

## AVIATION

## New Model Curtiss Hawk Supplied to U. S. Army

**A**N IMPROVED model of the Curtiss Hawk P-40 pursuit plane which, as the Curtiss Tomahawk fighter, performed valiantly for the R. A. F. in the North African campaign, is now being supplied to the U. S. Army.

The new ship, known as the P-40D, is already rolling off the assembly lines of the Curtiss-Wright Corporation's plant in Buffalo, the firm's president, Guy W. Vaughan, announced.

It is a more streamlined version than the original model, he said. The fuselage has been cut down to decrease head resistance and its fire power has been increased 25% over the earlier plane, which had six machine guns, four in the wings and two in the fuselage. Originally driven with an Allison liquid-cooled engine developing 1090 horsepower, the Allison engine on the P-40D yields over 100 horsepower more.

No information about the speed of the new ship is released, though its predecessor was capable of 330 miles per hour at 15,000 feet altitude in level flight. In a vertical dive over Dayton, Ohio, in April, 1940, a Curtiss-P-40 averaged a speed of 660 miles per hour.

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## PHYSIOLOGY

## Vitamin Linked With Sex; Found Associated With Ova

**V**ITAMIN A, the vitamin obtained from butter, carrots and other yellow foods, may be needed for production of one of the female sex hormones. Some relation between the vitamin and hormone production in the ovary is suggested by a discovery reported by Dr. Hans Popper and Dr. Alex B. Ragins, of Cook County Hospital and Cook County Graduate School of Medicine, Chicago.

Vitamin A itself imparts a characteristic green fluorescence in ultraviolet light, which disappears quickly due to destruction of the vitamin by the ultraviolet rays. Using this fluorescence to "see" the vitamin in body tissues, the Chicago scientists found it in various characteristic structures around the ova, and also found that the fluorescence undergoes typical changes in pregnancy and during the monthly cycles in women.

Tumors originating from structures in the normal ovary also impart vitamin A fluorescence.

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NEW FIGHTER

*This is the new Curtiss Hawk P-40D pursuit plane being produced in large numbers for the U. S. Army Air Forces. It is powered with a liquid-cooled engine and equipped with a Curtiss electric propeller.*

## RADIO

## Two-Way Radio Sets Used To Tell Who Is "Killed"

Enable Umpires To Make Their Decisions Within Five Minutes After Battery Theoretically Opens Fire

**B**OYS playing war shout, "Bang! You're dead!" Artillery at maneuvers has to do much the same kind of thing, except that it's on a bigger scale, and umpires decide who is to be "dead".

Introduction of two-way, police-type radio sets for this summer's maneuvers is making this part of the war game much easier to take care of, besides adding greatly to the accuracy of scoring. The sets enable umpires to make their decisions within five minutes after a battery theoretically opens fire, instead of the 25 minutes formerly required, when field telephones were the only means of communication. Under the old conditions, it frequently happened that the umpires never caught up with the results of this non-shooting artillery fire at all.

When a battery goes into action, in present-day maneuvers, the officers have their target assigned to them. Usually they cannot even see it from the gun position. They calculate the necessary firing data, the crews set fuses on dummy shells, load the guns and go through

all the motions of firing. The only thing lacking is the actual bang of the guns and scream of the shells.

Umpires at the battery check every detail of the data and the firing performance. If they decide the shells have landed as intended, umpires on the other side are notified by the new radio sets. These officers then drive in a hurry to the site of the imaginary explosion, set up flags to mark the spot, and ignite smoke candles, torpedoes or flares to call further attention. If troop units are in the "shelled" area they are declared out of action.

The War Department has purchased 240 of these sets, at a total cost of \$100,000. They are of the frequency-modulation type, so that umpires' messages to each other cannot be picked up by the field sets carried by the maneuvering troops, which use the older amplitude-modulation type. For mobility, the radio-using umpires range the field in trucks, command cars, weapon carriers and other cross-country motor vehicles.

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