



THE TEXACO STAR
SPRING 1945

LESTER
FAGANS

Transports of the Skies

NOT UNSUNG but perhaps under-appreciated by civilians are the tasks of those who fly the world's newest airways. Theirs are the more peaceful wings of war.

Their routes are lonely, for the most part. They fly to avoid the enemy, not to meet him in battle, for their cargoes are precious.

They carry whole blood and plasma to battle areas; they transport soldiers and civilian laborers and technicians; blueprints and machines; auxiliary gasoline tanks for fighter planes and repair parts for battle-damaged submarines; V-mail and microfilmed maps. They have flown an entire hospital overseas in a matter of hours. They bring back wounded men, beryl ore, platinum, crude rubber, and industrial diamonds.

Before the war America was without a single plane designed for the carrying of air cargo. Now the Army Air Force Air Transport Command alone is larger than all air transport organizations, civilian and military, that existed throughout the world before the war. The Naval Air Transport Service and the regular air lines also carry vast quantities of cargo and great numbers of military personnel.

The cover of this issue was painted in watercolor especially for THE TEXACO STAR by Lester Fagans in honor of the transports of the skies.

THE TEXACO STAR



VOLUME XXXII

NUMBER 1

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A PUBLICATION OF THE TEXAS COMPANY

W. S. S. RODGERS, Chairman of the Board of Directors; HARRY T. KLEIN, President; H. W. DODGE, M. HALPERN, J. S. LEACH, R. OGARRIO, C. E. OUMSTED, JAMES TANHAM, and TORREY H. WEBB, Vice Presidents; R. L. SAUNDERS, Vice President and Secretary; L. H. LINDEMAN, Treasurer; OSCAR J. DORWIN, General Counsel; ERNEST C. BREEDING, Comptroller, 135 East 42nd Street, New York 17, New York

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★ The Texas Company, with its chief refinery at Port Arthur, was the largest taxpayer in 1944 in Jefferson County, Texas. The Company tendered a check of \$272,537.28 for state-county, and district taxes after taking a three per cent discount of \$8,428.99.

Brief

AND TO THE POINT

★ The present 200,000,000-ton annual production of petroleum is more than twice the country's output of steel, says the American Petroleum Institute.

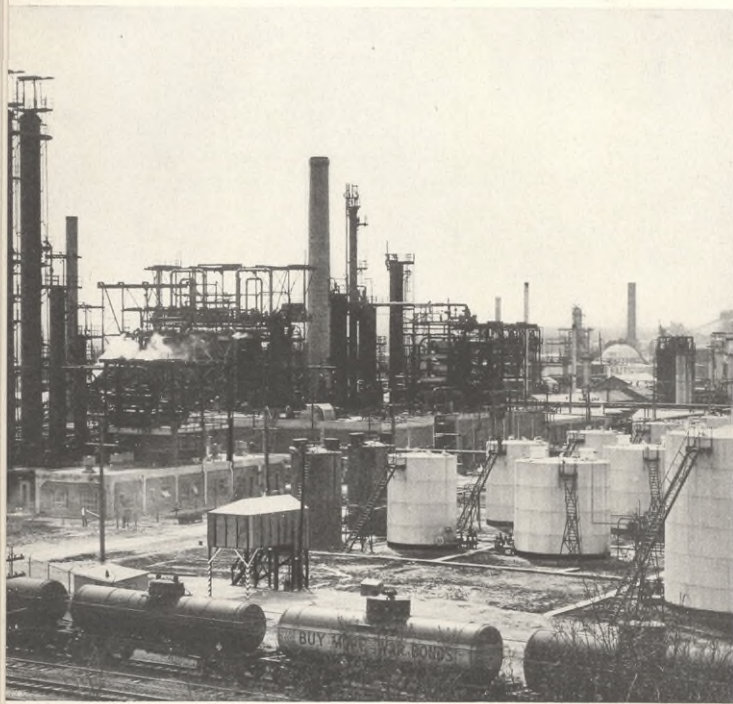
★ The cost last year to find, develop, and produce a barrel of oil was \$147, according to the A. P. I. William R. Boyd, Jr., the Institute's president, said recently that "since 1859 more money has been spent on the drilling of dry holes than has been recovered by the sale of crude oil."

★ The average pre-war motorist could operate his car for 1,000 years on the gasoline it takes to move an armored corps five miles.

★ The *Houston Post* says that 50 years ago it reported receipt of a letter from a certain Pennsylvania mayor declaring asphalt paving to be worthless. Today 70 per cent of the paving in leading U. S. cities is asphalt.

★ A B-29 bomber's fuel tanks hold the same quantity of fuel as a railroad tank car.

★ Some highway officials report that gasoline rationing is the apparent reason for considerably fewer deaths of wild and domestic animals from highway traffic than before the war.



A partial view of Lockport Works

★ LOCK- PORT'S STORY

By F. P. RISDON

★

Just two years ago, Lockport Works completed 30 years of operation for The Texas Company. Little was said about it at the time, for Pearl Harbor wounds were still fresh, the country was in grave danger of airplane bombing attacks, and Lockport was destined to be a supplier of toluene, one of the petroleum products from which the highly-explosive TNT is made. F. P. Risdon, an Engineer at Lockport Works, since deceased, wrote at that time a history of the plant from which the article below has been adapted. For reasons of security, it was not published at the time and still cannot be presented in its entirety to give up-to-date information as to capacity and current production. —EDITOR

LOCKPORT WORKS, the fifth of the Company's chain of 18 refineries to be built, the second in size and the most strategically located, started operations during the first week of January, 1912.

For its 30-year service award, Lockport received a new office building, something far different from the converted farmhouse which housed those who planned its first operations while it was being built and in its earliest days.

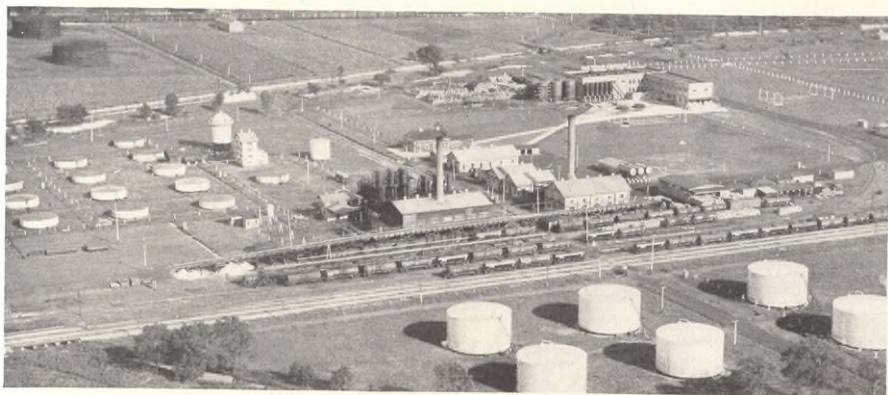
In 1912 Lockport was but a topping plant having a throughput capacity of from 2,500 to 3,000 barrels of crude oil in a 24-hour day. It produced nothing but straight-run gasoline, kerosine, and fuel oil. During 1912 and 1913, steam stilling capacity and a

lubricating oil compounding plant were added, and small additions were made to the plant's processing equipment in succeeding years. Not until 1922, however, was any marked increase in the refining capacity made. Up to that year Lockport had been able to take care of demands for petroleum products in the territory it could supply economically, but the demands were growing and the plant's capacity was being taxed to fulfill its commitments.

Lockport Works is on ground that at one time was an Indian village. Flint tools, axes, arrow heads, and other artifacts have been found in preparing sites for plant structures, and some of the collections assembled from these discoveries have been of sufficient interest to become museum exhibits.

Dividing the plant into east and west halves is the Illinois and Michigan Canal, one of the nation's oldest commercial arteries. This canal was conceived in 1808 as a means for reaching the navigable waters of the Illinois River from points north. Only the towns along the upper Illinois and Des Plaines Rivers were interested in the project; Chicago was merely a very small village.

Work was started July 4, 1826, with little idea of
(Please turn to page 4)



The view of Lockport Works above shows it as it was about 20 years ago. The two pictures immediately below show the first office, a farmhouse slightly converted, and the same building after it became the laboratory and when the office was in the building at the right. At the bottom of the page is the new, modern office building





East Chicago Terminal, a part of Lockport Works



Ancient locks of the I. & M. Canal at Lockport



Loading area along the Chicago Drainage Canal

any termini, and by 1829 Chicago was of sufficient importance, being then "a thriving village of some 1,200 souls," to be taken into consideration. Some 130 vessels had cleared from Chicago's docks since it was settled, and a right of way from Chicago to La Salle, Illinois, had been leased from Indian tribes. Money was exhausted before the project was completed, and capital was obtained from British bankers to finish the job.

The last recorded commercial passage of a vessel through the canal was in 1915. Its successor, the Chi-

cago Drainage Canal, is only a 10-minute walk from its predecessor, and carries more in a year than the probable tonnage of the Illinois and Michigan Canal in its best 10 years.

The city of Lockport, the original name of which was Runyontown, was incorporated about 10 years before Chicago, and is even older as a settlement. It was one of the principal ports on the canal, and derived its present name from the canal's first locks, still to be seen on the city's southern limits.

The greater part of Lockport Works' property lies in the original Des Plaines River valley, which was scoured out of the surrounding country by glacial drift millions of years ago. This has given Lockport an advantage seldom found at other Company refineries. Solid rock underlies the entire property, providing an ideal base for anchoring the heavy structures necessary in modern refining and processing. Gravel deposits are found on the high ground, and removal of sand, gravel, and loam from the high land to grade low areas where buildings have been erected has saved the Company several hundred thousand dollars because there was no need to purchase the fill elsewhere.

The Holmes-Manley cracking process—a development of The Texas Company—had proved its worth for several years before 1922, and six Holmes-Manley vertical stills and their auxiliary equipment were installed at Lockport during 1922 and 1923 to help the plant keep pace with the growing demand for automotive fuel. From that time to the present, Lockport Works has grown steadily until it is second only in The Texas Company's refinery chain to the great plant at Port Arthur, Texas.

Until 1922 all crude oil was delivered to Lockport by tank car from the Oklahoma and Kansas producing areas. To guard against interruption in the daily crude supply, large storage capacity had to be erected.

At about that time all pipe lines transporting crude oil were declared to be common carriers, and an arrangement was made with the Prairie Pipe Line Company to run a six-inch line from a point about 25 miles away to Lockport. When The Texas Empire Pipe Line Company came into existence, the Prairie connecting line was taken over by that company. As the result of Lockport's growth, more and larger lines have been installed from time to time to care

for the plant's ever-increasing processing capacity.

In 1930 considerable extra distillation capacity was added in the form of cracking and pressure coke stills and a large crude atmospheric and vacuum still.

In 1936 The Texas Company bought out the interests of the B. F. Nelson Company in a roofing plant, which had been built on land leased from The Texas Company adjacent to Lockport Works in 1929. Lockport had supplied saturants and coating products to this plant through pipe lines from the refinery. After modernizing the equipment, the regular line of Texaco Roofing Products began to be manufactured there, and the roofing plant is now one of the busiest parts of the Works.

Thanks to Lockport's admirable location with relation to roads, railroads, and the Chicago Drainage Canal, a vast area can be supplied by various means. The Alton Railroad Company's tracks skirt the refinery's property limits and along them are tank car loading racks. Similar loading racks also front on the main line tracks of the Atchison, Topeka, and Santa Fe, which go directly through the plant. Along the bank of the Chicago Drainage Canal, within Lockport's property limits, are 2,000 feet of area for loading barges and tankers, with access through the Illinois Deep Water Way to water transportation between Chicago and New Orleans by way of the Illinois and the Mississippi. The Texas Company's East Chicago Terminal is also a part of Lockport Works.

On Archer Road, one of the principal highways serving points north and south, there is a bulk loading station on the Company's property for serving motor transport trucks, one of the principal means of moving products at present. There are also loading racks inside the plant for handling fuel and furnace oil and liquid asphaltic products in transport trucks.

The present war brought vast expansion, in equipment, in variety of products, and in manpower, to Lockport. Although it is one vast war plant in its en-

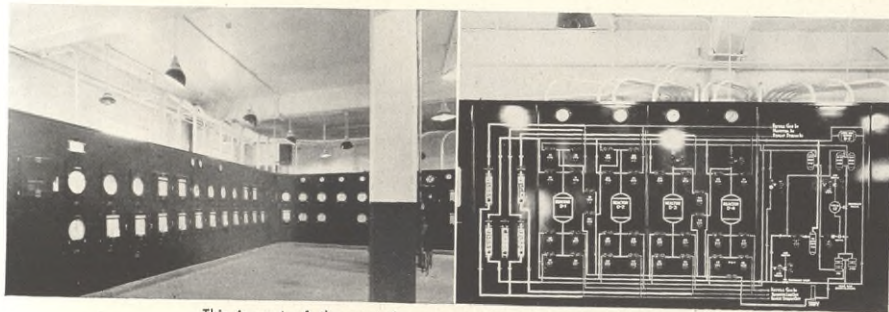
tirety, it contains within it smaller war plants, each of which took months and millions to build. The toluene extraction unit is the most widely known, but Lockport also has a new alkylation and isomerization unit and a hydroforming plant. All these were pictured in the Fall, 1944, number of THE TEXACO STAR. Besides toluene, which is shipped out of Lockport to be compounded elsewhere into war munitions, this equipment makes component products for 100-octane gasoline, and Lockporters feel themselves very much a part of the war effort.

The Lockport refinery has contributed 262 men and women employees to Uncle Sam's uniformed services, and its service flag bears a number of gold stars. Members of various departments keep in close touch by letter with employees in the service in all parts of the world. War Bonds and Stamps are sold at Lockport through the Lockport Works Federal Credit Union, which has a high standing in the Federal Credit Union system.

When the call came for Americans to contribute to the war effort by planting Victory Gardens, about 900 employees at Lockport set out with spade and hoe and worked gardens at home or gardened on Company land which the Engineering Department plowed and fertilized and provided with water lines. Part of it was the "Turn Basin" of the old canal system which had filled with silt. In 1944 Lockporters cultivated nearly 3,515,500 square feet of land.

Perhaps at no other Texaco refinery are employees so well organized in their after-hours recreation and hobbies. Lockport Works has baseball, softball, and bowling teams which play both in intramural and regional leagues. They get together at picnics and skating parties, compete with each other at tennis, and go hunting and fishing together.

All in all, Lockport is an exemplary modern refinery with an historic background and a top-notch spirit in war-time or peace-time activities.



This is part of the central nervous system of a huge refinery unit where gauges and dials record time, temperature, and cycles. These two pictures show different control boards of Lockport's hydroformer unit

A. P. I. C. Commends Klein

HARRY T. KLEIN, President of The Texas Company, who served as chairman of the American Petroleum Industries Committee from its formation in 1932 until last year, was honored at a recent dinner given by his former committee associates and was presented with a scroll bearing resolutions adopted at an earlier meeting.

The resolutions highly commended his direction of this national committee, which is composed entirely of legal representatives of the petroleum industry. It began its activities in November, 1932, with aims to combat Federal and state gasoline tax increases, to prevent evasion of gasoline taxes and their diversion to non-highway purposes, and to oppose unjust and discriminatory legislation against the petroleum industry and motorists. Executives of The Texas Company were active in establishing the committee and have worked in support of its principles.

The resolutions were as follows:

Whereas, Colonel Harry T. Klein has served as a member and as Chairman of the American Petroleum Industries Committee since its formation in 1932, and

Whereas, his understanding of the tax and legislative problems of the petroleum industry, his insight into the complex problems of gasoline taxation and automotive transportation, and his aggressive leadership in carrying out the objectives of the Committee as set forth by the Board of Directors of the American Petroleum Institute, have won for him not only the confidence and respect of his fellow members on the Committee, but wide esteem throughout the industry for whose welfare he has worked tirelessly, and

Whereas, Colonel Klein has been elected President



Harry T. Klein

of The Texas Company, thereby assuming new duties and enlarged responsibilities and has resigned from the Committee,

Therefore, be it resolved, that in view of the outstanding, faithful, and unstinted service of Colonel Klein in the work of the Committee for the common good of the petroleum industry, the American Petroleum Industries Committee, in meeting assembled this 8th day of June, 1944, hereby expresses its sincere appreciation for his services to the Committee, and extends to him assurances of friendship and best wishes in his future endeavors,

And be it further resolved, that copies of the resolution be transmitted to the Board of Directors of the American Petroleum Institute, to Mr. W. S. S. Rodgers, Chairman of the Board of The Texas Company, and to Colonel Klein.

Texaco and American Cyanamid Sponsor Chemical Company

JEFFERSON Chemical Company, Inc., a firm which will engage in the manufacture and sale of chemicals from petroleum, has recently been formed. It is owned jointly by The Texas Company and American Cyanamid Company.

"The importance of petroleum and petroleum gases as raw materials for the production of chemical substances is being increasingly appreciated," said W. S. S. Rodgers, Chairman of the Board of The Texas Company, in a statement announcing formation of the new company. "Great strides have been made in this field during the war. Many constituents of petroleum gases which were formerly by-products at oil refineries are now in demand as raw materials. We have, therefore, established Jefferson Chemical Company, Inc., to explore this field and produce from petroleum and petroleum gases such chemicals

and chemical products as are likely to be in demand by various consuming industries."

Directors of the new company are W. S. S. Rodgers, W. B. Bell, Harry T. Klein, H. L. Derby, M. Halpern, K. F. Cooper, R. J. Dearborn, M. C. Whitaker, W. M. Stratford, R. C. Gaugler, W. E. Kuhn, and L. C. Perkinson.

Officers are W. B. Bell, Chairman of the Board; W. S. S. Rodgers, Vice Chairman; H. L. Derby, President; P. M. Dinkins, Vice President and General Manager; R. J. Dearborn and M. Halpern, Vice Presidents; K. C. Towe, Treasurer; W. P. Sturtevant, Secretary; W. G. Elicker, Assistant Secretary and Assistant Treasurer. Headquarters of the company will be at 30 Rockefeller Plaza, New York City. Plants will be located adjacent to various large Texaco refineries.

YOUR FIRST POST-WAR TOUR

America's Courtesy is as Wide as Your Smile

By STUART C. HAWLEY

Director, Texaco Touring Service

ARE YOU planning a post-war sight-seeing tour? And are you financing that trip by purchasing War Bonds now? Many smart people, realizing their investment will hasten the day their tour can begin, are buying Bonds with a portion of their earnings with this express purpose in mind.

Where do you plan to go? To some distant place you've always wanted to visit? If you are, you should bear in mind the fact the trip will take longer in the first few post-war years than in pre-war times.

There are several reasons for this; for one, as your car will have served you far longer than formerly, with fewer repairs because of the scarcity both of parts and skilled mechanics to install them, you can't drive it so fast as when it was newer without far greater likelihood of accident. For another, the roads and highway surfaces will not be so good as they were, for in no state have either men or materials been available for other than emergency repairs while unusually heavy loads of war materials have been constantly pounding over them.

For still another reason, it is likely that at least a year must pass before accommodations along the way return to their normal pre-war standards, even though hotel, tourist camp, and tourist home owners may be counted upon to make every effort toward repair and rehabilitation of their places. There is too much to be done to permit its accomplishment overnight.

Now don't get the idea that we advise you not to go touring. Quite the contrary!

So many families have been confined to their immediate neighborhoods for so long, due to essential war restrictions, that an automobile tour is at the top of their post-war desires. These trips can be most enjoyable if carefully planned.

Considerable thought should be given to the itin-



Plan that vacation trip—but don't take it now

erary. We know that the lure of a National Park or a mountain or a seaside or a lake resort several thousand miles away is far greater than that of points of historical or scenic interest in our own neighborhoods—even though we've never seen the latter.

We remember that a neighbor made a 10,000-mile trip a few years ago, visiting nearly all the advertised vacation areas in the country, and we plan to make a similar tour—forgetting that

he had an extra month's vacation for his trip.

Ever since we read about the new Alcan Highway through Canada to Alaska we've wanted to drive over it, but we forget that its southern terminus is several thousand miles from the homes of most of us. Also, we've neglected to consider that it is, at present, purely a military road. A year or two, at least, must elapse before essential accommodations such as service stations, hotels and camps, and all-weather surfacing on the roads have been constructed and are maintained.

Then, too, we look with longing to that new Pan-American Highway and begin to gather information about a trip to Central or South America again, forgetting that its northern terminus is a considerable distance from most of our homes and that a good portion of our vacation time would be required going to and from that terminus.

Those planning trips over either the Alcan or the Pan-Am Highways should have at least four full weeks for the former and six for the latter when it is formally opened for tourist traffic.

Considerable construction remains to be done on the Pan-Am. Service stations or other accommodations south of Mexico City are still far in the future.

There are a multitude of scenic or historical places to visit within an easy two days' drive from any of our homes, both in our own and immediately ad-

jacent states. Why not plan to see these first?

Or there is that fellow or girl who was in our own or our son's or our daughter's outfit during the war—the one with whom we all want to visit and fight the battles over again. He lives in a nice locality, one we should have visited sooner.

Come to remember it, there was that nice couple who had the place next to us while we were working in the defense plant. Their place is on the Lake and it might be a good idea to go over and see if the fishing is all he claimed.

By all means go on a trip—make several short trips—just as soon as you possibly can, but take it easy the first year; easy on your family and self, easy on your car, and come home rested and contented.

Continue your plans for that long swing around the country, but give the several states' highway departments time to bring their roads back into the excellent condition of which they were so justly proud before the war!

On that traverse you can include a visit to the Colorado Rockies and drive over a pass 13,188 feet high; you can swing down to Mesa Verde to inspect the centuries-old cliff dwellings en route to Santa Fé, the western country's oldest capital, with Carlsbad Caverns an easy day's drive on your way to Texas' Rio Grande country and a visit to Old Mexico.

Or you can go through the Dakotas' Bad Lands to the Black Hills with Borglum's massive sculptures, then through Wyoming to Yellowstone where a week, a month, or a lifetime may be spent enjoying nature's wonders.

Nor should you forget about Glacier, with its

picture lakes and mountain scenes. Once here, you really should drive on north to and through Canada's Banff and Jasper Parks. Although these three are similar, generally, each gains by comparison with the others. Incidentally; the lowest pass on the American Continental Divide is Crowsnest, elevation 4,453 feet, between Coleman, Alberta, and Fernie, British Columbia. The next lowest is Stuarts, elevation 4,580 feet, between Deming and Lordsburg, New Mexico, on U.S. 80, some 1,700 road miles south.

You should give considerable thought to the Pacific Northwest, for at either of the larger Puget Sound cities you may stand at tidewater and see Mt. Rainier towering 14,408 feet above you! While in Washington you'll naturally visit Grand Coulee and Bonneville Dams, crossing the river above the latter on the Bridge of The Gods to drive down the world-famous Columbia River Highway to Portland.

While in this city you go up on Council Crest and see seven perpetually snow-clad peaks of the Cascade Mountains stretching from north to south. You may drive either through the Willamette Valley to Crater Lake, or cross through the Cascades around the base

GENDREAU



EWING GALLOWAY

When you pack up for that first post-war tour, be sure to allow enough time for it. Pre-war speeds won't be possible



(Left) A year or two will elapse before accommodations return to pre-war levels, with room and comfort for all who rediscover America

of Mt. Hood and go south on the East Side Highway, or you may go on over to the coast and follow along the Pacific Ocean and through the Redwood Empire to San Francisco.

What to see in California? Well, let's get together sometime when we've a fortnight or so to gossip and we'll try to begin to tell you. Of course you'll not miss Yosemite, General Grant, or Sequoia en route to Los Angeles.

One of the natural routes east is over to Las Vegas and Boulder Dam, turning south to Kingman; then the Grand Canyon, Zion, and Bryce Canyon en route to Salt Lake City.

What's that? You don't think you have time to drive to the western country? Well, what about visiting Natchez during their annual Spring flower carnivals? Or spending a week in northern Alabama and eastern Tennessee enjoying the sports the T.V.A. developments have made possible? Nor should you forget the Great Smokies with their eternal blanket of shining haze that gives them the name.

Motorists in the mid-Atlantic states brag, justifiably, about the beauties of the Shenandoah Valley and of Yorktown. And those of Pennsylvania and

New York will convince you a month can be most agreeable if passed traipsing here and there in those states. Their natural wonders and agreeable people are multitude.

The Great Plains states report excellent bird and rabbit hunting and you can follow the season north, from Texas to Canada, over some 1,500 miles of grazing, wheat, and corn fields. Non-resident, short-period hunting license fees are reasonable, and visiting sportsmen welcomed everywhere.

New England and Canada will welcome you with smiling assurance that whatever it is you are looking for they have—and proceed to prove it to you. They've had about three centuries' experience in entertaining visitors and practice *does* go a long way toward perfection.

Considerable thought must be given to a visit to the Great Lakes' area, too, for not only are steamer-ferry trips most agreeable but the many resorts situated on the smaller Michigan, Minnesota, and Wisconsin lakes vie successfully with those of any area, anywhere, in pleasing entertainment.

What about the Gulf coast? That's where you go when you just want to be lazy for a while! Or when you've tried fishing everywhere else. Until you've walked a six-foot tarpon for two hours from one of the Overseas Highway's bridges and he finally stands on his tail, throws your hook a hundred feet in the air and thumbs his nose in your direction, you really don't appreciate the burden religion lays upon you!

So again, take that trip. You'll be welcomed everywhere, for American courtesy isn't sectional—it's as wide as your smile.

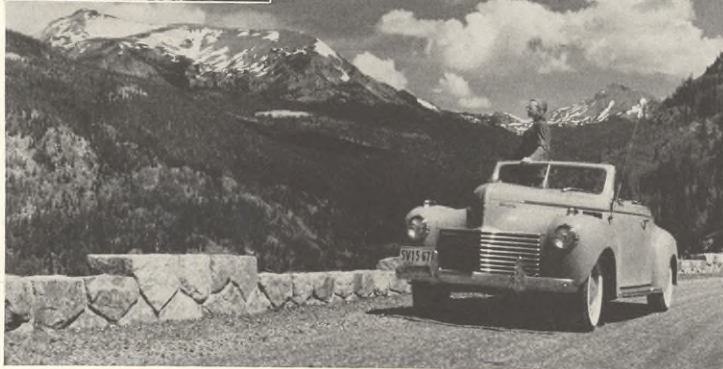


EWING GALLOWAY

Some will prefer to carry their shelter with them, but shelter isn't everything. Give the states time to repair the roads



(Right) You're due for an auto trip as soon as the war ends, but take it easy. See the scenery and historic sites near your own home first



SCREEN TRAVELER, FROM GENDREAU



The Navy uses a sizable portion of aviation gasoline production

WHERE DOES ALL THE PETROLEUM GO?

BY RALPH A. BARD

Under Secretary of the Navy

THE LARGEST single military use of petroleum products is for aviation gasoline. I think what happens to our aviation gasoline is fairly obvious. You read about it in the headlines every morning. It is needed not only for those battles which appear in the newspapers but also for the multitudinous training projects which make the battles possible. I repeat that aviation gasoline is the largest military use of petroleum today, a fact which speaks volumes about America's use of air power. Of course, most of the aviation gasoline goes to the Army Air Forces but a very sizable fraction is used by the Navy air arm.

The second largest military use of petroleum products is motor fuel. Most of the motor fuel goes to the Army ground forces who use it in tanks, jeeps, trucks, half-tracks, ducks, self-propelled gun carriages, and scores of other motor-driven vehicles which make up a modern army.

The third great military use of petroleum products is fuel oil, and obviously the Navy is the greatest consumer of fuel oil. It drives all of our modern sea-going fleet.

These three uses of petroleum—aviation gasoline, motor fuel, and fuel oil—are roughly, but not exactly, equal in size. The fourth military use of petroleum products, which is less than half as large as each of the other three, is diesel oil. The military supply of diesel oil is divided almost equally between the Army and the Navy. The Army has hundreds of diesel-powered vehicles including tanks. The Navy uses diesel-propulsion for vessels ranging from huge submarines to small landing craft.

The last and smallest military use of petroleum products, but one without which all the others would be unavailing, is lubricants. The volume of lubricants consumed by the Army and Navy is about one-sixth the volume of fuel oil and about half the volume of diesel oil. Our planes will use a gallon of oil for every 100 gallons of gasoline in an offensive raid employing considerable force.

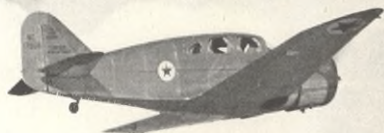
Military consumption of petroleum products is large not only quantitatively but also qualitatively. The aviation gasoline which is suitable for the operation of a commercial airliner between well-developed airports over well-monitored air routes is not satisfactory for the operation of a carrier-based torpedo bomber. The torpedo bombers must have a fuel that will deliver maximum power instantaneously in order to lift them fully loaded, sometimes with one-ton bombs, off the relatively short deck of an aircraft carrier.

The diesel fuel that works well in a road grader will not do in a submarine. In submarines, where space is at a great premium, engines are designed to develop the utmost in power in relation to size, and they are extremely critical of the fuel which they burn. It must be the highest grade diesel oil.

The fuel oil which the Navy uses in its surface warships must burn without smoke so as not to betray the presence of a ship and must be suitable for transfer from tanker to warship under difficult conditions of sea and temperature. Therefore, the Navy needs a grade of fuel oil much higher in quality than ordinary fuel oil.



Aviation's field is world-wide. Aubrey Keif (left) is Manager, Aviation Sales, for Domestic Sales and Foreign Operations. He confers above with H. T. Dodge, Foreign Operations' General Sales Manager, and O. B. Small, Assistant General Sales Manager



The Aviation Division's planes, like the one at left, are in the nation's service these days, helping keep civilian and armed services supplied with products

STAR CLOSE-UPS WINGS OF TEXACO

T. W. A.
PHOTO

(Below) Harold E. Bender, Aviation Representative, Chicago, with John H. Wilson, who is Executive Director of the National Aviation Trades Association



BOB BAILEY, HOUSTON

A. D. Patterson, Aviation Representative, Houston, keeps in touch with W. R. Ellwood, Assistant Manager, Southern Territory. (Below) Mr. Keif and F. E. Tobin, Aviation Sales Division's Assistant to Manager (Engineering)





Aubrey Keif, who was a flier for the RAF in the first World War, directs the destinies of his recently-enlarged, world-wide organization. He has been an employee of The Texas Company since 1932



Ralph J. Hall, Assistant Manager, has a background of flying and salesmanship and came to Texaco in 1935



Donald M. Rainey, until recently, was an Army Pilot, is Aviation Representative



Mr. Keif explains to Mr. Stuart some details of a proposed advertisement, set up on an easel, relating to Texaco airport service stations



Miss Patricia Feeney, Mr. Keif's Secretary, was the Aviation Division's first woman employee two years ago



STAR CLOSE-UPS

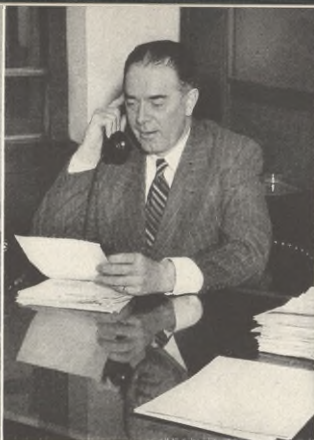
(Below) H. W. Holland (center), Sales Department Superintendent of Equipment, explains a new fueling unit to an Aviation Division staff meeting

(Below) Rainey, one of the Army Pilots, discusses the new air navigation





...ntly a captain in the AAF,
...tative, Los Angeles



O. L. Davis, Aviation Represent-
ative, New York, is a former
barnstormer, racing pilot, and
airplane salesman



Charles E. Stuart has been with Aviation Sales since
1929, is Supervisory Clerk of the Division, and is pictured
at his desk in a business discussion with G. F. Sturm, em-
ployee of the Department Agent's office



Miss Violet Hunt
is Stenographer
for C. E. Stuart



Miss Helen Waitovich, who has
been a Texaco employe one
year, is Stenographer for Mr.
Hall and Mr. Tobin



Mr. Keif consults H. W. Dodge, Vice President and
General Sales Manager, with R. T. Herndon, Manager
(Sales); W. H. Kershaw, Manager (Administration)

(Below) Mr. Keif and Mr. Hall talk over post-war plans
for airport service stations, where planes will receive
service like that given to the motorist

INGS OF XACO

and E. S. Mal-
pany's Chief
value of a new
gadget



PHOTOS IN STAR
CLOSE-UPS NOT
OTHERWISE CREDITED
ARE BY R. J. NESMITH



STAR CLOSE-UPS WINGS OF TEXACO



WRIGHT PHOTOS

J. A. Dwyer of the Wright Aeronautical Corporation's Purchasing Department checks an order to Texaco. In Wright's Wood-Ridge, N. J., plant, Cyclone 18 engines for Boeing B-29s are made. Texaco Aircraft Engine Oils, some Texaco fuels, test these engines in test cell shown at right



ART STREIB, LOS ANGELES

Fuel for the passenger liners. Since 1932 Texaco has supplied Transcontinental & Western Air, Inc., with its entire petroleum requirements



ROB BAILEY, HOUSTON

(Below) Col. Roy Harding, former Aviation Representative, Southern Territory, will be Assistant Manager (Aviation Sales) Foreign Operations, on completion of Army service



OSTERTAG, BUFFALO

(Below) Aviation Representatives Patterson and Davis (left) talk with C. E. Woolman (seated) and George Cushing, top officials of Delta Air Lines, 15 years a Texaco customer

(Left) Goodyear Daniels, Aviation Representative, accepts new plane

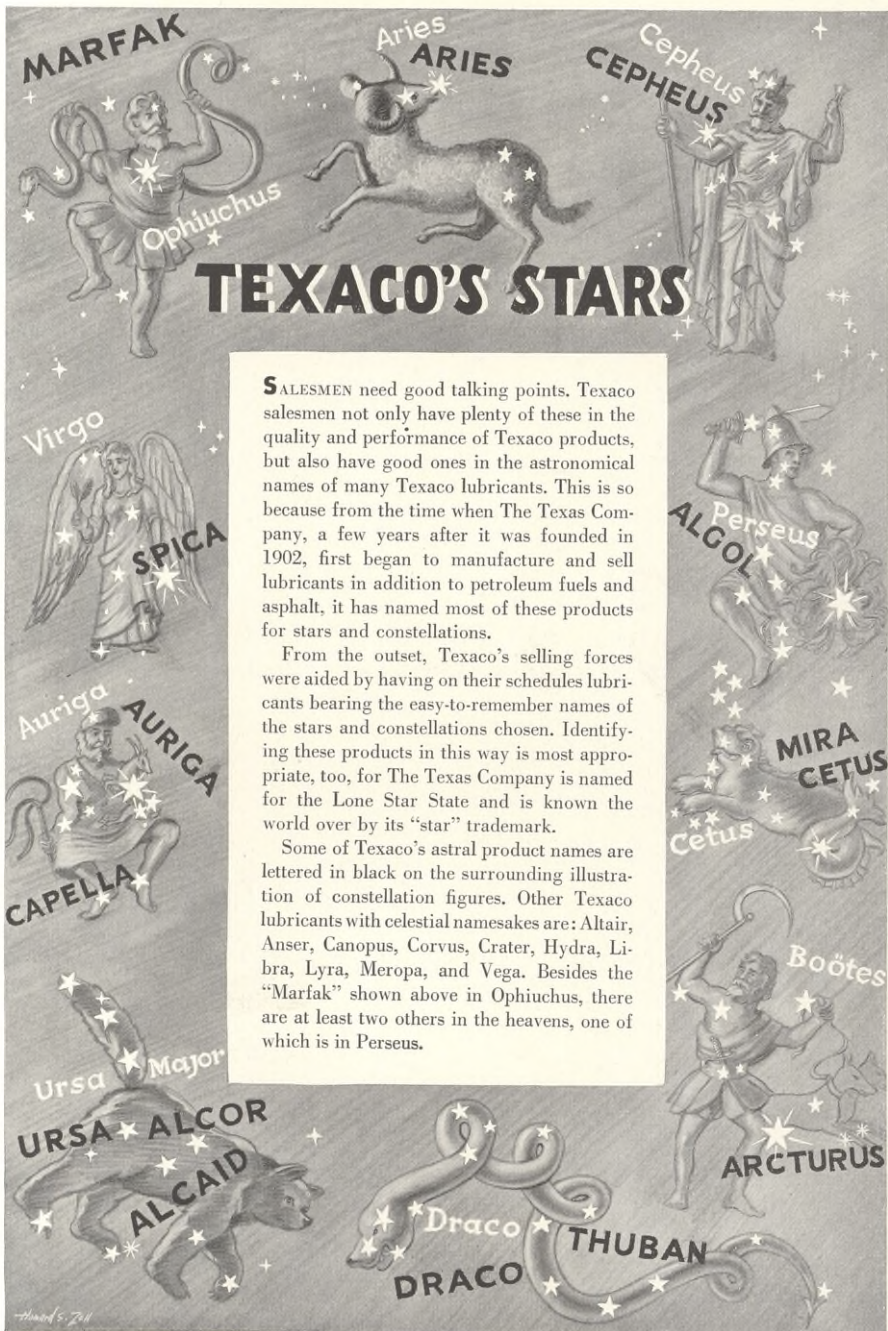
(Below) Prominent Texaco booth at the recent Southwest Aviation Conference

LANGLEY, DALLAS



EDGAR ORR, ATLANTA





SALESMEN need good talking points. Texaco salesmen not only have plenty of these in the quality and performance of Texaco products, but also have good ones in the astronomical names of many Texaco lubricants. This is so because from the time when The Texas Company, a few years after it was founded in 1902, first began to manufacture and sell lubricants in addition to petroleum fuels and asphalt, it has named most of these products for stars and constellations.

From the outset, Texaco's selling forces were aided by having on their schedules lubricants bearing the easy-to-remember names of the stars and constellations chosen. Identifying these products in this way is most appropriate, too, for The Texas Company is named for the Lone Star State and is known the world over by its "star" trademark.

Some of Texaco's astral product names are lettered in black on the surrounding illustration of constellation figures. Other Texaco lubricants with celestial namesakes are: Altair, Anser, Canopus, Corvus, Crater, Hydra, Libra, Lyra, Meropa, and Vega. Besides the "Marfak" shown above in Ophiuchus, there are at least two others in the heavens, one of which is in Perseus.



The only fast way across France. Red Ball trucks ate up gasoline

SUPPLY LINE

**End of the "Red Ball Express" Indicates
a Tougher, Costlier Supply Road to Japan**

PHOTOS BY U. S. ARMY SIGNAL CORPS

THE "Red Ball Express" is no more. Red Ball was the trucking system of 30 giant convoys that carried ammunition, weapons, food, blood plasma, fuel, and other supplies of war from the Normandy beachhead right up to the Nazi West Wall when the French railroads were still out of action.

Talk about your speed of modern warfare! Red Ball was probably the longest and fastest trucking line in world history, and it lasted just 81 days. It did its job so well it put itself right out of business.

But more Red Ball Expresses are probably in the making, under that same name or another. Perhaps some original Red Ball segments are now carrying supplies from railheads on the European fronts up to the battle lines. The Army is thinking, however, in terms of a trucking system to carry many millions of tons from beachheads on the China coast over unsurfaced roads meant only for *ricksha* traffic.

"Allied fighting men have achieved in Europe since June 6 one of the remarkable military victories of all time," said General Dwight D. Eisenhower on November 19. "They have eliminated more than a million German soldiers. In the great breakthrough in Normandy in late July, and in the sweeping exploitation that carried them all the way to the Ger-

man frontier, the tactical pattern was always the same: Sudden and devastating air attack, followed by intensive artillery bombardment, and then the forward surge of infantry and tanks to break defenses, capture towns, and hurry forward once again."

No less of a miracle was the achievement of getting supplies to the troops that pressed forward continually. As great a victory as the elimination of a million Nazi supermen was the elimination of beachhead bottlenecks that might have been created if supplies from the British Isles could not quickly have followed the armies.

The Army's Red Ball Express was what did it. Much of the Red Ball rolling stock was made up of heavy trucks—trucks with a payload capacity of four tons or greater, the kind that before the war made up only about one per cent of America's truck production. And when you're talking about trucks of that kind, you're talking about real gasoline consumption. Red Ball is said to have used 200,000 gallons a day.

Multiply that by the estimate of supplies needed for the invasion of Japan, add the super-fuel needed for planes, and you'll have a realistic preview of

(Please turn to page 18)



(Left) Something that took place all too infrequently when the front lines were 700 miles from the beach-heads: Red Ball drivers, tired from the grind of holding their vehicles at constant speed with regulation spacing over rutty French roads, take a brief rest



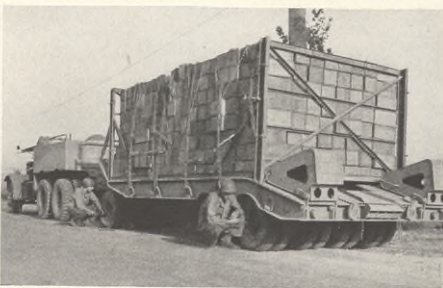
Gasoline in huge transports was an all-important item



Food came ashore by "Duck," then went inland by truck



Supplies from buttons to plane parts are invasion "musts"



Munitions: This truckload of TNT could wreck a village

(Continued from page 16)

non-civilian gasoline use after victory in Europe.

The truck route established by the Army Transportation Corps extended 700 miles from the invasion coast, through Paris, and to eastern France. Trucks on a one-way express highway took vital supplies from the beaches all the way to the front lines. The French railroads had either been destroyed by the enemy, sabotaged by French patriots, or blasted by Allied airmen. Trucks were the only means available. The German General Staff seems to have underestimated the ability of Americans to do this job. The Transportation Corps took it in stride. It was right up their alley, and it was a practical job of logistics with enough trucks and enough of the right personnel to do the job.

The Transportation Corps was born in March, 1942, by presidential decree. Before then, each corps of the Army's Services of Supply had its own transportation unit. The Transportation Corps became a concentrated organization supervising policies governing drivers and mechanics, and overseeing the upkeep, maintenance, and placement of all the Army's vast automotive armada. It did away with the lost motion and duplication of effort that took place under the former method of working.

Trained men were brought into the Transportation Corps—men formerly connected with organizations dependent on mobile equipment. They were truck

fleet owners, road engineers, traffic experts, and truck drivers. They were men who knew how.

The Chief of Transportation in the European Theater of Operations is Major General Frank S. Ross of El Paso, Texas, a veteran of 27 years of commissioned service. Head of the Motor Transport Division of the Transportation Corps is Lieutenant Colonel Loren A. Ayers of Ashland, Wisconsin, a West Pointer. In July, 1943, Lieutenant Colonel Ayers took over the job of organizing motor transport within the Transportation Corps. By D-Day everything was in full swing, and trucks played a major part in the invasion itself.

The Army vehicles in the ETO would reach from New York to San Francisco, back to New York, and westward again to Omaha with 60 yards between each vehicle—the regulation for convoy spacing in combat areas. Bumper to bumper such a convoy would stretch from Washington to St. Louis.

Every troop ship that disgorged soldiers, supplies, and munitions on the French coast added to the problem of keeping things moving, and a never-ending ribbon of motorized equipment worked on a 'round-the-clock schedule. Cherbourg required several thousand trucks for port clearance alone.

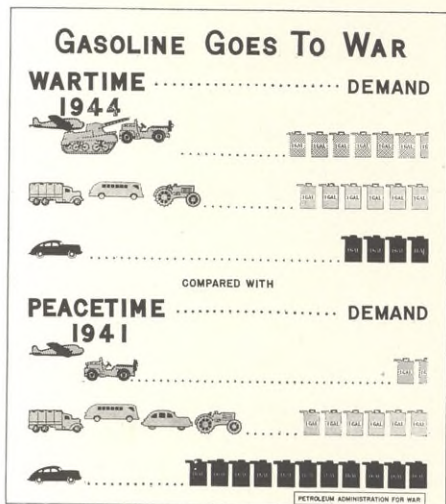
In invasion, from five to 10 tons of cargo, equipment, and other supplies must be landed for every soldier who hits the beach. These supplies include 700,000 different items, from buttons, needles, and



A convoy of Red Ball trucks is checked and heads for the battle lines



Trucks waiting to load men, equipment, and supplies on invasion craft in Italy last August. The chart below shows how war affects military and civilian gasoline consumption



(Continued from page 18)

thread to planes, tanks, and locomotives. A widening gap from beaches to front lines had to be bridged, and in the absence of railroads, trucks did it.

Colonel Clarence W. Richmond of Santa Monica, California, and Brigadier General Ewart G. Plank, Commanding General of the Advance Section, Communications Zone, put the Red Ball Express into operation.

Colonel Emerson L. Cummings, Chief Engineer, Office, Chief of Ordnance, Detroit, described the system when it was functioning in this fashion:

"Each truck in every convoy is prominently marked with a red ball at both the front and rear. The same red ball appears on the helmets of a special force of military police which guides them to their destination and guards their right-of-way. Every bit of unauthorized traffic must (and I assure you the MP's see to it) come to a halt in order to protect this right-of-way.

"The highway over which they run forms a loop. It feeds one-way traffic from Cherbourg to front lines which may have advanced as much as 25 miles a day. They rumble along averaging 40 miles per



Gas shovel and bulldozer clear a French intersection for trucks



It looks like asphalt. With it, Army Engineers repair a street



Red Ball trucks were running a gauntlet of rubble last October

hour. In the event that one truck breaks down, it is not permitted to delay its convoy. The driver swings off the road and permits all his convoy companions to keep rolling. If it is a minor repair, the driver makes it. If it is a major repair, he radios his position to a special radio-equipped Ordnance mobile shop truck, tells its crew what is wrong. They race to his SOS position and make the repair. Once the repair job is done, the driver of the truck waits until the next convoy passes him and then falls in line.

"When a driver gets too tired to stay awake at the wheel, his assistant driver takes over. The convoy keeps going. You have heard about the stage tradition which insists 'the show must go on.' Nowhere is that tradition so much respected and enforced as in the operation of this heavy truck program. Certainly nowhere has the necessity for maintaining such a tradition been so strong."

"During the Normandy landing," Colonel Cummings said, "2,500,000 men were put ashore. If our landing on the China coast is even to approximate the size of the Normandy landing, figures on the tonnage of equipment needed for invasion get a little too astronomical for finger counting. Here is the total: 6,381,500 tons."

That will supply the initial landings. For each quarter of a million men, 46,000 tons of replacements in weapons and ammunition, combat vehicles, and trucks will be needed in the following 30 days.

Exhorting the home front to greater effort so that supplies would be on hand when a greater Red Ball Express starts, Colonel Cummings concluded: "For every late delivery made during war time, you lose a customer, not to your competitor, but to the casualty list."

SPINDLETOP HAS ANOTHER BIRTHDAY

TEXAS oil men aren't going to let the world forget the anniversary of petroleum's coming to importance there, any more than Pennsylvania oil men are likely to let the birthday of Col. Drake's well at Titusville go unnoticed.

At Beaumont, Texas, on January 10—where in 1941 a monument was erected on the site of the Lucas gusher at Spindletop—the annual observance of the first gusher's discovery took place. The Beaumont Chamber of Commerce, the Texas Mid-Continent Oil and Gas Association, and many of the oil companies whose roots go back to those early days were interested in this 44th anniversary.

Chief credit for the striking of gushing gold by the Lucas well goes to Pattillo Higgins, a homemade geologist. For years Higgins proclaimed there was oil under the big hill near Beaumont—a relatively big hill for the neighborhood, that is; its elevation was little more than 10 feet.

Townpeople used to have fun with "Bud" Higgins by winking at their companions and asking Higgins what he thought about petroleum prospects locally. He obliged, even though he knew he was being made into a laughing-stock. Years later, after outstanding Beaumont citizens had signed a testimonial to him saying they had personal knowledge that he discovered the Beaumont oil field in 1892, Higgins said, "I felt the taunts and jeers and jests very deeply—how deeply, no one can ever know."

Higgins managed to interest two others in his venture, and the three laid out an industrial city, cut up into streets and lots, under sponsorship of the Gladys City Oil, Gas and Manufacturing Company. The "city" was named for little Gladys Bingham, member

of the Sunday School class that Higgins taught. Higgins was operator of a brickyard, and on a tour of similar plants in the North he found many of them using natural gas or fuel oil in their operations. It was this potential market that gave him his vision. His homemade geology came from studying United States geological reports and similar documents.

Two test wells produced nothing but encouragement and a very little gas. Higgins wrote letters and advertised in northern newspapers. "Captain" Anthony F. Lucas became interested. It was his well that blew in on January 10, 1901, a torrent of 100,000 barrels of oil a day that flowed for nine days before being brought under control. It was the biggest oil well the United States had ever seen.

A boom of "gold rush" proportions raised Beaumont's population from 9,000 persons to more than 50,000 almost over night. Special trains ran from New York, Philadelphia, St. Louis, and other cities. Speculative oil stocks went soaring. On Spindletop, 500 derricks rose on 144 acres as fast as materials could be brought in. The field produced 2,600,000 barrels the first year and 17,400,000 in 1902.

Spindletop, where The Texas Company got its start in 1902, was the forerunner of the Sour Lake field, and of other salt dome fields on the Gulf Coast.

On the 40th anniversary of the Lucas Gusher the monument unveiled on its site proclaimed: "Petroleum has revolutionized industry and transportation; it has created untold wealth, built cities, furnished employment for hundreds of thousands and contributed billions of dollars in taxes to support institutions of government. In a brief span of years it has altered man's way of life throughout the world."

Texaco Gives Schools Aid for Technological Study

THE Sales Promotion Division of the Domestic Sales Department, in coöperation with the Technical and Research Division of the Refining Department, after several years of study and contact with educational institutions, has re-designed Texaco's educational aid for supplementary use in schools and colleges with courses in Petroleum Technology.

This aid to study is so arranged as to show visually the story of refining from crude oil to finished petroleum products. It includes samples of products in the various stages of refining and a book on petroleum products especially written to supplement a student's text book work and to tell the complete story of petroleum from the well to the consumer. Also included are a volume containing eight large charts

covering the production, transportation, and refining of petroleum, and a booklet entitled *Outline of Petroleum Products*.

About 210 of these kits are being presented to colleges, universities, and technological institutions, and 150 to high schools. No more are available at present. The presentation is being made by Texaco employees who have contact with the schools and in many instances are alumni of the institutions.

School surveys made some time ago indicated that much material of this nature previously supplied by the industry for educational purposes remained unused because it was poorly designed for study and visual education. The new sample sets are expected to find ready use and acceptance.

LUBRICATION— ACHILLES HEEL

A LITTLE friction can wreck a lot of tanks and combat vehicles. Lubrication is the "Achilles heel" of our fast-moving mechanical armies.

The lubrication problem is not a small one. The vehicles of a motorized triangular division, requiring constant lubrication, will make a column 30 miles long if placed at 10-yard intervals.

A few years ago each Army post and field organization had to have available at all times more than 20 grades of lubricating oil and 30 different kinds of greases, in addition to petroleum specialties and related products. By extensive tests the Ordnance Department determined which commercial brand or brands were superior to the average products sold for the same purpose. In this way eight different grades of recoil oil, for example, were not only reduced to two but were improved by experts so that satisfactory operation over a wider temperature range would be provided.

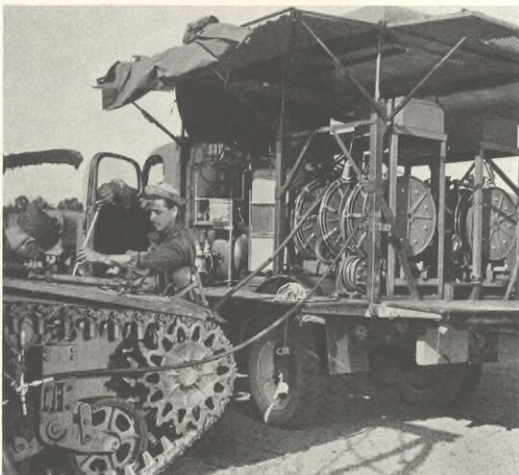
The Ordnance Department next issued streamlined lubrication charts and manuals to insure proper use of the simplified and standardized products. These lubrication guides for combat vehicles and field guns embodied suitable lubrication diagrams completely identifying all points for lubrication. They specified the lubricants to be used and indicated the lubrication intervals for each point.

A special mobile lubrication unit was designed which now makes it possible to lubricate completely four light tanks in 13 minutes. Previously the normal time for lubricating four tanks was one and one-half hours. Large numbers of combat technicians were trained to follow the improved lubrication program, and they are the ones who maintain our armored vehicles and keep our guns firing.

The Germans take great pains to wreck the transportation system before retreating—if it has not been wrecked for them. The Allies therefore depend on motorized transport. Although lubrication may appear to be a trivial detail, experience has shown that the best-laid battle plans can go awry if someone

fails to keep intact the film of oil upon which a mechanized army must travel.

No longer is there any guesswork in lubricating the motorized equipment of our motorized forces. The lubrication guides must accompany all equipment at all times. In civilian life every motor car does not have its lubrication guide along with it, but first-class Texaco Service Stations all have the Texaco Lubrication Guide for every make and model of automobile on the road, and have had for more than a decade. Its purpose is the same—to fight friction and wear without guesswork and "keep 'em rolling."



U. S. ARMY SIGNAL CORPS PHOTOS

(Above) A tank being lubricated from a mobile lubrication unit.

(Top) Army mechanics overhaul a truck near a Pacific battlefield.

WAR-TIME SAVING AND FUTURE SPENDING

By ISAAC W. ROBERTS

President, National Association of Mutual Savings Banks, and President, the Philadelphia Saving Fund Society

Now that the financing of the war is assured, it is well to bear in mind the part played by the voluntary day-to-day savings of the average man and woman. Through the direct purchase of War Savings Bonds by our citizens and through the purchase of Government securities by thrift institutions with funds representing the people's savings, this success has been made possible.

Not only have these savings contributed greatly to our country's war effort, but they have been a potent factor as well in restraining inflation, providing the individual with the wherewithal for developments of the future, a real step forward in winning personal financial independence.

We live in a remarkable age. Much of value will be produced by the stress of World War II. One of the worthwhile results and perhaps the most enduring result will be the lesson of saving. Not long ago many reasons were advanced against saving. A philosophy was evolved holding that there need be no cause to save. The Government would provide for everybody, in a measure. The correct thing to do with money was to spend it and thereby keep the wheels turning. If this was not exactly a philosophy of despair, it was a philosophy of depression—in the economic sense and in the mental outlook.

Then came the war. Activity of every kind immediately was accelerated to a pace unknown before. Americans began to find themselves. We returned to our natural character of inventiveness, enterprise, adventure. The war had to be won. So we would win it. A determination easy to state, more difficult to achieve. Not only must we produce, we must conserve. This meant saving.

Mutual savings banks have taught the doctrine of saving year in and year out. Today, they have dis-



ISAAC W. ROBERTS

BACHRACH

tributed about one-twenty-fifth part of War Savings Bonds, besides investing approximately 54 per cent of their own assets in Government issues—the immense sum of seven billion dollars, safely invested in the premier security of the world.

The American public responds better to leadership than it does to regimentation. Voluntary saving is the greatest demonstration of this power at this time. Consider what it means when almost 27 and one-half millions of workers have signed pledges to divert so many payroll dollars into War Savings Bonds—regularly every pay day. A sizable part of total War Savings Bonds so far issued were absorbed by payroll dollars—approximating six billion dollars—a system of purchase in which mutual savings banks take an important part.

The statement of these facts shows what it is possible to do by saving. The individual, assisting the nation, likewise prepares for his own needs and opportunities of tomorrow. Here is the vital spur to effort—helping our country and ourselves with one and the same dollar.

There is reason to believe that we will not experience a wasteful buying spree, but an orderly turnover to peace-time industry, a program in which business, banking, industry, and—by far the most important—the people themselves, will join hands. Let us have faith in this, our way, to a stabilized economy.

BOOKS

When Texas Bared Its Teeth

THAT the inhabitants of Texas signed a Declaration of Independence of their own is not a fact that sticks so readily in the mind of a schoolboy studying American history as the more thrilling account of the Battle of the Alamo. Texans, however, are very much aware and proud of their Declaration, and none more so than Louis Wiltz Kemp, who now emerges as the foremost authority on the subject. He has written a book, *The Signers of the Texas Declaration of Independence*, which sets the record straight on traditions surrounding it. He shows there were 59 signers when less careful historians have persisted for years in giving only 58 the credit.

This volume is rare among its kind. It can be read as a series of narratives by judicious skipping, but its profusion of footnotes, interpolated fragments of letters and quotations from other works, and genealogical and geographical notes, as well as a complete index of all names mentioned, endear it to the scholar. This explains why the first edition was a pre-publication sellout, chiefly to Texas history enthusiasts. The Anson Jones Press of Houston produced it.

Facts are presented with the utmost objectiveness and candor. No attempt is made to glamorize the signers or to deny that a number of them came to Texas with opportunist motives.



Louis Wiltz Kemp

"The Mexican government," says part of the Declaration, "by its colonization laws invited and induced the Anglo-American population of Texas to colonize its wilderness under the pledged faith of a written Constitution that they should continue to enjoy that constitutional liberty and republican government to which they had been habituated in the land of their birth, the United States of America." The Texans contended the Mexican government had "ceased to protect the lives, liberty and property of the people" and had forcibly changed the whole nature of their government "without their consent, from a restricted federative republic, composed of sovereign states, to a consolidated, central, military despotism." Therefore Texas announced her independence.

This is Mr. Kemp's first book entirely under his own signature, and is dedicated to Texaco's W. H. Kershaw, Manager (Administration), Executive Sales. An earlier book, *Heroes of San Jacinto*, was written in collaboration with Sam Houston Dixon. Mr. Kemp has contributed in many ways to the preservation of Texas history, in acknowledgement of which and befitting his position as Manager, Houston District, Asphalt Sales Department, the Texas State Highway Commission a few years ago dedicated a bridge over the Guadalupe River to him.

Petroleum's "Private Air Force"

WINGING over the sea along the Atlantic and Gulf coasts in mid-1942 was an assortment of land planes carrying pilots and observers from many walks of life. They were on the watch for submarines and for survivors from torpedoed tankers and other merchant vessels. They were the Coastal Patrol of the Civil Air Patrol, an air-borne army of civilian volunteers.

At that time coastwise shipping was having a difficult struggle with U-boats. Hundreds of shivering survivors of ill-fated vessels were brought to shore safely, thanks to this aerial observation. At least two submarines were destroyed by these voluntary guardians. More than 100 others were spotted for the Army, Navy, and Coast Guard.

The coastal patrol, however, faced abandonment because of inadequate financial support from the Government, according to a new book, *Sank Same*, by William B. Mellor, Jr., recently issued by Howell, Soskin, Publishers, Inc., with Army and Navy sanction. Then the petroleum industry came to the rescue with a \$40,000 Tanker Protection Fund, and additional gifts by individual oil companies constituted virtually the only support the air patrol received.

Before recognition finally came and the CAP Coastal Patrol was made an auxiliary arm of the Army Air Forces, it had rolled up 20,000,000 miles of overwater flight, during much of which it was known very, very unofficially as the oil industry's "private air force."



Is there a doctor in the house?

YES... 63 of them!

AMONG the hundreds of skilled research scientists of the house of Texaco are 63 doctors, not of medicine, but of science — representing many of the world's leading universities.

Among these scientists, too, are many of the outstanding specialists in the various fields of petroleum research — men whose insight and knowledge have completely revolutionized techniques of petroleum manufacture and use.



In hundreds of ways these scientists are working constantly and effectively for Victory.

Here American science fights back against the diabolical science of the Axis.

From these Texaco laboratories have come technical advances that have speeded up enormously the flow of 100-octane gasoline to our fighting flyers... created an endless stream of new fuels and lubricants to add power and speed to America's mechanized war machine... "secret weapons"... fighting chemicals.

And this work will give *you* even finer Texaco Products after the war.

THE TEXAS COMPANY

Coming... finer  FIRE-CHIEF and
 Sky Chief gasolines because
of Texaco's research in this war



The Texas Company (including wholly owned subsidiaries operating in the United States)	5,547
Foreign Subsidiaries (operating outside the United States)	66

Affiliated Companies—Domestic

Texas-New Mexico Pipe Line Company	64
The Texas Empire Pipe Line Company	33
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Affiliated Companies—Foreign

The Bahrein Petroleum Company Limited, and California Texas Oil Company, Limited	127
Arabian American Oil Company	13
N. V. Nederlandsche Pacific Petroleum Maatschappij	5
Colombian Petroleum Company and South American Gulf Oil Company	18

THIS SERVICE FLAG of The Texas Company combined with its subsidiaries and affiliates shows employees on military leave of absence, in the United States armed forces only, as of early December. Those in the armed forces of other Allied nations number 761 additional, and 39 more, including some civilians, are known to have lost their lives under the flags of Allied nations other than the United States