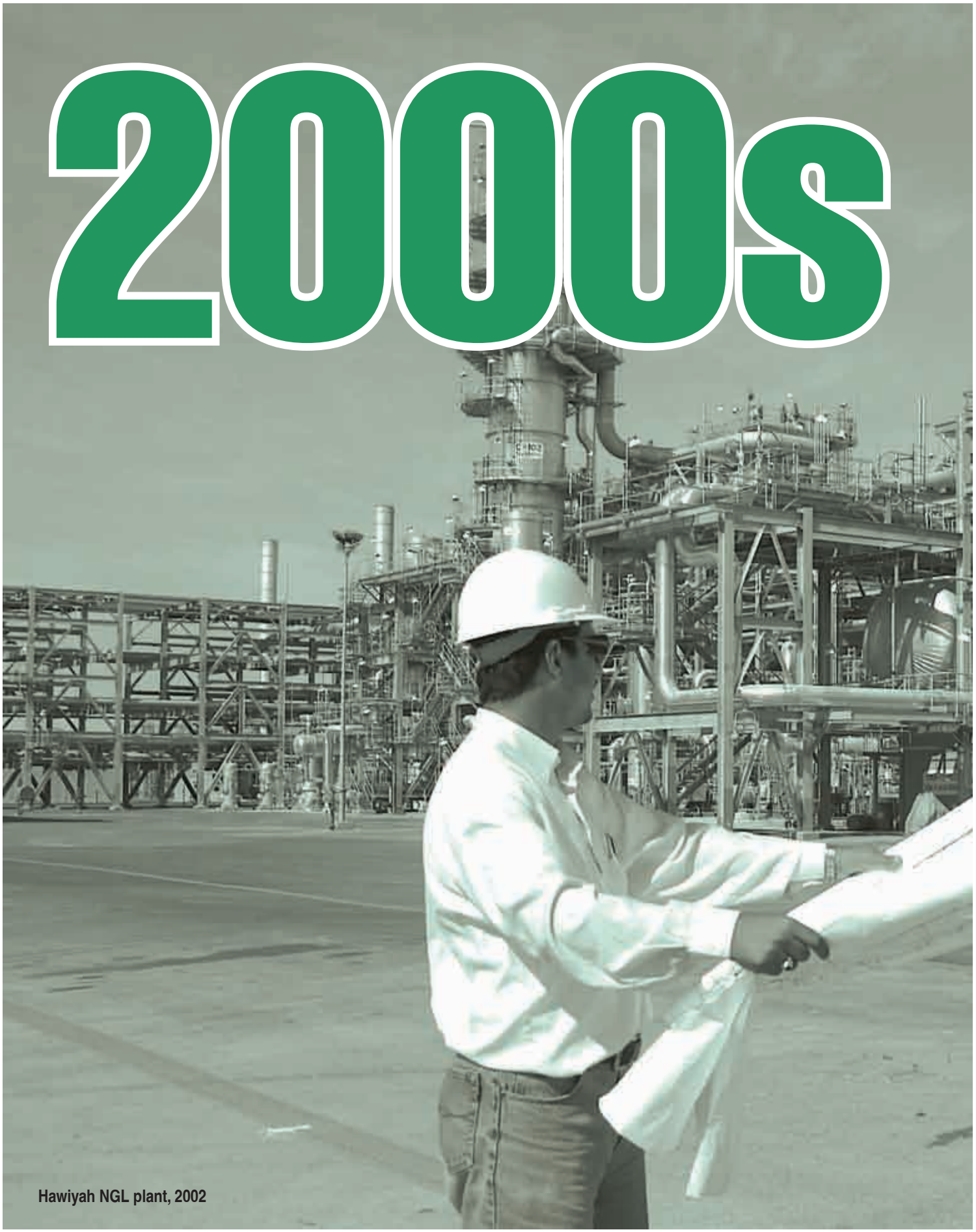
PRESENT

2000 - Aramco Gulf Operations Company, a fully owned subsidiary of Saudi Aramco, is established to manage the Government's petroleum interest in the Offshore Partitioned Zone between Saudi Arabia and Kuwait.

2000 - April. Saudi Aramco launches new logo and corporate identity campaign.

2001 - Hawiyah Gas Plant, capable of processing up to 1.6 billion standard cubic feet per day of non-associated gas, comes on stream.

2000s



Hawiyah NGL plant, 2002

2002 - Saudi Refining Inc., a subsidiary of Aramco Services Co., and Shell Oil Co. complete the acquisition of Texaco's interests in Motiva. Shell and SRI now each own a 50 percent interest in Motiva.

2003 - February. The Saudi Strategic Storage Program's Abha site — one of five such facilities — is inaugurated by HRH Prince Sultan.

2003 - Haradh Gas Plant is completed two-and-a-half months ahead of schedule.

>> The New Millennium

2004 - King 'Abd Allah, then Crown Prince, inaugurates the 800,000-barrel-per-day Qatif-Abu Sa'fah Producing Plant mega-project.

2005 - A company subsidiary, Sinopec of China and ExxonMobil sign an agreement to expand a refinery in Fujian province, and build downstream petrochemical facilities.

2006 - Saudi Aramco and Sumitomo Chemical Co. of Japan break ground on Petro Rabigh, an integrated refining and petrochemical project.

'Saudi Aramco will continue to be the world's best and brightest hope for a stable, reliable and affordable supply of petroleum.'

Abdallah S. Jum'ah, President and CEO, in December 2006.

To achieve a secure energy future, Saudi Aramco is committed to conservative long-term reservoir management, and strategic expansion and international joint-venture projects. Saudi Aramco is confident that through research and development, enhanced oil recovery techniques and other advances in technology, the Company can play a major role in meeting the world's energy needs for decades to come. By the end of 2009, the completed crude oil increment projects will raise Saudi Aramco's maximum sustained production capability to 12 million bpd, with spare production capacity of 1.5 to 2 million bpd to utilize as market conditions warrant.

2006 - Accords are signed for two export refineries, in Jubail (with Total) and in Yanbu' (with Conoco Phillips).

2007 - May. Saudi Aramco and Dow Chemical Co. agree to conduct a feasibility study for the construction, ownership and operation of a world scale chemicals and plastics production complex, known as the Ras Tanura Integrated Project.

2008 - Saudi Aramco celebrates its 75th anniversary.

Then and Now

Two Saudi drilling rig employees guide the drilling pipe and bit down through the rotary table on the platform of their rig near Abqaiq, 1949.

Saudi Aramco geoscientists and petroleum engineers modeling a hydrocarbon reservoir in Dhahran's 3-D Visualization Center. The 3-D models are computer-based displays of various integrated sets of data, including seismic data, well logs, core sample analyses, and reservoir simulators.

Seawater rushes through the intake channel at the Qurayyah seawater treatment plant, the largest such plant in the world. From here, the treated water is pumped via pipelines to 'Uthmaniyah where it is distributed to water-injection pump stations and injected into oil reservoirs to maintain pressure.

Aviation first started for Saudi Aramco 73 years ago in 1934, with the arrival at Jubail of a Fairchild 71 (pictured), specially equipped for aerial photography. Then in its infancy, aerial photography greatly simplified mapping of a concession area the size of Texas and Louisiana combined.

Today, Saudi Aramco Aviation operates a fleet of 38 fixed wing and rotary aircraft (B737-700 pictured).

'Abd al-Rahman Al-Barrak threads tape on a mainframe computer in January 1963. Al-Barrak became the first Saudi employee to qualify as a computer operator in 1962. He qualified as an operator of both the 4,000-unit and 16,000-unit IBM Model 1401 computers, used in processing company payrolls, financial and cost-accounting systems, personnel statistics and material supply records.

The exterior of the Research and Development Center building in Dhahran, April 2006. This state-of-the-art facility of 33,000 square meters provides laboratories, pilot plants, workshops, offices and meeting rooms for 330 professional staff members, 75% of whom are Saudi nationals. Company scientists at the R&DC have contributed nearly one-third of the company's U.S. patents, some of which have been awarded or are pending, for new gasoline-, diesel- and naphtha-based fuel formulations and associated refinery processes.

The Dynamic Analysis team examines the Rotodynamic Test System at the Saudi Aramco Research and Development Center (R&DC) in Dhahran. It was tailor made for Saudi Aramco with substantial input from the company. It is the only one of its kind in the Middle East.

Deep Desert Oil

Saudi Aramco heightened its profile as a world-class engineering and construction organization with a presentation before the prestigious Construction Industry Institute recently. The presentation, entitled The Shaybah story: Oil From Deep in the Desert, was given at the organization's annual conference in Minneapolis.

Abdulrahman F. Al-Wuhaib, then vice president, Project Management, and currently vice president, Ras Tanura Refining, reported on the series of construction accomplishments before an attentive gathering of some 500 Institute members representing 83 companies. Assisting him in a panel presentation and discussion that followed were four key members of the project team. They included Nadhmi Al-Nasr, manager, Shaybah Development Projects Department; Abdullah M. Okab, manager, Shaybah Producing Department; Rudy Ionides, project director, Overseas Bechtel, Inc.; and Hamid Amin, area general manager, Consolidated Contractors International Company. J.G. Palmer, quality coordinator, Project Management, served as moderator.

The Construction Industry Institute is a research organization with an all-encompassing mission: to improve the quality, safety, scheduling, competitiveness and cost-effectiveness of the engineering and construction process. Established in 1983 to develop a national research center for construction, it consists of a consortium of leading owner companies and contractors who join together to find better ways of planning and executing capital construction programs.

Al-Wuhaib saluted the construction industry organization in his presentation, giving credit to the national forum for planning, engineering and construction techniques developed and fostered by the organization. He indicated that the techniques had strong influence particularly in team building and schedule compression, two important areas that played a major role in the successful completion of the Shaybah program.

The Shaybah presentation marked the first time that Saudi Aramco has appeared on the annual conference agenda. Saudi Aramco has been a member of the Construction Industry Institute, through ASC, since 1992,

Abdulrahman F. Al-Wuhaib presented the Shaybah story to the Construction Industry Institute.

and has participated on a number of research teams over the years.

"Picture yourself, a project manager, sitting in a nice cool office in the headquarters building," said Al-Wuhaib, as he began his presentation. "Suddenly the boss stops by and says the company needs to develop a grass-roots oil field in Shaybah, one of the hottest and harshest environments on earth. It is 340 miles from the nearest town. Vehicular travel will take four days over sand dunes. No problem, you say. It will be a challenge, but it can be done.

The first steps in Shaybah presented a picture of overwhelming challenges—all to be overcome.

"Just after the front-end engineering is underway, the boss comes back and says your schedule is cut by 25 percent—a whole year! You have a total of three years to start production. Now this is a real undertaking."

Al-Wuhaib challenged his audience: "How would you manage and execute a project this big, in such a remote and harsh environment, in only three years?"

The Shaybah team, he said, actually built Saudi Aramco's largest oil production plant in this extremely short time frame.

"Success was achieved through the combined efforts of a committed team of employees, contractors and suppliers, from the President of Saudi Aramco to the welders in the field. One team, with one vision and one mission—that was Shaybah."

Panoramic view of the project

Using slides as he spoke, Al-Wuhaib took his audience through a scenario that has become familiar to many in Saudi Aramco acquainted with Shaybah's background and development. He covered the project scope, the obstacles faced, and explained how the project team met a myriad of challenges.

A map showed Saudi Arabia, the pipeline network and fiber optic cables, and the Abqaiq Plants and mammoth gas/oil separation plants (GOSPs) and related facilities. His audience saw scenes depicting the local topography, large salt flats surrounded by sand dunes towering 700 feet, and viewed pictures of early construction work where bulldozers leveled the imposing dunes to make way for men and machines.

"The desert environment has been undisturbed for thousands of years," Al-Wuhaib explained, "and the project team felt that its protection had to be one of their top priorities. Environmental impact assessments were conducted to minimize and mitigate potential harm to this delicate landscape, and all of our protection measures were enforced throughout construction.

"As you can see, the terrain is starkly beautiful, but treacherous and unforgiving. With temperatures sometimes reaching 135 degrees Fahrenheit, anyone unfortunate enough to get lost in this environment would most likely pay with his life. The location is 340 miles from the nearest town, 240 miles from the nearest road. Until the new road was finished, surface travel took four days, men digging out stuck vehicles and sleeping on sand dunes under the stars—nice in winter but a different story in summer."

The team faced extraordinary difficulties, Al-Wuhaib said, with transportation, equipment maintenance, and worker safety, health and morale. His rapt audience chuckled when he explained that even sand and gravel for concrete had to be imported because none of the local sand was suitable.

The Shaybah Story:

A major milestone was reached when the access road was completed, allowing much easier and speedier access to construction and operations sites.

Transportation achievements were legendary during the development of Shaybah. Every capital item, as well as all expendables, had to be transported deep into the desert.

The availability of pipe when and where needed was an indispensable part of the Shaybah story.

Biggest hurdle

But of all the challenges, Al-Wuhaib said the schedule presented the biggest hurdle. Six months into front-end engineering, management requested that the completion be advanced. The plan called for startup only 30 months later. According to Al-Wuhaib, not everyone in the company believed it could be done.

The steps the project took to meet the challenge were team building and schedule optimization, concepts promoted by the Construction Industry Institute, and strong management and team-member commitment.

An integrated project team structure was developed whereby members of Project Management and Operations and other involved organizations became members of a single team. This approach worked well as it streamlined communications and approval procedures and greatly expedited the progress of the work.

A second innovation was to expand the team concept to all stakeholders in the project. The team not only included such routine members as design and construction contractors, but also team members' families, turnkey suppliers, and local officials and agents.

Each and every stakeholder was impressed with the importance of the project and his role in it, which was key to establishing commitment. "The commitment had to come from the top," Al-Wuhaib explained, "and it did. Upper management communicated its commitment to complete the project on time to all Saudi Aramco organizations and explained its importance. Members of our team were committed to success, and everyone worked overtime regardless of his role, to ensure that the schedule was met. You never heard the words, 'It's not my job.' "

Al-Wuhaib went on to explain numerous other innovative approaches— such as early release of bid packages, unique transportation arrangements, Customs clearance assistance and compression of commissioning and startup—that contributed to the successful and timely completion of Shaybah. But underlying them all was team building, the members working together as a team to meet the aggressive schedule.

As a result, Al-Wuhaib said, the team effort accomplished:

- On-time completion with start of production just three years after the start of front-end engineering and only 18 months after start of construction;
- Less than 3 percent change orders;
- Capital expenditures well under the original budget; and
- Proven methods of organization and schedule improvement that are being used on other projects in Saudi Aramco.

In closing, Al-Wuhaib told his audience that the word "Shaybah" in Arabic means "gray-bearded, or old man." Most of our project team members, he said, now feel that they have earned this title.

Construction scene in early stages.

Shaybah GOSP-2 pipe rack under construction.

Crude-handling facilities designed to process 500,000 bpd.

A city grows from the desert as the Residential/Industrial Complex takes shape.

Access by air was also indispensable. Runway and hangar facilities tie the desert operations into everyday schedules.

King Helps Celebrate

Under the patronage of King Abdullah ibn Abdulaziz Al Saud, Custodian of the Two Holy Mosques, and the leaders of Gulf Cooperation Council (GCC) countries, Saudi Aramco kicked off its 75th Anniversary celebration May 20 as government officials, company executives, employees and invited guests gathered to welcome the King and GCC leaders at enormous tents near the Saudi Aramco Exhibit in Dhahran.

By Ahmad Dialdin and Sara Bassam

The program began with a tour through an exhibition showcasing Saudi Aramco's story in historic images, detailed timelines and innovative displays of the company's key operations.

Among the sensory barrage of sights and sounds of the past 75 years, the highlight of the exhibit was a simple yet monumental document - the original signed concession agreement between the Kingdom of Saudi Arabia and Standard Oil of California, displayed in a glass case.

Following the tour, guests were ushered into a newly erected tent-like structure created for the main celebration as King Abdullah welcomed everyone to the historic event and set the tone of pride and gratitude for everything that Saudi Aramco has accomplished for the Kingdom and its people.

"On this occasion, we celebrate the passing of 75 years of national growth," said King Abdullah, "so thank you very much to the men and women of Saudi Aramco.

"The country has given Saudi Aramco what it needs to become successful and exceptional," the King said. "It gave the company flexibility with which it nationalized technologies and gained from international experience in the necessary fields and industries."

King Abdullah praised Saudi Aramco not only for its role in national development but also for its role in supporting the Kingdom's international relations by providing energy to the world and effectively dealing with global energy crises whenever they happen.

"The country has given Saudi Aramco what it needs to become successful and exceptional," the King said.

In his speech, Ali I. Al-Naimi, Minister of Petroleum and Mineral Resources, talked about Saudi Aramco's long history from the time of King Abdulaziz, the Kingdom's founder, to the present and how much it has propelled this country to where it stands today.

75th Anniversary

King Abdullah, center, visits with some of the young performers at the 75th Anniversary celebration as, from left, HH the Amir of Kuwait Sheikh Sabah Al-Ahmad Al-Sabah; HRH Prince Mohammed ibn Fahd; HE Fahd ibn Mahmood Al-Saeed, Deputy Premier of Oman; HRH Prince Mish'al ibn Abdulaziz; HRH Prince Abdulaziz ibn Salman; Khalid A. Al-Falih; and Abdallah S. Jum'ah look on. (Photo by Hasan M. Al-Taraiki)

He also emphasized the pivotal role of King Abdullah in the past decade in supporting and guiding several key megaprojects and energizing Saudi Arabia's economic and industrial capabilities, all for the sake of the people and the Kingdom.

"Today, our employees, both Saudi and expat, recall 75 years of dedication and hard work to build and develop Saudi Arabia's oil industry, an industry that has spread its wealth and prosperity throughout the Kingdom, from north to south and east to west," said Al-Naimi.

"While I realize there are no words to convey how much this event means to the Kingdom and to Saudi Aramco," Al-Naimi said, "I want to, through this speech, highlight the sense of appreciation and pride for all who have left their mark through-out our history of oil production. This industry will continue to bring progress and advancements in the future, thanks in no small part to the support of our country's leadership, as well as to the dedication, hard work and innovation of this company's valued employees."

President & CEO Speaks

Jum'ah spoke next, reflecting upon the company's successful past and promising future, and expressing on behalf of Saudi Aramco's employees their pride for being part of this historic moment and for working in the home of the Saudi oil industry.

"We are proud to have inherited a strong tradition of devotion and dedication to our work," said Jum'ah, "as well as a culture that we call the culture of Saudi Aramco, built on the discipline, commitment, reliability and accountability of each and every employee. Under the guidance of our country, the company has been allowed to work independently and on pure business acumen — two key elements in the success of Saudi Aramco and its competitive prowess.

"As proud as we are of our past and present, we see an even brighter future ahead of us," Jum'ah said. "The work and projects we have now will make us better prepared for the next 75 years; they cement Saudi Aramco's status as a fully integrated company, one of a kind in terms of its expertise, its size and its fundamental role nationally and globally."

King Helps Celebrate 75th Anniversary

"This industry will continue to bring progress and advancements in the future, thanks in no small part to the support of our country's leadership, as well as to the dedication, hard work and innovation of this company's valued employees."

Jum'ah introduced Saudi Aramco's latest gift to the Kingdom, the King Abdulaziz Center for Knowledge and Culture, to be erected in that very spot near the Saudi Aramco Exhibit. A short film outlined the center's purpose and all that it would offer to the people of the country.

After the speeches, 75 children came on stage to entertain the guests, dancing to Arabic songs written specially for Saudi Aramco and its 75th Anniversary, followed by gifts given to King Abdullah and the GCC leaders.

King and Families

From there, the anniversary celebration moved to the King's Road complex in Dhahran, where a representative group of families welcomed King Abdullah and the GCC leaders in a re-creation of King Abdulaziz's historic second visit in 1947.

This celebration was, in part, a re-enactment of that visit, from the setup of the tents down to the visitors, dressed as they would have been in the 1940s. Costumes included women's white gloves and hats.

Miles Snyder, who was one of the children who shook hands with King Abdulaziz in 1947, said a few words about both momentous occasions, then and now.

"What was the 1947 event like? It was wonderful," said Snyder. "We American kids were able to shake the hand of a real King!

King Abdullah and guests wait for the 75th Anniversary celebration to begin. On the left is HH the Amir of Kuwait, Shaikh Sabah Al-Ahmad Al-Sabah. To the right are HM the King of Bahrain, Shaikh Hammad ibn Isa Al-Khalifah, and HE Fahd ibn Mahmood Al-Saeed, Deputy Premier of Oman. (Photo by Abdullah Y. Al-Dobais)

King Helps Celebrate 75th Anniversary

The proposed King Abdulaziz Center for Knowledge and Culture, shown here in an architectural image, was announced May 20 in Dhahran by Abdallah S. Jum'ah as part of the 75th Anniversary celebration.

Minister of Petroleum and Mineral Resources Ali I. Al-Naimi and a young Saudi performer present a gift from Saudi Aramco to King Abdullah at the 75th Anniversary celebrations. (Photo by Abdullah Y. Al-Dobais)

We all remember the event well. We remember the sight of the King, seated in a large easy chair atop a colorful carpet, with a little table with cookies on it beside him. He was surrounded by his colorful retinue, including many of his sons.

"Today, we join not as children but as adults; many of us are grandparents," Snyder said. "When we were young, that sense of magic was everywhere, living as we did in the Kingdom of Saudi Arabia," Snyder said of his experiences. "Each of us regards ourselves richer, wiser, more tolerant and understanding because of this great adventure."

Snyder concluded his remarks with a request: "Just as we had the honor of being photographed with your father, King Abdulaziz, may we please have the honor of being photographed with you?"

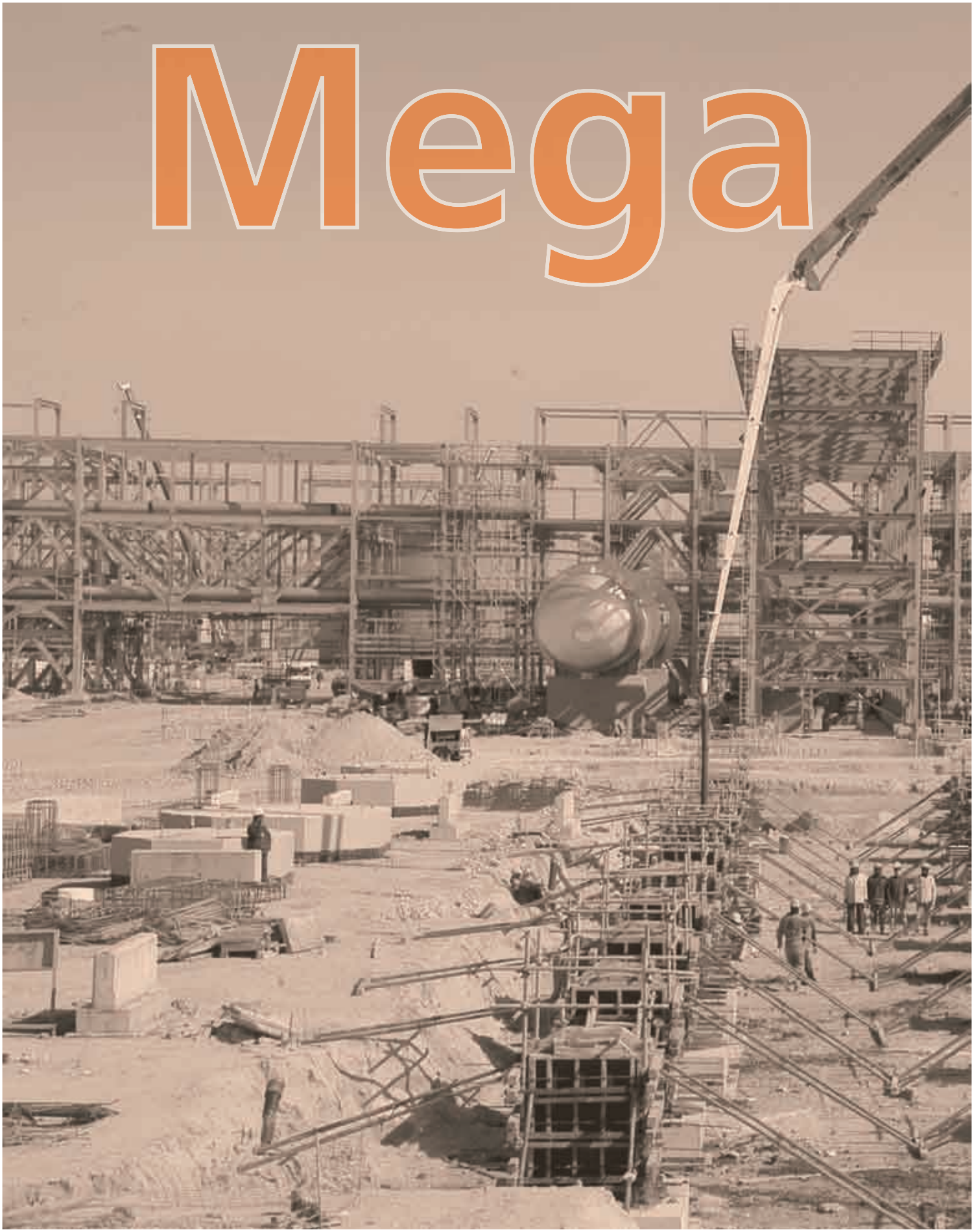
Soon afterwards, King Abdullah and his guests watched a series of international folklore performances. Children performed dances from "The Phantom of the Opera," along with a Latino segment and a khaliji dance. The performances concluded with the ardah, a traditional sword dance performed by Saudi Aramco employees and expats.

Lydia Fitzmorris, speaking on behalf of employees and families, addressed the King in Arabic, saying, "Your visit makes the celebration of the 75th Anniversary of Saudi Aramco an unforgettable event in our lives and those of our children."

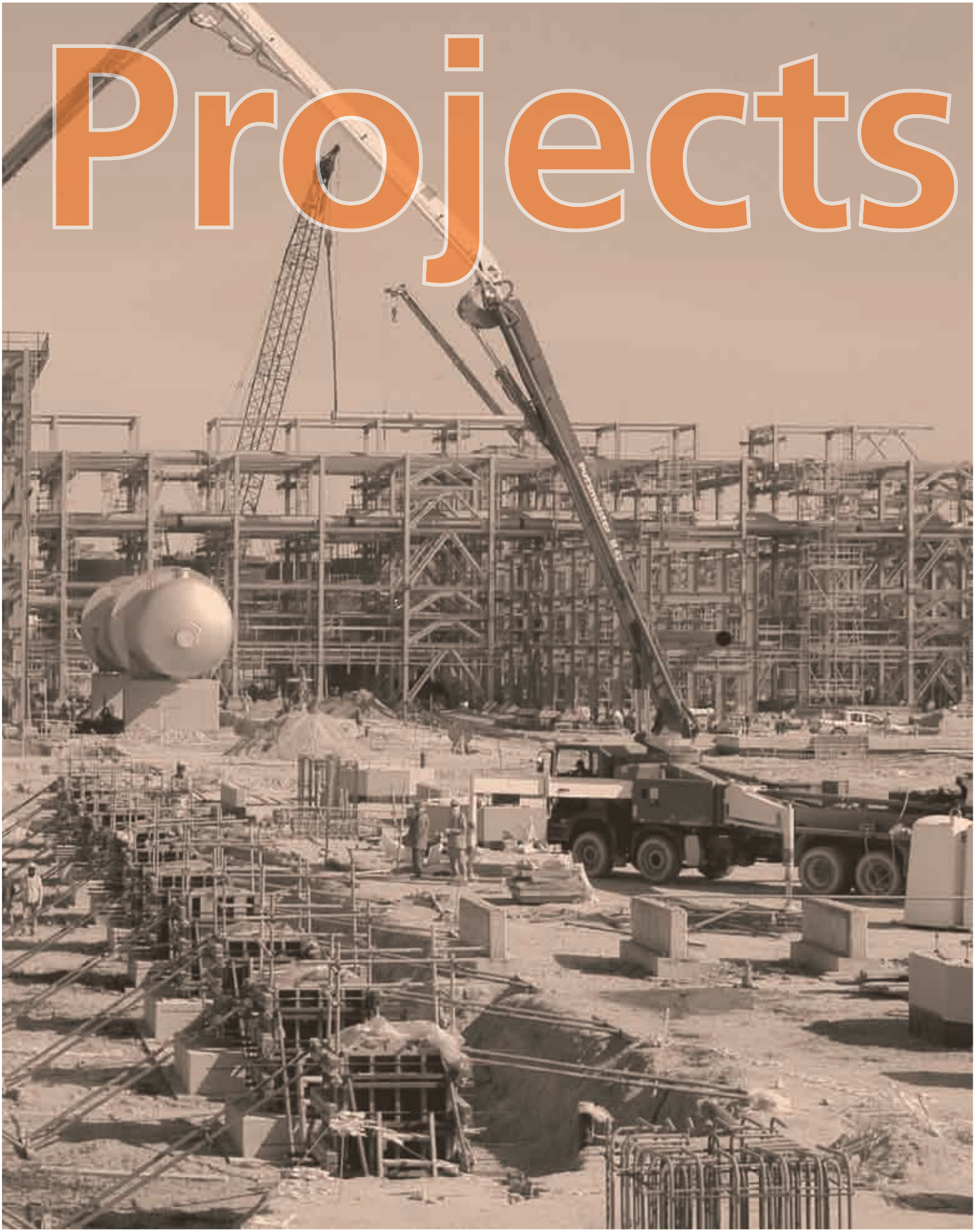
The 75th Anniversary celebration was a sensory barrage of sights and sounds. (Photo by Abdullah Y. Al-Dobais)

FIRE FIELD

Mega



Projects



Enormous projects Saudi Aramco

In a global project environment where many large projects struggle to meet their cost and schedule targets, Saudi Aramco has been successfully executing its world-class mega projects with ever shorter schedules, and well within budget.

By John Palmer & Timir Mukherjee

Of the five mega projects executed in the last 10 years, two were recipients of the Project Management Institute's prestigious Project of the Year Award, and one was honored at the 2005 International Petroleum Technology Conference.

Saudi Aramco is currently executing a series of new mega projects that will help meet the world-wide energy demand increases and ensure the company's leadership position for years to come. Huge new gas processing plants, facilities for capturing valuable petrochemical feedstock, and new crude oil production facilities are all part of Saudi Aramco's ambitious domestic capital program to increase oil supplies and support.

Collectively, the Hawiyah, Khursaniyah, Khurais, Shaybah and Manifa programs will by 2011 increase revenue to the Kingdom, and promote the local economy by increasing oil production capacity by 2.85 million barrels per day (bpd), sales gas by 1.4 billion cubic feet per day (cfd), ethane production by 450 million cfd, and condensate by 325,000 bpd. All these projects are being executed on demanding schedules and within budget without a significant increase in company personnel while expanding the Saudi Arabian procurement and construction content of the projects.

This section will explain how this is being achieved.

A key factor in the company's mega-projects success has been the broad cooperation of corporate Project Management personnel with internal stakeholders and contractors to deliver these projects. The cooperative spirit means that integrated teams resolve technical issues swiftly, optimize scope, streamline design reviews and achieve full control of the quality and schedule. Another major contributor to the success of these projects has been the use of best practices - in value engineering, constructability, planning for startup,

now a specialty for

benchmarking, scope definition and control, and the formal use of lessons learned - to promote excellence.

Saudi Aramco is fully dedicated to supporting Saudi Arabia's role as the leading provider of energy to the world, and history has demonstrated its success. The company will continue to build on its achievements through innovation, solid integration and a strong will to meet future challenges. Today, the company's mega projects are executed using international engineering firms for preliminary engineering and international EPC (engineering, procurement and construction) contractors for detailed engineering, procurement and construction, in tandem with local subcontractors. Engineered materials are purchased from international suppliers and local manufacturers when possible. Smaller projects (up to $600 million) are now predominantly engineered and built using local contractors.

Mega Project History

Saudi Aramco has a 70-year history of successful project execution. Its facilities tend to be very large compared to similar facilities worldwide. For example, the company's recent gas-oil separation plants (GOSPs) routinely process 300,000 bpd of crude to produce oil, water, and gas from

wells averaging 5,000 - 10,000 bpd each. Pipelines ranging up to 60 inches in diameter transport the oil to terminals.

Enormous projects were the order of the day early in the company's history, with constantly pressing needs to build new GOSPs, water injection facilities to maintain reservoir pressure, pipelines, oil stabilization units and export terminals. Major capacity expansions were built in the mid-1970s. Until the late 1970s, projects in Saudi Aramco were managed by operations organizations working through major international EPC companies.

In 1977, Aramco started managing its projects with an internal organization, using Program Management Contractors. The first mega project was a very large gas collection and distribution program - known as the Master Gas System - to eliminate natural-gas flaring at the wellhead and provide Saudi Arabia with natural gas as a commercial resource. At that time, with expenditures running about $3.5 billion per year (2002 equivalent), the Project Management organization had six general managers and 19 departments to manage the gas program and multiple smaller projects.

In 1988, Arabian American Oil Company (Aramco) became Saudi Aramco, as the original U.S. partners were bought out by the Saudi Arabian Government. This change was accompanied by increased hiring of Saudi nationals. In the late 1980s, the company started using lump-sum turnkey (LSTK) contracts for the largest projects, and local contractors for smaller projects. There were no more mega projects until the early 1990s.

Mega Projects - Top 10

Megaprojects in Saudi Aramco are generally defined as projects or programs exceeding $1 billion in value. The projects listed here are the company's largest to date.

Khurais Field Development (2005–2009)

The Khurais program will build facilities for 1.2 million bpd of Arabian Light crude through a new Central Processing Facility (CPF), the largest of its kind in Saudi Arabia, near the town of Khurais. A new gas plant will treat the associated gas, producing 70,000 bpd of condensate and 420 million cfd of gas. The program will also provide 4.5 million bpd of seawater for injection to support the increased production from Khurais and Ghawar fields. The seawater injection pipeline network will consist of 920 kilometers of 48"- 60" pipe. In addition, the program will also increase the existing East/West NGL pipeline capacity from 425,000 bpd to 555,000 bpd to manage the increased NGL produced at Khurais. Other pipeline work includes all of the oil gathering and water injection distribution and sour gas to Shedgum Gas Plant. Infrastructure work includes an air strip, residential facilities for up to 1,000 personnel, and an industrial complex to handle facility maintenance.

Manifa Field Development (2006–2011)

Under the Manifa program, Saudi Aramco plans to install central facilities at Manifa to process 900,000 barrels per day of Arabian Heavy crude oil. The Manifa Central Processing Facilities (CPF) will include gas and oil separation, wet crude handling, gas compression, gas conditioning, crude oil stabilization, produced water disposal and water injection facilities. The CPF will be designed to process 900 mbcd of crude oil, approximately 120

million scfd of associated gas and 50 mbcd of hydrocarbon condensate will be produced as a result of this crude increment. The gas and condensate will be processed at Khursaniyah Gas Plant, and the crude will be transported to Ju'aymah Terminal for export. This program is challenging primarily because of the location of the Manifa field in shallow water in the western Arabian Gulf, requiring a 41-km asphalted causeway and 27 drilling pads in the shallow water.

This shallow bay contains the most prolific shrimping area in Saudi Arabia, and all precautions will be taken to maintain this vital resource for the country. The program will include installation of four oil-producing offshore platforms with ten producing and two evaluation wells each, and seven water-injection platforms with ten water injectors each. Electric submersible pumps will provide artificial lift for production, which will be shipped without processing for multiphase flow transportation to the causeway and shore-based CPF.

The entire Shaybah oilfield complex had to be self-sufficient, so the scope included a Boeing 737-capable airport. There were two dominant contributing factors to these successes:

• Communication factors: commitment from Corporate Management; CEO meetings; clear, common goals for the extended project team; lessons learned from previous projects.

• Organizational factors: formal implementation of best practices; a culture of continuous improvement; project team continuity; and successful contracting strategies.

Many of these factors are applied to the whole project system. With the increased demand for oil, Saudi Aramco has significantly increased its capital program, with six active corporate mega projects and three joint-venture mega projects. The company continues to set aggressive targets.

Factors contributing to success

The Ras Tanura Refinery Upgrade Program, started in 1991 and completed in 1998, was a watershed project in many respects. This $1.3 billion project was the first major expansion of the RT Refinery, which started refining oil in 1947. There were very few personnel in the company that had managed any mega projects, much less a complex refinery project, so experienced industry engineers were hired to help.

The company was also moving away from doing its own inspection to requiring contractors to inspect their own work. The project, though ultimately successful, was completed nearly two years behind schedule. The company learned from a multitude of mistakes on this project, so that in the future it must:

• Assure that all stakeholders are completely aligned;

• Provide very clear project scopes and minimize scope changes after the Design Basis;

• Clearly state the quality requirements in the contract, not in an attachment;

• Keep management and key technical personnel on the job for the entire project.

Another mega undertaking, the Shaybah project, was started in 1995 and completed just 36 months later, on time and on budget, despite the amazing logistical challenges of building the company's first major project in the deep desert. Project management professionals learned from success on this project: minimal scope changes; well defined scope; tight communication internally and externally; and alignment of all stakeholders.

The last significant learning step was benchmarking. A project

From 1998 to 2002, several programs were instituted that made the changes permanent and actually changed the culture to one of continuous improvement.

system benchmark study of 30 projects was conducted by IPA (Independent Project Analysis) in 2000, showing that the company's projects were taking 60 percent longer than the industry as a whole and cost almost 30 percent more. The company began to incorporate this learning into change.

Improving the Program

Change started with Total Quality Management in 1994, with quality teams and enthusiasm. PM personnel were reluctant to change much until the learning from the two aforementioned projects and the benchmarking hit home. From 1998 to 2002, several programs were instituted that made the changes permanent and actually changed the culture to one of continuous improvement:

• A lessons-learned system was established in 1995, and added to the knowledge base of project personnel. The company also joined the United States Construction Industry Institute (CII) to take advantage of their best practices and sponsored a chapter of the Project Management Institute in the Arabian Gulf. All of these changes began to increase the level of expertise. Changes have reduced average project schedules from an average of 48 months to 35 months;

• A Value Engineering Unit was formed after early successes showed that VE could significantly reduce project costs. Five people were trained and certified, and the unit continues today;

• Project Cost and Schedule performance targets were instituted in 1999 for on-time and on-budget completions, value engineering and value improvements. Recording value improvements (improvement ideas proposed by team members) acknowledged their contribution and provided incentives for finding ways to save money. This effort was enhanced by the advent of a balanced scorecard (BSC) for projects starting in 2002, when several other performance measures were added;

• A standard contract schedule for quality, introduced in 2000, significantly improved project quality. Further quality improvements, especially for local construction contractors, were promoted with a project quality measure for the BSC, focusing on adherence to requirements, and in 2002, requiring conformance to ISO 9001 and related documents;

• After several years of moderate success, asking project teams to implement CII best practices and the lessons learned program, Project Management established a Best Practices group in 2002 to formally implement these concepts. This group of experienced personnel works with project teams in formal, facilitated sessions to optimize the value of selected best practices.

The result of these changes is that average project schedules have been reduced from an average of 48 months (from start of preliminary engineering to mechanical completion) for projects started in the early to mid-1990s to an average of 35 months in 2006. About 50 new projects start each year.

On-time performance has increased from 40–50 percent in the late 1990s to 80–90 percent for the last five years.

On-budget performance (including contingency) has increased from 50–60 percent to 80–90 percent. Project quality has improved substantially, and start-up time has decreased to less than one month for almost all projects.

Safety performance for construction contractors has also improved substantially, with less than one lost-time incident per 10 million man-hours in each of the last four years. It is important to note that this statistic is not comparable with U.S. statistics because there are no OSHA regulations; minor injuries and off-site traffic accidents are often not recorded.

Since 1998, VE studies have saved over $2 billion - roughly 7 percent of project value, and value improvements initiated by the project team or contractors has exceeded $1.8 billion.

Further Improvement

Saudi Aramco conducted its second IPA system benchmark in early 2004 for 30 projects that started during 1999–2003. The results showed improvement from the original study in 2000, with average schedules about 25 percent longer than industry and costs about 15 percent higher. However, it identified multiple specific areas for improvement. Consequently, the company launched a Corporate Capital Program Best in Class initiative with 23 of the 24 Administrative Areas participating. Nine major improvement areas were identified, and the initiatives are all moving into the implementation phase.

These initiatives are expected to have a great impact on cost and schedule performance of all Saudi Aramco projects:

- Greater use of Innovative Contracting Strategies, which focus on converted LSTK, using reimbursable engineering and procurement and then converting to a regular lump-sum contract at 50–70 percent of detailed design;

- Standardized Component Design. The first effort was a standardized substation design using precast walls and roof with top-entry electrical wiring, allowing a slab floor and experienced erection subcontractors. This design will save design time and about 3–4 months in substation construction;

- Increased accountability during the design basis (IPA FEL 1 & 2) now uses a more formalized gate approval process. Since 1998, value engineering studies have saved over $2 billion;

- Project team integration for groups of small projects based on mega project success in this area;

- More rigorous review of plot-plan layouts and equipment peripherals and instrumentation;

- Procurement process improvements including standardized procurement systems for local contractors and requisition templates;

- Construction productivity improvements for local contractors who employ personnel from Third World countries with limited industrial experience. The initial focus is on reducing interruptions;

- Productivity improvement for local design contractors, focuses on construction feedback to the design process and design quality control;

- The Integrated Project Technology initiative will increase the use of information technology (IT) for improved project processes, data management and flow, and for program management reporting.

KAUST: Building Wis

Saudi Aramco is no stranger to mega-projects, but in 2007, the company undertook a building program of a different kind: a $10 billion, world-class research university that is the brainchild of King Abdullah. The new university, to be located in Thuwal, Saudi Arabia, on the western Red Sea coast north of Jeddah, will usher in a new era of scientific discovery and achievement that will benefit not only the Kingdom but the entire world.

The King Abdullah University of Science and Technology (KAUST) builds on the tradition of the Arab golden age of knowledge, when from the 8th to 11th centuries, scholars of Baghdad's Bayt al-Hikma, or House of Wisdom, preserved and enlarged on Greek and Roman discovery, anticipated and informed Renaissance scholarship, and made seminal contributions to geometry, physics, optics, medicine, logic, engineering and other fields. As wisdom's new house, KAUST is chartered to bring the world to Saudi Arabia on one campus to explore and develop solutions that will transcend national boundaries to serve the world.

The university will be international in scope, open to men and women of all nationalities and faiths, creating opportunities for top minds to address common global issues and problems. Initially, KAUST will focus on four interdisciplinary research clusters: energy and the environment, biosciences and engineering, materials science and engineering, and applied mathematics and computational science. The university, in collaboration with the world's foremost research and academic institutions, will recruit top students globally to pursue master's and doctoral degrees and conduct research. KAUST's Innovation Center, a key element of the university, will link researchers and industry to drive economic growth and create jobs. These goals of forming a knowledge-based economy, supporting scientists and their work at national and international levels, and benefiting the world through research and economic development will be achieved through partnerships and collaborative agreements with leading universities and research centers around the globe.

KAUST, envisioned by King Abdullah as both "a source of knowledge and a bridge between people and cultures," is being built on the premise that a global institution with global partners can exert a global impact.

dom's New House

"It is true that KAUST's physical campus represents a mega-project, but Saudi Aramco's participation is the result of more than the company's success with giant construction projects. For nearly 75 years, the company has been the Kingdom's international model, with 65 nationalities working together to help meet the world's energy needs."

In addition, KAUST's $20 billion endowment will place the university in the upper echelon of the world's top-funded institutions of higher learning.

It is true that KAUST's physical campus represents a mega-project, but Saudi Aramco's participation is the result of more than the company's success with giant construction projects. For nearly 75 years, the company has been the Kingdom's international model, with 65 nationalities working together to help meet the world's energy needs.

Leadership in Community Enrichment

In a major, unprecedented undertaking at the direction of the government, Saudi Aramco is developing the King Abdullah University of Science and Technology (KAUST), a world-class graduate research university that promises to usher in a new era of scientific and technological discovery. This unique cooperative research complex is intended not only to advance academic knowledge and strengthen and diversify the economies of Saudi Arabia and the region, but also to contribute to global economic and social advancement by producing generations of leading scientists, engineers and technologists to find solutions and innovations benefiting all humankind. In June, the KAUST website (www.kaust.edu.sa) and logo were launched, and on October 21, KAUST's groundbreaking on the Red Sea coast north of Jiddah took place before 1,500 dignitaries from around the world.

In 2008 preliminary engineering started on the Saudi Aramco Cultural Center, a planned multistory public complex commemorating the 75th anniversary and supporting King Abdullah's vision of a knowledge-based society. In addition to housing a library, learning facilities, a media center and an auditorium, the center will host a variety of cultural events.

In 2007 Saudi Aramco took many steps to create jobs and boost the domestic economy, including procuring two contracts for the construction of 65 new offshore oil and gas production platforms and structures. In addition, a new yard in the Dammam Port area will allow offshore fabrication to be done in Kingdom for the first time, capturing jobs in construction, procurement, housing, transportation and other areas that previously were foreign-sourced.•••

Environmental

Saudi Aramco is committed to minimizing our footprint on the environment. We're focusing research and development on cleaner, more efficient operations, processes and products. Our good stewardship is reflected in environmental awareness programs to encourage conservation and other environmentally responsible actions. And of course, it is reflected in our operating record. A shining example is our shipping subsidiary, Vela, which in 2007 completed more than 1,000 voyages, transporting nearly 2 million bpd of crude oil to customers in the United States, Europe, India and the Far East, without a significant environmental incident.

Research and Development

In another technological development, Saudi Aramco is developing new pre-refining processes to desulfurize whole crude oil and produce sweetened oil. This step anticipates that less sweet crude will be available to global markets, and refiners will increasingly need to meet market requirements for lower sulfur-content clean fuels.

Saudi Aramco's fuel quality road map, a plan stretching into 2030 for cleaner, higher quality fuels, sends a clear message worldwide that hydrocarbon fuels can meet the most stringent environmental standards. The map sets a timetable for introducing clean fuels meeting ambient air quality standards in the Kingdom's urban centers. Our cleaner transportation fuels will limit sulfur content and dramatically reduce benzene content and aromatics in gasoline.

Another environmental achievement was funding a third diesel hydrotreater project at Ras Tanura Refinery, which will produce low-sulfur diesel. When the hydrotreater is completed in 2010, emissions from diesel fuel produced in Kingdom will be reduced by 95 percent.

Saudi Aramco's scientists also unveiled impressive environmental innovations in 2007. Hanaa H. Habboubi, a scientist in the R&D Center's Biotechnology Group, led studies on genetically modifying bacteria so it can provide a range of services for Saudi Aramco, from reducing sulfur in reservoirs to actually "eating" oil in contaminated soil.

Environmental Programs

As part of our Environmental Master Plan, in 2007 Saudi

"Our good stewardship is reflected in environmental awareness programs to encourage conservation and other environmentally responsible actions."

Stewardship

"A new technology called the "Cutting Edge Membrane Bio Reactor" process will raise the reused wastewater proportion to more than 90 percent."

Aramco completed 12 projects valued at almost $1 billion, and 20 more for a total of about $1.87 billion have been approved. Future plans include an additional 10 projects with a total value of $564 million.

Saudi Aramco's comprehensive groundwater protection program incorporates field sampling and laboratory analytical functions to monitor groundwater quality, and other methodologies to protect human health and the environment.

Saudi Aramco also implemented programs to minimize groundwater consumption and promote reuse of treated wastewater. Currently, more than 72 percent of the company's sanitary wastewater is recycled for beneficial recycling via tertiary sanitary wastewater treatment facilities in major Saudi Aramco communities. Additionally, a new technology called the "Cutting Edge Membrane Bio Reactor" process will raise the reused wastewater proportion to more than 90 percent within a few years.

Saudi Aramco has established a corporate Energy Management Program with the ambitious goal of improving energy performance by 50 percent by the end of 2010. We're also collaborating with national and international universities on energy conservation training and research. In another energy management initiative, Saudi Aramco is developing, along with other government agencies, a national energy policy and implementing a Kingdomwide awareness program to improve energy conservation.

The company also participated in the Ministry of Water and Electricity's collaboration with Japan to develop an energy efficiency plan for Saudi Arabia's residential, commercial and industrial sectors.

As part of ongoing efforts, Saudi Aramco conducted its annual Recycling Awareness Campaign. We also launched the Recycling Website, extended community recycling programs and continued to promote our Water Conservation Program through various media.

The company approved 14 energy conservation initiatives this year that are anticipated to save $27.5 million per year in Saudi Aramco facilities, and 15 more initiatives are under evaluation.

Reliable energy suppli

Saudi Aramco is continuously seeking new oil resources, as well as expanding production through efforts including the two largest single increments in its history (Khurais and Manifa), and expertly managing its existing portfolio of some 100 fields to maximize recovery. And as the world's oil supplies become more challenging to produce, Saudi Aramco is taking the lead in developing technologies to produce conventional oil reserves more efficiently.

Crude Oil

Not long ago, Saudi Aramco President and CEO Abdallah S. Jum'ah issued a challenge to the wider oil industry: Find enough new resources to add 1 trillion barrels to world reserves over the next 25 years. That challenge began at home. Saudi Aramco is leading the strategic development charge to help ensure reliable energy supplies far into the future. Saudi Aramco is continuously seeking new oil resources, as well as expanding production through efforts including the two largest single increments in its history (Khurais and Manifa), and expertly managing its existing portfolio of some 100 fields to maximize recovery. And as the world's oil supplies become more challenging to produce, Saudi Aramco is taking the lead in developing technologies to produce conventional oil reserves more efficiently.

This 10-year, Kingdom-wide capital program includes an exploration strategy that aims to replace reserves to match our annual crude oil production and add at least 5 trillion standard cubic feet of non-associated gas reserves per year. The program includes drilling and seismic activities to generate prospects and improve imaging in support of finding both oil and non-associated gas. Some of the capacity added by these major crude oil increments will offset natural decline, and the remainder will expand our maximum sustained production capacity, which by the end of 2009 will reach 12 million barrels per day (bpd).

These efforts to discover new resources and add to reserves for years to come are just one reason Saudi Aramco is the world's cornerstone for crude oil.

Two Days, Two New Oil Discoveries

Success stories for 2007 included two new oil discoveries, both located in the Eastern Province

es far into the future

Saudi Aramco's mega-project slate is geared to ramp up production in response to the growing global need for energy. Collectively, these strategic increments alone will match the daily oil production of some oil exporting countries.

southeast of Ghawar, the world's largest onshore oil field.

The first, Mabruk, struck on April 26, is the first discovery in the Hadriyah reservoir south of Ghawar.

The Mabruk-1 well flowed 5,600 bpd of Arabian Heavy oil with 2 million standard cubic feet per day (scfd) of gas. Under normal production conditions, the well is expected to flow at a higher rate. The following day, on April 27, the Dirwazah field was discovered in the Unayzah reservoir. The Dirwazah-1 well flowed 5,569 bpd of Arabian Light oil with 2.8 million scfd of gas.

Mega-Projects: Production Success Stories

Saudi Aramco's ambitious capital program achieved many milestones during 2007 toward construction of crude oil increments. Since 2001 through the scheduled completion of Manifa in 2011, the company will have built more than 4 million bpd of oil production capacity and 3.3 billion scfd of new gas-plant output.

Mega-projects, generally defined as programs exceeding $1 billion in value, are not big news just for their size or cost. Their impact also is huge. Major crude increments will

add the following amounts to Saudi Aramco's oil output capacity: Khurais, 1.2 million bpd; Manifa, 900,000 bpd; Khursaniyah, 500,000 bpd; and Shaybah, 250,000 bpd. While Nuayyim does not qualify as "mega," at 100,000 bpd, it will add significantly to production capacity.

An unprecedented number of major crude oil increments were in progress during the year: Khursaniyah is near completion, and Shaybah, Khurais, Nuayyim and Manifa are under construction.

To put the grand scale of this expansion program in perspective, consider that the collective capacity these increments represent is equivalent to the daily oil production of some exporting countries.

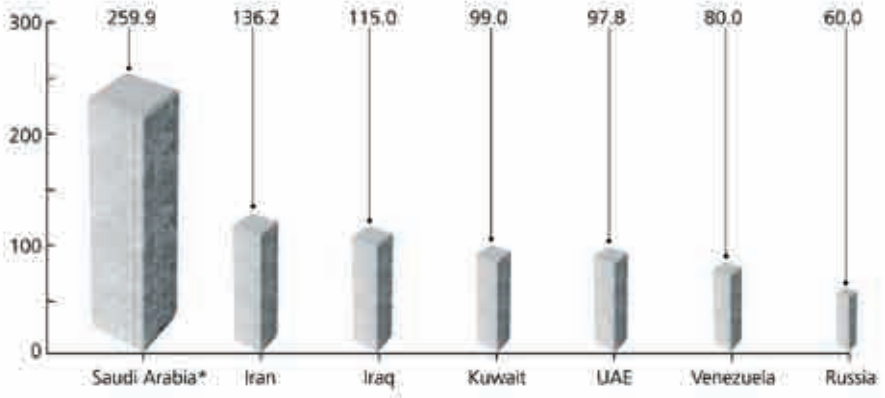
Khursaniyah: The Khursaniyah Oil Production Facilities project neared completion at the end of 2007, with facilities slated to come on-stream in 2008. The plant has the capacity to process and stabilize 500,000 bpd of Arabian Light crude. All gathering and distribution pipelines, and communication and industrial support facilities were commissioned in 2007. The integrated Khursaniyah Gas Plant (KGP) designed to process the associated gas will be commissioned with a first-time distinction: a 100-percent Saudi workforce.

Khurais: The Khurais program, the largest integrated project in company history and the largest industrial project in the world, is on track for facilities completion in 2009.

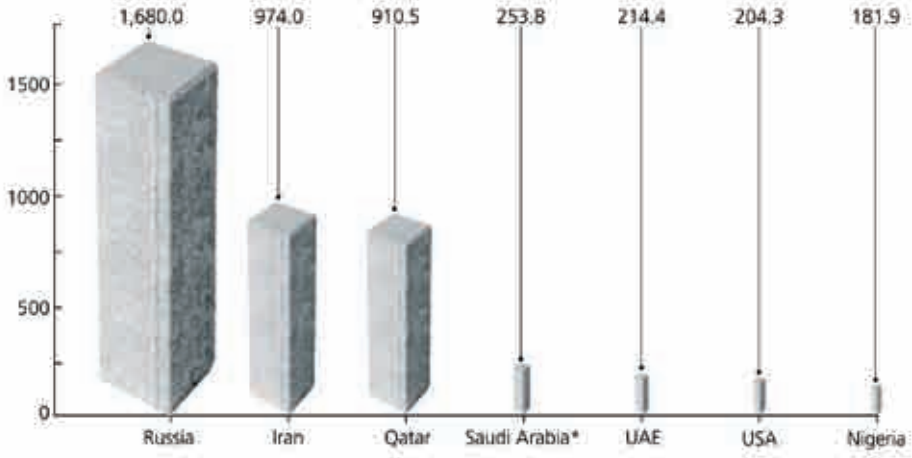
Estimated Worldwide Crude Oil and Gas Reserves

(as of January 1, 2008)

Conventional Crude Oil Reserves (billion barrels)



Natural Gas Reserves (trillion cubic feet)



* Source: Saudi Aramco actual

Source: *Oil & Gas Journal*

Saudi Arabia Crude Classifications

Arabian Super Light (ASL) – API > 40°

Arabian Extra Light (AXL) – API 36-40°

Arabian Light (AL) – API 32-36°

Arabian Medium (AM) – API 29-32°

Arabian Heavy (AH) – API < 29°

Natural Gas

Discoveries and Expansions

Saudi Arabia's expanding domestic economy and industrial enterprises depend heavily on Saudi Aramco's natural-gas reserves. Current use is at the highest level in the history of our gas program. To meet this demand, Saudi Aramco is working hard to find reserves and build its production and distribution capacity. Total gas production average was 8 billion scfd at year-end. Saudi Aramco plans to increase gas capacity to 13 billion scfd by year-end 2011.

Saudi Aramco's exploration efforts were rewarded with the discovery of two significant gas reservoirs in 2007, both located in oil fields originally discovered in 1967. Karan-7, an extension of our largest gas field, Karan, is located six km south of Karan-6, a 2006 reservoir discovery. Gas also was discovered at the Jana-6 offshore well.

Gas Cornerstones

The Karan Gas Field Development Project will provide offshore platforms and pipelines for the production of 1.5 billion scfd of gas by 2012. Associated gas from Khursaniyah will be processed at Berri Gas Plant until the new Khursaniyah Gas Plant is completed. Scheduled to begin operations at the end of 2008, the new plant will process 1 billion scfd of associated gas from Khursaniyah, Abu Hadriyah, Fadhili and neighboring fields.

The Hawiyah NGL Recovery Plant, on track for start-up in third-quarter 2008, will process nearly 4 billion scfd of sales gas to yield 310,000 barrels of natural gas liquids. The NGL products will be used as feedstock for the Kingdom's expanding petrochemicals

industry, creating thousands of job opportunities for Saudi citizens. Approximately 379 km of related pipelines and two pump station upgrades were completed in November 2007, and are

"Total gas production average was 8 billion scfd at year-end. We plan to increase gas capacity to 13 billion scfd by year-end 2011."

ready to deliver the NGL products to end users.

Another component of the project, the expansion of Ju'aymah Gas Plant, is set for startup in second-quarter 2008 and will fractionate additional NGL products. The last part of the program, the Hawiyah Gas Plant Expansion, will process an additional 800 million scfd of non-associated gas.

The integrated Khurais program will dehydrate and compress 450 million scfd of gas, and the Manifa Oil Field program will produce 120 million scfd of gas by third-quarter 2011.

The expansion of Yanbu' Gas Plant will increase ethane and NGL processing by 185,000 bpd, and will support the strategic aim of growing feedstock supply to industries at the Yanbu' and Rabigh petrochemicals complexes.

The Master Gas System Eastern Region Expansion Project, funded in July 2007 and slated for completion in 2010, will expand the MGS distribution system with 215 km of 56-inch pipeline parallel to existing lines and increase capacity by 30 percent.

Innovations and Breakthroughs

Saudi Aramco has developed new drilling practices that led to drilling horizontal wells targeting separate layers and improving access to gas reserves. As part of this process, we also developed clean drilling-fluid designs in 2007. An added benefit of this latest fluid development is a much lower cost.

The mystery of black powder, a corrosive nuisance that clogs and damages control valves, parts and pipelines and whose origin has stymied the industry for years, was solved when Saudi Aramco's Research and Development Upstream Program completed a two-year study and presented its findings in Norway in 2007. The company's scientists determined that black powder results from the gas components of oxygen and moisture; they also identified the culprit's punishing properties, which include tiny particles of metal, sand, dirt, hydrocarbons and elemental sulfur. The team worked closely with the Pipelines Department to isolate black powder's origin and composition, and Southern Area Labs contributed to the breakthrough by conducting gas analysis.

Petroleum: Energy's Cornerstone

According to the International Energy Agency, global demand for energy is projected to grow by more than 50 percent over the next 25 years, exceeding 325 million barrels of oil equivalent per day.

Why? Oil is a proven commodity, and for decades to come, fossil fuels are expected to continue to comprise some 85 percent of the "energy pie." Much of that demand stems from transportation requirements; a recent World Energy Council study concludes that through 2050, cars will continue to depend primarily on petroleum fuels and internal combustion engines. And there will continue to be more cars on the roads, too, especially as the populations of emerging economies such as China and India become more mobile thanks to improved lifestyles.

What about other types of energy, such as wind and solar, nuclear and renewables? Given spiking energy demand, contributions from all energy sources will be needed. So while we believe that alternative and renewable resources should be developed as part of the world's future energy mix, we must also recognize that many of these options face significant technical, commercial, environmental and cost hurdles on the road to feasibility and viability.

On the other hand, from the standpoints of abundance, reliability and affordability, fossil fuels are an established resource with extensive production, transportation and distribution networks. They are expected to ac-

Board of Directors

count for more than four-fifths of the world's energy demand for the next quarter-century, and will not be displaced in the foreseeable future.

Petroleum's health-care applications are another indication of how this vital energy source enhances, protects and preserves life. Not only is petroleum a component in a range of medicines, it is also used as a coating to make pills easier to swallow. Petroleum-based plastics are used in an array of medical applications and products. Catheters, syringes, gloves, tubes, pumps and prosthetics are just a few examples.

Widespread misperception has given rise to concerns about the security of future petroleum supply. Saudi Aramco believes that, at current rates of consumption, the world's resources are sufficient, even under conservative assumptions, to meet global demand for well over a century, and for nearly 200 years when technological advances are factored in. Despite this assurance and our existing resources, we are continually expanding our own reserves base of roughly 260 billion barrels. In order to meet the world's growing energy demand, we have ramped up exploration activities with the ambitious target of increasing Saudi Aramco's discovered oil resources, or "oil in place," including proven, probable, possible and contingent reserves. These exploration activities aim to increase these "oil in place" resources from the current total of 716 billion barrels to 900 billion barrels and beyond within the next 20 years. We are also focused on improving petroleum's performance, making it more efficient and environmentally friendly.

Saudi Aramco's Operations Coordination Center (OCC) is the hub of our oil, gas and refined products management function. OCC personnel use realtime information to deliver quality products to the customer at the right time and place.

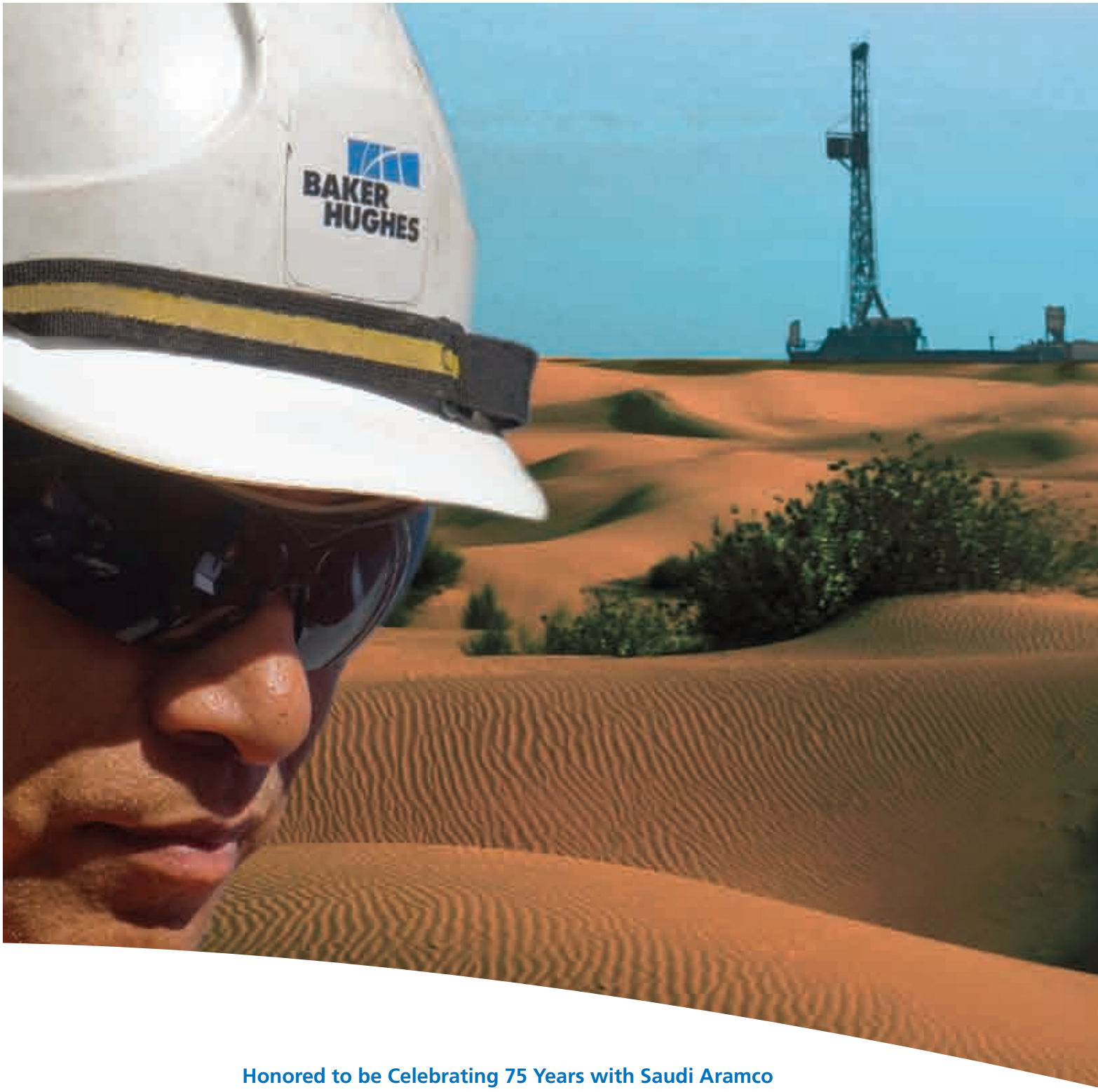
From the fuels that power cars, trucks and planes to the petrochemicals used in virtually every manufactured product, petroleum plays a vital role in everyday life: It's in clothes and shoes; contact lenses and glasses; artificial limbs, heart valves and hearing aids; aspirin, anesthetics and antiseptics; car bodies, tires, dashboards and safety glass; gasoline, diesel and jet fuel; computers, CDs and televisions; toothbrushes, toothpaste, cosmetics and shaving cream; sports equipment and recreational gear; furniture, paint, roofing and upholstery — the list of practical and beneficial uses goes on and on.

Without a doubt, petroleum is energy's cornerstone. And as the world's leading producer and supplier of this vital natural resource, Saudi Aramco is itself a cornerstone of reliability and sustainability.

Agriculture is an excellent example of how petroleum and petroleum products dramatically enhance daily life around the globe on virtually every level. From fertilizers that promote less expensive, higher yield crops to the plastics used in irrigation hoses and other equipment to the fuel that powers farm machinery, petroleum plays an important role in food production and distribution.

Sponsors

Our Second Century of Innovation



Honored to be Celebrating 75 Years with Saudi Aramco

As Baker Hughes celebrates 101 years of innovation and service in the oil and gas industry, we congratulate Saudi Aramco on its 75th anniversary. Today's Baker Hughes carries on the tradition of R.C. Baker, Howard Hughes, Sr. and many other oil service pioneers. We join Saudi Aramco employees in developing technology innovations to find, develop and produce oil and gas to fuel our global economy.

For more information, visit our website *www.bakerhughes.com*

BAKER HUGHES

Best in Class


الف مبروك

Collaborative Partnerships—**Targeted Solutions**

Since our first wireline log for Saudi Aramco in 1941 we have collaborated to deliver innovative products, services, and solutions that optimize reservoir performance throughout Saudi Arabia.

We look forward to supporting Saudi Aramco's future endeavors to provide "Energy for Generations."



It is the vision of the leaders of the Kingdom of Saudi Arabia that has allowed the Oil and Gas industry in Saudi Arabia to flourish. This vision was channelled through the Ministry of Petroleum and Minerals and Saudi Aramco and has developed the wider national industry.

Saudi Aramco has emerged from the past 75 years as a world class oil company and an industry benchmark. It has become synonymous with best quality performance, environmental and social responsibility and the engineering of mega-projects.

Saudi Aramco continues to develop the necessary technology, human resources and knowledge vital to meet the challenges of Exploration and Production, E&P, in Saudi Arabia. Today Saudi Aramco is successfully undertaking a number of Mega projects and developing complex fields such as the Shaybah development in Rub Al Khali and the offshore Manifa by using extended reach wells. Over the last few decades Saudi Aramco has played an unprecedented role in contributing to Saudi Arabia's economic prosperity and development.

King Abdulaziz City for Science and Technology, KACST, is proud to work with Saudi Aramco on many research projects and looks forward to a positive contribution in developing the national strategy for localization and development of Oil and Gas E&P technologies with a vision of technology leadership by 2025.

For the next 75 years and beyond, we, at KACST, wholeheartedly wish Saudi Aramco further success, growth and contribution to the Kingdom.

مدينة الملك عبدالعزيز للعلوم والتقنية

King Abdulaziz City For Science and Technology



King Fahd University of Petroleum & Minerals congratulates Saudi Aramco on it's 75th anniversary

www.kfupm.edu.sa

At KFUPM we are mindful of our strong ties with Saudi Aramco. Since our founding as the College of Petroleum & Minerals in 1963 we have prospered alongside Saudi Aramco as a neighbor on Jebel Dhahran and as partners in progress. Many of our more than 21,000 alumni have followed career paths with Saudi Aramco.

We anticipate strengthening our ties through future cooperation in academic and research programs.

جامعة الملك فهد للبترول و المعادن

King Fahd University of Petroleum & Minerals

Research Institute congratulates **Saudi Aramco** on it's 75th anniversary

www.kfupm.edu.sa/ri

Saudi Aramco has supported the KFUPM Research Institute as our largest client from the time of our founding 28 years ago. We continue to offer Saudi Aramco research services in a wide range of applied research projects to which we always apply the multi-disciplinary resources of the entire University.

We foresee building upon our previous engineering and scientific research experiences and will be proud to assist the Company in meeting the technological challenges of the future.

معهد البحوث

RESEARCH INSTITUTE

King Fahd University of Petroleum & Minerals

Research Institute

Note from Publisher

It is both an honor and privilege to have worked on the Saudi Aramco 75th Year Anniversary supplement. Highlighting a truly visionary array of pioneers, events and progress the supplement is divided into 7 sections; Royal Visits, Pioneer Profiles, 'Past, Present and Future', Sponsors and this Note.

The first section 'Royal Visits to Saudi Aramco - In the Founder's Footsteps' reviews the visits that Saudi Aramco has received from all six Saudi Kings. The visits start with King 'Abd al-'Aziz (reigned 1902 – 1953), King Sa'ud (reigned 1953 – 1964), King Faysal (reigned from 1964 -1975), King Khalid (reigned 1975 – 1982), King Fahd (reigned from 1982 – 2005) to King 'Abd Allah who has reigned from 2005.

The Royal Visits section exemplifies the vision of the Saudi Arabian monarchy that started with King 'Abd al-'Aziz seeking international oil company expertise to explore his kingdom for natural resources. This ultimately led to Standard Oil of California, (Socal) being awarded the exploration concession on 29th May 1933.

Yet it took five years of hard work and persistence on the part of geologists, engineers, desert guides and executives before 'striking pay'. CASOC found oil in commercial quantities on 3rd March 1938 while drilling Dammam Well No. 7. That strike encapsulates the 'Pioneer Profiles – They built Aramco' section, which outlines the roles of the explorers that delineated initial acreage and production assets.

The Past (Blue), Present (Green) and Future (Orange) sections correspond with the Saudi Aramco 75th Anniversary burst logos. The Past section traces the evolution of Saudi Aramco through the decades starting with the company's origins in the 1930s.

It continues with the company's foundations being established throughout the 1940s and outlines the unprecedented momentum being built within Saudi Aramco in the 1950s. It covers the further growth and development of the company during the 1960s and 1970s. It also shows the transformation of the company within the 1980s and the remarkable global reach of the company by the 1990s.

The Present section covers Saudi Aramco from the turn of the millennium. From 2000 Saudi Aramco has clearly shown that it is part of a secure energy future through its commitment to conservative long-term reservoir management, strategic expansion and international joint-venture projects as well as cutting edge research and development, and enhanced oil recovery techniques. Illustrating this is the fact that Saudi Aramco has produced some of the most revolutionary techniques and processes in the oilfield. Exemplifying this is the award winning Shaybah Deep Desert field development, the Maximum Contact Reservoirs and POWERS reservoir simulation as well as the fascinating array of Saudi Aramco EXPEC RD technology applications. Today's Saudi Aramco has global reach and its success as the world's No 1 Oil company in terms of crude oil production and holding ¼ of the world's oil reserves is a combination of the blessings of God for its petroleum reserves, the wise stewardship of the rulers of Saudi Arabia, and the efforts of its employees who understand that the people of Saudi Arabia – and billions of people around the world – rely on Saudi Aramco to provide them with the energy they need to live fuller, more productive lives.

The future section is characterised by Mega Projects and a continuation of the vision that founded Aramco. Today, KAUST (The King Abdullah University of Science and Technology) symbolises King 'Abd Allah's vision of a graduate research university capable of meeting the need for advanced science and mathematics skills to tackle the energy and environmental challenges facing all the inhabitants of the planet.

Last but not least are the publication sponsors, which are found on pages 95-105.

Sentiments on the 75th Anniversary are best expressed by two quotes:

Saudi Aramco President and CEO Abdallah S. Jum'ah said, "We view this as an opportunity to connect the company's remarkable past with the exciting promise of the future. It will also allow us to send a big 'Thank You' to our current and retired employees, to the people of the Kingdom and to all those with whom we partner."

Ali I. Al-Naimi, Minister of Petroleum and Mineral Resources and Chairman of the Board of Saudi Aramco said, "Saudi Aramco is a very special company, the 75th Anniversary is an opportunity to celebrate its great achievements over the years and to highlight the company's role in contributing to the future of the Kingdom and the world economy."

Acknowledgement

Saudi Arabia Oil and Gas would like to express gratitude to Saudi Aramco for providing material for this publication.•••

Wajid Rasheed Publisher and
Founder EPRasheed

Energy for generations

Saudi Aramco 75th Year Anniversary

Supplement to

Saudi Arabia oil & gas

www.saudiarabiaoilandgas.com

Publisher and Founder EPRasheed
Wajid Rasheed
wajid.rasheed@eprasheed.com

Editors
Majid Rasheed
Mauro Martins

Layout
Fernanda Brunoro

Contacts

United Kingdom

- Head Office
Tel: (44) 207 193 1602
- Brian Passey
brian@bspmedia.com
- Sally Cole
sally@bspmedia.com

Houston

- William Bart Goforth
william.goforth@eprasheed.com
Tel: (1) 713 304 6119

Saudi Arabia

- Akram ul Haq
PO BOX 3260, Jeddah 21471
akram.ul.haq@saudiarabiaoilandgas.com
Tel: (966) 557 276 426
- Mohanned AlSagri
mohanned.alsagri@saudiarabiaoilandgas.com

Brazil

- Ana Felix
afelix@braziloilandgas.com
Tel: (55) 21 9714 8690
- Josefina Filardo
jfilardo@braziloilandgas.com
Tel: (55) 11 9119 2104

www.ttnrg.com

www.braziloilandgas.com

www.norwayoilandgas.com

www.saudiarabiaoilandgas.com