




THE TEXACO STAR  
SUMMER 1943



The lubricating oil going into these war drums at a Texaco refinery may save lives by keeping some machine of Mars running smoothly in battle. Just as important as the petroleum fuels that power ships and planes and tanks is the fluid that protects their moving parts

PHOTO BY ROBERT YAPNALL RICHIE

If you come to New York City and plan to get in touch with acquaintances in the Company there, you will save time by making your intentions known at the Personnel Department, 18th Floor, 135 East Forty-second Street. Someone there will make you welcome and help you locate your friends.

# PETROLEUM

## SPEEDS THE PLOW

"WHERE does all the gasoline go?" ask automobile owners in areas where service station men who used to say "Shall I fill the tank?" now grudgingly state "I can let you have a *little*."

One answer is that gasoline goes abroad, and also to training camps and bases at home, to power planes, tanks, jeeps, PT boats, and the other war wagons carrying Allied troops to victory. That's the picturesque side of the story, but there's another answer. Gasoline, fuel oil, kerosene, lubricating oils, and greases are going in greater quantity than before to the agricultural home front.

The petroleum industry, its stills and grease kettles kept hot right around the clock, is truly fighting a two-front war, plus a war of transportation to get the right product to the right place at the right time.

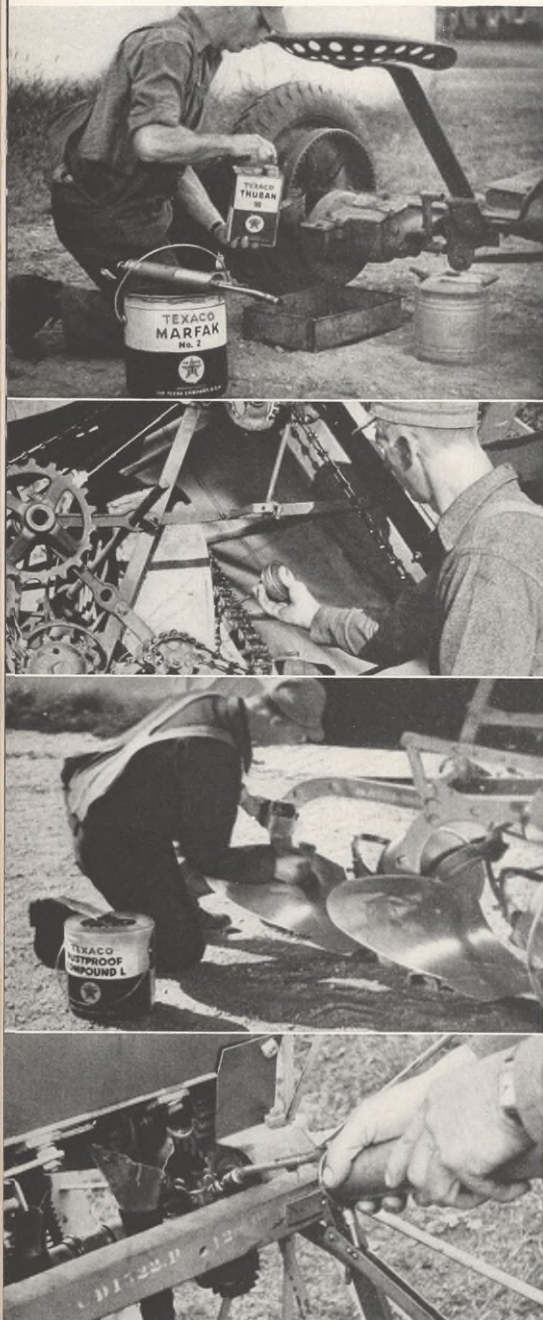
Agricultural requirements alone, this year, are for well more than *four billion gallons* of petroleum products, and if you remember even vaguely those "believe-it-or-nots" about how big a billion of anything really is, that's a tremendous quantity for the nation's refineries to be turning out in addition to huge military and other civilian needs.

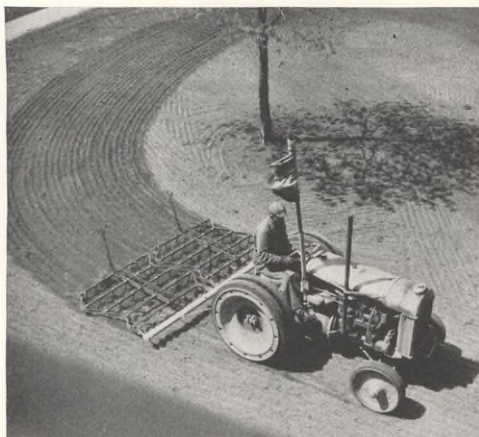
Two-thirds of gasoline, fuel oil, and greases used by tractors on farms this year are being consumed right now, in this third quarter of 1943, to produce the food that our armed forces and civilians need. Better than three billion gallons of the four billion total requirements are gasoline.

Farmers have a preferred status, too, when it comes to obtaining this gasoline for non-highway use. Not only does an army march on its stomach, as Napoleon said, but civilians work better when well-fed. The Government, the petroleum industry, and the farmer share the responsibility of maintaining morale with full meals.

In the horse-and-ox age of America, tallow or animal fat was the only lubricant needed for the simple farm tools of the day. Then came the horse-and-buggy era, after the discovery of petroleum, and the farmer's chief lubricant needs were heavy machine oil and a can of axle grease. In the Model-T stage of national development, fuel and lubricants began to come into their own.

Wear and weather are the enemies of farm machinery. Careful attention to correct lubrication, and application of a rust preventive when agricultural equipment is out of use, shorten the number of days until victory for every American farmer





PHOTOS, UPPER LEFT, JOHN HATLEN FROM FREDERIC LEWIS; ABOVE, EWING GALLOWAY; LEFT, PHILIP GENDREAU



(Above, left) The tractor, the farmer's mechanical horse, needs the best of fuel and lubricants. (Above) Horse power brings in the oats, mechanical power threshes the grain. (Left) Farmers have a preferred status for obtaining non-highway gasoline for tractors and trucks

Today farm machinery is intricate and delicate, and much of it operates at high speeds. Like other modern machinery, it requires specialized lubricants. Insulated Havoline Motor Oil, Texaco Fire-Chief Gasoline, and Texaco Marfak and Thuban are now extensively used on modern tractors, just as they are standards of quality for highway vehicles. Texaco Crater is the farmer's standby for gear teeth and open bearings, and Texaco Crystalite is ideal for use in kerosine-burning tractors, brooder house and incubator heaters, home cook stoves, and that old faithful of the open spaces, the kerosine lamp.

The Texas Company, however, does not simply furnish the farmers with this variety of products and call that the end of its responsibility. A farm handbook, *Harvest Gold*, full of useful information and suggestions on the care of machinery, is available; a Texaco Tractor Check-Up "Clock" can be had to show when to service tractors and what care they

need at each service period; a Texaco Tractor Lubrication Guide for every make of tractor, duplicating the Texaco Lubrication Guide used to lubricate the family car, and also a Texaco Lubrication Guide for each type of field machinery.

Texaco's newest product to help the farmer keep his difficult-to-replace machinery in good working order is Texaco Rustproof Compound, an excellent means for retaining the earth-polish on surfaces of plows and harrows, and for keeping all exposed metal clean and sharp during Winter storage or even during short out-of-use periods.

Turn whatever way you will, you find petroleum's essential helping hand today. From the fuel oil that powers battleships and the toluol that makes the explosive TNT, to the synthetic rubber on which the war worker's car rolls and the Texwax that covers the housewife's jelly jars, petroleum is helping win another world conflict.



(Left) Flower bed behind Dallas bulk station was made into a vegetable garden this year by 68 Dallas District Sales employees and some neighborly help. (Right) New Orleans District Sales gardeners get advice from Asst. District Manager H. J. McConaughey (in foreground)

## THE LAND SURRENDERS TO TEXACO TASK FORCES



(Left) Port Neches gardens, on ground set aside for employees in the plant's cottage area, produced encouraging, ration-free food. (Right) Eighty-six members of the Beacon Texaco Association, Beacon Laboratory, Beacon, N. Y., entered a Victory Garden contest. Frank Farrell, association president, awards first prize to H. H. Cross for his excellent garden



(Left) Houston employees held a Country Fair when gardens ripened. One thousand attended, admired, danced

(Right) Planners of Houston's Fair: H. L. Hawkins, W. B. Davis, W. C. Samuels, J. B. Freeman, Ferd Reiger, H. L. Chauvin





LEVICK FROM FREDERIC LEWIS



Vice President Torrey H. Webb today and (left), as Postmaster Patten of New York handed him mail pouches for the first air mail flight

## FIRST WINGS OF THE MAIL

1st Lieut. Torrey H. Webb, Now a Texaco Vice President, Was the Original Aerial Postman 25 Years Ago

THE DATE was May 15, 1918; the time a few moments before 11:30 a.m.; the place Belmont Park, Long Island, New York, and the occasion something novel—mail was to be carried by airplane between New York and Washington.

Postmaster Thomas G. Patten of New York had just handed 1st Lieut. Torrey H. Webb of Gazelle, California, two pouches containing 2,457 pieces marked "aerial mail," and had made a speech saying that the event marked a new epoch in the transmission of intelligence. Lieut. Webb's Hispano-Suiza single-motored JN-4 plane had been readied for the take-off, and the zero hour of 11:30 was approaching when Alan R. Hawley, president of the Aero Club, rose to speak.

At 11:30 on the dot, Lieut. Webb, accustomed to the military method of doing things on time, climbed into the cockpit and streaked down the field. Mr. Hawley's words were drowned by the roar of the engine, and every eye was turned skyward for 10 minutes until the plane was lost from sight.

Lieut. Webb made his way southward by compass and contact, reached Philadelphia in exactly one hour, and turned the plane over to 2nd Lieut. James C. Edgerton, who set it down in Washington 200 minutes after it left New York.

Another flight, from Washington to New York, was scheduled for the main event of the day, but was less fortunate. Lieut. G. L. Boyle made a successful

take-off from the Polo Grounds in Washington's Potomac Park at about the same time Lieut. Webb left Long Island, but compass trouble began after only 25 miles of flight. He lost his way, was forced down at Waldorf, Maryland, and his plane's propeller was broken in the landing.

Mail was flown from Philadelphia to New York on May 15 by Lieut. Howard P. Culver, without waiting for the Washington flight. It went by truck and train from the Long Island field to New York's post office, beating regular train mail time by 75 minutes. Lieut. Edgerton picked up the delayed Washington-Philadelphia-New York mail on May 16 and brought it to the Long Island field.

Three weeks later, Lieut. Webb opened the New York-to-Boston air mail service, and also piloted the first air-mail flight from Boston to New York on June 9, 1918.

Torrey H. Webb is now a Vice President of The Texas Company with headquarters in Los Angeles. Major Reuben H. Fleet, the U. S. Army Signal Corps officer in charge of planes and pilots for the momentous first air mail flight, is an official of the Consolidated Aircraft Company, also in California. The two had not seen one another for 25 years, but as the nation's press was hailing the 25th anniversary of the air mail, they met with other present and former aviators at the Los Angeles Aviation Forum and quietly accepted congratulations.

## TANKERMAN GETS W. S. A. HERO MEDAL



**A** YOUNG Texaco employee had a medal pinned on his chest the other day. It wasn't a soldier's or sailor's medal for military or naval heroism, yet it equaled such medals in every way. It was the Merchant Marine Distinguished Service Medal.

The employee, Stanley Lee Neal, was most modest, if not actually embarrassed, at receiving the award. Capt. Granville Conway of the War Shipping Administration pinned it on his lapel, while other Texaco and War Shipping Administration people looked on approvingly. As soon as the ceremonies were over Lee unpinned the medal, put it in its box and the box in his pocket, and then felt better. He was still a little uncomfortable carrying a scroll which read:

*"For heroism above and beyond the call of duty."*

*"The tanker upon which he served was effecting the rescue of 123 survivors of a Brazilian passenger ship which had been torpedoed by an enemy submarine. At imminent risk of his own life, Neal twice went overboard into waters swarming with sharks to rescue survivors from floating wreckage. On one occasion, he succeeded in bringing two wounded and completely helpless men to and aboard his ship. Later, he again went overside to wreckage upon which an elderly woman had been lashed, freed her, and brought her to safety. On each occasion, ship's officers were forced to lay down a continual pistol fire against the sharks to insure a small measure of safety to Neal in his heroic efforts."*

*"His high courage and complete disregard of his own safety in effecting these rescues are in keeping with the highest tradition of the United States Merchant Marine."*

*"For the President"*

(Signed) EMORY SCOTT LAND, Chairman"

Lee, who is 23, was a messman on one of Texaco's



Capt. Granville Conway of the War Shipping Administration pins Merchant Marine Distinguished Service Medal on Stanley Lee Neal

tankers which picked up the survivors of a Brazilian passenger and freight ship that had been torpedoed by an Italian submarine. He joined the Marine Department's Ship's Personnel some nine months ago, and this was his nearest approach to actual warfare.

The survivors, some of them wounded and others suffering from exposure, had been afloat on rafts and wreckage for 20 hours. The sea swarmed with sharks. When the tanker neared them, Lee came up from the galley, dove into the water, and was pulled back to the deck three times bearing helpless survivors.

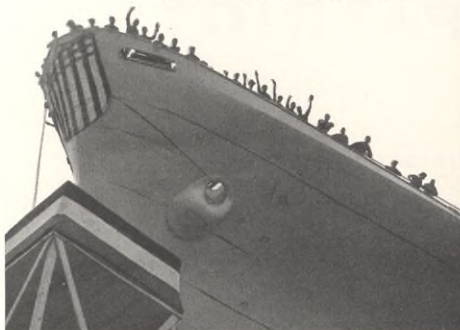
"What did you think about those sharks?" someone asked him after he got the medal.

"I didn't notice 'em much myself," said Lee. "Guess I was kind of busy."

It took the tanker crew four hours to bring the 123 survivors aboard "after colossal efforts," according to one of them, who continued: "The wonderful treatment extended to us by the crew was indeed a heartwarming experience. They gave up their clothes and sleeping accommodations, and their cabins and berths were transformed into hospital quarters. Even the master of the tanker had to sleep out on deck, as his cabin was occupied."

Stanley Lee Neal walked out of the War Shipping Administration offices just as he came in, a hero in a plain blue suit. He went home to Pennsylvania, where he used to run a service station, for a short stay with his wife and baby. Meanwhile, Texaco ordered a handsome watch engraved in honor of one of the most outstanding of its many heroes.

# **"I CHRISTEN THEE DELAWARE!"**



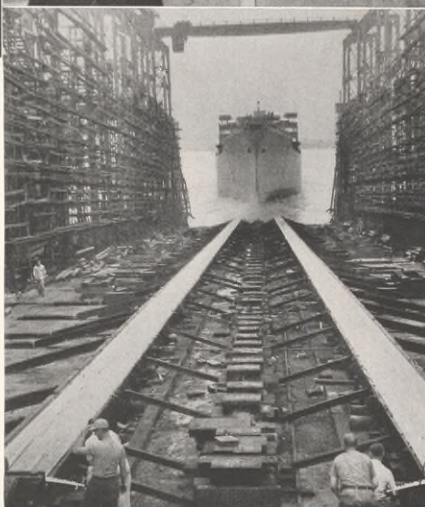
The tanker *Delaware* just before she was launched

(Top right) Mrs. J. Sayles Leach was the sponsor

(Right) The *Delaware* rides smoothly down the ways

LIKE the building of a tanker in war time, its launching is a swift, serious, business-like affair. Texaco's *S. S. Delaware* was scheduled for launching early July 12 at the Sun Shipbuilding and Dry Dock Company, Chester, Pennsylvania. A few minutes before the appointed time, a small launching party from The Texas Company whisked into the shipyard. Mrs. J. Sayles Leach, the sponsor, wife of a Texaco vice president, broke a bottle of champagne on the *Delaware's* bow, and in less time than it takes to tell it, the vessel was afloat.

As the launching party passed out through the gates, workmen began building another tanker on the shipway the *Delaware* vacated.



The launching party rose at dawn to catch slack tide on the Delaware River, which is necessary for safe launching. In the center, next to Mrs. J. Sayles Leach, the sponsor (with flowers), stands Capt. Sverre Petersen. He commands the *Delaware*, which is already in her country's service

# STAR PATRIOTS

## STAR PATRIOTS TO DATE

### Killed in Action or Died in Service

THE TEXAS COMPANY AND SUBSIDIARIES,	
U. S. armed forces . . . . .	17
AFFILIATES, Allied armed forces other	
than U. S., and civilians . . . . .	30

### Missing

THE TEXAS COMPANY AND SUBSIDIARIES,	
U. S. armed forces . . . . .	2
AFFILIATES, Allied armed forces other	
than U. S. . . . .	5

### Prisoners of War

THE TEXAS COMPANY AND SUBSIDIARIES,	
U. S. armed forces . . . . .	4

AFFILIATES, Allied armed forces other	
than U. S. . . . .	3

### Interned

THE TEXAS COMPANY, civilians . . . . .	1
THE TEXAS COMPANY, U. S. armed forces	2
AFFILIATES, civilians . . . . .	37
AFFILIATES, civilians previously interned	
and repatriated . . . . .	9

### Employees Serving the Government as Civilians

THE TEXAS COMPANY AND SUBSIDIARIES	129
AFFILIATES . . . . .	22

Figures include persons listed on this and the following page, and in previous issues. Unless otherwise identified, they are from The Texas Company

## KILLED IN ACTION OR DIED IN SERVICE

GLEN LEMAR BOSSIER, Case and Package Division, Refining Department, died May 15, 1943, in the Naval Hospital at Norfolk, Virginia. He enlisted in the United States Navy January 10, 1942.

ARTHUR B. CHANDLER, Warehouseman, Sales Department, Dallas District, was killed recently in an accident in California. He entered military service May 31, 1942.



WILLIAM A. MOORES

1ST LIEUT. WILLIAM ALEXANDER MOORES, Pilot-Mechanic, Producing Department, Louisiana-Arkansas Division, was killed in an airplane accident on March 16, 1943, at Jackson, Mississippi.

WOODROW LYNNE MOORMAN, Cook's Helper, Producing Department, Louisiana-Arkansas Division, Houma District, was killed June 11, 1943, in an airplane crash at sea while on convoy duty in the Caribbean Area. He was the son of W. O. Moorman, Rotary Driller, Houma District, and entered military service October 8, 1941.

LOVIC CLYDE PENNINGTON, Sales Department, Atlanta District, was killed in action in North Africa on March 13, 1941.

MARTIN H. T. SMUTS, Rate Clerk, Caltex (Africa) Limited, was killed in action November 3, 1942.

## MISSING

D. H. MICHAEL, Clerk, Caltex Limited, Sydney, Australia, was reported missing in October, 1942.

LIEUT. FRANCIS PEATTIE, formerly an experimental helper at Beacon Laboratory, Refining Department, has been reported missing in action in the South Pacific. He entered military service January 8, 1942.

## PRISONERS OF WAR

L. J. HOLDAWAY, Country Salesman, Caltex Limited, Sydney, was previously reported missing. He has now been reported a prisoner of war.

## INTERNEED

PVT. LARRY A. LOGGINS, formerly Oiler and Stock Gauger at Jal, New Mexico, for Texas-New Mexico Pipe Line Company, saw action on the Philippines, on Bataan, and at Corregidor with a Coast Artillery company, and is now a prisoner of the Japanese.

## EMPLOYEES SERVING THE GOVERNMENT

FRANK F. AXTELL, Engineer, Refining Department, Port Arthur Works: Foreman (Boiler House), Neches Butane Products Company.

VERNON M. BERRY, Controlman, Refining Department, Port Arthur works: Operator, Neches Butane Products Company.

(Continued on facing page)

## Employees Serving the Government

(Continued from facing page)

W. F. BERRYMAN, Sub-Foreman, Refining Department, Port Arthur Works: Neches Butane Products Company.

R. H. BROOKS, Special Assignment, Refining Department, Lawrenceville Works: Special Assignment, War Emergency Pipelines, Inc.

DAVID M. CHUMBLEY, Jr. Clerk, The Texas Pipe Line Company, South Texas: Ground School Instructor, Army Air Force Cadets, Texas.

JAMES V. CONWAY, Tester, Refining Department, Bayonne Terminal: Inspector, Quartermaster Depot, War Department, Jersey City, N. J.

E. L. CORRIE, Sr. Clerk, Comptroller's Department, Houston, Texas: War Emergency Pipelines, Inc.

F. H. GOODYEAR DANIELS, Reg. Rest Room Inspector, Sales Department, Buffalo District: Civilian Instructor, Naval Flying Cadets.

E. A. DOHMANN, Tank Inspector, The Texas Pipe Line Company, Oklahoma Division: War Emergency Pipelines, Inc.

O. E. DRODDY, Gangpusher (Insp.), Refining Department, Port Arthur Works: Inspector, Neches Butane Products Company.

O. ENGBRETSON, Clerk, Refining Department, Port Arthur Works: Stock Clerk, Neches Butane Products Company.

HAL U. FISHER, Clerk, Export Sales Department, New York Office: Foreign Operations Committee.

WILSON FISHER, JR., Kaw Pipe Line Company: Civilian Instructor, Army Air Corps, at a Texas air field.

J. R. FLEMING, Chemical Engineer, Refining Department, Port Arthur Works: Chemical Engineer, Neches Butane Products Company.

H. J. GOODWIN, Assistant Stabilizer Operator, Refining Department, Port Arthur Works: Civilian Instructor, U. S. Army.

ALBERT GREGERSEN, District Geologist, Producing Department, Pacific Coast Division: P.A.W.

E. F. HANLON, Clerk, Export Sales Department, New York Office: Foreign Operations.

EMIL L. HEBERT, Assistant Creditman, Sales Department, New Orleans District, Civil Air Patrol.

A. L. HOOPER, Right-of-Way Agent, The Texas Pipe Line Company, Illinois Division: War Emergency Pipelines, Inc.

R. P. HOPSON, Assistant to Vice President, The Texas-Empire Pipe Line Company: Manager of Crude Oil Purchase and Sales, War Emergency Pipelines, Inc.

PHILIP C. HUMPHREY, Manager, Public Relations Department: Special Consultant to the Director in Charge of District No. 1, P.A.W.

J. B. KELLY, Experimental Laboratory Operator, Refining Department, Port Arthur Works: Pilot, Ferry Command Service.

ELWOOD H. LE BARON, Oiler-Stock Gauger, The Texas Pipe Line Company, East Texas Division: Welder, The Sonken-Galamba Supply Company.

WILLIAM V. McDONALD, Tester No. 2, Refining Department, Port Arthur Works: Civilian Flight Instructor of Aviation Cadets, U. S. Army Air Forces.

CHAS. W. MELONEY, Construction Engineer, Export Sales Department, West Indies: Assistant Supervising Engineer in charge of Oil Handling Facilities, U. S. Navy, Balboa, Canal Zone.

ROBERT D. MUTCH, Stake Truck Operator, Sales Department, New York District: Civilian Instructor, Army Air Force Cadets, at a Pennsylvania air field.

ROBERT PALMER, Gas Plant Compressor Operator, Refining Department, Port Arthur Works: Civilian Instructor, Army Air Force Ferry Service.

H. D. PENDARVIS, Stillman, Refining Department, Port Arthur Works: Operator, Neches Butane Products Company.

J. E. ROBBINS, Pumper, Producing Department, Oklahoma-Kansas Division: 1st Lt. Pilot, Civil Coastal Air Patrol, Corpus Christi, Texas.

W. C. ROUNTREE, Gang Foreman, North Texas Division, The Texas Pipe Line Company: Pipe Line Inspector, War Emergency Pipelines, Inc.

G. F. RUSSELL, Stillman Helper No. 1, Refining Department, Port Arthur Works: Instrument Man No. 1, Neches Butane Products Company.

O. G. SANDERS, Electrician, Refining Department, Port Neches Works: Instrument Man No. 1, Neches Butane Products Company.

EDWARD SCHOEN, Clerk, Sales Department, Boston District: Supplies & Distribution Staff, Petroleum Industries Committee, New Haven, Connecticut.

E. F. SELMAN, Clerk, Refining Department, Port Arthur Terminal: Civilian Navigation Instructor, Army Air Forces at a Texas air field.

LAWRENCE SMITH, Gang Foreman, North Texas Division, The Texas Pipe Line Company: Pipe Line Inspector, War Emergency Pipelines, Inc.

\*J. B. SNODGRASS, Operating Representative, Sales Department, New York District: Supplies and Distribution Committee—District No. 1, Office of Petroleum Administrator for War.

E. P. TIFFANY, Pumper, Producing Department, West Texas Division: War Emergency Pipelines, Inc.

C. W. WISE, Chief Clerk, Illinois Division, The Texas Pipe Line Company: Supervisor of Pump Station Construction, War Emergency Pipelines, Inc.

\*Assignment completed.





IN ★ ★ ★ ★  
THE ★ ★ ★ ★  
SERVICE ★ ★



**CALTEXANS  
IN UNIFORM**

P. F. C. John Williams of Accounting & Auditing

California Texas Oil Company, Limited, a young company with many young men among its personnel, has lost heavily to the services

P. F. C. Arthur J. Minnaugh was a Caltex Payroll Clerk



Seaman 2c Stanley L. Torgersen worked as a Stenographer



Pvt. Eugene J. Holley, Signal Corps, from Payroll Divn.



Lieut. William E. Squire is in engineering aviation work



Lieut. David H. Rowson, Naval Reserve, now on distant seas



Cpl. Paul F. Crouch, an Army man, had a secretarial job

**PIPE LINE PEOPLE IN THE ARMY**

Pipeliners are giving a good account of themselves in the services. For some reason, many of them seem attracted to the Air Forces



Aggie M. Thornton (left), pilot, A.A.F., from Sundown Dist., Texas-New Mexico Pipe Line Company



Billie B. Johnston of Texas-New Mexico Pipe Line Company



1st Lieut. Marvin J. Spivey, The Texas Pipe Line Company



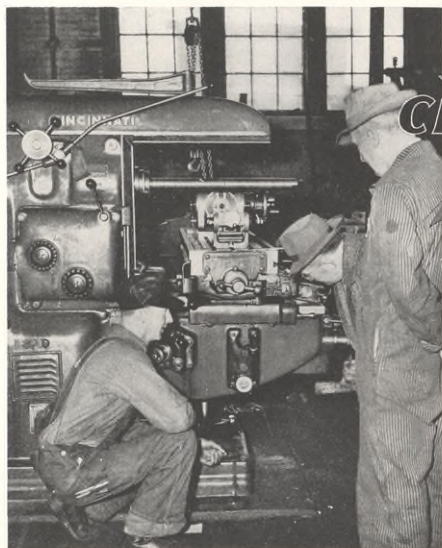
Edward L. Miller from The Texas Pipe Line Company



Cecil R. Trull was a Texas Pipe Line Company employe



Lieut. Robert B. Gentry, from The Texas Pipe Line Company



R. D. Hone, Texaco's Chief Lubrication Engineer in Butte District (center), personally checks product performance

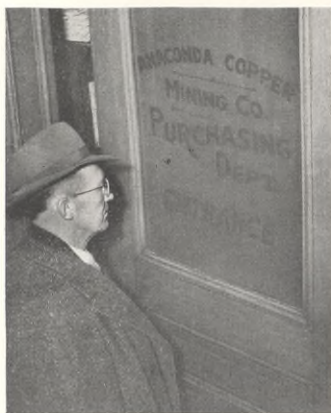
## STAR CLOSE-UPS

TEXACO  
SERVES  
A WAR  
PLANT



Hone and two Anaconda employees, D. J. Robbinette and F. W. Bellinger, look over an oil sample at a power plant sub-station in Butte, Montana

Hone discusses products, orders, and services with M. O. Scott, Anaconda's Asst. Purchasing Agent



Chief Lubrication Engineer Hone keeps in close touch with Anaconda's local headquarters as well



**M**ANY large companies, like The Texas Company, serve war plants throughout the nation. One of these is Anaconda Copper Mining Company, which buys a large portion of its lubrication needs from Texaco.

Such nation-wide companies are the prime concern of the National Sales Division of The Texas Company's Sales Department, which keeps contact

with them and makes sure the products they need will be available when and where they are wanted.

Some of Anaconda's largest operations are in Anaconda, Great Falls, and Butte, Montana, and these locations are served by the Butte District Sales Office of The Texas Company in line with the National Sales Division's policies.



# STAR CLOSE-UPS

TEXACO  
A WAR P



An Anaconda purchase order comes to Butte District Sales Office (left)

A portion of the Butte District Sales staff is shown at its desks (above)

Hone talks about stocks on hand with H. T. Place, Chief Clerk, Order Group



Credit Manager F.N. Gould and Assistant Credit Manager H. C. Weingartner have a share in the handling of some of the orders

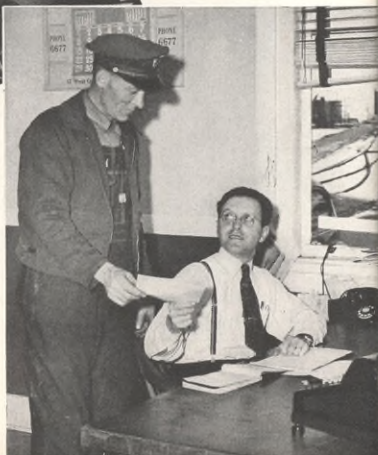


District Manager J. D. Barton (right) talks industrial sales with two of his assistants, H. G. Carmichael and G. T. Cour



Mrs. Marjorie Nick phones an Anaconda order to the warehouse

Truck Operator W. J. Silk is handed the order by Warehouseman J. B. McBride



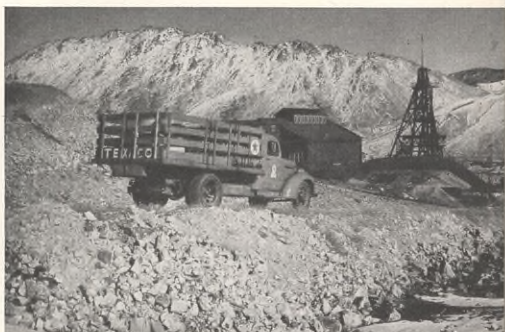
ERVES  
LANT



Tommy McGree picks out the products ordered from stocks in Texaco's warehouse in Butte



Bill Silk loads the products aboard his stake truck bound for one of Anaconda's plants



Silk's truck route begins at the Butte warehouse

He delivers products through the rugged terrain on the outskirts of Butte



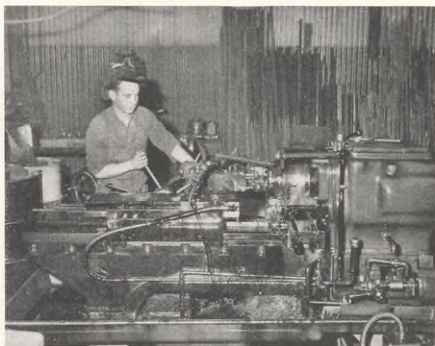
Silk takes two cases of grease to an Anaconda machine shop

(Below) Truck Operator Silk gets Robert McKenzie's signature on the grease delivery invoice

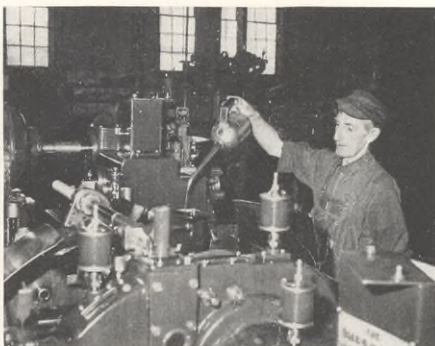
Leo Bens, the guard at Anaconda's Hawksworth Bit Shop, is acquainted with Silk, but that gun is ready



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



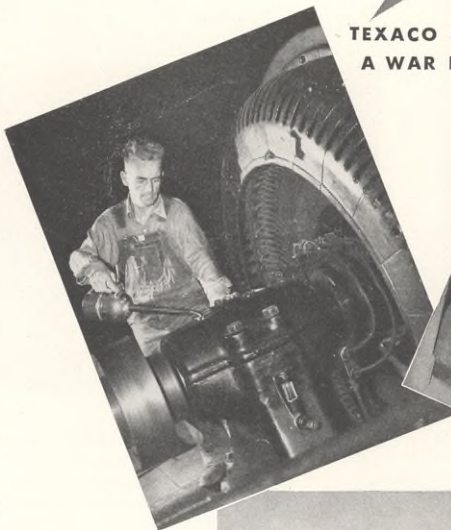
Cutting drill steels on a turret lathe is George Foley's task; Texaco lubricants help



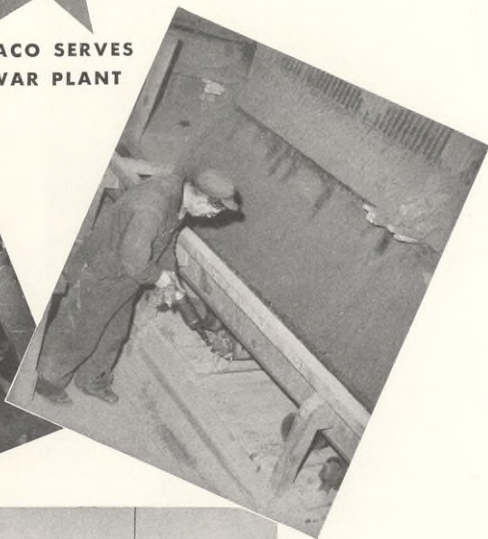
Machinist Frank Bagaff oils a threading machine in Anaconda's Hawksworth bit shop

## STAR CLOSE-UPS

TEXACO SERVES  
A WAR PLANT



(Above) Tommy McGee oils huge generators at a power substation



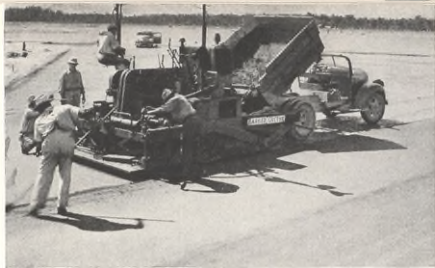
(Above) Texaco lubricant goes on an Anaconda conveyor belt idler pulley

Anaconda's metals and Texaco's products are reunited in engines of war



PHOTO U. S. ARMY SIGNAL CORPS

THE TEXACO STAR



(Above) Texaco asphalt being laid on an airport runway. An asphalt surface is excellent for landing commercial or military craft



(Above) Any typical Army camp may have streets like this one, which are of Texaco asphalt



(Left) Texaco asphalt roofing protects all homes in this housing project near a war plant

## ASPHALT HELPS US WIN

By MAJOR ROSWELL P. ROSENGREN

Chief, Office of Technical Information, Army Engineer Corps

**T**HE ROAD to an Allied victory is paved with asphalt.

American bombardiers now blasting Axis bases and fortifications and fighter pilots swooping down on enemy planes and troop concentrations learned the tricks of their trade on asphalt-covered training fields. Taking off and landing on runways made of asphalt, thousands of other young aviators are learning to follow the paths of glory blazed by such men as Colin Kelly and Buzz Wagner. On taxi ways and landing strips and wide aprons of asphalt the Army Air Forces begin their flights to victory.

Workers making asphalt are doing a first and fundamental job in preparing the Army Air Forces for their devastating attacks on Germany, Italy, and Japan. United States planes fighting from New Guinea to the rim of the Mediterranean are a long way apart, but they all took off first from asphalt

landing strips in the United States. Even planes going out to combat depend on good asphalt runways. Our planes taking off from continental bases in their ceaseless search for Nazi sub raiders are all based on asphalt fields. And many of the planes which pounded the Jap bases in the Aleutians took off from asphalt strips in Alaska.

The Army Ground Forces also depend on asphalt. The vast network of roads in military establishments all over the United States would more than provide three 20-foot highways from New York to San Francisco, and many of these roads are built of asphalt. Over them travel an endless parade of Army vehicles, including everything from jeeps to General Sherman tanks, from scout cars to the self-propelled 105 mm. howitzers that blasted Rommel's Afrika Korps. Hundreds upon hundreds of miles of access roads to

Here's a rubber-shod 155-mm. gun, and it takes plenty of tires to give it mobility. Texaco Mineral Rubber, an asphaltic product, goes into the present-day manufacture of tires

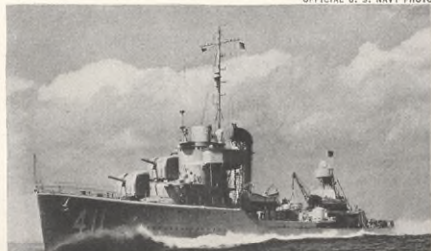


United States warships are protected by paints and varnishes in which Texaco asphalt is an important ingredient. The Navy's cordage gets asphalt waterproofing, too

KEYSTONE



OFFICIAL U. S. NAVY PHOTO

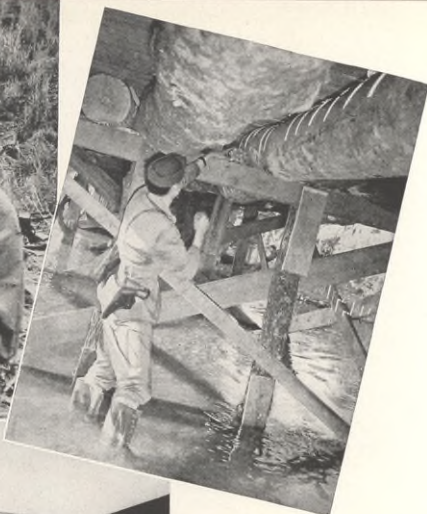




KEYSTONE

(Above) Shells, such as those for the mortar shown, are protected from factory to firing line in asphalt-treated tubes

(Right) Thousands of tons of Texaco asphalt make a waterproof lining paper for cases in which to ship war machines



OFFICIAL SIGNAL CORPS PHOTO

(Above) This Army engineer is about to blow up a bridge. The fuse leading to the explosive has been waterproofed by being dipped in asphalt



GENDEAU

camp, airfields, and other Army installations and highways essential to military or industrial war needs have also been built in the past two years, and a great part of these are made of asphalt.

Second only to the use of asphalt for paving is its use for building. Every type of cantonment construction is using as much asphalt as can be obtained. The Army must have asphalt because it is tops in resisting weather and wear. Asphalt is a basic need for the building of storage magazines, those igloo-shaped buildings, mounded over with earth, in which the Army's ammunition is carefully protected. Asphalt is used also for the clean, solid flooring of Army hospitals. This, in itself, is an enormous need, for the entire population of Kansas City, Kansas could be housed in hospitals built for troops. Asphalt as siding or as flooring, as roofing or as a binding agent, is to be found wherever troops are stationed in the United

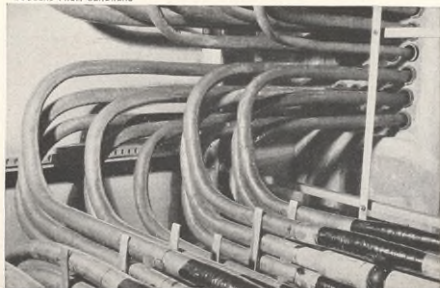
States. It covers and protects our soldiers and it helps them to get the right living conditions they need while learning to smash the Axis.

During the last six months of 1942 the United States Army used about 693 million gallons of asphalt for all these purposes in the United States, its Atlantic bases, and its supply divisions overseas. Some 30 million gallons were used for paving and roofing overseas during this same period, and that does not include any of the uses to which it may have been put in our great North African and Sicilian campaigns.

Asphalt is really at war. General Nathan Bedford Forrest told the whole story years ago when he said, "The art of war is to get there fustest with the mostest." You can't get there at all unless you have the buildings to house and supply your men or the roads to travel on. Asphalt, by providing the United States Army with both, is helping it to smash the Axis.

Texaco asphalt coatings on power lines and communications cables safeguard the transmission of messages and power in war time

DOUGLAS FROM GENDEAU



This pipe line is being wrapped with asphalt-saturated felt. A large tonnage of Texaco asphalt keeps oil pipe lines from corrosion



IN ★ ★ ★ ★  
THE ★ ★ ★ ★  
SERVICE ★ ★



Burton W. Cole,  
Woodworking



Maj. Violas Bishop, Solvent Dewaxing Units, ranks high among engineers at a Pacific outpost

MEN AT ARMS  
FROM PORT  
ARTHUR WORKS



L. H. Reed, from  
the Laboratory



W. S. McElwee worked  
in the Machine Shop



Lieut. W. B. Thomas,  
Power Dept.; U.S.N.R.



The Lab's H. C.  
Thompson, Jr.; A. A. F.

Port Arthur Works, chief operating unit of the Refining Department, contains one of the largest concentrations of Texaco's employe population. Literally hundreds of employes from this great refinery, with a vast amount of chemical and mechanical knowledge, are now in their country's service



Doward Hankins, C. &  
C. Building; overseas



Harry Dore worked  
in the Office



Herman Hankins,  
Machine Shop



1st Lieut. Chas.  
E. Provost; Lab.



Sgt. O. Mitchell,  
Grease Plantman



Clifford J.  
Burke, Paraffine



James A. Stewart,  
Boiler Shop

B. J. Ford, from  
the Grease Plant

Michael Maltese,  
Grease Plant

W. H. Salter of  
the Lab.; overseas

L. Ramirez,  
Yard; Air Forces

Milton P. Di-  
onne, C. & C.

W. J. McKague  
Dewaxing Units



IN ★ ★ ★ ★  
THE ★ ★ ★ ★  
SERVICE ★ ★

REFINING  
MEN WITH  
THE COLORS



T.Sgt. Michael A. Risk,  
Technical and Research

THE WORLD is fighting a war of machines and of technical skill. Men in the Refining Department are men with a natural knack for machinery, an inborn ability to understand and to use the devices made necessary by warfare as waged today. Each in his own post is bringing much credit not only to the Army but to the Refining Department, which has contributed a substantial proportion of its hard-to-replace personnel to the armed forces



Arthur E. Bower, Jr.,  
Technical and Research Divn., N. Y.



Donald Lee Strickland,  
Warehouseman, Jacksonville



P.F.C. L. C. Swarthout,  
Army Air Forces, was Rackman at Mobile



2nd Lieut. Cecil A. Cobb  
used to be Gauger at  
West Dallas Works



S.Sgt. Roy T. Cochran,  
Army Air Forces, was a  
Loader at Pryse Works



M. E. Motley, from  
West Dallas Works,  
was trained in advanced flying



Howard Griffin, Technical & Research, in the Signal Corps



Travis Moberly, RM 3c—S 2c, left Pryse Works for the Navy



M.Sgt. E. L. Browning, Tech. & Research; in the Army



Sgt. S. L. Brogli, Charleston Terminal; in the Marine Corps



Cpl. Frank M. Moore, Casper Works, is in the Signal Corps



Lieut. Richard F. Ames, Geophysical Dept., Tulsa, Okla., is a Signal Corps map man

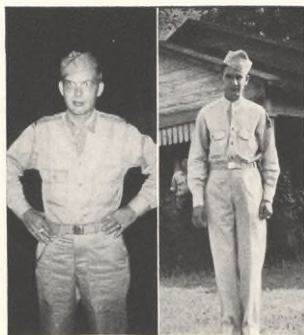
1st Lieut. J. G. Blevins, W. Texas-New Mexico Dist., taken with his company's mascot

# IN ★ ★ ★ ★ ★ THE ★ ★ ★ ★ ★ SERVICE ★ ★ ★ ★ ★

## PRODUCERS SERVING UNCLE SAM



MANY MEN of the Producing Department are highly valuable in the armed forces because their peace time jobs familiarized them with equipment adapted to war



Maurice W. Kennedy, Land and Leaseman, W. Texas Division, is a 2nd lieutenant

P.F.C. Pat L. Watson, in the Army, from the Geophysical Division, Houston



S.Sgt. M. M. Arce-mont was in the Louisiana-Arkansas Divn., Houston Geophysical Divn.

Pvt. William J. Graham, Engineering Department, New Orleans, trained to be a weather observer

(Top) Pvt. A. C. Champagne, Geophysical, Houston. (Above) J. W. O'Brien, Manvel Dist.

Pvt. Glen W. Baxter, Acctg. Clerk, Tulsa Office, was an officer candidate at infantry school

1st Lieut. James L. Kincaid, former Petroleum Engineer, W. Texas Divn., is in field artillery



Pvt. Geo. W. Nichols, Rocky Mountain Divn.

T.Cpl. J. Lee Crosby, Pump-er from Tulsa

Pvt. Benny Arrigo, Lafayette Dist., an airman

T. A. Myers, Lafayette Dist.; a paratrooper

Pvt. C. G. Myers, from North Kansas Division

Lieut. Edward W. Smith, Ft. Worth Office

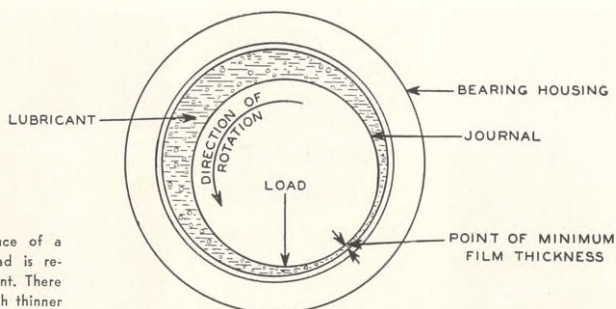


Figure 1. Clearance of a bearing under load is reduced at one point. There the oil film is much thinner

## KNOW YOUR BEARINGS

By ALLEN F. BREWER and J. J. MIKITA

Technical and Research Division, New York

OVER the Channel hundreds of roaring engines propel a flight of bombers and fighters towards an inland objective, a factory where Axis diesel engines are built. The production of these diesel engines must be stopped. High over an enemy naval fleet a tiny speck selects its target, peels off, and dives. The smashing of a floating airdrome, the home of enemy fighters, is the objective. An armored vehicle careens over the rough terrain towards the horizon where in a cloud of dust tanks are in mortal combat. In a jeep a major general rides to the front line to inspect troops preparing for an attack. Miles away transport vehicles are carrying the one thousand and one supplies of war. This is World War II and the internal combustion engine is king.

Not only on the war front but also on the home front, the internal combustion engine plays its important rôle. It powers those trucks, buses, and cars which are transporting men, women, and materials to and from war plants which are out-producing the Axis. Truly, the internal combustion engine is vital in this struggle for the Four Freedoms.

To do this vital work efficiently and well, the internal combustion engine must have fuel and lubricating oil. The petroleum industry is doing more than its part in providing these products. However, the finest fuels and lubricants available are of small benefit if the engine is not in good mechanical adjustment; if a motor oil is allowed to become badly contaminated; and if the air filters and oil filters are neglected.

Most automobile engine bearings fail due to some factor which caused overheating. It is heat which causes the gases in the cylinder to expand and do useful work on the piston. It is also heat which destroys bearings. In the combustion chamber, the heat

not utilized for doing work on the piston is rejected to the cooling water and to the exhaust gases. These mediums for taking away excess heat are flexible. In reality they constitute a "safety valve" to prevent overheating. In a bearing there is no such "safety valve" for heat. The amount of heat that can be carried away by the oil circulating through the bearing and by other means is limited. Whether the bearing seizes or scores can be traced to some factor which causes overheating.

Thus the problem of correct replacement of precision bearings becomes one of not doing anything that may cause excessive bearing temperatures. Fundamentally there are only two causes of excessive bearing temperature and these causes are inter-related: (a) Friction and (b) Insufficient oil.

It must be remembered that the oil acts not only as a lubricant but also as a coolant. If for any reason the supply of oil to a bearing is reduced, less heat is carried away from the bearing and its temperature will rise. There are many factors in installation which affect the subsequent bearing friction and accelerate bearing failure; the following list contains only some of the more important ones:

1. Dirt
2. Insufficient or excessive clearance
3. Misalignment
4. Improper fits of bearings in crankcase saddle bores or caps
5. Out-of-round, scored, or worn journals

Precision bearings and the caps and saddle bores into which they fit are machined to very close tolerances. With bearing linings 0.002 to 0.005 inches thick and with journal to bearing clearances 0.0015 to 0.0035, a matter of a few ten-thousandths of an inch becomes important. The life of the bearing in service will depend on how well these clearances can

be maintained. Thus during fitting or bearing replacement, misalignment on the order of 0.0005 to 0.0010 or reductions in clearance of the same magnitude may be serious.

Dirt is perhaps the greatest enemy of bearings. Engine manufacturers install oil filters and air filters on engines to keep dirt out of engines because they realize that the life of engines can be materially increased if dirt is kept out. A few simple precautions necessary to keep dirt out of engines during bearing replacement never constitutes too high a price to pay for increased bearing and engine life.

This article is adapted from The Texas Company's technical publication *Lubrication*, of which Mr. A. F. Brewer is the editor

SHAFT

BEARING SURFACE

BEARING BACK

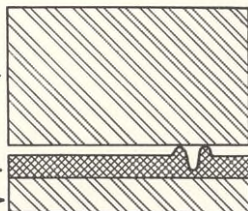


Figure 2. This shows, on an exaggerated scale, how a particle of foreign matter thicker than the oil film can score the surface of a bearing. Scoring helps generate great heat

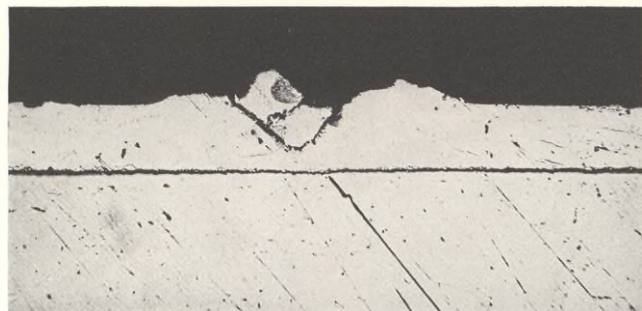
Although the clearance of a bearing may be 0.0015 to 0.0035 inches under static conditions, in operation the clearance in one portion of a bearing is materially reduced and the oil film thickness may be as low as 0.0001 inch. This is illustrated in Figure 1, which shows the position assumed by a rotating shaft in a bearing. Even extremely minute particles of dirt in the oil will not pass through the point of minimum film thickness without acting as a lapping medium on both the journal and shaft. Particles larger than the thickness of the oil film either pass through the bearing, leaving a deep scratch as shown in Figure 2, or become imbedded in the bearing surface as shown in Figure 3. In either event damage is done.

Under load, the small protuberance on the bearing surface resulting from deep scratches or dirt imbedment will rub against the shaft and heat will be gen-

erated. This heat will cause a rise in temperature of both the bearing and the oil film. As a result, the bearing film thickness, which depends on viscosity, will decrease, more protuberances and high spots will contact the shaft and, if the cycle of events proceeds far enough, the oil film becomes so thin that metal-to-metal contact will occur generally over a large portion of the bearing and temperatures will rise excessively, eventually resulting in "burning out" of the bearing.

Even should the conditions not be so severe as to cause bearing failure as described above, the high "spot" temperatures in and adjacent to the protuberance will accelerate fatigue failure of the bearing. Small cracks will develop in the bearing adjacent to the protuberance, and gradually the varying oil pressure will loosen a small section of babbitt. This small section of babbitt, no longer bonded to the back, rubs against the shaft. Because it cannot dissipate heat through the bearing back for lack of good contact, it eventually disintegrates. The disintegrated particles are then carried through the bearing so that the entire process of scratching and imbedment is repeated.

Anything which interferes with the heat dissipation of a bearing has an effect on the resulting performance. It is common to find bearings assembled with particles of dirt between the bearing back and crankcase or connecting rod bore. The effect of a particle of dirt in such a location is illustrated in



NORMAL  
BEARING LEVEL  
BABBITT  
BEARING BACK

Figure 3. This bearing surface, shown highly magnified, has been disarranged by an imbedded dirt particle

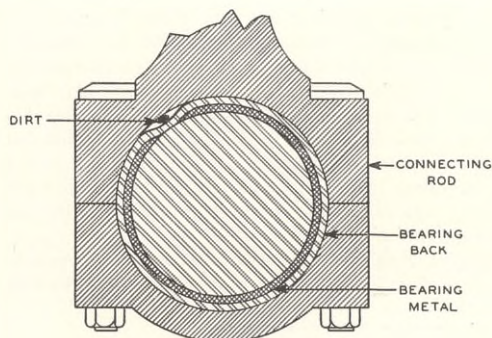


Figure 4. This dirt particle, larger than the thickness of the oil film, will cause heating

Figure 4. A section of the bearing is deflected from the bore and consequently heat transfer through this section is retarded, thus resulting in increased temperature at a small section of the bearing surface. To further aggravate this situation, the bearing is no longer round and the shaft will bear on the high spot, which will further increase the temperature at this particular location. The final result is similar to that previously described for scratches and dirt imbedments—shortened bearing life.

To avoid these troubles, it is necessary to keep dirt out of engines during operation and overhaul. The air filter, the oil filter, and regular change of the motor oil all are excellent precautions in service. When the engine is undergoing repair or adjustment, adhering to the following practices will go a long way towards preventing troubles from dirt:

1. Keep work benches, tools, and machine equipment clean.
2. Wash all parts possible with kerosine or a solvent or use a suitable degreasing outfit.
3. Clean crankshaft oilways with a small brush and kerosine or solvent.
4. Thoroughly clean cylinder block after valve grinding, cylinder grinding, or honing operations.

5. Make certain bearings and crankpins are clean when bearings are installed.
6. After the engine is assembled, flush with a suitable flushing oil before charging with the normal lubricant.
7. Drain crankcase after first 200 or 300 miles of operation after overhaul.

The matter of cleanliness cannot be over-emphasized. Proper practices in this regard will add many miles to the life of equipment.

The few gallons of gasoline a month now granted to the average A ration book holder do not indicate that much mileage will be put on his car under current operating conditions. In severely rationed areas the mileage, expressed in terms of oil-change, might indicate that the average motorist would consider it necessary to change oil only twice a year—or

when the seasons dictate a crankcase drain and refill.

But, in terms of limited mileage, when engines are shut off at the least provocation to save gas, that's just when the potential damage to the oil film on the cylinder walls may develop. Most motorists "choke" when starting, whether the engine is warm or cold. That throws momentarily an excess of liquid fuel into the cylinders, to "cut" or dissolve the oil film. Later, this gasoline accumulates in the crankcase to thin down the motor oil. If the motorist were driving at 50 to 60 miles an hour, for long distances, the engine temperatures would be sufficiently high to vaporize some of this gasoline and enable it to be discharged by way of the crankcase breather. At 35 miles maximum, however, engine temperatures are lower and keep this from happening.

Accordingly, many motorists probably are lubricating their automobile engines with a mixture of gas and motor oil most of the time, unless they change their oil more frequently than heretofore. The cost of two or three more oil changes a year is a small price to pay for insurance against having to put up the car for the duration because of irreparable damage to critical materials in the engine.

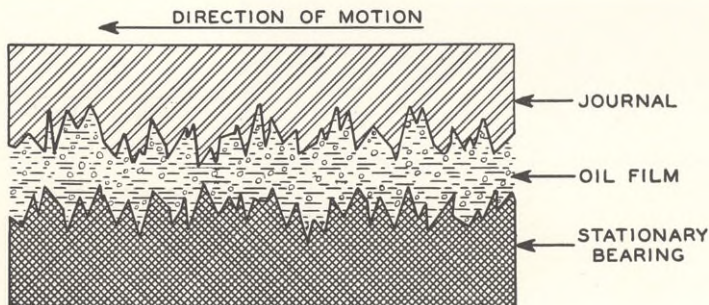


Figure 5. Roughness of the surfaces of a journal and bearing is exaggerated in this illustration. If the oil film becomes thinner, more and more high spots come in contact. Heat thins the film when they rub, and later the bearing fails

IN ★ ★ ★ ★  
THE ★ ★ ★ ★  
SERVICE ★ ★



Capt. C. J. Simms,  
an infantry instructor



Sgt. Gilbert Romero,  
an officer candidate

TEXACO MEN  
FROM CASE  
AND PACKAGE



Britton Hilton, Jr.,  
is an Army private

Carl E. Merriam,  
a sergeant at ease



SERVICE MEN FROM THE SALES DEPARTMENT



Ist. Lieut. M. C. Lewis,  
a Dallas Marine



Troy M. Dasher, Jr.,  
Marine from Atlanta



Ist. Lieut. Arnold  
Anderson, Army Air  
Corps, Roofing Division,  
New York



D. W. Galbraith of  
Los Angeles District



Lieut. D. E. Lewis,  
Agent, San Francisco



Nestor J. Genest of  
East Hartford, Conn.

M.Sgt. H. T. Frantz,  
Los Angeles Office



S.Sgt. L. W. Nordgren  
of Los Angeles

Ralph P. Gentry was  
Agent, Sacramento



M/M E. J. Bidwell,  
Los Angeles District

L. M. Twist, Marines,  
came from Buffalo



J. J. Rapp, Stamford,  
Conn., now overseas

Ralph Miller from  
Roofing Divn., N. Y.



G. J. Rheault from  
Los Angeles Office

Capt. A. N. Lilley,  
Los Angeles Office



## PETROLEUM MAKES THE BOMB AND THE BANG



Petroleum not only produces toluol, a basis of TNT. Crude but highly powerful bombs are made from a sock full of explosive (left) dipped in heavy grease, with a fuse

With this grenade, a man can cripple a tank (below)



U. S. ARMY SIGNAL CORPS PHOTOS



These men are armed with Molotov cocktails—bottles of gasoline with fuses—and sticky grenades

Ideal attack is to blow a hole in tank armor with a sticky grenade, then toss incendiary into hole

### James Tanham is Appointed to the War Labor Board

VICE PRESIDENT James Tanham of The Texas Company recently was made an industry member of the War Labor Board. For several months previously he served as a Special Mediation Representative of the Board.

Mr. Tanham has been a Vice President of The Texas Company since September, 1941. He has a record of 24 years of service with the Company, back to the day when he entered its employ as a Stenographer in the Executive Offices, New York.



James Tanham

### "There Can Be No Failure . . ."

"It is going to take literally oceans of 100-octane and other highly specialized engine fuels to fight this war to a victorious conclusion. . . . It will simply not be possible to sustain our air armadas in the skies . . .

or to provide our mechanized ground forces with all that they require if, at the same time, the demands of an unrestrained civilian consumption have to be met at home.

"Certainly, no one will deny that there can be no failure on our part to meet the military requirements—in full, and on time. To do less could only mean the unnecessary prolongation of the war and the needless loss of countless American lives."—Ralph K. Davies, Deputy Petroleum Administrator for War.



★  
The young Marine at the left, whose picture was published in the First Section, War Service Number, The Texaco Star, is H. L. Porter, a former employee of the Producing Department, New Orleans Office. He was identified before, in error, as Private 1st Class M. G. Baxter from the same office

Lieut. Col. W. F. Marshall (second from left), Real Estate Representative for the Sales Department's Atlanta District before the war, meets at a Caltex station in Cairo, Egypt, Lieut. D. Miller, lessor to The Texas Company of a service station in Lakeland, Florida. The two were business associates before their connections with Texaco. The sign on the wall behind them reads "The Texas Company, Caltex"



A U. S. Marine Corps tank (below) in a war zone far from home gets an overhauling by tank crew members whose job is to keep this unit of Uncle Sam's fighting machines in top-notch condition. This crew uses Texaco to do it

OFFICIAL U. S. MARINE CORPS PHOTOGRAPH





## "To Secure the Blessings of Liberty..."

The Texas Company (including wholly-owned subsidiaries operating in the United States) .....	4,396
Foreign Subsidiaries (operating outside the United States) .....	39

### Affiliated Companies—Domestic

Texas-New Mexico Pipe Line Company .....	58
The Texas-Empire Pipe Line Company .....	21
Kaw Pipe Line Company .....	50

### Affiliated Companies—Foreign

The Bahrein Petroleum Company Limited, and California Texas Oil Company, Limited .....	105
California Arabian Standard Oil Company .....	13
N. V. Nederlandsche Pacific Petroleum Maatschappij .....	3
Colombian Petroleum Company .....	17

U. S. ARMED FORCES ONLY, MID-JULY. ABOUT 700 IN OTHER ALLIED NATIONS' FORCES

