

TRUTH ABOUT U. S. WARPLANES

The Engine Bottleneck

(Editor's Note: What about the engines which power our warplanes? How bad is the "bottleneck" in their production? What is involved in relieving this situation? These and many other pertinent questions are answered in the following article, the second of a series by Devon Francis, aviation editor of the Associated Press.)

By DEVON FRANCIS
Associated Press Aviation Editor

NEW YORK, Jan. 6.—When Roscoe Turner, the elder statesman of American air racing, won the big-money Thompson trophy event at Cleveland in 1938 by running his 1200-horsepower engine wide open for a solid hour, he helped peg American aircraft power plants as the world's best.

Flushed, tired and more than \$20,000 richer for his hour's toil, big Roscoe taxied his silver monoplane to the line and cut the switches.

"Wide open, all the way," he announced, amazed.

Forthwith mechanics tore down the engine to see what had happened to it. Airplane engines were not meant to take that punishment. Its interior looked almost as good as the day it came off the factory production line.

Criticism of American warplanes, in comparison with those of Germany and England, cannot be made on the counts of speed or engine dependability.

Criticism can be more justly leveled at our engine production. That is both America's strength and weakness in the race for air rearmament. We have the world's best radial, air-cooled plane engines, but our current production will equip only 600 to 700 combat planes a month.

The engine "bottleneck" will be relieved appreciably by late spring or early summer.

But what that will mean in terms of greater American air power remains for determination. Much of our production is destined for England. President Roosevelt's "rule-of-thumb" division of our warplane output equally between our armed forces and England has been revised.

The greater part of the output of some warplane factories, and all of that of some factories, is going to England as fast as it comes off the assembly line. That is in keeping with the policy of all aid short of war.

In the next five or six months two major engine factories and their branches, buttressed by a trickle of production from automobile factories now tooling up to make plane engines, are expected to be turning out 3,000,000 horsepower a month.

In terms of units, that is the equivalent of 3000 engines of 1000 horsepower each. That would equip, every month 1500 airplanes of all types—bombers, patrol planes, pursuits and observation planes—including the "spares" which go with each order.

On American engines, even more than on American airplanes, is going to depend in good part the maintenance of British bombing power. On them will be predicated the future of American air power.

This is why: Speed and bomb-carrying ability of warplanes are functions of design, wing-loading and power-

loading. No nation has a copy-right on design. Our latest pursuits, for example, copy many of the best features of British and German pursuits.

Wing-loading means the relation between the weight of a plane and the wing area—the higher the weight, the faster the plane. Power-loading means the

SPEED DISCOUNT

NEW YORK, Jan. 4 (AP)—Published airplane speeds often are subject to sharp discount so far as their use in military work is concerned.

The world's "absolute" speed record, achieved over a three-kilometer course last year, is 469.2 miles an hour. It is held by a German plane from which the current Messerschmitt "109" fighter was developed. The fighter's top speed is about 360 miles an hour, not as fast as some new American types.

The difference is accounted for in the fighter's greater load in armament and fuel for longer range, and in the lesser degree of perfection in a "production" plane as compared with a specially-built racer.

relation between the weight of the plane and the engine horsepower—the lower the weight, the faster the plane.

Design and wing-loading can be changed at the pleasure of the engineer, but as the armed services make demands for bigger airplanes and higher speeds, it is the engine manufacturers who hold the key to the superior performance of our aircraft.

In the radial-shaped, air-cooled field no other nation has been able to approach American engines in dependability and power output.

The two leading radial engine manufacturers, the Pratt & Whitney division of the United Aircraft Corp. and the Wright Aeronautical Co., (the latter a subsidiary of the Curtiss-Wright Corp.) are turning out engines of greater horsepower than any engines in production abroad.

It is a Pratt & Whitney engine rated at 1850 horsepower which carries along the new navy Vought-Sikorsky shipboard fighter at more than 400 miles an hour at optimum altitude. That is a top, not a cruising, speed. The same engine, with slight alterations, is being re-rated for a 2000 horsepower output.

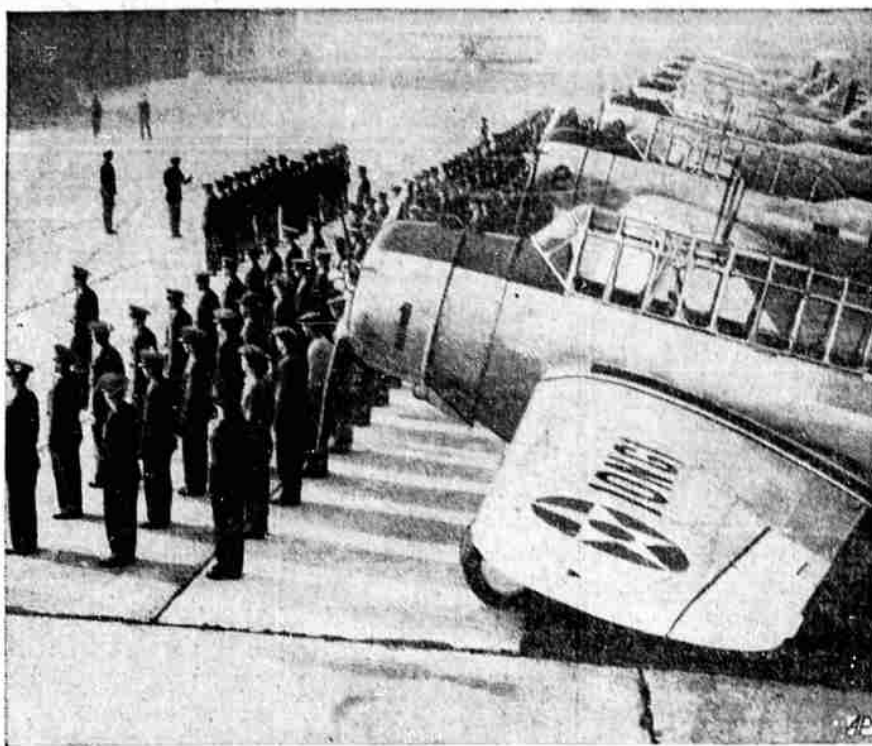
Improved Wright engines, rated at 1650 horsepower, are speeding the longer-range Pan American Airways clippers across the Atlantic. Wright, too, has engines in the 2000 horsepower class.

None of the new American aircraft power plants weigh much more than a pound for each horsepower they develop.

Engines of 2000 horsepower are known to be in the experimental stage abroad, but they are of the heavier V-shaped, liquid-cooled, in-line type.

Much has been said in recent months, beginning with a statement by Secretary Morgenthau of the treasury department last winter, about the potential engine "bottleneck." Airlines with engines on order were, in fact, asked to release them to the army air corps.

Continuance of the bottleneck will depend in part on the air corps' engine procurement policy the demands of Great Britain and on how fast this



UNDER NEW MANAGEMENT—Members of the 110th observation squadron, Missouri national guard, inducted (above) at St. Louis into year's federal service, will be at Little Rock, Ark.

President May Balance "Normal Expense" Budget

WASHINGTON, Jan. 6 (AP)—President Roosevelt, it was reported authoritatively today, will show a balance between tax revenues and "normal expenses" of the government in his forthcoming budget.

The budget, to be submitted to congress next week, will be for the fiscal year beginning next July 1.

However, the "normal expenses"—those exclusive of emergency defense costs—will amount to about \$8,000,000,000 out of a total budget of approximately \$17,000,000,000, it was reported, indicating a deficit of nearly \$9,000,000,000.

The "ordinary budget," it was said, will include all non-defense costs, expected to total roughly \$7,000,000,000, plus \$1,000,000,000 or more of defense expendi-

tures, that probably would have been incurred if there were no emergency armament program.

Due to better business and several new taxes levied last year, federal revenues were estimated for the coming fiscal year (beginning next July 1) at a little over \$8,000,000,000—a \$1,700,000,000 gain over expectations for the current year.

Non-Christians

The world's non-Christian sects have a membership totaling 1,166,785,000, including a combined total of 30,000,000 in the closely related Chinese religions of Confucianism and Taoism, and Buddhism's 230,150,000.

Best Sight

Birds have the most highly developed vision in all animal or human life. Able to see accurately at short distances, they also are able to do so from incredible heights, as in the case of buzzards, hawks, and condors.

AUTHOR'S SCRIPTS SAVED; HOME BURNS

PORTLAND, Ore., Jan. 6 (UP)—None of the stories of William Winter, Portland author, contains a quirk of fate as odd as that which saved the manuscripts of two books he is writing when fire completely destroyed his home.

Winter, author of the book "One Bell Calls the Watch," usually keeps the manuscripts of his new books at his office. However, on New Year's night he brought the manuscripts home in a brief case and threw them in his bedroom.

The fire occurred while the family was away, destroying virtually everything. The brief case was burned to a char, but for some inexplicable reason the manuscripts of the two books and notes for another book were scarcely scorched.

IMPATIENT DRIVER ASSESSED \$25 FINE

Benjamin Davidson, local lumber worker, was a little impatient during Friday night's snow storm and passed stalled cars on the viaduct, the act costing him \$25 fine in police court Saturday morning. According to arresting officers, other cars were unable to cross the viaduct and Davidson violated one of the city's strictest traffic rules when he passed them. He was charged with reckless driving and posted \$20 and his car for bail. A plea of guilty was entered and a fine of \$25 levied. The police judge asked \$5 when Davidson failed to produce a driver's license. This sum was refunded when Davidson showed a valid Missouri license and a receipt for an Oregon application.

Frankie Monroe, Nevada Indian, who has long been a problem to local officers, received the maximum fine of \$100 and 30 days in jail on a drunk charge. Four drunks and one traffic ticket made up the balance of the report.

The average length of a lion's life is 40 years.

"Knute Rockne" is coming.

Royal Air Force Aviator Relates Vivid Experience Of Having Pants Burned Off

SPOKANE, Wash., Jan. 6 (AP)—How he walked up to an English farm house with his pants completely burned off after he had been shot down in a dog fight south of London, was described lately by flying officer W. Bruce Millar of Penitence, B. C., the first Royal Canadian air force officer to be invalided home from the battle of Britain.

"I guess I really shocked that housewife" who walked out to help me," he added with a chuckle.

Millar was shot down Sept. 9 with a bullet in his leg and his plane in flames.

Describing his fight he said his squadron had gone up to break up a large formation of German raiders and that "a couple of bullets hit my gas tank and set it afire. One hit my leg, but that was nothing—like a slap on the thigh."

"I pushed the controls aside and tried to open the hood to bail out," he said. "Then I really got scared. The hood wouldn't open. I guess I dropped about 1000 feet before I got that hood open, but it seemed like a thousand years."

Millar said he hoped to return to the English front shortly and that he wouldn't be afraid to fly again, although he

has not been up since he was shot down.

"Of course," he added, "every one gets scared once in a while, but it doesn't matter, you just go ahead doing what you're doing."

Millar said he believed that the English pilots were better trained than the bulk of the German fliers, "though some of the older ones are very good." His squadron, he said, had scored 72 victories with the loss of only three pilots.

Special Wine

Kept in the cellars of an inn in Warsaw, Poland, since 1008, 292 dust-covered and cobwebby bottles of wine are to be drunk only in celebrating the coronation of a king of Poland.

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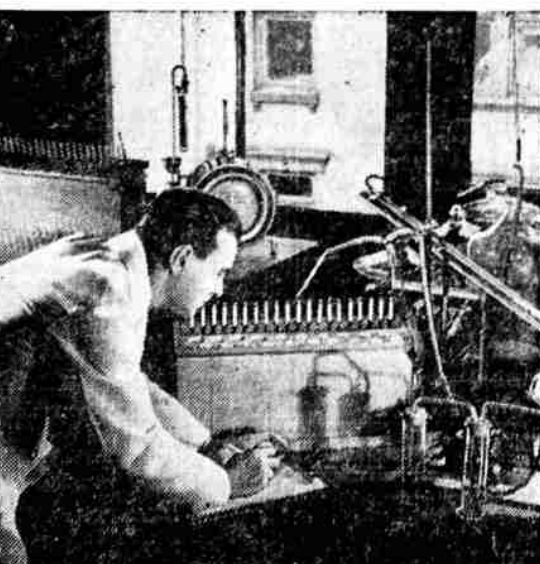
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Hurricanes—III Winds to II Duce



It's an ill wind that blows no good, but these British Hurricane fighters in the middle east bring little comfort to Mussolini's north African legions. Spectacular photo above was taken just as flight of Hurricanes broke formation over the desert to attack enemy aircraft reported to them by radio.

ACES UP

TITUSVILLE, Pa., (AP)—Albert M. Mahelmer, who spent New Year's in Cleveland participating in a family foursome of pinochle, predicts this is going to be a lucky year for him.

The cards were dealt. He picked them up, and his eyes nearly popped out. Right in a row—eight aces—a perfect hand. "First time in 50 years," declared Manheimer.