

Brown Boys in Blue

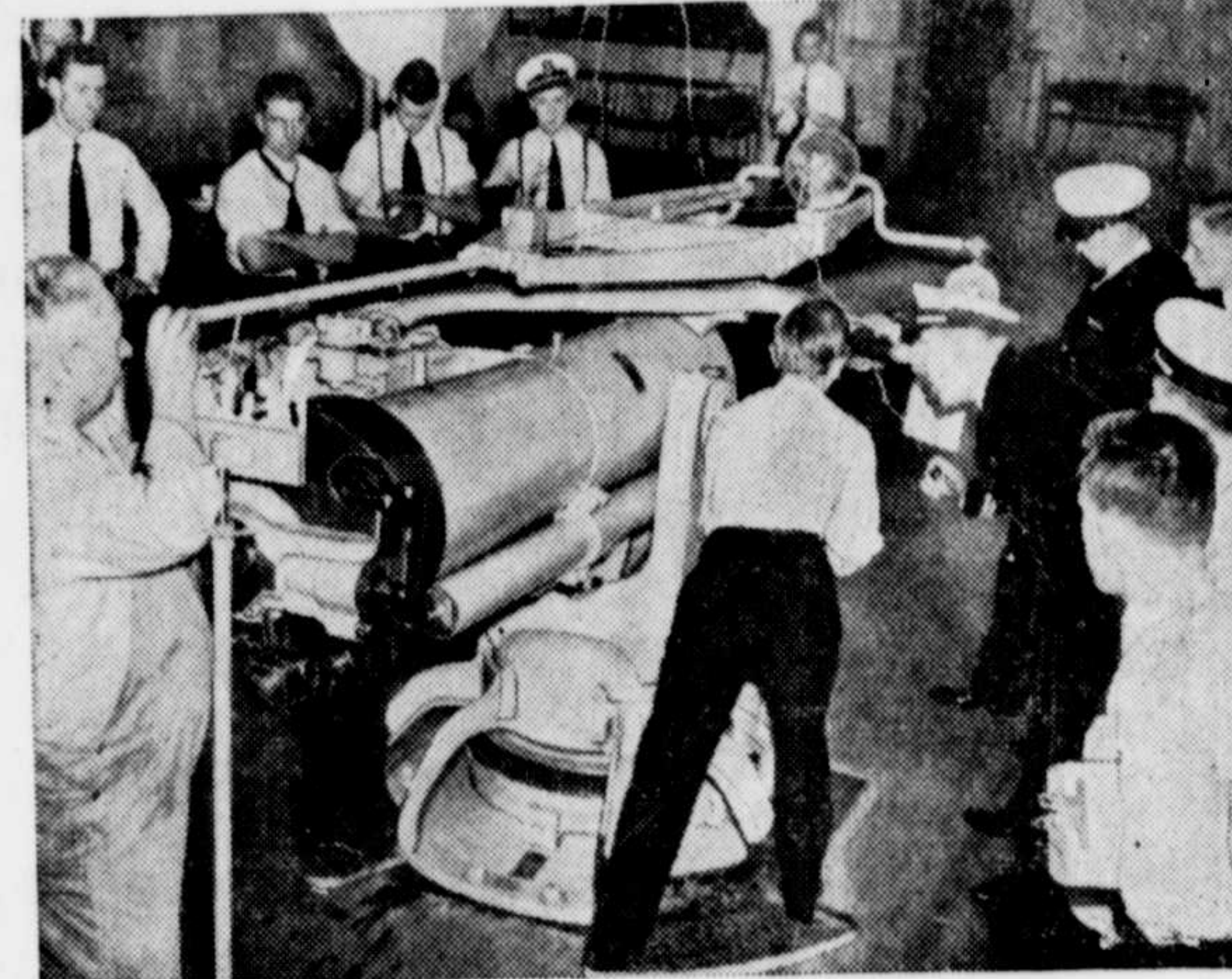
The navy department has established naval reserve officers training corps at various colleges throughout the nation. Typical of these is the unit at Brown university, Providence, R. I., where the navy has a key base at nearby Newport. These photos take you to Brown, and show you how the Brown boys in blue are learning the arts of the seagoing warrior to man the fortresses of floating steel that are our first line of defense.



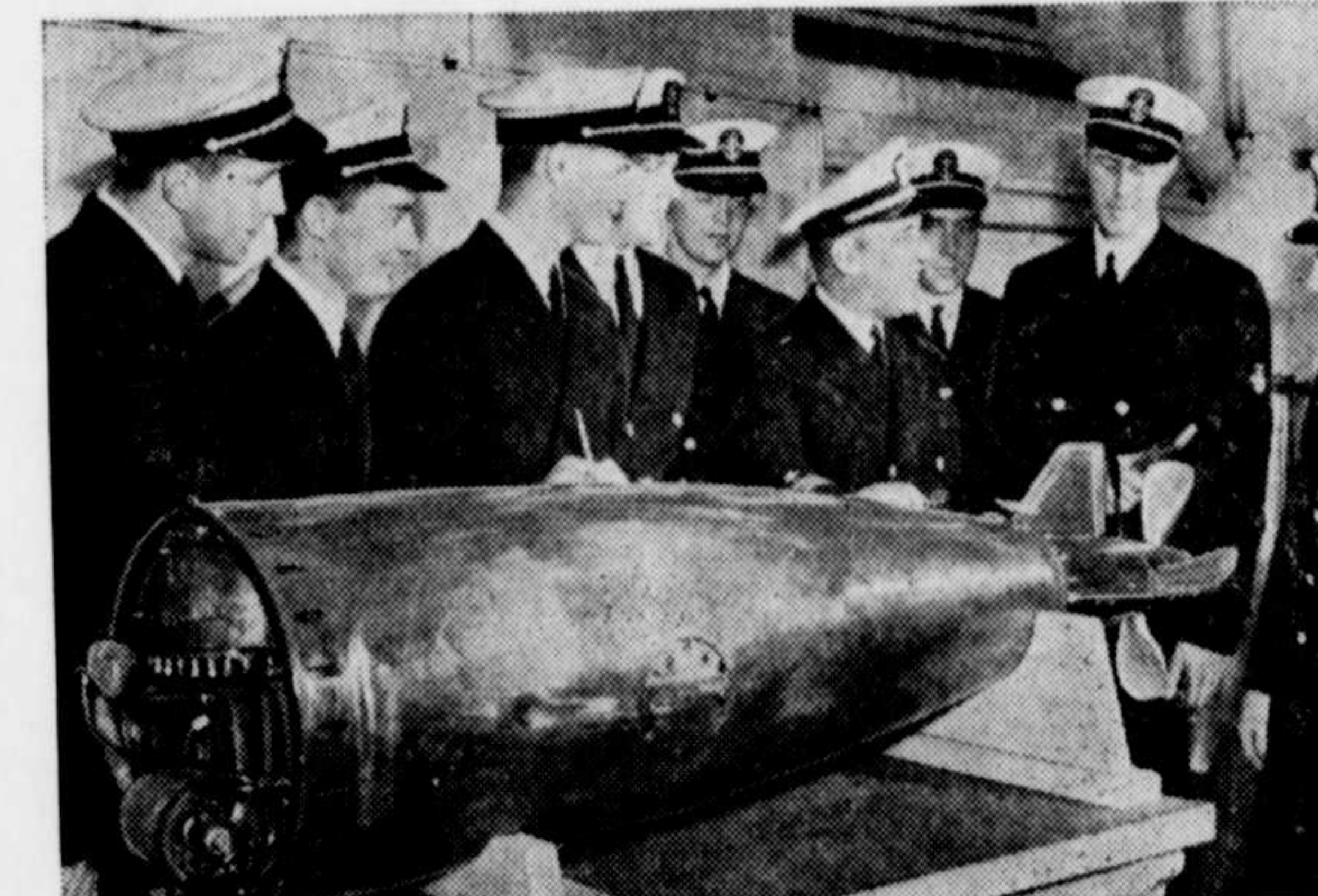
Like the generations of Brown sons who have fought in every one of America's wars since the Revolution, these young men are determined to share in America's victory effort.



Loading and firing of naval guns is practiced in this loading machine. Dummy shells are used. This is a job where teamwork counts.



Naval instructors who teach the Brown boys their gunnery simulate conditions at sea by means of a device that makes the target heave and toss.



"TIN FISH" . . . Studying the after part of a torpedo, one of the most intricate of naval weapons.



Care of Tires Becomes Vital With Rationing

WASHINGTON, D. C.—Before tire rationing became an actuality, motorists and car owners in the United States considered a tire as just another commodity purchasable when ever needed. Then few motorists gave any reasonable amount of thought to ways and means of lengthening the life of their tires. There are a good number of motorists who are well acquainted with the story making the rounds concerning a test-car driver who was asked how he would wear out a brand-new set of tires in three days. Those motorists, more than likely, after hearing that story began to check up on themselves to see if they were guilty of such actions suggested by the test-driver in that story, the idea of which is repeated here.

'Successful' Tire Wear.
The "successful" ways to wear out tires, according to that veteran driver, are: "Underinflate each tire about 20 per cent. Drive in hilly country where the roads are twisty and the grades steep. Select a pavement having a 'sandpaper' top. Choose hot, dry weather. Take curves so fast the tires slide and squeal loudly, run mostly on the road shoulders. Spin the wheels when starting, open 'er up to 70 or better when you can, and always make screaming, sudden stops." But today motorists aren't out for such an experimental lark. They are intelligently doing the following things test-car research has proved about tires and their proper care: They are keeping careful check on the inflation of their tires. For



Before and After.

it has been found that underinflation increases tread wear, causes walls and cords to break down, and increases susceptibility to pinch-damage. Overinflation concentrates wear in the tread center, makes wheels bounce, spin, and skid, and promote bruises and hard riding. If a tire is run flat it might be ruined in but a few seconds.

Then, they now realize, there is the matter of pinching, bruising, and overloading. Such is often hooked up with improper inflation. Pinching usually is caused by striking objects which fold a tire wall against the rim often breaking or loosening cords. Bruising comes from striking stones, chuck holes, or curbing. Overloading magnifies the effect of such thoughtless abuses.

Good Tires Only Recapped.
And at this point motorists should understand it will be only the good tire that the government, through army specialists, will permit to be recapped. Not just any tire is going to be recapped. For there is a definite time and condition of the life of a tire beyond which it is uneconomical to recap. Trying to get wear out of the last few thousand miles puts a tire in the class where recapping for economically suitable use is doubtful.

Besides the above points which motorists are paying strict attention to, here are some more suggestions, as read in Popular Science Monthly, that are helpful in adding miles, and perhaps years, to tires.

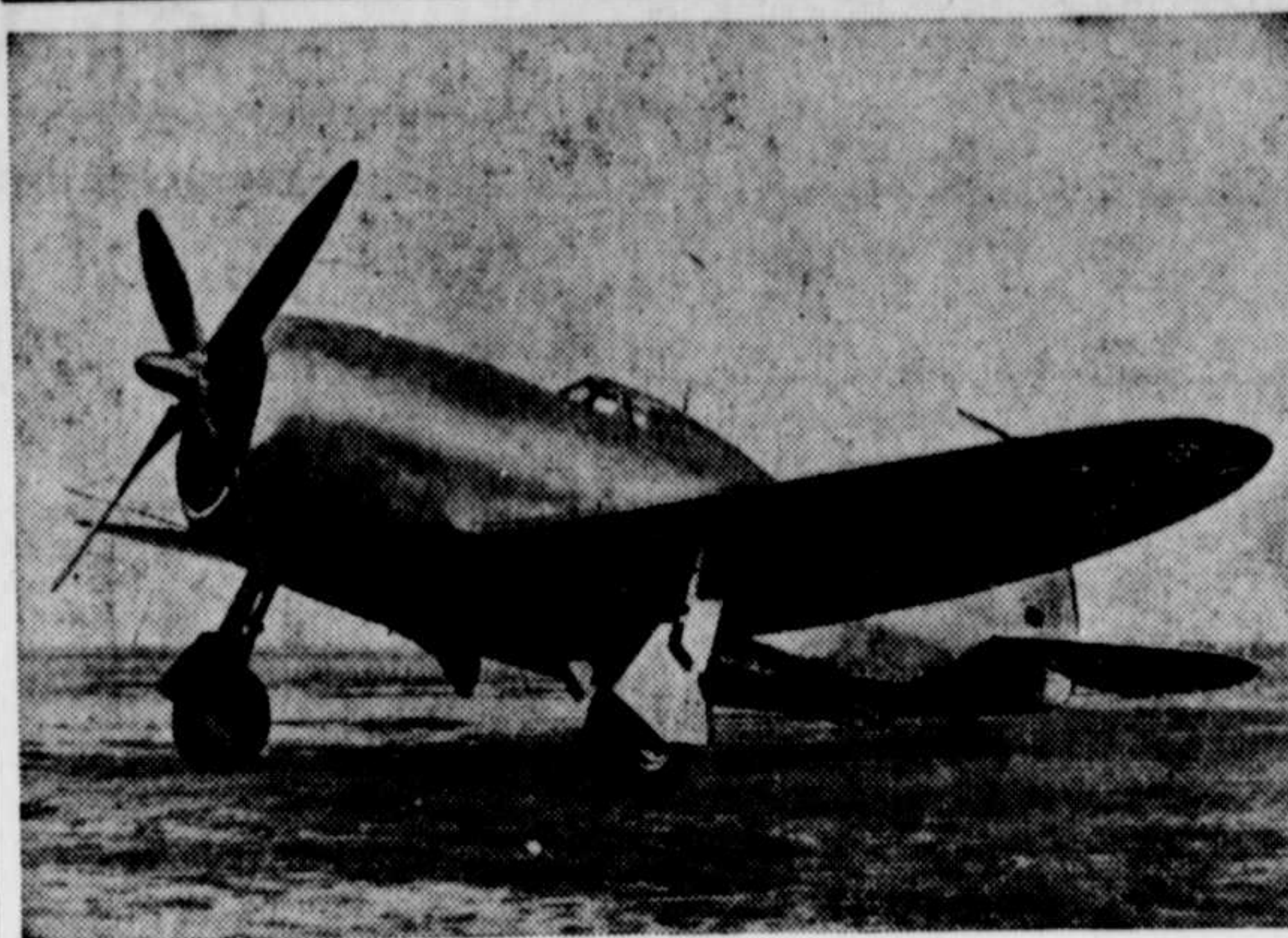
Prevent wheel misalignment which scrubs rubber from treads. Similar damage comes from improper front-wheel camber and caster, bent axles, loose bearings, wheel wobble, unequal brakes, and out-of-round drums. Likewise proper balance of the wheel and the shifting of the tires, with the spare included in the shifting, further decreases rubber wear.

And a Few 'Don'ts.'
A few "don'ts" for motorists interested in longer tire life are: Don't speed in hot weather. Don't let the brakes become inequaled. Don't wheel-spin the car off to a jumping start—especially in gravel and cin-

Vast Training Program Protects War Industry

STATE COLLEGE, PA.—Although long-range industrial planning has already created a huge reservoir of skilled workmen for war industries, the federal government in cooperation with Penn State and 144 other engineering schools is training reserve personnel. Penn State is giving courses at Pittsburgh steel mills, a Schenley, Pa., distilling company among other factories.

Fighter Planes Offer Best Defense In Protection From Bombing Attacks



WASHINGTON, D. C.—Pictured is the fastest fighter plane in the world, the Republic Thunderbolt, the P-47, which has attained a diving speed of 680 miles per hour and in level flight a speed of more than 400 miles per hour. According to the Office for Emergency Management, the Thunderbolt is soon to be placed in massed production. The plane has a 2,000 horse power engine, a four-bladed propeller and is 32 feet long. It has a wing spread of 41 feet. Fire power of the plane was not disclosed, but O.E.M. said it is "heavily armored and bristling with both large and small caliber guns."

How effective are anti-aircraft guns? How can they hit a target like a speedy elusive plane? Isn't it difficult to fire heavy projectiles several miles up into the air against the strong pull of gravity?

These questions are arising in the minds of many Americans, now that coastal cities of the United States are preparing for air raids, and guns are being set up to guard against them.

Actually, British experience in this war has shown that the chief value of anti-aircraft guns is not in bringing down enemy bombers, but in keeping them high and spoiling their aim, says a bulletin from the National Geographic society.

"If a bombing plane is to score a hit on its objective on the ground far below, it must fly in a straight line in the direction of the target for a few minutes to give the bombardier a chance to set his bomb sight accurately. It is during this period that a bomber is vulnerable to anti-aircraft fire, for then the pilot cannot dodge or follow a zigzag course.

Anti-aircraft gunners worry less about overcoming the pull of gravity than about getting their shells up fast enough to explode near or hit their rapidly moving target. Anti-aircraft shells contain a powerful charge of powder, designed primarily to launch the projectile on its upward path with the greatest possible speed.

Bomber pilots have learned in this war to watch for the flash of anti-aircraft guns firing at them from

below. Don't speed. And once again, don't let the rubber on your tires get too low before having them retreaded or recapped.

For technicians point out that a tire which is recapped before the rubber is worn to too great an extent will give close to the original mileage obtained from a new tire. Say these technicians, the recapping of a tire by the addition of approximately 15 pounds of rubber, keeps in service a tire of about four times that weight according to estimations.

Finally, here is what an authority has to say to put the "finishing touch" on tire conservation: "The kind of driving that is safest for the driver, his passengers, pedestrians, and the occupants of other cars is precisely the kind that produces the longest life in tires and the car itself."

below, according to British officers who have been interviewed in this country. When they see the flash, they know that it will take several seconds for the shell to reach their level and explode. In this brief period of grace they try to dodge, if possible. Hence the importance of making shells travel upward at the greatest possible speed.

Fighter planes are the best defense against enemy bombers, the British have found. During the heavy air attacks on England in 1940, British fighters shot down nearly 10 times as many German bombers as did anti-aircraft guns. Heavy guns of about three-inch bore and upwards are used against high-flying bombers.

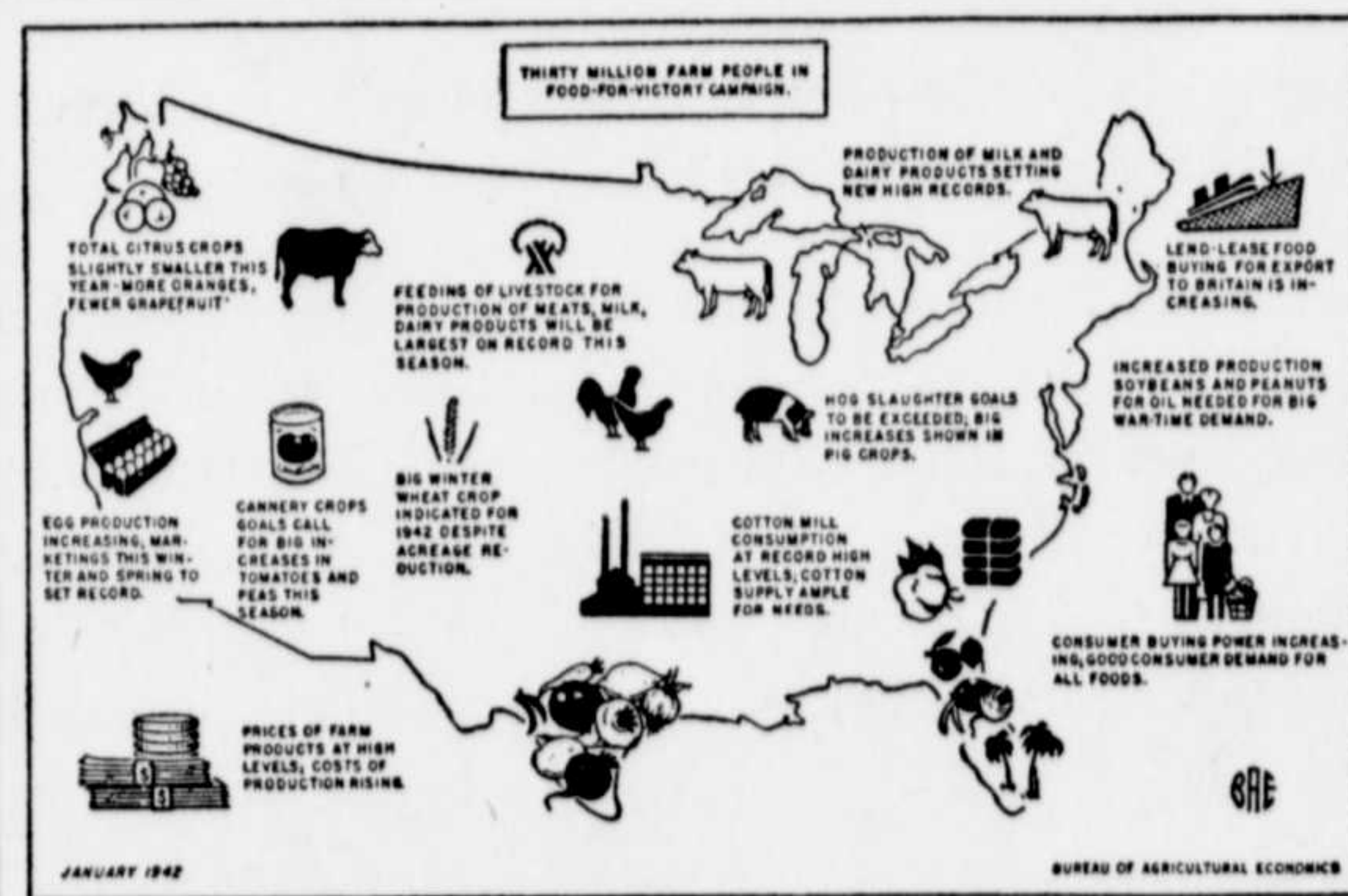
Against dive-bombers, which zoom down close to their targets, light, rapid-fire anti-aircraft guns are effective, British experience shows. One of the most useful is a 40-millimeter (about 1 1/4 inch) gun. The best way to use such a gun is to wait until the dive bomber is very close to the ground and the range is short, and then fire at high speed. If a dive bomber is fired upon when it is still high, the pilot can see the location of the guns, and has time to pull out of his dive and approach from a new direction.

Machine gun fire also is effective against dive bombers if the gunner can restrain his eagerness until the plane is at very close range, British officers report. During the evacuation of the British army from Dunkerque some German dive bombers even were brought down by concentrated rifle fire.

One incidental use for heavy anti-aircraft guns is to show friendly fighter planes the location of enemy bombers. It is often difficult for gunners on the ground in England sometimes fire a few bursts of shrapnel in the direction of an enemy bomber formation to point out its location to British fighters that are in the air, then leave the battle to the airmen.

Anti-aircraft shells are set to explode at any desired height before they are loaded in the gun. The height, and other factors that enter into calculation of the range are determined by secret and highly complicated apparatus. When a shell bursts, fragments of shrapnel are sent flying in all directions over a considerable area.

Current U. S. Agriculture Picture



Above map indicates the current agricultural situation throughout the country as reported by the Department of Agriculture. Food production and consumer buying power are at record levels.

WASHINGTON.—Food production is at high record levels, buying power of consumers is the greatest ever, prices and income to farmers average the best in a decade or more, according to a current analysis of the bureau of agricultural economics, U. S. department of agriculture. This means, says the report, that producers and consumers of food are in unusually good economic position.

Government figures show that the income of industrial workers has increased considerably more than the

increase in food prices during the last two years. Whereas total non-agricultural income is about 39 per cent larger than the 1935-39 average, retail food prices average only 10 per cent higher than at that time. Monthly earnings per employed factory worker are 40 per cent higher than in 1935-39, whereas farmers in recent months have been getting about 30 per cent higher prices for food than at that time. This means purchasing power is increased in the same proportion.

Apparently Little Tommy Was a Movie Enthusiast

The teacher was trying to get the pupils to understand the dreadful business of conjugating verbs. "When I say 'I have, you have, he has,'" she explained, "I am conjugating the verb 'to have.' Do you?"

They did. "Very good. Now listen carefully. 'I love, you love, he loves.' What is that?"

There was a moment of silence, and then up shot little Tommy's hand.

"Please miss," he said, "it's one of them triangles when someone gets shot!"

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On Roman Architecture
Although the famed architecture of the Roman Empire produced an extensive contemporary literature, there exist only two books on the subject that were written by Romans.—De Architectura Libri Decem by Vitruvius and De Aquis Urbis Romae by Frontinus.

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Public History
What is public history but a register of the successes and disappointments, the vices, the follies, and the quarrels of those who engage in contention for power.—Paley.

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OR SPREAD ON ROOSTS

Growth of Palm Tree
After a palm reaches a height of only about eight feet, its trunk rarely increases in diameter, even when the tree grows to be more than a hundred feet tall.

"MIDDLE-AGE" WOMEN (38-52)
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