

FREEDOM is made of simple stuff

FROM the archives of broken peace we are bringing out old words and dusting them off for use again as shining lanterns to lead us through the darkness of another war.

Words like freedom, justice and truth—all of them hard to define, none of them used more frequently than freedom.

You cannot say what freedom is, perhaps, in a single sentence. It is not necessary to define it. It is enough to point to it.

Freedom is a man lifting a gate latch at dusk, and sitting for a while on the porch, smoking his pipe, before he goes to bed.

It is the violence of an argument outside an election poll; it is the righteous anger of the pulpits.

It is the warm laughter of a girl on a park bench.

It is the rush of a train over the continent and the unafraid faces of people looking out the windows.

It is all the howdys in the world, and all the hellos.

It is Westbrook Pegler telling Roosevelt how to raise his children; it is Roosevelt letting them raise themselves.

It is Dorothy Thompson asking for war; it is Gen. Hugh S. Johnson asking her to keep quiet.

It is you trying to remember the words to The Star-Spangled Banner.

It is the sea breaking on wide sands somewhere and the shoulders of a mountain supporting the sky.

It is the air you fill your lungs with and the dirt that is your garden.

It is a man cursing all cops.

It is the absence of apprehension at the sound of approaching footsteps outside your closed door.

It is your hot resentment of intrigue, the tilt of your chin and the tightening of your lips sometimes.

It is all the things you do and want to keep on doing.

It is all the things you feel and cannot help feeling.

Freedom-it is you.

—Hazel Parker in the Louisville Courier-Journal (reprinted by permission)

THE TEXACO STAR

January, 1942

VOLUME XXVIII

NUMBER 4

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A PUBLICATION OF THE TEXAS COMPANY

For distribution to employes and stockholders

MEMBER, THE HOUSE MAGAZINE INSTITUTE,
NATIONAL COUNCIL OF INDUSTRIAL EDITORS' ASSOCIATIONS

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Direct all Communications to the Editor of The Texaco Star $135\ {\rm East}\ 42{\rm nd}\ {\rm Street}, {\rm New\ York\ City}$

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- * Driving a car back and forth fast, without spilling water from a milk bottle perched on the floor, is one practice exercise for women who want to qualify for motor corps duty.
- ★ If you travel any distance in Iceland, you'll probably go by motor vehicle. There are no railroads.



- ★ W. S. S. Rodgers, President of The Texas Company, is a member of the Executive Committee of the new Petroleum Industry Council for National Defense, formed to advise Federal Petroleum Coördinator Harold L. Ickes. H. W. Dodge, Vice President and General Sales Manager of the Company, is one of the council members. Mr. Rodgers is also serving on a sub-committee to determine measures for preventing waste in the industry. The Council will mobilize the resources and abilities of the industry under the present war emergency.
- ★ Most of the TNT for national defense is being made with toluene derived from crude oil and from gasoline. Nitric and sulphuric acid, the other ingredients of TNT, are also readily obtainable from petroleum.
- ★ A car made in 1941 will probably contribute \$600 in taxes before it reaches the junk pile, say statisticians. The average modern car is made so well and gets such considerate treatment that its life expectancy is onethird greater than that of a 1931 model. Long life and high gasoline taxes will enable it to generate more in taxes than the cost of making the car in the first place.
- ★ A "sugar coating" for steel ingots has been devised to give them a smooth, flaw-free surface. Before the molten steel is poured, the ingot molds are sprayed inside with dry corn sugar (pitch and tar are also used) which keeps splashes of metal from solidifying on the walls of the mold and causing defects.

On Christmas Day in the Morning

BY GRACE S. RICHMOND*

Illustrated by Kenneth W. Thompson

That Christmas day began a whole year beforehand, with a letter written by Guy Fernald to his younger sister, Nan, who had been married just two years. The letter was read aloud by Nan to her husband at the breakfast table, the day after Christmas. It was upon one subject:

"Dear Nan:

"It's a full-grown shame that not a soul of us all got home for Christmas—except yours truly, and he only for a couple of hours. What have the old folks done to us that we treat them like this? I really thought Ralph was home—he wrote me that he might swing round that way by the holidays, but I know the rest of you were wrapped up in your own Christmas trees and weren't going to get there.

"Well, I took the seven-thirty down and walked in on them, sitting all alone by the fire. I felt gulpish in my throat when I looked at them. Mother just gave one gasp and flew into my arms, and Dad got up more slowly—he has had that rheumatism worse than ever this Winter—and came over and I thought he'd shake my hand off. They were so glad to see me that it made my throat ache.

"Ralph had written that he couldn't get round, and you'd all written and sent them things—and they appreciated them. But—blame it all—they were just lonesome—and the whole outfit within three hundred miles, most within thirty!

"Nan—next Christmas it's going to be different. I've got it all planned out. Not that they had a word of blame—not they. But that didn't make the thing any easier for them. Next year—but you'll all hear from me then. Meanwhile, run down and see them once or twice this Winter. Somehow it struck me they aren't so young as—they used to be. My best to Sam.

Your affectionate brother.

Guy"

When the year had nearly rolled around, the

first of December saw Guy at work getting his plans in train. He began with his eldest brother, Oliver, because he considered Mrs. Oliver the hardest he had to tackle. "You see," he expounded patiently, as they sat and stared at him, "it isn't that they aren't always glad to see the whole outfit, children and all, but it just struck me that it would do 'em a lot of good to revive old times. I thought if we could make it as much as possible like one of the old Christmases before anybody got married, it would give them a jolly surprise. I plan to have us all creep in in the night and go to bed in our old



^{*}Condensed from The Texaco Star of December, 1916, reprinted by permission of Doubleday Doran and Co., Inc.



impatience. "Don't you remember she fell down the back stairs a year ago?"

"Certainly, Oliver," his wife interposed. "I wrote to her how sorry we were."

"She's a little lame, and always will be," said Guy, "and her knee stiffens up in the night, and she doesn't get up and go prowling about at the least noise, the way she used to. So if we make a whisper of noise Marietta'll tell her it's the cat or something. The only thing that worries me is that I can't get you all to take hold of the scheme. On my word, Ol,"—he turned quite away from his sister-in-law's critical gaze—"don't we owe the old home anything but a present tied up in tissue paper once a year?"

Marian began to speak. She thought Guy was exceeding his rights in talking as if they had been at fault; it was not often that elderly people had so many children within call—but a man owed something to his own family, and at Christmas!

Her husband interrupted her. He took his pipe out of his mouth and spoke decidedly.

"Guy, I believe you're right. I'll be sorry to desert my own kids, of course, but I think they can stand it for once. You may count on me."

In his younger sister, Nan, Guy hoped to find a ally, and he was not disappointed. Carolyn—Mrs. Charles Wetmore—fell in heartily with the plan. Ralph, from the far West, wrote that he would get home or break a leg. Edson thought the idea rather a foolish one, but was persuaded by Jessica, his wife —whom Guy declared a trump—that he must go by all means. And so they fell into line, and there remained for Guy only the working out of the details,

"Miss' Fernald, I'm most forgettin' what I was to ask you. I s'pose you'll laugh, but Guy—he wrote me in partic'lar he wanted you and his father to—" Marietta's face took on a curious expression—"to hang up your stockin's." Mrs. Fernald paused in the doorway of the bedroom. "Guy wrote that?" she asked. "Then—it almost looks as if he might be coming himself, doesn't it, Marietta?"

"Well, I don't know's I'd really expect him," Marietta replied. "I guess what he meant was more in the way of a Christmas present—something that'll go into a stockin', maybe."

"It's rather odd he should have written you to ask me," mused Mrs. Fernald.

Marietta considered rapidly. "Well, I s'pose he intended for me to get 'em on the sly and put in what he sent, but I sort of guessed you might like to fall in with his idee by hangin' 'em up yourself, here by the chimbley, where the children all used to do it. Here's the nails, same as they always was."

Mrs. Fernald found the stockings, and touched her husband on the shoulder. "Father, Guy wrote he wanted us to hang up our stockings," she said, raising her voice a little and speaking very distinctly. The elderly man looked up, smiling.

"Well, well," he said, "anything to please the boy. It doesn't seem more than a year since he was a little fellow hanging up his own stockings, does it, Mother?"

The stockings were hung in silence. They looked thin and lonely as they dangled beside the dying fire. Marietta hastened to make them less lonely. "Well," she said in a shamefaced way, "the silly boy said I was to hang mine, too. Goodness knows what he'll find to put in it that'll fit, 'less it's a poker."

They smiled kindly at her, wished her good night, and went back to their own room. The little episode had aroused no suspicions. It was very like Guy's affectionate boyishness.

"I presume he'll be down," said Mrs. Fernald, as she limped quietly about the room, making ready for bed. "Don't you remember how he surprised us last year? I'm sorry the others can't come. Of course, I sent them all the invitation, as usual—I shall always do that—but it is snowy weather, and I suppose they don't like to risk it."

Presently, as she was putting out the light, she heard Marietta at the door.

"Mis' Fernald, Peter Piper's got back in this part o' the house somehow, and I can't lay hands on him. Beats all how cute that cat is. Seem's if he knows when I'm goin' to put him in the woodshed. I don't think he'll do no harm, but I thought I'd tell you, so 'f you heard any queer noises in the night you'd know it was Peter."

"Very well, Marietta," the soft voice came back to the schemer on the other side of the door. "I shan't be alarmed if I hear him."

"All right, Mis' Fernald, I just thought I'd let you know," and the guileful one went grinning away.

"Emeline, you aren't getting to sleep."

"I know I'm not, John. Christmas Eve keeps one awake somehow. It always did."



"Yes. I don't suppose the children realize at all, do they?"

"Oh, no—oh, no! They don't realize—they never will till—they're here themselves. It's all right. I think —I think at least Guy will be down tomorrow, don't you?"

"I guess maybe he will."
Then, after a short silence:
"Mother, you've got me,
you know. You know—
you've always got me,
dear."

"Yes." She would not let him hear the sob in her voice. She crept close, and spoke cheerfully in his best ear. "And you've got me, Johnny Boy!"

"Thank the Lord I have!" So, counting their blessings, they fell asleep. But one set of lashes was wet.

and jellies.

"Say, but this is great," exulted Ralph, the stalwart, consuming a huge wedge of mince pie with a fine disregard for any consequences that might overtake him. "This alone is worth it. I haven't eaten such pie in a century. What a jolly place this old kitchen is. Let's have a candy pull tomorrow. I haven't been home Christmas in—let me see—I be-

lieve it's six-seven-yes,

seven years. Look here:

there's been some excuse

for me, but what about you

that live near?"

He looked accusingly about. Carolyn got up and came around to him. "Don't talk about it tonight," she whispered. "We haven't realized how long it's been."

They pleaded for mercy and hot food. They got

it-everything that could be had that would diffuse

no odor of cookery through the house-smoking

clam broth, a great pot of baked beans, cold meats,

"We'll get off to bed now," Guy declared, rising.
"They may catch us down here. If either of them should want some hot water or something—"

"The dining room door's bolted," Marietta assured him, "but it might need explainin' if I had to bring 'em hot water by way of the parlor. Now go careful up them stairs. They're pretty near over your ma's head, but I don't dare have you tramp through the settin' room to the front ones."

"Who's to fix the bundles?" Carolyn paused to ask as she started up the stairs.

"Marietta," Guy answered. "I've labeled every one, so it'll be easy. If they hear paper rattle, they'll think it's the usual presents we've sent on, and if they come out they'll see Marietta. Quiet now."

They crept up, one by one, each to his or her old room. There needed to be no "doubling up," for the house was large, and each room had been left as its owner had left it. It was late, and they were beginning to be sleepy, so they were soon in bed.

Christmas morning, breaking upon a wintry world—the Star in the East long set. Outside the house a great silence of drift-wrapped hill and plain—inside, a crackling fire upon a wide hearth, and a pair of elderly people waking to a lonely holiday. Mrs. Fernald crept to the door of her room—the injured

"Christopher Jinks! What a drift!"

"Sh-h-they might hear us!"

"Nan, stop laughing, or I'll drop a snowball down your neck! Gee whiz! Can't you get that door open? I'll bet it's frozen fast."

The storm door swung open by force from the inside. A cautious voice said low: "That the Fernald family?"

A chorus of whispers came back at Marietta,

"Yes, yes-let us in. We're freezing."

"You bet we're the Fernald family—every man-Jack of us—not one missing."

"Oh, Marietta-you dear old thing!"

"Hurry up! This is their side of the house."
"Sh-h-h—"

"Carol, your sh-h-ishes would wake the dead!"

Stumbling over their own feet and bundles, the crew poured into the warm kitchen. Serious Oliver, oldest of the clan; stout Edson, big Ralph, tall and slender Guy, and the two daughters of the house, Carolyn, growing plump and rosy at thirty; Nan, slim and girlish at twenty-four—they were all there. Marietta heaved a sigh of content as she looked them over.

"Well, I didn't really think you'd get here—all of you. Thank the Lord, you have. I s'pose you're tearin' hungry, bein' past 'leven. If you think you can eat quiet as cats I'll feed you up, but if you're goin' to make as much rumpus as you did comin' in, I'll have to pack you straight off up the back stairs."

knee always made walking difficult after a night's quiet. She meant to sit down by the fire which she had lately heard Marietta stirring and feeding into activity, and warm herself at its flame. She remembered with a sad little smile that she and John had hung their stockings there, and looked to see what had been wrought in the night.

"Father!"—Her voice caught in her throat—
"What was all this?" By some mysterious influence her husband learned that she was calling him, though he had not really heard. He came to the door and looked at her, then at the chimney piece where the stockings hung—a long row of them, as they had not hung since the children grew up—stockings of quality: one of brown silk, Nan's; a fine gray sock with clocks, Ralph's—all stuffed to the top with bundles overflowing upon the chimney piece and even to the floor below.

"What's this—what's this?" John Fernald's voice was puzzled. "Whose are these?" He limped closer. He put on his spectacles and stared hard at a parcel protruding from a sock. "Merry Christmas to Ralph from Nan," he read. "To Ralph from Nan," he repeated vaguely. His gaze turned to his wife. His eyes were wide like a child's. But she was getting to her feet, from the chair into which she had dropped.

"The children!" she was saying. "They—they— John—they must be here!"

He followed her through the chilly hall to the front staircase, seldom used now, and up—as rapidly as those stiff joints would allow. Trembling, Mrs. Fernald pushed open the first door at the top.

A rumpled brown head raised itself from among the pillows, a pair of sleepy but affectionate brown eyes smiled at the two faces peering in, and a voice brimful of mirth cried softly; "Merry Christmas, mammy and daddy!" They stared at her, their eyes growing misty. It was their little daughter, Nan, not yet grown up!

They could not believe it. Even when they had

been to every room—had seen their big son, Ralph, still sleeping, his yet youthful face, full of healthy color, pillowed on his brawny arm, and his

mother had gently kissed him awake to be halfstrangled in his hug-when they had met Edson's hearty laugh as he fired a pillow at them—carefully, so that his father could catch it-when they had seen plump, pretty Carol pulling on her stockings as she sat on the floor smiling up at them-Oliver, advancing to meet them in his bathrobe and slippers-Guy, holding out both arms from above his blankets, and shouting, "Merry Christmas!-and how do you like your children?"-even then it was difficult to realize that not one was missing-and that no one else was there. Unconsciously Mrs. Fernald found herself looking about for the sons' wives and daughters' husbands, and children. She loved them all-yet-to have her own, and no others, just for this one day-it was happiness indeed.

When they were all downstairs, about the fire, there was great rejoicing. They had Marietta in; indeed, she had been hovering continuously in the background, to the jeopardy of the breakfast in preparation, upon which, nevertheless, she had managed to keep a practiced eye.

"And were you in it, Marietta?" Mr. Fernald said to her in astonishment, when he first saw her. "How in the world did you get all these people into the house and to bed without waking us?"

"It was pretty considerable of a risk," Marietta replied, with modest pride, "seein' as how they was inclined to be lively. But I kep' a-hushing 'em up, and I filled 'em up so full of victuals they couldn't talk."

At the breakfast table, while the eight heads were bent, this thanksgiving arose, as the master of the house, in a voice not quite steady, offered it to One Unseen: "Thou who camest to us on that first Christmas day, we bless Thee for this good and perfect gift Thou sendest us today, that Thou forgettest us not in these later years, but givest us the greatest joy of our lives in these, our loyal children."

Nan's hand clutched Guy's under the table.

"Doesn't that make it worth it?" his
grasp said to her, and hers replied
with a frantic pressure, "Indeed it
does, but we don't deserve it."



WE'VE CHANGED OUR NAME

Across a table in Texaco's New York Offices, at 8:15 p.m. on October 31, 1941, Harry T. Klein, Executive Vice President and General Counsel of The Texas Company (Delaware) handed a sheaf of legal papers to L. H. Lindeman, Treasurer of The Texas Corporation. The papers were deeds giving the Corporation title to all of Texaco's real property.

This transaction was one of the last steps in a simplification of Texaco's corporate structure, accomplished for the purpose of greater efficiency and

economy in operation.

The delivery of the deeds, a prerequisite for the passing of title, is analagous to the custom of medieval times, when a transfer of land required that a new land-owner be handed a pinch of the soil of which he was about to take possession.

In reorganizing, The Texas Company (California), one of the operating subsidiaries of The Texas Corporation, was dissolved; the principal operating subsidiary, The Texas Company (Delaware), was merged into The Texas Corporation; finally, the Corporation dropped its own title and assumed the name of its Delaware-incorporated subsidiary. The resulting corporation—"The Texas Company"—took over all the assets and assumed all the liabilities

of both the subsidiaries, and thereupon became an operating company itself.

The former "parent company," The Texas Corporation, was not qualified to do business in any state other than that of its incorporation—Delaware. To enable it to carry on the business of the subsidiaries mentioned, it was necessary for The Texas Corporation to file papers with state authorities—listing various details of its capitalization, business, and assets—and get specific authority to do business in each of the remaining 47 states.

On November 1, with all groundwork completed, the new company formally took over the operation of all the business of the two subsidiaries.

Announcing the reorganization, President W. S. S. Rodgers stated that there would be no change in management or policy of the Texaco organization. Officers of the present The Texas Company are the same as those of the former The Texas Company (Delaware); and except for the difference in name, there has been no change in debentures or in the manner of selling them or exchanging them. Stockholders were asked to send in their stock certificates promptly after January 1, 1942, to be exchanged for certificates bearing the new name.

T. K. SCHMUCK

THOMAS K. SCHMUCK, Attorney in The Texas Company's Legal Department, New York Offices, died suddenly on December 9. He was 53 years old.

Thomas Kirby Schmuck was born in Cincinnati, Ohio, June 15, 1888. He was graduated from the University of Cincinnati with a Bachelor of Arts degree, and received his LL.B. from the Cincin-

nati Law School. He practiced law before the Cincinnati bar from 1910 to 1917 as a member of the

firm of Schmuck and Jacobs.

On December 27, 1917, Mr. Schmuck was commissioned a Captain in the United States Army, and served in the Military Intelligence Division, General Staff, until February 8, 1919, at which time he was in charge of counter-espionage in the United States. He was a member of the Claims Board, Office of the Director of Purchase, War Department, from February, 1919, to 1920, and from 1920 to 1922 was Special Assistant to the Attorney General of the United States.



In 1923, Mr. Schmuck became an Attorney in the Legal Department of The Texas Company, and served with distinction in that post, particularly in the field of international law.

He married Ruth Miles Kinsey on December 25, 1913. They were divorced in 1938. On November 2, 1940, he married Pauline Campbell, who survives him. He is also survived by the first Mrs. Schmuck; a son, Thomas Kirby Schmuck, Jr., and by his mother, Mrs. E. O.

Schmuck, and sister, Mrs. Olive Thrasher, both of Cincinnati.

Tom Schmuck will best be remembered by his many associates in The Texas Company as a cultured, gracious personality, blessed with a sense of humor that was a delight to encounter. A true cosmopolite, he could discourse with equal charm, wit, and authority on Seventeenth Century literature, painting, early Roman and Greek bronzes, or on the more obscure and technical phases of the law. His untimely death is a severe loss, not only to the Company he served so well, but to those who were privileged to be numbered among his friends.

NEW WINGS FOR WAR AND PEACE

ROARING down the runway for the takeoff, the towplane pilot pushes his throttle ahead. The train of gliders, strung out behind him by ropes, feels the tug and lifts from the ground. The light, sensitive craft catch the air currents and rise rapidly in the wake of the climbing plane, one behind the other, until finally they are specks in the sky. Then, one by one, they cut loose and slip silently down to a quiet landing far from the airfield.

By learning the technique of tow gliding, selected pilots from the United States Army have begun to acquire a new kind of wings. Pilots have been sent by the Army Air Corps to the "gliding capital," Elmira, New York, for an intensive course in soaring and piloting tow gliders. Other pilots have been studying at Lockport, Illinois.

Full justification for military development of gliders came last Spring, when German troops swarmed out of the sky to capture the Island of Crete. They came in gliders carrying from 12 to 30 soldiers each, towed by lumbering old transports unsuited to aerial combat but ideal for this new purpose. As many as 11 gliders were strung out behind each plane. By air transport and gliders, the Germans landed an estimated 15,000 troops in an incredibly short time, along with rifles, machine guns, field pieces, even medical supplies and radio equipment.

Eleven years ago, tow gliding was given its pioneer publicity in America under the auspices of The Texas Company. The late Frank M. Hawks, famed aviator who was then Manager of Texaco's Aviation Sales Division, felt that the future of aviation lay in getting Americans used to the air. One of the

1930—Texaco aviators Hawks and Jernigan made headlines with the tow-glider *Eaglet*





Towed by the Texaco VII, the glider Eaglet soared across the continent, introducing a new phase in American aviation

Sportsman's thrill: Given a tug, the motorless craft soars like a bird on rising air currents



Best way of teaching boys to fly, thought Hawks, is to give them gliders



HANS GROENHOE

HANS GROENHOFF

cheapest, safest ways to teach eager American boys to fly, thought Hawks, was to furnish them gliders.

Besides, he argued, aircraft manufacturers could learn a lot about streamlining and wing curves from a study of gliding. Glider sportsmen say that in their motorless craft, without assistance from gasolinepowered engines, they learn to take advantage of all the vagaries of air currents, and can master the "feel" of a plane better than power pilots.

To publicize gliding, Captain Hawks took off from San Diego, California, on March 30, 1930, in the glider Eaglet. He was towed by a Waco biplane, Texaco VII, piloted by J. D. Jernigan, Aviation Representative of The Texas Company. Hawks landed in Van Cortlandt Park, New York City, after a spectacular eight-day flight across the country—36 hours and 47 minutes in the air. Over key cities along the route, Hawks would cut his glider loose from the tow plane and soar for a while over the landing fields to show the admiring crowds the Eaglet's paces.

The trip was an eventful one; through rain, winds, and thermal up-drafts that spiraled from sizzling deserts. Sometimes the feather-weight Eaglet would catch air currents which the Texaco VII plowed straight through, and would come soaring over her tow craft, leaving the line slack until the Texaco VII could regain its lead. Once the line snapped, but Captain Hawks, relying on his skill and the Eaglet's good design, brought the glider back 10 miles to a landing field. The Eaglet weighed only 290 pounds, had a wingspread of 50 feet, and carried one of the first instrument boards ever installed in a glider.

A few months later, the Eaglet found its permanent nest in the Smithsonian Institution in Washington, D. C., along with other famous aircraft. In making the presentation speech, Frank Tichenor, publisher of Aero Digest, said, "This glider and the work which Captain Hawks has done with it and in it, sponsored and financed by The Texas Company, are symptomatic of the inevitably victorious idea of



Major Frederick R. Dent, of Wright Field (left) climbs into an Army "two seater." Major Dent headed the glider research at Elmira

*

ers, representing 28 of the 48 states. Every Summer, at Elmira, New York, glider enthusiasts get together for gliding and soaring contests. They do not approach European records -the Germans have held glider meets since 1920but one American has climbed to 17,000 feet in his bird-like craft without being towed. The American distance record is 263 miles; time aloft, 21 hours. Modern gliders (particularly the sail planes used for soaring) are graceful, streamlined affairs of delicate beauty -light but strong, equipped with all the mechanism of an airplane except the engine. Once launched into the air by auto, plane, or rubber

launching cord, they must depend entirely on air currents for their motive power.

This year, gliders bearing the red, white, and blue insignia of the Army sailed alongside the amateurs competing at Elmira. The Army has reserved its first attention for combat planes, but for several months prior to the Elmira meet, the Army had been doing active engineering research and training on gliders for transporting troops. Other Air Corps officers were assigned to Elmira as observers. Recently, Lewin B. Barringer, crack civilian glider pilot, was appointed by Lieut. General Henry H. Arnold, Chief of the Army Air Forces, to head the Army's glider program.

Experimental gliders, now being built for the Army as troop carriers, will carry from two to 15

capping the brilliant achievements of our superlative American inventive genius with the intelligence and patience of competent, ceaseless, untiring research."

That was 1930—only three years after Lindbergh's non-stop flight to Paris—the same year that Amy Johnson made headlines by flying from London to Australia, Colonel Roscoe Turner flew from New York to Los Angeles in a little under 19 hours, and the British dirigible *R-100* floated into Montreal.

Aviation has come a long way since. Feats more amazing are accomplished every day, in 1941, without comment. And gliding seems to be getting its share of public attention. There are about 160 licensed glider pilots listed by the United States Civil Aeronautics Authority, and 124 licensed glid-



Lieut. General Henry H. Arnold, Chief of the Army Air Forces:
"A modern army must have all the new implements of war . . ."

HANS GROENHOFF

men. It is estimated that a troop-carrying glider, set loose at a height of 20,000 feet, could soar 70 to 100 miles over an enemy border before skidding to a stop on the ground. As silent in flight as the wind, they would escape all air-raid detectors.

Meanwhile, the United States Navy, which experimented with gliders as far back as 1934, is working on plans for troop-carrying gliders that will land on water. Contracts have been given by the Navy Department for experimental gliders, including large troop-carrying ships built of a newly developed, wood-impregnated plastic. Some of these, 24-place gliders, will each have a wing span of about 110 feet, and a gross weight of 12,000 pounds. Some 12-place ships being built will have a wing span of about 88 feet and will weigh 6,500 pounds. Both types will be amphibians, and can be towed by practically any combat aircraft in the Navy.

At present, the Army envisions the use of tow gliders for short hauls only. Says General Arnold: "We can't expect to tow strings of gliders behind airplanes over 3,000 miles of ocean, but we are certain that there are many missions for gliders which may develop in the future. For this reason, we don't know today what final form our glider force will take. We do know that we must have gliders, per-

haps hundreds and possibly thousands of them, capable of carrying at least 15 men each, together with full equipment, including rifles, machine guns, and even light cannon."

In England, specifications are said to have been drawn up for a "flying gas tank" glider, carrying 500 gallons of gasoline, which will be attached to a heavily loaded bomber that is taking off. Given the initial pull by the bomber, the glider will soar above it, transfer its load of fuel after the bomber has successfully gotten into the air, and then cut loose and return to the ground. Another proposed glider, the "piggy back," would attach to an over-heavy bomber by a short cable, and lend its lifting power until the bomber is well in flight.

Suggestions like these are more serious than they might appear. For tow-gliding, publicized by Texaco 11 years ago, has been marked for special peacetime duties, too, as an adjunct to other air transportation. Colonel Edward S. Evans predicts: "When this emergency is over, I can vision the day when great glider freight trains will cross the country at speeds of 100 to 200 miles an hour."

Texaco's Eaglet, snug in her berth of honor at the Smithsonian, may well preen herself on the contribution she made, back in 1930, to the future of aviation.





Rubber—a Military Necessity

By H. A. WRIGHT

Manager, Tire Sales, The Texas Company

High on the list of America's vital strategic materials is rubber. Due to present world conditions and especially the war in the Pacific, there is the ever-present possibility that this country may be cut off entirely from its principal sources of this important product.

Virtually every industry or business depends in some degree upon the use of rubber. From the automobile, in whose remarkable growth rubber has played a leading part, to the lowly pencil eraser, rubber has become an essential of our modern civilization. Industry and transportation, the lifeblood of our national defense, depend upon the uninterrupted flow of this material and the conservation of present rubber stocks.

Never before in our history has America's rubber supply been so important. Today's armies move on rubber. The blitzkrieg was born of the speed and mobility of rubber-shod armored trucks and tanks. Our fast-growing mechanized Army and our vast aircraft production have created huge new demands for rubber. The rubber industry has been drafted for its biggest job and is now concentrating on supplying our Army, Navy, and Air Forces with vital military equipment foreign to its normal operations. From America's rubber factories comes an ever-increasing supply of machine-gun bullet links, anti-aircraft gun mounts and carriages, combat tires, truck tires, scout car and tank tracks, airplane tires and de-icers, barrage balloons, gas masks, bullet-resisting, selfsealing gasoline tanks, and dozens of other products. One rubber company is operating a huge powder loading plant and two others are under construction.

Although no other nation in the world has such vast natural resources as the United States, all of our crude rubber must be imported across thousands of miles of ocean. Ninety-seven per cent of our supply comes from the Dutch East Indies, Malaya and Singapore, and about 65 per cent of this is carried in American ships. The big problem in this connection is to secure enough bottoms to carry it. Moreover, it is no longer possible for rubber to come to us by the shortest route—10,184 miles over the Atlantic by way of the Suez Canal. Now it must run the gantlet across the Pacific to West Coast ports, or through the Panama Canal to New York, a distance of 12.522 miles.

The United States uses more than half the world's supply of rubber. Last year we consumed 648,000 long tons, of which 450,000 tons went into tires and tubes. This year, due to the defense program, we are consuming at the rate of 800,000 long tons a year. At the present time, about 100,000 long tons of crude rubber per month are being imported. It is estimated that of this total, 40 per cent is used for national defense purposes. Despite the curtailment of new car production, it is not expected that much additional rubber will be released for the "replacement tire industry"—the market where American motorists replenish their worn-out tires—as far as actual tonnage is concerned, since there are no restrictions on heavy trucks, whose tires take large amounts of rubber.

Because our defense program is so vitally dependent upon the continuation of our rubber supply, the Rubber Reserve Corporation was created in June of this year for the purpose of accumulating a rubber stock pile in this country. All rubber coming into the United States is purchased by the Government through this agency, and then resold to rubber manufacturers.

Imports of crude rubber are allocated to each rubber manufacturer monthly by the Office of Produc-(Continued on page 14)



Latex sponge parachute seats (right) are but one of many uses of rubber in Army aviation

Scout cars (left) roll along a river bed on rubber tracks and bulletsealing tires



Rubber tracks (right) with embedded steel cables are being made by the thousands for tanks and scout cars



Raw synthetic rubber (right) is cut from blocks and goes into a "wash mill" for first processing step

Army men learn (left) to do a job they may encounter often. Changing tires on a mired truck is not so simple

(Left) With a triplesized needle, a worker puts the final touch on an airplane fuel tank which will seal itself against bullet holes

(Right) A rifleman tests a tire for mechanized warfare that can be riddled by bullets and continue to roll on without loss of air

PHOTOS NOT OTHERWISE CREDITED ARE FROM THE



RUBBER-A MILITARY NECESSITY

(Continued from page 12)

tion Management, according to a percentage of the total business each rubber company did for the 12 months ending March 31, 1941. From this allotment, the various companies must first manufacture products for defense. They may then use the balance of their supply for domestic, non-defense requirements,

There is urgent need for the Government to set aside each month part of the rubber imported, in order to build up a reserve stock pile. Including stocks in the hands of manufacturers as well as the Government's reserves, stocks of crude rubber increased 253,087 long tons during the past year. But the ultimate goal of the Rubber Reserve Corporation is a reserve of 750,000 tons for defense needs alone.

In order to increase the available supply, the four major rubber companies, in coöperation with the Government, are building factories to make synthetic rubber, of which butane derived from petroleum is a principal ingredient. While the total output of these plants will fill only a small part of the rubber needs of this country, nevertheless it will be an added source of supply and is the beginning of an important new American industry.

There is no better way to conserve rubber than

to equip your car with quality tires that will give you maximum service and the utmost in mileage. The mounting defense requirements for rubber goods have not affected the quality of the tires so essential to motor transportation and private car use. Subject to Government restrictions, it will still be possible for you to use your Texaco Credit Card to buy Firestone or Goodrich tires, tubes, and batteries.

Another effective way to conserve rubber is to have your tires re-treaded when they have worn smooth. If the body of the tire is safe and sound, a tough, long-wearing new tread can be applied which will give up to 80 per cent of new tire performance for about 44 per cent of the price of a new tire. We suggest that you ask your Texaco dealer to inspect your old tires, and he will advise you whether they can be safely re-treaded or whether the purchase of brand new tires is advisable. If the body of your old tires is in good condition, he will be glad to recommend a reliable firm which will apply a new tread.

The present situation in the rubber industry is a challenge to the American motorist. In these stirring times, we as individuals can serve our country well by conserving its supply of rubber and thus help to *Keep America Rolling*.

HOW YOU CAN HELP SAVE RUBBER



HERE are a few simple rules of tire care which will save millions of pounds of rubber annually for America and also save motorists money:

1. Always maintain the recommended or rated air pressures in tires. Under-inflated tires waste rubber.

2. Test tire valves for slow leaks. Replace with new valve or seal with an air-tight cap.

3. Whenever you change a tire, check the air pressure after a few miles of service.

4. Do not run a tire constantly on the same wheel. Instead, shift your tires from wheel to wheel every 5,000 miles to insure even wear.

5. Keep safe tires on all wheels—a blowout often damages a tube and casing beyond repair.

Don't take corners at high speeds; that practice wears tires faster than anything else.

8. Have your wheel alignment front and rear—checked every 5,000 miles, or at least every six months.

Give your tires a personal inspection occasionally.

10. Don't drive too fast on hot, dry roads. High speeds heat up tires and hasten the processes of deterioration and wear.

11. Start up gradually. Don't spin your wheels and grind off rubber.

12. Don't bump into curbs. No tire can long withstand such abuse.

13. If your car begins to steer queerly, pull off the road and examine your tires carefully. You may prevent a serious tire failure.



CIRENCESTER DIARY

EARLY in the present war, when London began to be threatened with bombs, the offices of our British subsidiary, The Texas Oil Company, Ltd., were moved for safety to Cirencester, a little town in Gloucestershire. Thirty per cent of the normal peacetime personnel of the company were serving in His Majesty's fighting forces or some other form of British national service, and were scattered far from their normal stations. To keep these Texaco employes in touch with one another, A. S. Runacres, Sales Manager of the English company, has been issuing a small, unofficial publication, The Cirencester: Gazette, which carries the latest Texaco gossip sent in by Texaco employes now far from home.

Last December's The Texaco Star told of the beginnings of *The Cirencester Gazette*. Since then, at least one other British Texaco employe has lost his life; others have climbed higher in their military careers; still others have taken on new wartime duties or traveled from one British post to another.

The Cirencester staff is very busy, and must get out the little *Gazette*, mimeographed economically on both sides of the paper, whenever there is time. Issues are often delayed, but when a *Gazette* appears it is crammed with items of personal interest, and gives an intimate picture of how Texaco employes are living under war-time conditions.

Consider this story: "Bdr. A. P. Chambers of the R. H. A., and late of Southern Branch Office, writes that for the last two months he and his battery have been hopping from one wood to another and sleeping when allowed to like babes in the wood. He mentions that in five nights and days he had exactly two hours sleep."

Another item from "L/Cpl. Mantle, R. A. S. C., and late of Dagenham Terminal, who has arrived safely in the Middle East and who is enjoying the sunshine, but not the flies. He says he is awakened each morning by a native who sells cups of tea."

At the previous writing, 118 employes of The Texas Oil Co., Ltd., had joined His Majesty's forces. A later issue of *The Cirencester Gazette* reports an assorted total of 119, including one Wing Commander in the R.A.F., five Captains in the Army, and two petty officers in the Navy. The addition of one more Texaco employe to the Royal forces may be thus accounted for:

"Mr. R. Rawlinson, formerly Fitter's Assistant at Manchester Terminal, and latterly with the Petroleum Board, joined the R.A.F. on the 6th May at the age of 20 years,"

Girls, too, are doing their part. "Miss Leonora

Dowling, now in the A. T. S. . . . wonders what will happen to her army habits when she returns to work with the Company—what will happen to the buttons she cleans so carefully each morning—will she leap to attention when spoken to by a superior colleague, and will she salute for her pay?"

Reminders that the Texaco employes are not playing at war are stories from men in actual combat:

"Sgt. W. D. Black, R.A.F., and late of Northern Branch Office, writes to say how pleased he is that he has at last got to an operational squadron which is engaged in long range night operations over Ger-



Birthplace of "The Cirencester Gazette"

many. At the date of his letter he had already done four raids, and he says, 'I now feel an old hand, but the real veterans of this outfit have done over 30 shows' . . ."

"... Gunner F. Etchells, formerly clerk in Northern Branch, was captured during the fighting in Greece and is now a prisoner of war in Italy. We hope to receive his present camp address, when we are sure many of his former colleagues will be only too pleased to write to him, as we all know how eagerly prisoners of war look forward to news of their friends . . ."

Then an abrupt note of tragedy: "It is with much regret we announce that Mr. H. J. Poulter, formerly truck operator at Battersea Depot, who was on loan to the Petroleum Board, was killed in London during an air-raid on the 19th April."

War is not kind to settled routine. Copies of The Texaco Star and Texaco Topics, publications issued in the United States and distributed to employes of The Texas Company, can no longer be sent to England. In the dark interim of wartime, The Cirencester Gazette is doing much to bolster the morale of the employes who read it, and to keep the British Texaco family in touch with one another.

OPERA AGAIN ON THE AIR FOR ITS SECOND SEASON UNDER TEXACO AUSPICES

Every Saturday afternoon ten million persons put aside the cares of a turbulent world for a time and listen to something that levels all differences of race and language and political beliefs, something that soothes rather than excites the emotions-the music of the Metropolitan Opera.

Through the sponsorship of The Texas Company these ten million listeners within the almost illimitable spaces covered by a network of more than 160 radio stations and supplemental facilities enjoy a treat that was once the sole privilege of the comparative handful who could crowd into the Metropolitan Opera House in New York.

The wonders of modern science-not alone the science of radio but the science that built The Texas Company to the point where it could sponsor such an enterprise-now furnish the world's best music to rich and poor alike throughout the Americas.

The opening of "The Met" on November 29 marked the beginning of the second year of opera broadcasts under Texaco's sponsorship. The 1940-41 season, the first year, was singularly successful in the public response and commendation it invoked.

The widespread interest in fine music shown by radio listeners was not the only factor that led to the second year of The Texas Company's sponsorship and to expansion of the broadcasting outlets. Much weight was added by the Company's firm conviction that music can and will play a vital rôle in strengthening public morale and in cementing international good relations. In broadcasting the opera, The Texas Company feels it does a service which contributes not alone to morale but to culture.

"Prominent music authorities have written in recent years," says W. S. S. Rodgers, President of The Texas Company, "of the help which American industry has contributed to the marked increase of music appreciation in this country, particularly through the radio sponsorship of opera, of fine orchestras, and of concert artists. The Texas Company hopes that its sponsorship of these programs will serve to continue the public good resulting from this partnership between industry and art. We dedicate our sponsorship to that end."

The broadcasts originate from the stage of the Metropolitan Opera House itself, and are picked up there by WJZ, key station of the National Broadcasting Company's basic Blue Network. A number of supplementary hookups make it possible for them to be heard in every corner of the United States and Canada. Short-wave transmitters carry them to Latin America, where appreciation of opera music is keen and widespread.

There are three interesting supplementary features in addition to the complete opera. Each of these runs about a quarter of an hour. Two of them are new this season. One of these, Music in America, is conducted by Morris Markey, magazine writer, nationally known as "the Reporter at Large." This feature was introduced by The Texas Company as a means of paying tribute on each program to some American city which has helped make America a great musical nation. These tributes identifying various communities with American musical progress originate in the broadcasting booth at the Metropolitan.

The other new feature, the Opera Forum Quiz, presents as a permanent board of experts Olin Downes, noted music critic; Sigmund Spaeth, famed as "the Tune Detective," and Eugene Stinson, former music critic of the Chicago Daily Times, as chairman. The three, with an honor guest selected each week, answer the most interesting opera questions sub-

mitted by listeners to the program.

The Opera Guild "At Home," a broadcast feature of last season, is continued this year. The Metropolitan Opera Guild is a membership organization of about 16,000 persons in every state of the Union and throughout Canada, and it was through this organization, formed in 1935, that the Metropolitan Opera House was preserved as a musical cultural center. "Listening groups" of opera lovers are a part of the Guild's activities. To them and other listeners The Opera Guild "At Home" presents through Mrs. August Belmont, its chairman, and Mrs. William Francis Gibbs, interesting personalities of the Metropolitan Opera Company in intimate chats on back-

Listeners' preferences as expressed in letters largely guided the choice of operas that are being broadcast during the current season, and also influenced The Texas Company in its decision to expand the number of radio outlets carrying the program.

The Texas Company is very proud of its part in bringing this gift of opera to a host of music lovers.



OPERA OPENING

Gallery entrance (left)
—no top hats, mink
coats, or diamonds
among some 800 who
wait for hours only to
stand through the
opera's opening performance

The lavishly decorated interior (right) of the Metropolitan Opera House a-glitter as an expectant audience awaits the curtain



"—In a beautiful fur coat, and so close I could have touched her—honesf!" This is a memory one little girl will treasure





Nash Ambassador sixes and eights, true to the 1942 trend, are long, low, and powerful

The Automobile Industry Meets The National Emergency

BY WILLIAM HARRIGAN

Technical and Research Division, The Texas Company

LEADERS in mass production, the automobile industry is now confronted with the gigantic problem of furnishing the engineering and manufacturing skill necessary to supply a wide variety of military equipment to meet the present war-time emergency. This, nevertheless, has not prevented the industry from making available 1942 passenger cars to the motoring public.

Although production of these automobiles has

been curtailed by decree, manufacturers, through research, are now preparing for an even greater market. They anticipate sales at some future time in excess of eight million cars a year.

A review of 1942 passenger cars reveals many ingenious uses of substitute metals, often so well planned that although it is a secondary choice, the change has been a definite structural improvement. These automobiles are more beautiful and more com-



fortable than ever, besides being more economical to operate.

One of the mechanical changes in 1942 production is the greater availability of automatic transmissions. Studebaker, Nash, Lincoln, Mercury, and Hudson, as well as Olds, Cadillac, Chrysler, De Soto, and Dodge, offer this convenience as optional equipment. With the exception of Hudson, these cars all utilize either fluid couplings or fluid drive with the automatic transmission.

The new automobiles are more streamlined than heretofore. Although at present they are adorned with considerable chrome plating, it is expected that shortly this bright trim will have to be discontinued.

While in the accompanying illustrations several views are shown of automobiles equipped with white side walled tires, the shortage of rubber, as well as the lack of manufacturing facilities, will soon remove this style tire from the market for the period of the present emergency.

Lincoln, for 1942, has bid a final farewell to door handles. Push button latch controls now are standard, both inside and outside, on doors of all models and on the luggage compartment as well.

Particularly noteworthy are the new airfoil fenders used by Buick, as well as other members of the General Motors group. These fenders blend into the very fine streamlining of the cars.

In convertible phaetons and coupés, nearly all makes offer very stylish models and provide electrically-operated tops.

For 1942, a noticeable change in body design is the trend to eliminate cowl ventilators. This permits the extension of the engine hood, improving the general overall attractiveness of the car as a whole.

Practically every automobile manufacturer is now engaged in the intensive manufacture of military equipment such as tanks, guns, trucks, or airplanes, and the departments handling these activities have, in themselves, in some instances even dwarfed the former facilities used in the manufacture of automobiles. This, of course, means that many automobile companies, particularly those building aircraft, may continue the manufacture of such products as part of their regular routine work after the war is over, which would be extremely desirable so that employment in the automotive industry can be maintained at a reasonably high level, even after our National Defense program has reached its goal.

It is generally believed that after the war the world's automobile markets will be badly dislocated. Foreign nations, in order to give employment to demobilized troops, may have to nationalize their employment. Many nations, as a result of mass war production, will be in an excellent position to manufacture automobiles in large quantities, and this may present the first serious competition the American automobile industry has ever had to combat. The reply to this challenge lies in the research laboratories of this country. Automatic transmission change speed sets, new and better engines, and lighter and more streamlined vehicles incorporating better engineering will be some of the factors which will keep American cars superior to all others.



OUR AMERICAN INITIATIVE

By PHILIP D. REED

Chairman of the Board, General Electric Company Metropolitan Opera Broadcast, January 11, 1941





UNDERWOOD & HINDERWOOD

In the veins of American citizens flows the blood of every race on earth. The mantle of citizenship is proudly worn by Americans of every creed and every color who came or whose ancestors came to this land from every corner of the world, from countries near and far, great and small, frigid, temperate, and torrid, and whose occupations embraced every trade and calling known to man.

A short while ago, as time is measured, America was populated only by its native Indians, and its vast natural resources of oil, coal, lumber, minerals and rich farm land were and had been for centuries lying idle and unused. Today America, though by no means perfect, is the greatest and strongest nation in the world, and its people have more of the good things of life—the necessities, conveniences and luxuries—than any other people have or ever had since the beginning of time.

There must be, and of course there is, a reason, an explanation for this wonderful achievement. We sometimes hear it said that America is great simply because it is more fortunate than other countries in having the natural resources I mentioned a moment ago. But this, though fortunate indeed, is not the answer. Other countries, for example Russia and China, have natural resources equaling or exceeding our own, and yet the great bulk of the Russian and Chinese people live in poverty unknown and undreamed of anywhere in America.

We must, then, look elsewhere for the answer. We find it in two great national traits or characteristics that are our dearest heritage as Americans, traits that we must recognize, use and preserve at all costs.

The first of these traits is initiative. Since the days of the earliest colonists, the millions of people who emigrated from their native soil in every quarter of the globe to this new land of ours had initiative of a high order. However happy or unhappy their native surroundings may have been, we all know that it is only the courageous and enterprising few who will, and in those early years who did, brave the dangers and discomforts of a long voyage in the hope of finding opportunity to better themselves and their families through hard work in a new and unfamiliar country.

We know, then, that the brave, strong trait we call initiative, or enterprise, is concentrated in the heart and character of the American people to a degree unmatched in the history of nations. Whether as individuals we represent the first generation or the tenth, that inborn urge, that desire to get on, and that willingness to work and plan for it, are our comfort and priceless heritage. It explains a great deal to those who seek to analyze the almost unbelievable growth in the strength, influence and standard of living of America. May we ever encourage and exercise our initiative to the full and may we never, through thoughtlessness or easy living, dull its bright edge or fail to breed and build it in our children and our children's children.

The other great characteristic of Americans is

their love of freedom. Indeed, freedom and initiative go hand in hand, for without freedom, initiative is frustrated, and without initiative, freedom is neither used nor appreciated. Having both to a high degree, the people of this country embraced and developed a system of government which we call American democracy. It differs radically and fundamentally from dictatorship or totalitarian government. In a democracy the government derives its powers from the people and it functions only as a mechanism for the orderly administration and performance of the people's bidding. In a dictatorship, however, the state or government is recognized as the supreme, allpowerful being over which the people have no control and to which every individual owes absolute obedience.

Also, under our American system, the individual is free to use his initiative and intelligence for his own and his family's benefit, whereas in the totalitarian state individual initiative is neither encouraged nor rewarded in the average citizen. The state plans, regiments, and assigns the tasks to be done. It tells one where to live, what to do, whom to work for, and at what pay. The thinking, venturing, and dreaming is done by the dictator and his intimates—not, as in America, by millions of citizens possessed of individual initiative and spurred on by opportunity and incentive.

This is precisely why we have so much in this country that no others enjoy. That is why we have thousands of research laboratories in colleges and in industry searching for and finding better and cheaper products so that all of us may have more for the work we perform. And that is why so many men and women of humblest origin rise to positions of national importance and great public trust.

We are living today in a ruthless and vital period in world history. Dictatorship in its most brutal and aggressive form is seeking to dominate the world. We in America are in process of producing enormous quantities of supplies and implements of war for the defense of our independence and our way of life. There are hard jobs to be done, high taxes to be paid, sacrifices to be made. There are also great opportunities to serve, to learn and to improve.

American initiative faces perhaps its greatest test and—I say it with complete confidence—its greatest victory. The strong, virile qualities that built America are in every one of us. We shall all go on making this a better land in which to live, and the great defense program now before us is but another step in the long journey. Beyond it, if we keep faith with the traditions of our forefathers, lies a realistic, economic, and therefore lasting world peace. Initiative and freedom are still ours. Let us demonstrate our worthiness to keep them. Let us get on with the job.

\star

"FIRST LADY" OF TEXACO STOCKHOLDERS



First woman ever to attend a meeting of The Texas Company's stockholders is Mrs. Sarah J. Campbell-Scott of Argyll Heights, Lampasas, Texas. During the time E. C. Lufkin was President of the Company (1913-1920), Mrs. Campbell-Scott attended such a meeting in Houston with her husband, W. T. Campbell.

"The meeting was formal and dignified," says Mrs. Campbell-Scott. "Afterward Judge R. E. Brooks,



Mrs. Sarah J. Campbell-Scott

a Director, told me I was the first woman stockholder to attend.

"The late J. S. Cullinan said that Mr. Campbell was the only one of the original organizers who predicted the future of the organization. Mr. Campbell, in the early days of the Company, went so far as to say that his grandchildren would be receiving dividends. Mr. Cullinan said that all the men were amused by this display of optimism."



Building a Texaco Asphalt road at Pine Camp, northern New York

Motorized Forces Keep Rolling on Texaco Asphalt

WAR EMERGENCY calls for large scale movement of troops and planes, feverish industrial activity, and increased travel by defense workers. Airports are jammed; highways must carry not only the nation's 27,500,000 passenger cars and 4,500,000 trucks, but thousands of military vehicles. To "keep 'em rolling" and "keep 'em flying," military authorities are taking most careful stock of America's roads and airports, drawing up maps of strategic highways, planning ahead for road improvements, new construction and paving, and new bridge building, that will be needed in months to come.

"Highway transportation," says Colonel Lacey V. Murrow of the United States Army Air Corps, "because it is the most flexible and least subject to delay and damage by aerial bombardment of all the transportation agencies now in use, must be given every possible opportunity to give the maximum service that is now necessary."

Thousands of miles of these vital highways and airports are paved with Texaco Asphalt. Years ago construction experts found that asphalt—because of its resilience, strength, workability, economy, its waterproof qualities, low upkeep cost, and ready availability—made an ideal covering for road and runway. For more than a third of a century Texaco has been furnishing asphalt for roads; it now covers streets in three out of four United States cities over 25,000 population.

Recently the rôle of Texaco Asphalt paving has taken on new importance. It covers not only the regular street and highway system, but access roads that lead to airports, defense industries, and military cantonments.

Inside the Army posts themselves, it is essential to have streets that are capable of standing up under grinding traffic and heavy mechanized equipment of a modern army—tanks, armored cars, artillery. Texaco Asphalt provides durable and resilient paving for a number of these military centers. Pine Camp, in northern New York State, has approximately 25 miles of Texaco Asphalt streets; Fort Bragg, North Carolina, has 95 miles.

Heavy tanks can roll down the asphalt-paved company streets without damaging them. They may stamp a tread mark in the paving like those left by tractors on country roads; but unless the tank swerves into a sharp turn and shovels up the roadway, the mark will be ironed out as soon as enough ordinary traffic has passed over it.

The resiliency of asphalt paving—its ability to take a shock without giving one in return—makes it particularly useful in the construction of airports. A big bomber, when landing, puts tons of weight on the pavement. Not only must the surface be able to take shock after shock, but it must allow no skidding of the plane, contain no loose particles that may be drawn into the propellors and damage them. A loose surface, furthermore, might cause a plane to nose over and wreck itself.

For paving runways and taxiways, Texaco Asphalt has met the most difficult demands. Millions of square yards of Texaco Asphalt have been laid in major Army and Navy air bases. The new air base constructed under the supervision of United States Army engineers at Windsor Locks, Connecticut, alone has 500,000 square yards of Texaco runways and taxi strips—equal to 50 miles of 18-foot highway. The asphalt plant used at Windsor Locks remains on the project, to pave service roads at the base. Contracts have been awarded for 80,000 square yards of camp streets at Mitchel Field, the chief Army air base in the northeastern United States. West Point cadets being trained at Stewart Field, Newburgh, New York, land their planes on Texaco-surfaced runways.

Three of the Navy's principal air bases, located at Norfolk, Virginia, Corpus Christi, Texas, and Jacksonville, Florida, are served by Texaco Asphalt runways. In addition, Texaco has surfaced a large number of civilian airports throughout the country, including some sponsored by the Federal Government because of their military value.

A new development in highway-air transportation—"flight strips"—will probably also be surfaced to a great extent with asphalt. These supplementary landing areas, built along highways, are planned to provide air service and dispatch depots and dispersal bases for the Air Force during attack.

Busy defense manufacturing plants, swamped with the automobiles driven to work by thousands of emergency employes, are using asphalt to construct additional parking spaces. The Grumman Aircraft Company at Bethpage, Long Island, and United Aircraft at Hartford, Connecticut, have not only built parking spaces, but also constructed their own private airplane runways with Texaco Asphalt.

Experts say that in wartime asphalt has many special advantages for the construction of airports and roads. It can be laid swiftly and economically. Its dark surface reflects relatively little light; and if it blends well with the surrounding territory it cannot be seen readily from the air. If it is bombed, holes in it can be readily patched without taking up large sections of the pavement, and the repaired surface is ready for immediate service.

America's existing highway network is envisioned by defense officials as a means of evacuating civilians from coastal areas in case of enemy attack, and of transporting troops and supplies swiftly from one section of the country to another. In the Defense Highway Act of 1941, Congress set aside \$220,000,000 to improve strategic portions of this system, and add new roads leading to defense plants and Army camps. The fundamentals of this road making are the same in war as in peacetime; with its long and honorable peacetime reputation, Texaco Asphalt is prepared to assume a strategic rôle in defense.

But asphalt is used not only in pavement. Though at one time oil men didn't know what to do with this thick, tarry petroleum residue, it is now one of petroleum's most versatile products.

Contained in roofing made by The Texas Company and other manufacturers, Texaco Asphalt covers roofs at many Army posts. In the construction of cargo boats (as important as roads in the transportation of supplies) Texaco Asphalt forms a waterproof lining for the outer shell of the boat. On deck, Texaco Asphalt is used to make a mastic floor that sheds water and protects steel plates. It coats underground pipe lines, shields steel cable from weathering. Special paper containers saturated with Texaco Asphalt are being used to protect gun shells from moisture.



Company street at Pine Camp, New York, built of Texaco Asphalt, Barracks such as those shown, and other buildings attraining camps and Army posts in many parts of the country, are covered by Texaco Asphalt roofing products



