ARAMCO WORLD
505 PARK AVENUE, NEW YORK 22, N. Y.

THE PEOPLE THAT HISTORY FORGOT

feeding. Over in the barley field a man is plowing with a team of oxen.

This is the farm of Tiwataparas, a Hittite landowner. He is short and swarthy with a markedly curved nose. After the fashion of most Hittites, his forehead is shaved but his dark hair, divided into three locks, falls freely down his neck. He wears neither mustache nor beard.

Tiwataparas is dressed in a knee-length woolen tunic with short sleeves and a belt. Across his left shoulder he wears a bright red, fringed mantle. His shoes, turned up at the toes, are thick-soled. His clothes, heavier and made of better material than used by the Syrians or Egyptians, attest to the rigorous winters endured on the Hittite plateaus. In answer to questions about his farm, Tiwataparas replies in a language that shows a faint resemblance to Latin or Greek, although most of the words clearly belong to some entirely different tongue.

In Tiwataparas' house are a number of cooking and serving vessels and other utensils of copper, bronze and pottery. But Tiwataparas displays one object, a small dagger, of which he is especially proud. It is made of iron, a rare and precious metal among the Hittites. His home also contains small bronze replicas of the weather god and sun god, chief deities among a bewildering array of gods borrowed from Sumerians, Assyrians, Babylonians and Indians.

Although Tiwataparas' farm is many miles from the Hittite capital of Hattusas, he daily feels the influence of Hittite law-givers. A code of law, 200 paragraphs long, regulates both his personal and business life. When he sells his barley or honey, for example, he is paid in silver coins at prices regulated by the code. In criminal matters, Hittite justice is held to be very fair – even lenient.

Only rarely does Tiwataparas make the long journey to Hattusas, but he has pointed out the well-traveled road to many making a first trip to this center of Hittite power. To one approaching the city, the great double walls appear first in the distance. Square towers, looking out onto the surrounding terrain, are spaced along the walls. In front of the first wall is the mouth of a tunnel, out of which the city's defenders can rush in a surprise attack on any enemy who besieges the city.

At that very moment a thunderous sound issues from the direction of the walled city. From a large stone gateway pours a host of Hittite troops in the light, two-wheeled Hittite war chariots that are feared throughout Asia Minor. Unlike the older chariots of the Sumerians – heavy, wood platforms with solid, clumsy wheels – the Hittite chariots are graceful and highly maneuverable. Their wheels are rimmed and have six spokes. Each chariot is drawn by a pair of spirited horses, whose driver handles them with the skill that has made Hittite horsemanship admired over the entire Middle East. At the head of the chariot shaft between the horses is fixed a large copper crescent. It is a good luck charm – and as the sun glances off it as the chariots charge into battle, it helps terrify the enemy.

Each chariot holds three men – the driver and two warriors. Some are dressed in belted knee-length woolen tunics. Others, bare to the waist, wear what resembles a kilt. The warriors wear tufted, bronze helmets and carry short curved swords and battle-axes. They also have bows, and quivers of arrows are mounted on the sides of the chariots. A shower of arrows upon a foe terror-stricken at the sight of the chariots often brings victory at the first charge.

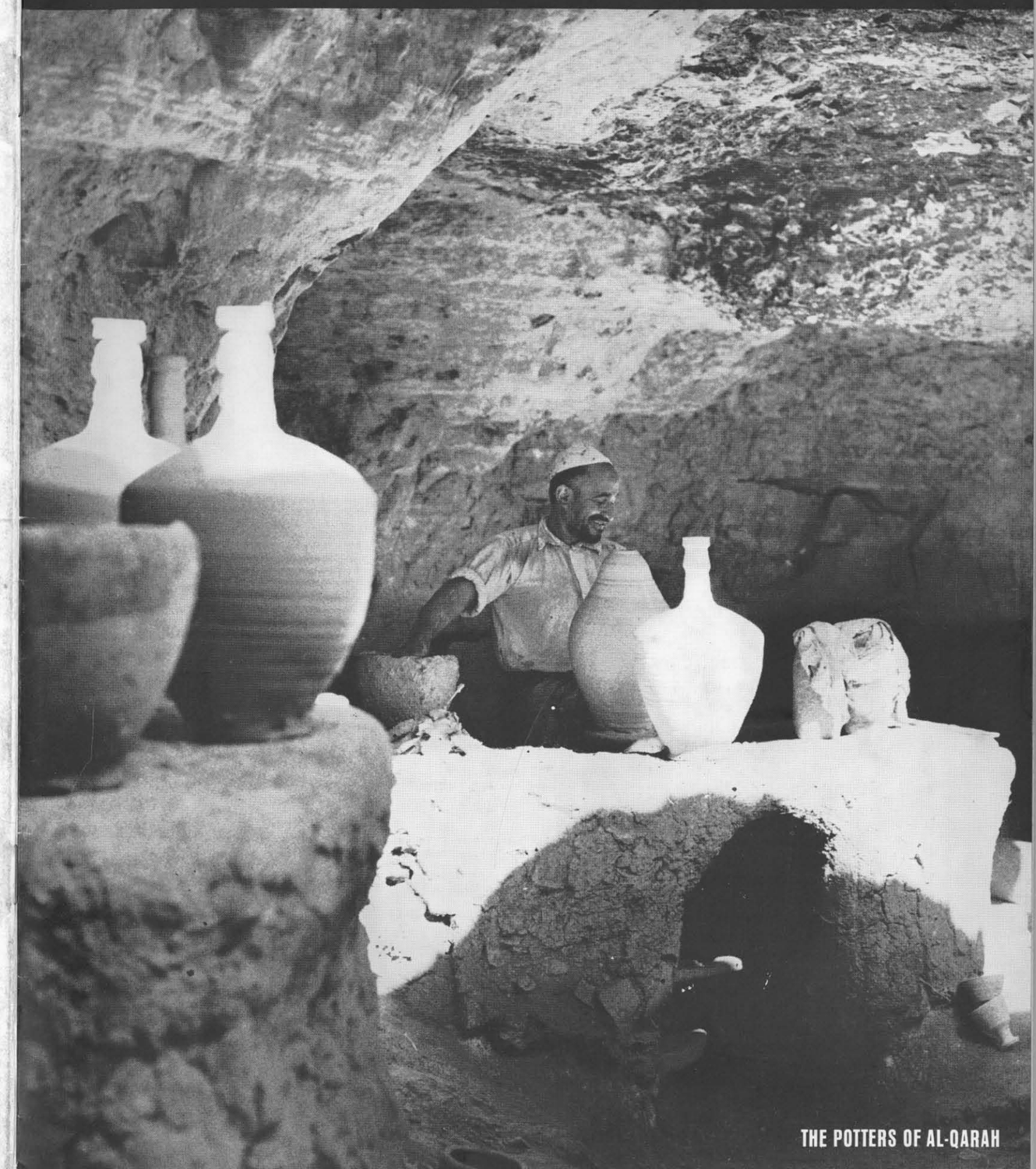
Behind the chariots come the infantry. Some of the troops carry bows or slings, while others are armed with short lances or broad-bladed choppers. In battle the Hittite army attacks in close order, concentrating its strength at one point along the enemy's line, a point which seldom resists the shock of the Hittite onrush.

The troops are on their way to the greatest struggle in Hittite history. Their king, Muwatallis, has decided to put a stop to the expansionist drive of Egypt under the new Pharaoh, Ramses II. So the Hittite war chariots, glinting with sunlight through the dust raised by their horses, roll onward toward Kadesh, far off on the Orontes River, not far from the Syrian border. This year, 1296 B.C., will be the last year of life for many Hittite soldiers, but their comrades will return victorious over the Egyptians.

All this is what a visitor, magically returned to the plains of Asia Minor, could have seen and heard as he lived among the Hittites in their days of greatness. Seeing them and their achievements, he would not have believed it possible that almost all memory of such a people could disappear for more than three thousand years. But the patient work of the archaeologists and scholars have at last, in a very real sense, brought the Hittites to life again. ■

Aramco World

OCTOBER 1961



THE POTTERS OF AL-QARAH

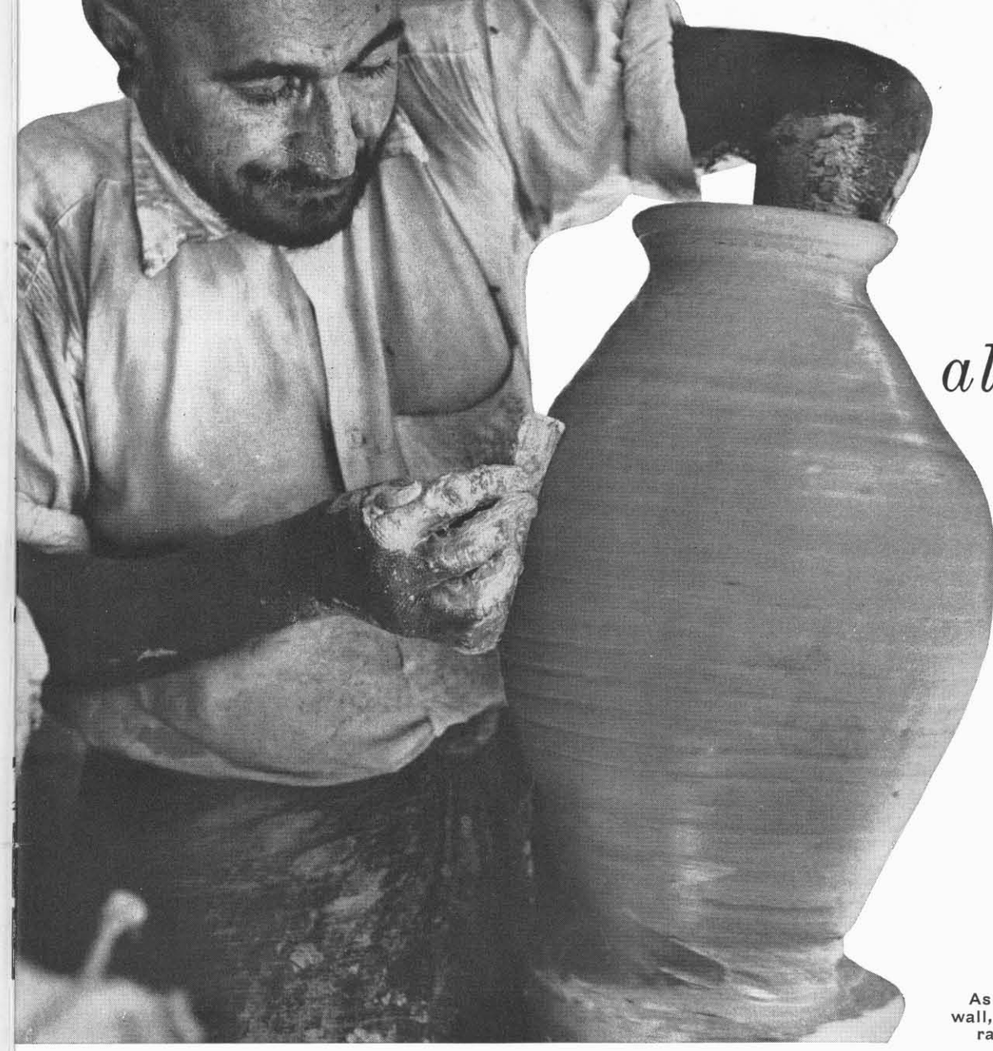
Aramco World

OCTOBER 1961 VOLUME 12 NO. 8

FRONT COVER: Tahir ibn Ali has raised a jug to full height and is ready to narrow the neck. His cave-workshop at Jebel al-Qarah, near Hofuf, Saudi Arabia, has an abundance of sunlight for working, yet the thick walls and ceiling provide natural air conditioning.

PICTURE CREDITS: Front cover, pages 3, 4, 5—William R. Morrall. Pages 6, 7—Union Pacific Railroad, Pages 8, 9 (left)—Culver Pictures, Inc. Page 9 (bottom)—American Express Company. Page 9 (right)—Foul Anchor Archives. Pages 10, 11—United States Air Force. Page 12—Aramco photo by B. H. Moody. Pages 13, 14, 15—Aramco photos by Khalil Abou el-Nasr. Page 17 (right)—The Chase Manhattan Bank Museum of Moneys of the World. Pages 18, 19—illustration by Harold D. Hoopes. Page 19 (right)—Turkish Information Office.

A publication of the Arabian American Oil Company—A Corporation—505 Park Avenue, New York 22, N. Y.
T. C. Barger, President; J. H. McDonald, Vice President and Secretary; E. G. Voss, Treasurer
Issued by the Public Relations Department, T. O. Phillips, Manager



The Potters of al-Qarah

For 15,000 years and maybe longer man has mixed clay, water and imagination to create ceramics

As right hand supports jug's wall, Tahir ibn Ali's left hand raises and shapes the clay.

JEBEL AL-QARAH at Hofuf, in the Eastern Province of Saudi Arabia, contains a wonderful assortment of caves. They come in all shapes and sizes and make ideal spots for the adventurous games of young Saudi Arab boys. But one of the caves on the north side of the jebel is neither a "hideout" nor the site of "buried treasure." It is, less romantically, the workshop of Sayied Tahir ibn Ali Al Gahrach. But within the cave Tahir ibn Ali and his family ply a trade that has the romance and dignity of a 15,000-year history. The trade, or better yet art-form, is that of ceramics — the molding of clay or earth in plastic forms that are given permanency by the use of intense heat. Tahir ibn Ali picked an ideal spot for his workshop: his clay, stored in large stone vats, is kept moist and the cave provides him and his family with natural air conditioning.

That Tahir ibn Ali turns out a useful, eye-catching product is no surprise. His family has been working with ceramics for generations. Tahir ibn Ali and his two eldest sons are the potters who "throw" the pieces on foot-powered potter's wheels, which are built into the rock for stability. Other members of the family dig the clay from nearby clay beds, wedge (mix) it, prepare the outdoor kilns or ovens, and fire them with a fuel of dried palm fronds. Youngsters are taught at a very early age to help in all stages of pottery production, and they are not very old before they are shown how the potter's wheel operates. In this way the art of ceramics is passed on from generation to generation.

Visitors to the workshop are amazed at the display of dexterity that enables the potters to "throw" a two-foot-tall water jug in about six minutes. Tahir ibn Ali first centers a roll of clay on the wheel head. Then, with the clay whirling between his hands, he quickly opens the top of the batch. It begins to assume a jug-like shape as Tahir ibn Ali pushes his left hand down into the center of the pliable clay while his right hand raises and supports the outside wall. Extreme steadiness of hands and arms is needed to insure uniform thickness and shape. When the jug reaches its full height, Tahir ibn Ali forms the narrow neck by squeezing his hands together. So sure and swift are his

movements that his skill looks deceptively easy to anyone who doesn't appreciate the many years it took to acquire. Carefully, Tahir ibn Ali lifts the finished jug from the wheel and hands it over to another member of the family.

After the jug has dried in the sun, it is ready for baking. The two large outdoor kilns are stone-lined pits with fire-boxes below to burn the palm fronds. Placed in the pits in circular rows, the clay pots are given a covering of broken pottery just before the fires are lighted.

The result of all this family effort is a handsome and durable water jug that more than likely will find its way into a home in the village of al-Qarah, where it will be used to hold water. The porous clay allows a small amount of seepage which evaporates, keeping the water inside cool even in the hot summers. The al-Qarah potters make enough water jugs, bowls and vases to supply the village needs. In Hofuf other potters are busy supplying that city's needs, and in Qatif still other potters are at work. Wherever ceramics are needed, there are men like Tahir ibn Ali.

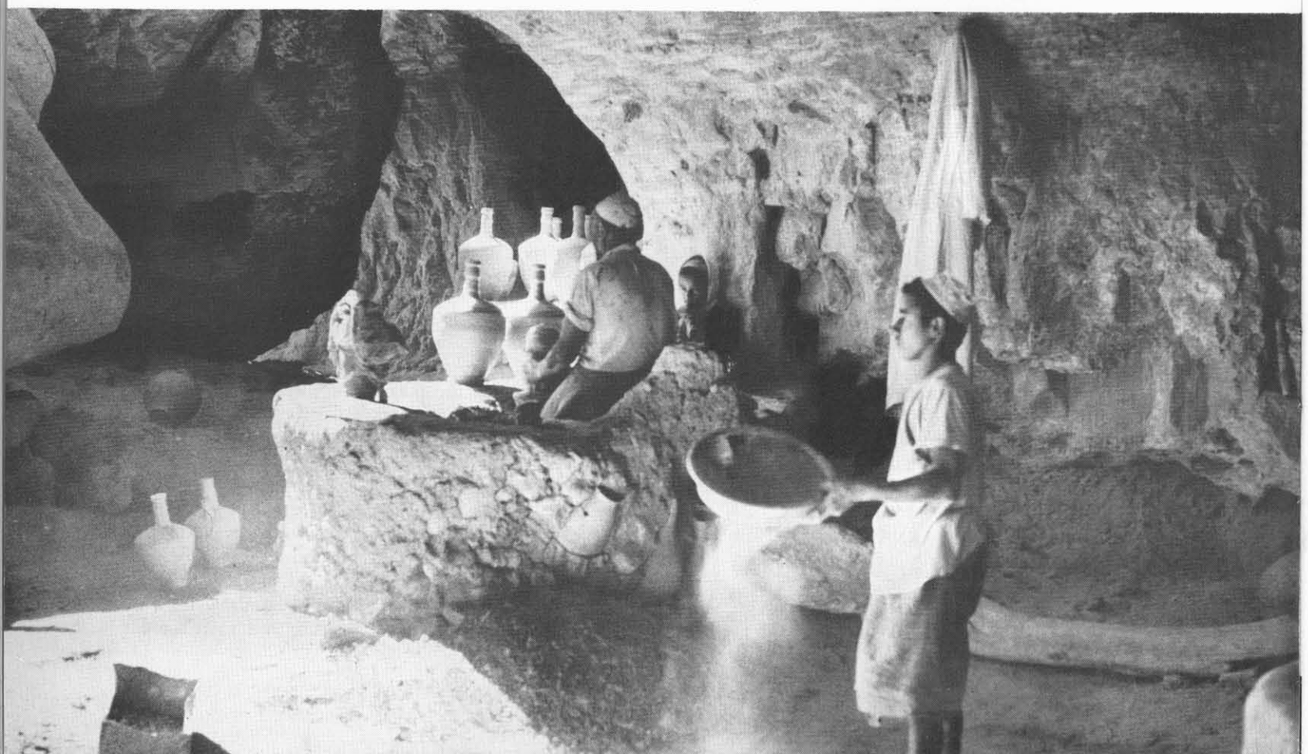
The same holds true in other parts of the world. Outside of the mass-production methods that supply some domestic and export needs, many countries foster handmade potteries similar to those fashioned at al-Qarah. The ceramics craft ranks along with such other ever-popular cottage industries as weaving, looming, carving and basketry, and no matter where made, the handmade jug or bowl always retains the distinctive touch of the individual craftsman, a touch that is lost in the mass-produced article.

Potters have been plying their trade for some 15,000 years. How it all started, no one knows, but it's reasonable to believe that a primitive man left his footprints in clay which dried and hardened in the sun. He saw that the depressions held water and might have guessed that clay would make an excellent lining for his reed baskets.

Hardening clay by fire was probably also an accidental discovery, but someone long ago also found that after being fired a ceramic article is almost indestructible. Excavations in the Nile Valley turned up fired clayware that was at least 13,000 years old and as good as the day an ancient potter put the finishing touches on it. Similar clayware found elsewhere in the Middle East, Europe, Asia and South America indicates that the development of the ceramics craft belongs not to a particular people or region but to the world as a whole.

Although many improvements and refinements have evolved, the basic steps in pottery-making have changed very little over the centuries. One improvement, however, was extremely important – glazing, which enabled potters to make their clay vessels more beautiful, durable and watertight. There are countless variations of the glazing compound, a molten substance which is fired on the surface of the clayware under intense heat. Egyptians as early as 3,000 B.C. were already glazing their wares, and the Syrians and Persians were not far behind in developing a very practical alkaline glazing compound. Later, iron, cobalt, manganese and copper were used to produce magnificent colors. Some of the most beautiful ceramics, considered masterpieces today, were produced in the Middle East of the pre-Crusade era. Artisans decorated pottery with various paints before applying a transparent glaze.

In the naturally cool cave at al-Qarah, pottery craftsmanship is a family enterprise. One of Tahir ibn Ali's sons (below) sprinkles clay dust on the floor so that the clay roll, kept in a large vat, will not stick to the floor when it is mixed.



Earlier, across the Mediterranean, the Greeks favored liquefied clay and molds that could produce duplicate vessels, covered with a very thin, lustrous glaze. Their famous dark glazes were obtained by using iron oxides with silica and small amounts of alkali as a flux or fusing agent. Although Roman potters borrowed much of the Greek styling, they were artisans in their own right, some of their best work seen in the valued Samian and Etruscan wares. Besides vases and bowls, the Romans produced ceramic bricks, tiles, drainpipes and bathtubs. Invading Roman legions carried pottery-making techniques into France, England and Germany. Evidence that articles they made were of enduring quality is the fact that some of their water conduits in France and Italy are still in use today.

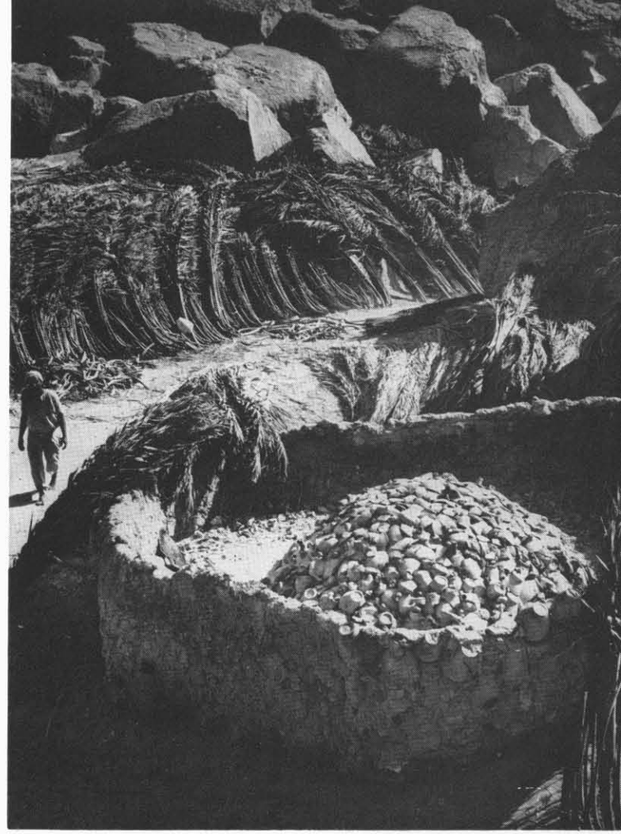
Using kaolin and feldspar as clay ingredients, the Chinese developed porcelain. Fired at an extremely high temperature, porcelain is a dense, translucent pottery, watertight even without glazing. The Chinese sometimes used a bluish-green or cream-colored glaze on porcelain ware that was the envy of Europe from the twelfth century until John Bottger discovered kaolin in Saxony, Germany in 1708 and began producing his own porcelain ware.

Other countries, too, added grace to the world's market places in the form of individualized pottery. Spain, for example, long has been noted for its majolica ware. The Spanish technique of applying an opaque gloss glaze, then painting on colored designs, was introduced to Europe during the Moorish conquest of Spain in the eighth century. Japan, France and England had their own ceramic industries but not until 1300 A.D. and later. On the North American continent, pottery was not a common craft until at least 500 A.D., and even then it developed very slowly. In fact, the Indian pottery of the American Southwest was produced by the *coil* method (successive strands of clay), and the potter's wheel was unknown until the arrival of the white man.

In the United States, ceramics, almost as old as man himself, has won a new popularity, not as an industry but as a hobby for home or club workshops. Hobby stores furnish everything needed: pre-mixed clays, glazes, kilns and potter's wheels that enable everyone from housewives to business executives to enjoy a creative pastime.

Even in Saudi Arabia, where ceramics as a cottage industry has always been important, ceramics as a hobby is catching on. Nearly a dozen wives of Arabian American Oil Company employees are avid ceramics hobbyists. Corners of their homes have been turned into workshops, or else they pursue their interest together at the Aramco Art Center in Dhahran. Not all of them progress to the potter's wheel, and some prefer the hand-molded vases and sculpture. Of those who do use the potter's wheel, very few can hope to match the skill and speed of Tahir ibn Ali. The Aramco wives are well aware that it takes years of constant practice to turn out consistently well-made pottery pieces, the kind Tahir ibn Ali and his two sons produce at Jebel al-Qarah.

But that very difficulty presents a challenge worthy of diligent, dedicated potters. As one of the ladies put it, "After being a potter for several years, I still find that I'm learning new things about ceramics." ■



The large outdoor kiln is fired with dried palm fronds and is covered with broken jugs that help fire-pit retain heat

Aramco housewife Adele Schauss "throws" a large bowl on potter's wheel. Adele teaches a ceramics class in Dhahran.

STAGECOACH WEST

A stagecoach ticket in the Old West entitled a passenger to

15 INCHES OF SEAT

and a bone-jarring ride at breakneck speed

Sturdy Concord coaches, carrying passengers, baggage and mail inside and out, rolled along the lonely trails of the Old West.

THREE years before the outbreak of the War between the States, one of the first westbound stages of the newly established Butterfield Overland Stage Company was stopped in Texas by a band of several hundred admiring Comanche warriors. The Indians were not on the warpath – they were merely curious. The driver and passengers waited with patient resignation while the Indians wonderingly examined every part of the vehicle. They lifted up the leather seats, opened the cargo compartments and turned out the mail sacks. They peered at the wheels, the couplings and trappings. They marveled at the intricate scrollwork and ran their fingers delightedly over the smooth finish of the finely sanded and painted wood. Finally, their curiosity satisfied, they told the driver in halting English, "You go now. Make swift-wagon go!"

To the Indians of the West the new coaches were things of wonder, appropriately called "swift-wagons." To the white man the stages were known more prosaically as "Concord coaches." They offered the most practical means of traveling through the West, especially on the long trek across plains and over mountains to California.

A trip by stagecoach in the West of a century ago usually started at a spot known as "end of rails" – the point where the infant railroads stopped and horses took over. The trip was more than a unique experience – it was an adventure. Travelers got down to the stage station at dawn, for seat reservations were unknown. Baggage was weighed carefully, for everything over 25 pounds cost dearly. Those unlucky enough to be among the last to board the coach found themselves on a hard jump seat in the center with no backrest and with knees jammed against those of facing passengers. A ticket entitled a passenger to 15 inches of seat, perhaps with a fat man on one side, a teary-eyed widow on the other, and a bandbox or carpetbag perched precariously overhead.

Traveling companions might be merchants or soldiers, dance hall girls or sweethearts, traders or trappers, cowboys or opera singers, know-it-alls who had been West before or gawking greenhorns.

The driver spat tobacco juice from the side of his mouth, called out a lusty and final "All aboard!" and released the brakes with a jerk. A whistling crack of the driver's whip – more for its effect on the spectators and passengers than on the horses – snapped the eager six-horse team into action. A good driver did all of his communicating with the animals through gentle movements of the reins. As one grizzled old stage driver once told a small boy who had inquired just how the horses always seemed to know what he wanted them to do: "I talk to them through the ribbons, Sonny."

In no time the main street of town was left behind and the broad prairie stretched ahead. Game was everywhere – buffalo, deer, antelope, elk, sagehens and prairie dogs. There were other trail travelers, too: lone hunters, freight wagons, caravans of settlers, Indian families with their goods on horse-drawn travois.

Just about when the first froth appeared at the horses' mouths and the passengers were thoroughly shaken up, the coach reached a "swing station." Twelve dusty, bumpy miles had been covered. Swing stations were squat buildings of adobe and logs – not very pretty to look at but meant to be arrow-proof. While passengers alighted to stretch their legs, stock handlers quickly changed the stage's team.

About fifty miles farther on was a "home station" operated by a station master and his family. The home station boasted a restaurant of sorts, but on most of the early stage lines complaints about the food were universal. Travelers covered about a hundred miles a day and bedded down for the night at a home station as best they could – cramped, dirty and tired. Few stages traveled at night, for after sundown it became almost impossible to avoid pot holes and

horses might bolt at the sight of tumbleweed drifting across the road. Then, too, by the end of the day passengers had had enough of the unceasing, bone-jarring motion, to say nothing of the heat or the cold, the rain or the dust, which pervaded every inch of the coach. It was a long day's journey that contrived to bring out the worst in everyone, and more than one friendship failed to survive the day.

Hazards multiplied in the mountains; in high country turns were tricky and coaches sometimes tipped over. Passengers often had to get out and push to help the horses in getting the coaches over the mountain passes. Travelers on J. B. Crandell's stage line in the Sierras spent so much time out of their coaches that it was sometimes facetiously called "the line of Foot and Walker."

What was perhaps the fastest and roughest stagecoach ride of all was described by Mark Twain. Horace Greeley left Carson City, Nevada by stage for a lecture engagement farther west and told the driver, Hank Monk, that he was in a hurry. Cracking his whip, Monk started the team down the slopes of the Sierras at such a terrific pace that Greeley soon began to regret his request for speed. With sparks flying from the brake blocks, the coach slithered around hairpin turns, scattering gravel over the edge of the precipice each time. The jolting finally became too much for the editor. He called to Monk to slow down, saying that he wasn't in such a hurry after all.

The driver yelled back this irreverent advice to his famous passenger: "Just keep your seat, Horace. I'll get you there on time!"

Early stage lines usually had plenty to contend with. Very often they were in debt, beset by misfortunes, and almost never able to maintain schedules. The C.O.C. & P.P.E. (Central Overland to California & Pike's Peak Express) was dubbed by one waggish creditor: "Clean Outa Cash & Past Paying Expenses." Nevertheless, whenever anyone didn't want his place in a coach, there was always another undaunted traveler ready to step into it.

As shipments of gold dust by stagecoach increased, so did attempts to waylay the coaches by gangs of highwaymen. Charley Parkhurst, a stage driver in California who was widely known for his driving skill, was once stopped by highwaymen. Charley gave up the express box on demand and added, "I wasn't expecting this, but the next time you stop me I'll be ready for you." Charley was, too. Parkhurst shot the leader of the ill-starred gang that stopped his stage the next time and whipped his team right through the others, scattering them. What made Charley's feat all the more remarkable was revealed at his death in 1879. The doctor's death certificate showed that Charley, old rough-and-tumble Charley, was actually Charlotte Parkhurst.

"Throw down the box!" became the familiar command and chilling trademark of the bandits who preyed on express shipments. Some gold shipments by stage coach totaled as much as $140,000. In 15 years Wells Fargo stages were robbed some 313 times. One polite holdup artist in California robbed stages successfully for eight years, each time leaving taunting verses signed "Black Bart, the PO-8."

During one holdup a frightened woman threw her purse out of the coach. "Madame," said the robber, as he picked it up and returned it to her, "I don't want *your* money; I only want Wells Fargo's." A laundry mark on a handkerchief dropped at one robbery eventually led investigators to San Francisco, where Black Bart was revealed to be a highly respected mining engineer.

In 1861, the remnants of the faltering stage lines of the West were gathered together by Ben Holladay, a wealthy freighter of goods on the Santa Fe Trail, those 800 rough miles from Independence, Missouri to Santa Fe, New Mexico. For a brief period he was to preside over the greatest transportation empire ever owned by one man. Holladay bought stage lines, franchises, toll roads, and ferry rights with abandon. His dream was of a single stage line linking the Missouri River with the Pacific coast.

Holladay personally surveyed route changes in the existing lines to make them shorter. His gangs of laborers leveled and scraped the rutted old trails and built many new ones.

The six-horse team often was called on to race the stage through country that held far greater hazards than bumpy roads.

At its height, his Overland Stage Company employed 15,000 men, owned 20,000 wagons and coaches and 150,000 animals. His routes stretched over more than 2,700 miles of the West and offered daily service each way between Atchison, Kansas and Salt Lake City and tri-weekly coaches to the mines of Montana and also to the Pacific Coast. He made stagecoaching a big business.

Holladay employed only the most experienced drivers. Rough characters though they were, he outfitted them all in flashy outfits of corduroy trimmed with black velvet. Driving gloves and high-top boots were of matching leather. Each man sported a broad-brimmed beaver hat and proudly carried the badge of his trade – a nine-foot rawhide whip with a silver handle.

His stage line was divided into "divisions," each in charge of a hard-riding division superintendent. Firm rules of behavior were laid down for employees. To be disrespectful to passengers or drunk on the job or swear – even at stubborn animals – were all grounds for immediate dismissal.

The secret of the success of the Overland Stage Company lay in its rolling stock. In New Hampshire Holladay placed a huge order for Concord coaches, which were causing a stir in the West. These coaches – flat-topped and roomy – were a radical change from the traditional British coach. The Concord body was not cradled between the wheels on ordinary wagon springs, but on "thoroughbraces" – a dozen straps of rawhide, laced and riveted together, which served as shock absorbers – but mostly for the benefit of the team rather than the passengers. Horses and mules were difficult and expensive to replace. For example, a span of good horses cost as much as $1,000, and a Concord required three spans.

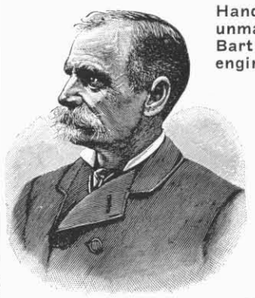
The workmanship of the Concord Coach was a joy to behold. Its sturdy frame was built of well-seasoned New England ash and so cleverly put together by Yankee craftsmen that the joints were hardly discernible. The top and side panels were of the clearest poplar obtainable. Wheel spokes, also of ash, were hand-balanced and fitted to the rims and hubs with such care and precision that the wheels never warped out of line. No better proof of the Concord's quality is needed than to note that the advertisements of almost every stage line read: "Only genuine Concord coaches are used on this line."

Holladay rebuilt home stations and added clean sleeping accommodations. He liked good food and wanted tasty meals for his passengers, so Overland menus regularly featured venison, bear steaks, trout, and other delicacies, as well as fresh vegetables from the station garden.

In 1861 passengers paid $75 for a ticket that took them over the 620 rocky miles from Atchison, Kansas to Denver, Colorado; $125 for the 1,255 miles from Atchison to Salt Lake City, Utah; and $225 for the 1,900-mile trip to Placerville, California. Passengers could figure that each mile the coach covered cost about 12 cents, roughly three times the per-mile cost of modern rail and air travel. But by the end of the War between the States, war-induced inflation had driven the price of a California trip up to $500.

Holladay's claim to fame goes beyond his talent for organization. In 1865, he made a spectacular dash from San Francisco to Atchison, Kansas, in just 12 days. (The normal time for this trip was 18 days.) It cost him $25,000, but the publicity was well worth it. Newspapers called him "The King of Hurry."

The conclusion of the War between the States marked the beginning of the end for stagecoach lines. The railroad had come. Steel tracks edged their way across the plains and over the mountains, while the stage lines became shorter as they shuttled back and forth in the ever-narrowing gap. In October of 1866, canny Ben Holladay sold the Overland to a rival for $2,000,000 in cash and $300,000 in stock. The dramatic meeting of the Union Pacific and Central Pacific Railroads in Utah less than three years later only demonstrated Holladay's wisdom in seeing the handwriting on the wall. The coming of the Iron Horse to the West had sealed the doom of the real one. ■



Handkerchief laundry mark unmasked stage robber Black Bart (left) as mining engineer Charles C. Bolton.

When stage from Soledad to San Miguel, California was robbed in 1875, this notice was posted in nearby towns.

During a 15-year period Wells Fargo stage drivers heard the command "Throw down the box!" 313 times.

REWARD

WELLS, FARGO & CO.'S EXPRESS BOX

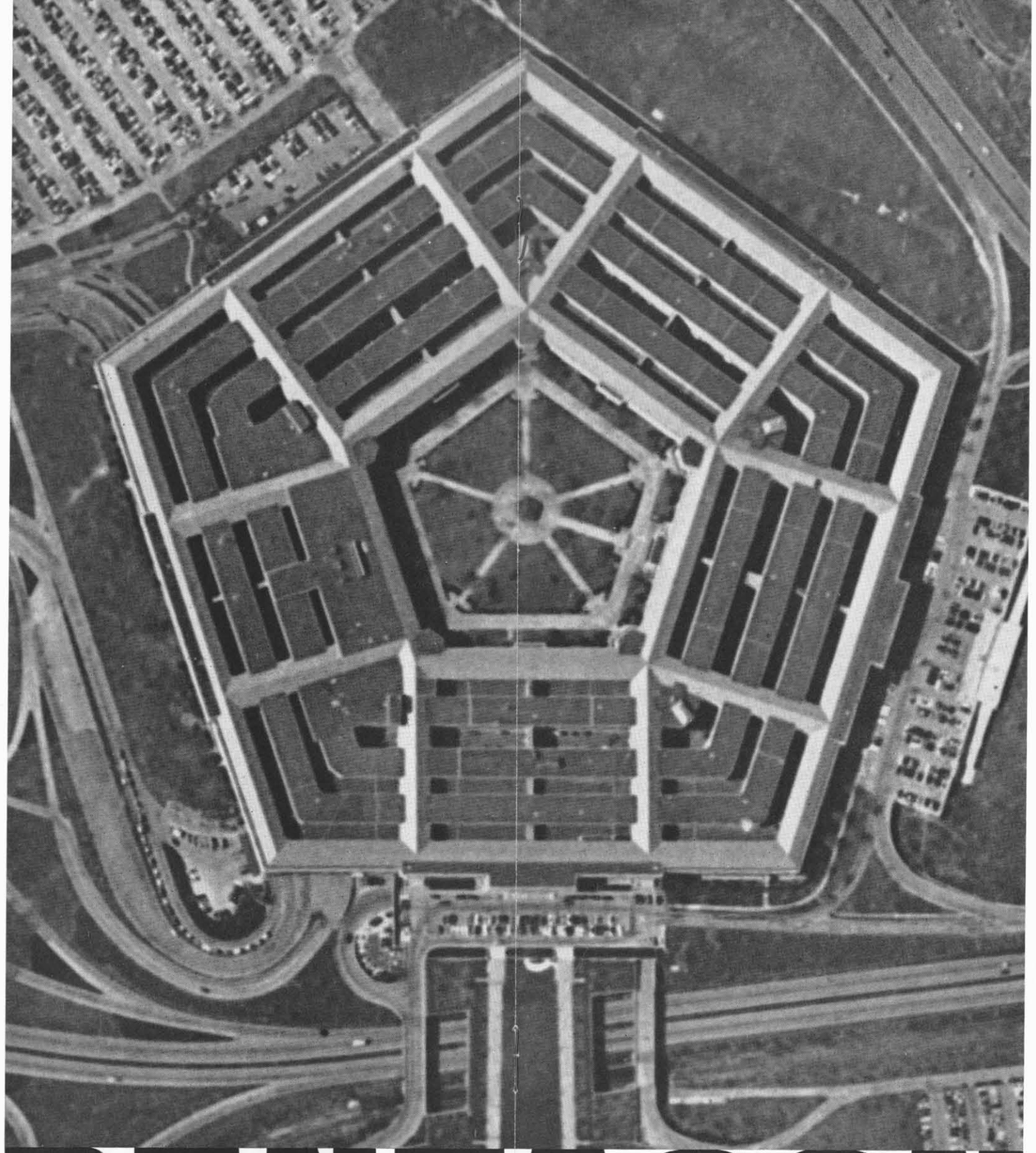
on **COAST LINE STAGE CO'S ROUTE**, from Soledad, was **ROBBED** this morning, by two men, about ten miles north of San Miguel.

$250 Each

will be paid for **ARREST** and **CONVICTION** of the Robbers.

San Francisco, July 15, 1875.

JNO. J. VALENTINE, Gen. Supt.



PENTAGON

There's nothing in the world of great office buildings to match the 5-sided giant of the Potomac

A VISITOR to Washington, D.C. stopped a policeman and asked, "Officer, what street is the Pentagon on?"

The policeman, puzzled at first, smiled and answered, "It isn't on any street. Take the 14th Street Bridge across the Potomac and you can't miss it."

He was right. The famous Pentagon, which houses personnel of the Department of Defense isn't on any street. And how could anyone miss the world's largest office building, a building that is a self-sustaining city within itself?

Other famous buildings also can present impressive statistics and claim to be leaders among office buildings. New York's Empire State Building, for example, with 2 million square feet of floor space is one of the world's giants. Chicago's Merchandise Mart is even bigger—3 million square feet of space. But neither comes close to the Pentagon's 6.2 million square feet!

No one approaching the Pentagon could doubt its No. 1 ranking. Each of its five sides is 921 feet long, and a person taking a lunch-hour stroll around the building walks almost a mile. Some 200 acres of lawns, terraces and flower beds and 64 acres of parking lots surround the Pentagon, which itself sits on 34 acres of ground. Thirty miles of roads weave an intricate pattern underneath and around the structure.

Strangers entering the Pentagon for the first time find a maze of corridors and offices. They are directed to information desks where guides present them with maps of the building and point the way. It all sounds simple, but rare is the person who doesn't get lost on his first venture.

Although it may seem bewildering, the floor plan of the building is ingenious. There are five floors to the five-sided structure with five concentric "rings" running out from the center. These rings are connected by ten corridors. So, for example, if the visitor wants to go to room number 5C-264, the first number tells him that it is on the fifth floor. The letter "C" says that it is on the "C" ring or the third ring from the inside of "A" ring. The number "2" tells him that the room is off the second corridor to the right.

In spite of the clever scheme, there are some surprises not originally planned by the architects. The basement and sub-basement have been chopped up into shops, vaults and security rooms so that many a wandering visitor has been trapped until he found someone who could lead him to his destination. On the upper floors, some of the rings have been closed off for security reasons so that it's impossible to go to many offices by the most direct means. Despite the 17½ miles of hallways, the maximum walking distance between any two points is only 1,800 feet—a six-minute walk.

At the peak of World War II, there were three shifts of 32,000 people working around the clock. Today, however, some 30,000 daytime employees work in the building. Most of these people have to eat at least one meal during the day and many eat two or three. Almost 700 cooks, servers, cashiers and dishwashers help to handle 60,000 pounds of food daily in the two restaurants, six cafeterias, nine beverage bars and, during the summer months, an outside snack shop. An average of 35,000 cups of coffee, 3,800 quarts of milk and 7,000 soft drinks are consumed each working day. All this makes the world's largest office building also the world's largest food service organization.

Each of Pentagon's five sides is 921 feet long; five rings on structure's five floors are served by 17½ miles of hallways.

A city that boasts of 30,000 inhabitants needs other conveniences besides food service. Located inside the "Puzzle Palace" are two banks, a post office, telegraph office, airline and railroad ticket offices, a newspaper stand, a credit union, an optometrist, a drug store, ladies' and men's ready-to-wear stores, a book store, bakery, florist, barber shop, laundry and dry cleaner, candy shop, jewelry store and a uniform store. There are two medical dispensaries staffed with 17 physicians, 22 nurses, eight dentists, a psychiatrist-neurologist and a tuberculosis specialist. Fifty medical corpsmen and technicians assist the professionals.

Distributed throughout the building are printing and reproduction facilities which turn out about a million impressions each working day.

To solve the transportation problem for those without cars, buses and taxis can unload beneath the building. Twenty-one stairways lead from the huge concourse to a three-lane bus and taxi terminal. Two bus companies operate about 900 trips in and out of the terminal daily. Several hundred military men commute by boat each day as the "Air Force Navy" operates a regular schedule from Bolling Air Force Base across the Potomac.

Admirers are fond of quoting the following bits of information to prove that Washington's Pentagon really is a building of superlatives:

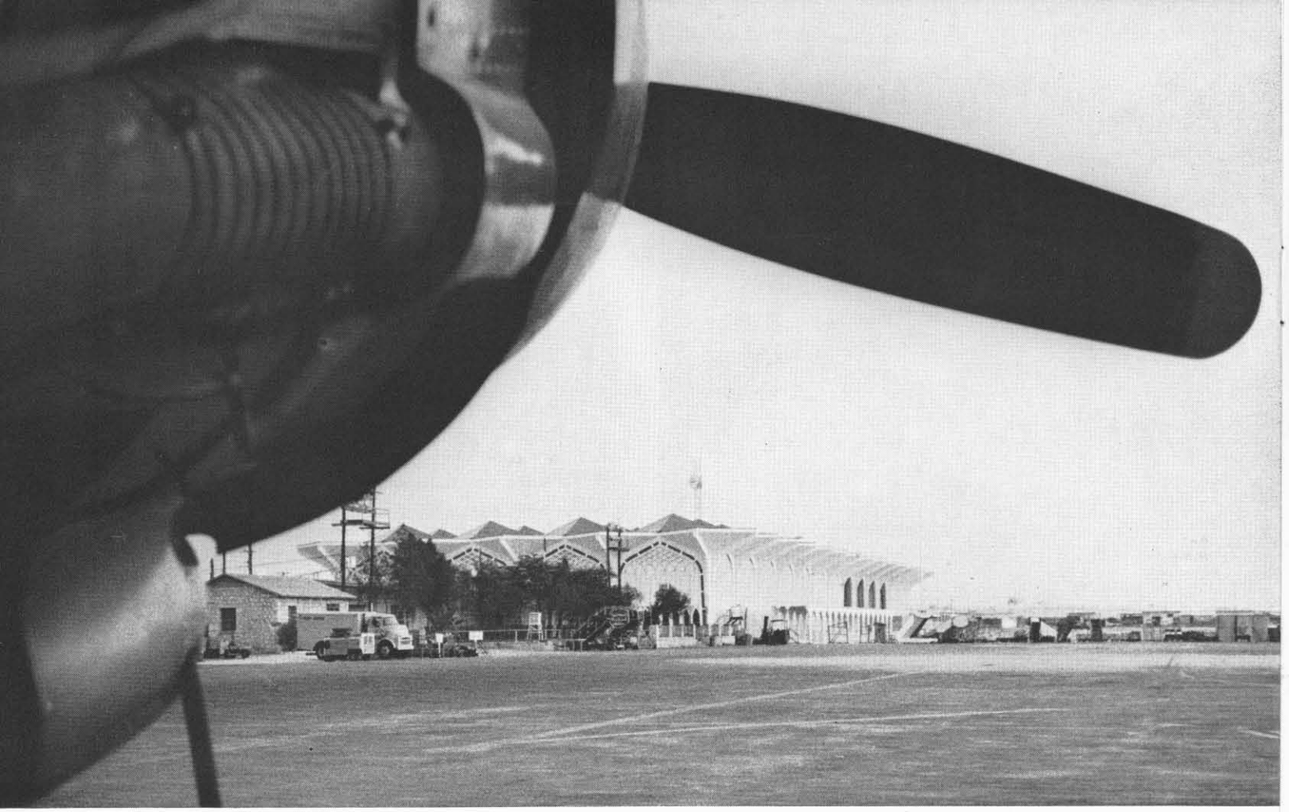
Over 400,000 cubic yards of concrete were used to form the walls and floors which required 680,000 tons of sand and gravel. The quiet lagoon on the river side of the building was formed by the dredging of this material.

Ten tons of waste paper each day are baled and sold, returning nearly $100,000 annually to the government.

There are 65,000 light fixtures of every description which burn out an average of 900 bulbs daily; 685 drinking fountains and 4,000 clocks; 44,000 telephones are in use and an estimated 275,000 calls are made on them each working day; ten window washers require 30 days to wash the 7,600 windows; and there are 13 freight elevators, 19 escalators and 150 stairways in the building.

The Pentagon was built originally to consolidate the numerous War Department offices scattered all over Washington at the beginning of World War II. During the planning stage there was considerable controversy about the site and the type of building to be erected. The unusual shape was ridiculed by some, and there was plenty of opposition to spending the taxpayers' funds on a "five-sided squirrel cage." However, the need was recognized by President Roosevelt, and he ordered construction to start in September, 1941. When war came in December, construction was stepped up and, much to the surprise of its critics, the building went from drawing board to completion in just 16 months—a job that was forecast to take four years. A force of 13,000 workers was employed around the clock. The total cost of construction was $83 million—a third of what it would cost to do the job today.

In spite of the jibes and jokes about the "House of Confusion," it is a model of efficient building design and office layout. As the nerve center for the nation's defense forces, this giant among buildings serves its masters well. As one guide said, "All you have to do is follow the map and stop for food and rest once in a while." ■



Starting point of the "milk run" — Dhahran Airport, Dhahran, Saudi Arabia.

The "milk run" flight is always a welcome sight to folks at desert communities who depend on it for everything from news and fresh vegetables to a lift along the pipeline

"MILK RUN"

ONE Sunday morning early this year the *Cormorant* stood silent and waiting on the broad asphalt apron in front of the customs shed at the Dhahran, Saudi Arabia airfield. Near the cockpit is a cluster of small, metal plates that tell the life story of this durable DC-3 that flies the desert pipeline "milk run" from Dhahran, Saudi Arabia to Beirut, Lebanon. One plate reveals that the *Cormorant* was accepted for World War II duty by the U.S. Army Air Corps in July 1942. Another shows that the plane was converted to civilian use in 1947, and a third documents its further conversion into a versatile cargo-passenger carrier a year later.

Aptly named for those long-winged sea birds, the *Cormorant* today leapfrogs from one pump station to the next, serving the diverse human and technical needs of the world's longest privately built crude oil pipeline — 1068 miles. The eastern end is owned and operated by the Arabian American Oil Company (Aramco) and the western end by the Trans-Arabian Pipe Line Company (Tapline).

The cool early-morning wind rustled the flight manifest on the counter of the Aramco flight shack. It was 6:53 a.m., and Flight D-453-W/E was shaping up. A green Mercedes swung up to the parking guard rail and two men got out. One walked up to the flight shack and put his luggage on the big scales. He helped tie a set of "Beirut" tags to his suitcase and large Aramco flight bag. Two Saudi Arabs, Mukhtar 'Adli and 'Abd Allah Batin, bound for Badanah, reported to the flight counter.

7:10 — The "check pilot" assigned to the flight tugged at the leather peak of his flight cap. He dug his hands into his pockets and said, "One of the pilots who came down last night says the weather's good up the line. But we may get clobbered a bit around Damascus."

The co-pilot for the flight walked away from the parked plane. "We've got a big generator on board to go to Turaif," he said.

7:22 — The flight captain signaled to the cluster of passengers to board the plane.

7:45 — The plane taxied to the runway. Engines roared. Brakes off, the *Cormorant* rolled down the runway, gathering speed.

7:47 — Airborne and climbing: the Persian Gulf, blue under the thin haze; Dhahran, green-black off to the left; al-Khobar, a building-block city to the right. The plane slowly gained altitude. On the left wing are the large green letters "ARAMCO"; on the right wing in black letters is the designation N717A.

Lashed to the floor in the center of the cabin was a large, 3,100-pound 42-KVA generator. It had been carefully loaded and tied down the night before. At the right rear of the cabin a lattice of green canvas webbing held cargo in place — small boxes, luggage and personal effects, some rolled tightly in rugs. There was also a box marked "Electric Cautery," and against the rear wall of the cabin stood another medical item in transit — a large brown paper folder marked "X-Rays — Clinic — Beirut."

As the passengers settled themselves, the *Cormorant* hummed along on the first leg of the pump station "milk run." It would not return to Dhahran for six more days. On this day it would stop, in succession, at Nariyah, Qaisumah, Rafha, Badanah and Turaif, and terminate at Beirut. Tomorrow (Monday) it would return station-by-station to Qaisumah. Tuesday, it would double back to Beirut. Wednesday, it would fly down the line only as far as Badanah. Thursday, it would return to Beirut. Friday, no flight on the Moslem Sabbath. Saturday, all the way back to Dhahran but on Saturday the "milk run" would become an egg run with a supply of eggs from Beirut being dropped off at each pump station.

The seemingly endless steppe of northern Saudi Arabia rolled away under the plane. Wet patches shone darkly, for the winter rains had been plentiful. Camel trails coming down from Kuwait and Iraq merged from the distant ground haze and straggled away to the south toward wells and villages lost in the misty distances. Only the slender black thread of the pipeline imposed a straight line upon the curves and meanderings of the northern desert.

8:35 — The *Cormorant* was held in a long, gradual descent. The co-pilot ran his finger down the landing check-list above his seat. Memory is taboo; every landing is routined step by step. Nariyah lay ahead. The minaret of the mosque in the Saudi Arab settlement loomed in the sun. Then, the oiled landing strip.

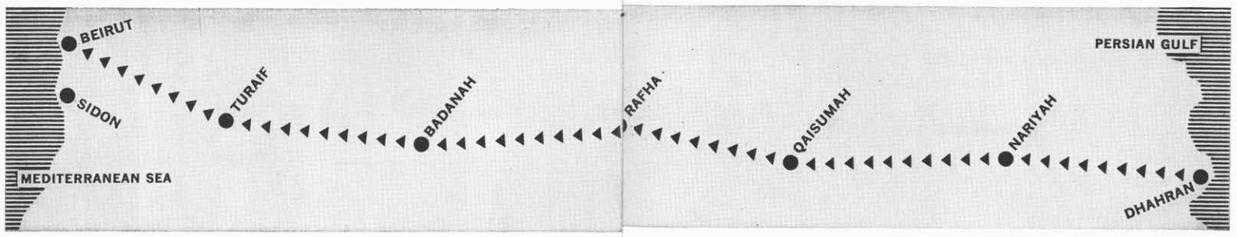
8:42 — Nariyah. The double doors were flung open. Warm greetings in Arabic filled the sunny air. "Marhaba." (Hello.) "Ahlan wa-sahlan." (You are welcome.) "Kayf haalak?" (How are you?) A stake truck backed up to the plane and a loading ramp bridged the last couple of feet to take cargo off and put cargo on.

8:52 — Take-off from Nariyah. Camels grazed away to the right. Someone observed that eleven passengers would come aboard at the next station, Qaisumah. "We'll have to drop the generator off to make room. They'll truck it to Turaif from there."

9:53 — The wheels of the plane touched the oil-outlined landing strip at Qaisumah, where Aramco's part of the pipeline system ends and Tapline's begins. A sign read "Elevation 1,165 feet." Ground temperature: 53 degrees. Four trucks were parked facing the airstrip; one had an A-frame at the rear for lifting heavy cargo. Passengers huddled in a cinder-block weather shed out of the cold wind. 'Abd Allah Muhammad, his wife and his infant son and daughter, bound for Rafha, waited in the shelter. The agile Saudi Arab cargo crew released the heavy turbine from the floor of the plane's cabin. In a short time the generator was in the truck.

Qaisumah had 5.05 inches of rain during the first seven weeks of 1961, compared with about 1.5 inches in all of 1960. Someone observed: "There'll be thousands of camels here this summer for grazing." A pilot commented on the encroachment of plant-life on the Qaisumah landing strip: "Yes, and if the heavy rain keeps up, you'll have to mow the runway."

All seats aboard were swung down into place. One Saudi Arab worker had debarked at Qaisumah; two Ameri-



The "milk run" follows the route of the trans-Arabian pipeline system that delivers Arabian oil to the Mediterranean port of Sidon. Regular "milk run" stops are Nariyah, Qaisumah, Rafha, Badanah and Turaif, the communities built around powerful pump stations which push the oil along towards the Mediterranean Sea.

Cargo for Badanah is loaded onto the Cormorant at Turaif.

Passengers hustle to board the DC-3 at Qaisumah station.

"MILK RUN"

cans and nine Saudi Arabs were added to the passenger list. The flight crew had been completed by the addition of Mike Bado, the "milk run" cargo expediter.

10:54 – Take off, Qaisumah. Jim Hughes, foreman of pipeline repair at Turaif, talked to another passenger. Hughes had been at Qaisumah on a special job, repairing a section valve that had broken on the pipeline. Away to the left on the desert floor, seven Bedouin tents were lined up end to end with the open section of each tent facing east.

12:01 – Rafha. The desert looked more its parched self. "Funny thing," someone remarked, "there's been a lot of rain up and down the line, but we haven't had much." 'Abd Allah Muhammad and his family, four other Saudi Arabs and one American debarked at Rafha. Bahij Saud, a medical laboratory technician, and Janus Verhoeven, an electrician, joined the flight. Mike Bado oversaw the exchange of cargo.

12:21 – Take off, Rafha. Passengers who had boarded at Dhahran were offered a box lunch – turkey and lettuce sandwich, cheese sandwich, two hard-boiled eggs, salt and pepper, potato salad, mayonnaise, ketchup, mustard, pineapple juice, fresh orange, pineapple upside-down cake.

Mike Bado, flight steward, rounds out his clerical work as "milk run" nears Beirut. He has made more than 500 flights.

Ramadhan, the month-long Moslem sunrise-to-sunset fast, had already started; all the Saudi Arabs aboard declined the lunch.

Mike Bado flies the "milk run" regularly from Qaisumah to Beirut, as well as all intermediate flights. Mike is a stocky, good-natured Lebanese who has made more than 500 flights on these runs. "I like it," he said briefly. "I know everybody."

"Tomorrow, when we come back down the line," he went on, "we will bring frozen foods to Turaif. That's the distribution point for the other stations. And on that trip we bring personal things too – like fruit from home for the Lebanese employees. On Wednesday we carry fresh vegetables from Beirut to Turaif and Badanah. On Saturday Rafha and Qaisumah get their vegetables. Then on Sunday everybody gets eggs all down the line.

"Passenger traffic is heaviest at Christmas and Easter," Mike continued. "Once in a while we have an emergency flight. Not long ago we were having lunch in Qaisumah and the word came that we were going right away to Badanah – the big hospital for the pipeline is there, and we have flown patients to the hospital sometimes.

"Chickens and rabbits turn up as cargo sometimes," Mike said. "Last month we carried a hooded falcon from Qaisumah to Badanah. And look here." He lifted the rope-tied lid on a small wooden box under the cargo webbing. "You know what they are? *Truffles.* To the Saudi Arabs, they're a great delicacy. At this time of the year truffles are found along the line at certain places. We must have more than a hundred kilos on every flight now."

1:23 p.m. – Badanah. A little bumpy coming in. The electric cautery was quickly unloaded and given to a doctor from Badanah's forty-bed hospital. John Terry, superintendent of the station, joined the pilots and the ground crew under the forward belly of the plane. A sample of aviation gasoline was drawn and examined before the plane was refueled. A repair had been made in the avgas pipeline at the airstrip and the line had then been leak-tested with water. Terry waited to be certain that no water was present in the fuel.

Badanah nurse Helen Haddad displays assortment of fresh produce brought in from Beirut on "milk run."

The new cargo included two golf bags with caddy carts attached. Two boys, Jimmy Foody and Paul Booth, Jr., shortly joined the bags aboard for a short trip to Turaif.

2:04 – Take off, Badanah. The plane swung over 'Ar'ar, a Saudi Arab community of 7,000, and the headquarters of the Amir of the Northern Province of Saudi Arabia.

2:49 – Bumpy weather. The light panel flashed: "Fasten Your Seat Belts." Suddenly, the plane was closed in by a milky mist. Just as suddenly, the plane was in the clear again. Mike Bado dug fruit juice and chocolate milk cans from a cooler and opened them for the American passengers.

3:02 – Touch down, Turaif. Jim Foody was there when the doors opened to greet his son Jimmy and Paul Booth. "They've been down to Badanah to show John Terry how to play a little golf. John had a little invitational tournament down there for everyone up and down the line. The boys went but we were having our own little tournament here. They played well but they didn't quite win."

Turaif has a government building at the edge of the airfield – the Passport Office. It is the final pump station stop on the flight and a Saudi Arabian port of entry. Passports were collected from the Beirut passengers. Turaif is the headquarters for the major shopwork that is needed on pumphouse equipment for the pipeline. Such equipment is tagged, placed aboard the "milk run" and delivered to the Turaif shops for repair except in cases where the repair demands on-the-spot service by a man from Turaif.

3:31 – Take off, Turaif. Last leg of the "milk run." Three Saudi Arabs, three Americans and the crew of four aboard – plus a 100-pound crankshaft, aluminum ladders, auto parts, film rewinder tools, asbestos packing, communications parts, turbine parts and other small cargo bound for the pipeline storehouse at Sidon, the headquarters mail room in Beirut, the company clinic, and several other terminal points.

Mike Bado rounded out his clerical flight work: the load record, official journey log, an international E/D card for each passenger and immigration sheets.

John and Judy Rosquist thumbed through some magazines. They were going to Beirut to renew their passports which had to be held together by stout rubber bands. Their accordion-like insert pages of the passports testified to the great amount of traveling they had done in recent years. Rosquist laughed: "The last time I went through U. S. Customs the guy started folding out these extra pages and he suddenly stopped and said, 'My gosh, don't you ever stay home?'" (The Rosquists were the first American employees along the line to marry. Judy Rosquist had been a nurse at Badanah where she had met John. Rosquist is the supervising turbine technician at Turaif.)

3:41 – Crossed the border into Jordan. Still climbing. Weather getting rough. The desert now looked red through the overcast.

4:17 – Nearing 12,500 feet. Very cold in plane. Heater not working. Crossed into Syria.

4:49 – Crossed border of Lebanon. The sun glistened on the snow in the Lebanese mountains. The deep valleys, the whiteness of the snow, the tiny houses in the mountain villages gave the airscape a peculiar post-card unreality. In the distance the Mediterranean shimmered hazily. Then the plane was over the fabulous Bekaa valley, the vast green and fertile valley that stretches like a great farm for dozens of miles.

5.08 – The mountains dropped swiftly to the sea and the plane was over the Mediterranean. Below lay Beirut, "the Paris of the Middle East." The dramatic green-black depths of the mountains had given way to the sun-swept buildings of the sprawling city which looked brilliantly clean in the clear afternoon air.

The *Cormorant* swung north in a broad arc, banking easily. It finally closed the vast loop and headed south along the shoreline awaiting landing orders. The city lay off to the left of the plane, a jewel of buildings old and new in an incredible framework of snow-mantled mountains and deep enamel-blue sea. Finally, the *Cormorant* made a long descending curve and headed for one of the long runways.

5:23 – Touch down, Beirut. As the plane turned toward the terminal building, Beirut's skyline loomed beyond the end of the runway. It was 3:27 Beirut time. The *Cormorant,* a one-time war bird, had finished another day's work.

Mike Bado laughed at a final question. "No," he said, "we never carry any milk on the 'milk run'." ■

View through cockpit window of the Cormorant as it lands at Beirut International Airport.

A Few Wds. on Abbrevs.

They're
eminently respectable,
undoubtedly
useful --
and very often
confusing

WE ARE RUSHING pell-mell through a hasty world of abbreviations ("abbrevs.") these days. Talking and writing are done in terms such as "natch," "gas," "DC-8," "JFK" and "Ike."

It might be called "instant language." Pilots flash radio their reports on "e.t.a." (estimated time of arrival). Pipeline engineers talk of "LPG" (liquefied petroleum gas). And America's first spaceman reported: "a.o.k."

Even the housewife who leaves a note saying, "Pls lv 2 qts mlk tdy" is indulging in this nervous, bobbed-off language. It is used more than we realize. Everyone says or writes "prelims," "exams," "Geo. Washington H.S." or "n.g." Teeth are fixed by a "D.D.S.," pulses taken by an "M.D." Friends are called "Joe" or "Kate." "Flu," "photo," "pram," "TV" and "phone" are so common that no one gives them a second thought.

But language authorities see trouble ahead. Abbreviation is a weedy language growing willy-nilly – out of control. More than one company lately has had to caution its staff: *If there can be doubt, better write it out!*

And unless abbreviations are handled with care there can be plenty of doubt! Abbreviate "kingdom," for example, and you get "king." Abbreviate "management" – and you can get "man." Thus a memorandum might say, confusingly: "Pls send your report to the man."

The letter "a" was used in schools for years, where it meant "absent." Today it has at least 31 meanings, including amateur, ampere, acceleration, arc, at, atmosphere, and axis. And the letters "c" and "o," used together, have at least 35 meanings – such as company, cash order, commanding officer or in-care-of.

Just to show how important it is *not* to use abbreviations carelessly, a New York City ("NYC") sales executive ("exec"), jokingly tells this story on himself. Ready to dash for his train one day, he scribbled an abbreviated note to his secretary ("secy"). He wrote on a memorandum ("memo") pad:

"Miss J. (for Jones): Pls rsv 2 tix for a late p.m. plane for Mr. R. & self to Pitts tmrw, ret. Fri. Also rsv 2 comfrtbl rms/bth for tmrw nite at a gd hotel in Pitts. Tnx. J.C."

Miss Jones decoded this memo, then did what she thought was right. Next day Mr. C. asked, "Did you get the reservations?"

"Yes, sir." Miss Jones handed him the tickets.

"What flight are we on to Pittsfield?"

"Pittsfield? Do you mean Pittsfield, Massachusetts?"

"Yes, of course."

Miss Jones clapped her hand to her mouth. "Oh, Mr. C., I have everything arranged. You and Mr. R. will just have to go to Pittsburgh, Pennsylvania."

The trouble is that while "abbrevs." have become a language of necessity in this hasty, complex age, there are few, if any, "ground rules." Yet the use of abbreviations is certainly in good standing everywhere from corporation reports to scholarly research. Although the average person doesn't have to look far to find excellent justification for using shortened words and phrases, he will not find much agreement on how they should be used. What, for example, does "Eng." mean? Engineer? Engine? England? English?

Not even the colleges agree on the rules. Bachelor of Literature may be engraved on diplomas as "B.L.," "B.Litt.," "Lit.B.," or "Litt.B." And even dictionaries, which play an important role in determining good usage, differ. The word "abbreviation" itself appears as "abbre.," "abbr.," "abr.," "abv.," "abvn." – or just plain "a."

All this lack of discipline means that someday Americans may be faced by a chaos of abbreviation. The benefits of one of the most useful "languages" yet devised may be lost – unless all who rely on abbreviations do so with care. Until order comes, language authorities suggest that users follow several guides.

One good point to remember is that abbreviations always should be used in their proper *environment*. To illustrate, suppose someone writes: "Mr. Smith is our local D.D." It is a fine compliment, because to many people D.D. means Doctor of Divinity. But in a different environment D.D. has a different meaning: to a policeman, you would be saying, "Mr. Smith is our local drunk driver." That is what D.D. signifies in a police report!

Another good idea in forming abbreviations is the addition of a "rudder," or a "steering letter," when there is the possibility of confusion. How much better it is to abbreviate that word "kingdom" as "kingd." – rather than the confusing "king."

It helps, too, to know that most abbreviations fall into eight forms: (1) initials, as in "N.Y."; (2) first letters, as in "p.m."; (3) key letters, as in "Aramco" or "Nabisco"; (4) first-last letters, as in "La." for Louisiana; (5) skip-letters, as in "Sgt.," "Ltd.," or "bldg."; (6) syllables, as in "Prof." or "Wash."; (7) contractions – "isn't," "won't"; (8) diminutives or nicknames, as "Hal," "Sue" or "Philly" for Philadelphia.

How did abbreviations ever get started?

Ancient sculptors were largely responsible. A sculptor ordered to carve an impossibly long inscription on a small monument, tablet or coin, soon found that he simply *had* to abbreviate. If "Julius" wouldn't fit on a Roman coin, "J." would. No one seemed to object, and the use of abbreviations spread. By 60 A.D., Rome's L. Annaeus Seneca was listing 5,000 abbreviations already in use.

During the Middle Ages abbreviations took on an even more sophisticated task. Serious scientists and philosophers protected themselves from the wrath of oppressive and ignorant rulers who distrusted the search for knowledge by disguising their thinking and research. These men devised a system of symbols that stood for whole ideas. The triangle, for example, stood for perfect creation or perfect production; the circle for a completed thing or the whole thing when finished. The square carried the idea of stability, and the dot meant beginning or birth. Any inquisitor examining a scientist's notes came across a maze of strange symbols and nothing more. These signs were actually abbreviations of whole thoughts. Today, in somewhat the same manner, chemists use symbols to indicate the elements or properties of matter.

Since their early days abbreviations have never stopped spreading. The older a language is, the more words it is likely to have. And the more words, the more abbreviations. Modern libraries maintain a shelf of dictionaries listing abbreviations, but when a language is growing, dictionaries can be outmoded before the ink is dry. Current English-language dictionaries list over 25,000 entries.

From all indications, the future promises an even greater use of abbreviations of both the one-word and the multiple-word variety. As the sciences grow, for example, they will need more abbreviations just to keep up with themselves. Whole sentences and complex ideas will have to be shortened, just as airplane designers now use "a." to express "the distance from the leading edge to aerodynamic center of the wing." Already in use are abbreviated sentences in daily conversation – as soldiers in World War II learned to say "Snafu" for "Situation normal – all fouled up."

Even out in space there is need for this great and growing "language." But there is possible confusion. In abbreviated space talk, for instance, what is meant by "Sat." and "Sun."? Are these two days of the week – or two heavenly bodies, Saturn and sun?

As anyone can plainly see, those "ground rules" are needed soon – or the whole great language of abbreviations will be "snafu"! ■

Houses For Sale

EXECS.—New mod hme, on seafrnt, 4-bdrm, trrcd grdn, und $50,000. Main Realtors.

HOMETOWN—Cust Col w/wtrfrnt, 4 bdrms, 2½ bths, spac liv rm, on 2 acs, $40,000. Owner trnsfrd.

IDEAL COUNTRY HOME—Big frmh on 4 acs, trout brk, EZ terms fo[r] Fixit, 8 rms, mdn cnvncs. T

Summer Homes

CUTE SUMR HOME- or rent w/option. future possibil. R

Newspaper classified ads conserve space by dropping vowels. Some of the words are meaningful only in context of ad.

Headline in show business tabloid "Variety" used 13 letters to express idea that rural families turned thumbs down on movies based on rural settings.

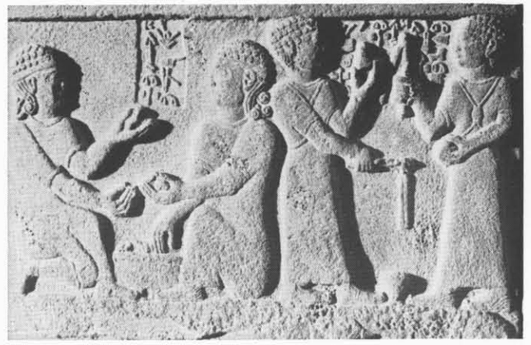
STIX NIX HIX PIX

Abbreviations solved minters' problem of saying much in a small space. Eighteenth-century Spanish "piece-of-eight" at left reads (in full form, translated from Latin) "Philip the Fifth, by the Grace of God, King of the Spains and the Indies." Abbreviated Latin on English florin (right) reads "George the Sixth, by the Grace of God, King of all the Britains."

A scene at the gate of Hattusas, capital city of the Hittites during height of their empire, 1900 B.C. to 1200 B.C.

Thirty centuries ago the Hittites held sway in the Middle East, then, strangely enough, became

The People that History Forgot



Almost 3,000 years ago an artist created a stone frieze that showed children of Hittite King Aranas playing (left) jacks-like game with animal joint bones and (right) a form of tops.

Hittites kept religious symbols in their homes. Below is a bronze representation of the universe, honoring the sun god and depicting sun with heavenly bodies revolving around it.

THE winds that sigh across the flatlands carry voices from the past. They speak softly, until the wind rises to a howl. Dust billows into unintelligible shapes, then falls to continue its endless drift across Turkey's central plateau country. Travelers to this bleak and wind-swept land hear the voices and see the dust dancers. As they walk the hot plains, they feel that there are ghosts all around them.

And perhaps there are. For this is the land of a powerful and mysterious people who lived and battled here three thousand years ago, who built an imposing empire, then – incredibly – vanished from human memory.

This is the land of the Hittites.

Theirs is one of mankind's strangest and most intriguing stories. It is known today that from 1900 B.C. to about 1200 B.C. they were one of the great powers of the Middle East, rivaling Babylonia, Assyria and Egypt – and superior to all three in statesmanship, lawgiving and warfare. They ruled Asia Minor, into which they had come as Indo-European invaders, and forged a commonwealth of city-states out of the tribes and kingdoms they found there. Little of their art or literature remains, but on thousands of clay tablets and on rocks and stone-faced hills they left inscriptions – sculptures of their gods, their kings and their people, and writings in cuneiform and hieroglyphics. Unlike some of their neighbors, the Hittites were not cruel. They were, however, excellent strategists, tacticians and warriors. They were superb horsemen, inventors of the most formidable war machine of their time – the light, two-wheeled battle chariot. Under the relentless attack of the Hittite infantry and chariot-drawn legions, even the power of Egypt broke.

With all these glories the Hittites, when their empire at last declined, should have been remembered through the ages. Egypt was. So was Babylonia. But by a freak of history, the Hittites were forgotten for 30 centuries – from the end of their power around 1200 B.C. until their rediscovery in the last century. All that was known of them during this long time was what was contained in several, brief Old Testament accounts. In "Genesis" it states that Abraham, when his wife, Sarah, died, bought a burying place for her from Ephron, the Hittite. But from the various Biblical references to them, the Hittites appear merely as one of several minor tribes in Asia Minor. This is how they were still regarded even as late as 1834, when Charles Texier made his journey of discovery to central Turkey.

He had gone in search of an old Roman town and had arrived at the village of Boghazköy. When the people there told him about some ruins nearby, he went to examine them. Texier was astounded when he saw the ruins. This was not the rubble left from a small Roman town but the remains of an immense city that obviously had been built by some great but forgotten people. Yet scholars had no knowledge of any such people. Texier announced his discovery – but admitted that he could not explain what his discovery meant.

What Texier had in fact stumbled upon was nothing less than the ruins of Hattusas, the great walled capital of the Hittite empire. By the late 1800's scholars came to appreciate the significance of Texier's discovery, and the newest branch of archaeology, Hittitology, had been born. It is still fresh and exciting, and each year new discoveries in Turkey are bringing the ancient and forgotten world of the Hittites farther out of the darkness that cloaked it for more than three millenia.

Imaginative archaeologists, guided by the aged remnants of a lost civilization, give a fairly complete picture of what life was like in the days when the Hittites prospered. Modern travelers, as they tramp over the deserted plains, find it easy to lose track of time, to conjure up in the mind's eye the land and its people as they were more than three thousand years ago.

Spreading out across the plateau that lies inside the great curve of the Halys River is a farm that boasts its owner's care and pride. The farm is rich with vineyards and with orchards of apple, pear and pomegranate trees. There are beehives in swarm, and in the pasture goats and sheep are