

MILITARY SCIENCE

Air Successes Measured

Combat movies show the effectiveness of fighter planes in attacks on the enemy; fighter pilot has much in common with caveman.

► THE INCREDIBLE success of Army Air Force fighters in their attacks on enemy planes and ground targets was shown when combat films taken in the European theater were displayed at Foster Field, Texas. The movies, taken with a 16-millimeter camera mounted on the gun of the plane, show where the bullets hit the enemy, where the bullets were missing and why they missed. Thus these films become gunnery instructors for pilots in combat and valuable visual aids in training fighter pilot gunners for combat.

While viewing film after film taken in the heat of combat and while seeing enemy radar stations, locomotives, transports, rocket planes and other units burst into flame before your eyes, you realize that the modern fighter pilot has much in common with our hairy ancestor, the caveman.

The caveman's weapons were a rock and a club. He wasn't very effective when his target was too far away. It was beyond his maximum effective range.

The fighter pilot has better weapons, speedy planes, machine guns, and electronically operated computing sights through which he can line up his target. Yet he, like the caveman, is not very effective when he is out of range. The caveman knew he could throw rocks when he was within throwing distance. Our fighter pilots can knock 'em over when they are within effective shooting distance, which gunnery experts call the maximum limit of effective range.

The closer a fighter pilot approaches his target the more deadly he can be. At 500 feet his aim is more deadly than at 1,000 feet. The maximum effective range of our fighter plane's bullets is 1,200 feet. The ideal firing range is 750 feet.

Fighter pilots are not born with a knowledge of good shooting. They acquire it through hard work and much practice. The training they receive today is under the supervision of Lt. Gen. Barton K. Yount, commanding general of the AAF Training Command.

Some of the things student fighter pilots learn at this school for fixed gunnery are that they can destroy aerial targets

more quickly and with less danger to themselves when they hit from the side. A target moving straight away from them or straight toward them does not appear to move; they can hit this type of target by aiming directly at it. They must aim ahead of a target moving across their line of sight. The faster the target, the farther ahead they must aim. This is the same thing a football player does when he throws a pass. The faster the receiver, the farther ahead of him he throws the ball. Technically this is called deflection allowance.

Flying three types of fighter planes, the P-38, P-47, and P-51, pilots learn the latest techniques in fixed gunnery to prepare them for their new role of supporting ground troops. Firing at wire mesh tow targets, each fighter plane uses .50 caliber bullets dipped in red, green, yellow or black paint. When the bullet hits the target its hole is rimmed with color, so that when the target is brought in and scored, each pilot knows how many hits he got.

For training at hitting ground targets, fighter pilots pour a stream of bullets at a simulated hut located in a 75-foot circle. The planes dive down from an altitude of 11,000 feet and begin firing at between 4,000 and 5,000 feet.

Bombing runs, using 3.5-pound practice bombs, are started from 5,000 feet and 3,500 feet, coming in over the target which is usually a simulated airplane, at great speed.

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ZOOLOGY

Angora Rabbits Increased Greatly Since War Began

See Front Cover

► SOFT CAPS for babies and fuzzy mittens for evening wear are now being made from Angora wool produced in the United States from rabbits like those shown in the photograph by Fremont Davis, Science Service staff photographer, on the cover of this SCIENCE NEWS LETTER. Before the war thousands of pounds of this soft white wool were imported each year from Europe, three-

fourths of the total supply coming from France. Today hardly any Angora rabbit wool reaches America from abroad and the local industry is beginning to flourish.

The wool, which may grow from five to eight inches a year on these rabbits, may be either sheared or plucked. Spinning mills pay a premium for plucked wool actually pulled out by hand at the time of molting. Breeders pluck the rabbits three or four times a year.

Barber shears or electric clippers similar to those used on sheep may be used to shear Angora rabbits. If done about four times a year, the hairs attain a length of two and a half to three inches each quarter. From a mature animal not nursing young, about 12 to 16 ounces of wool may be sheared each year.

Little if any grooming between shearing periods is needed, provided the rabbits are properly cared for and the shearing done every 10 to 12 weeks. If the coat is allowed to grow for a longer period, the fibers are likely to become tangled and matted.

There are two types of Angora rabbits—the English and the French. The English, with its much softer wool, has a broad head and short ears. This type is well trimmed with ear tassels and bangs. The French, of a larger, more rangy build, has coarser wool. At present the price of wool is the same, since there is not enough of either type to ship alone.

During spinning and weaving the wool tends to fly, much of it dropping out or becoming entangled in the wheels of the machines. Thus at present few mills are equipped to handle Angora rabbit wool. The wool, frequently dyed lovely pastel shades, is not as sturdy as other types of wool and a binder is always used to give the thread added strength.

The type of wool best fitted for mill use and whether it is better to pluck or shear the rabbits is being studied by the Fish and Wildlife Service of the U. S. Department of the Interior in cooperation with the Bureau of Animal Industry of the U. S. Department of Agriculture. Rabbits with an even more plentiful supply of this soft, fuzzy wool may result from breeding studies now in progress.

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Paper wrappers on *tomatoes* during shipment in cold storage should be removed when the tomatoes are placed in a warm room to ripen because the cold vegetable causes moisture to condense in the paper which helps decay organisms.