

ps operated actively. The Germans maintained themselves in the pocket for about two weeks, but they were forced to withdraw from the whole they had formerly occupied. Our unit had completely fulfilled its task.

What are the general conclusions? The described attack shows once again that offensive combat must be conducted in a stereotyped fashion. When circumstances demand, it is possible to dispense not with artillery preparation but even with fire attack, chief reliance being placed on artillery support of the infantry in the course of the attack, especially in the time of fighting in the enemy rear.

Once again it was proved that partial attacks succeed only after careful preparation, which prevents avoidance of fruitless repeated attacks. The great importance of absolute secrecy is emphasized; the attacking unit managed to keep this very perfectly. Preparations went on for three days in a completely open terrain, and the enemy detected nothing.

The great significance of advance measures for consolidation of captured positions and for the prevention of flanking enemy counterattacks was demonstrated. Here it is especially important to mention the massed use of mortars. Their fire permitted the destruction of hostile centers of resistance on the flanks of our attacking battalions.

It is very clearly evident from the experiences of attack how important a sober estimation of army capabilities is—both those of the enemy, and our own. To estimate the relationship between them is especially vital in a partial attack, when the army has the possibility of calling for all the artillery of his neighboring sectors and concentrating combined fire on a narrow front, maneuvering artillery fire from target to target.

Finally, this battle emphasizes the principal element, i.e. the role of the morale factor. Bold and decisive movement forward on the left flank quickly overwhelmed the strong enemy defense and avoided destructive fire of enemy artillery from the initial moments of the attack. Less decisive actions on the right flank caused our companies here to suffer heavier losses. The heroic actions of both battalions clinging to the seized areas bear witness to the fact that in all circumstances stubbornness is the condition for success. In defense the deciding factor is, first of all, firmness—readiness to die rather than give up the captured positions. Our battalions beat off twenty-one enemy counterattacks and stood up under a hurricane of artillery fire.

#### Army Pigeon

[From an article by Frank W. Lane in *The Royal Air Force Quarterly* December 1942.]

THE USE of the pigeon as a message carrier in war

goes back a long way. Pigeons were used as couriers in the armies of the ancient Greeks and Persians. Brutus, besieged by Antony, dispatched a message by a pigeon to Octavius asking for reinforcements. The Royal Signal Corps of Julius Caesar was composed of homers. The Turks used pigeons by the thousand during the Crusades. The Dutch made use of them in the wars of the Netherlands, and William the Silent sent clouds of them up during the siege of Haarlem.

But in 1908, when the field telephone was adopted, the British War Office dismissed the pigeons as out-of-date. 1914 showed the folly of such dismissal. By the time of the Armistice we had a pigeon-force of some 20,000 birds. But Germany started World War I with that number of trained pigeons.

To develop and improve the pigeon's natural homing instinct and flying powers has been the aim of fanciers for generations. But within recent years, and especially since war has given an added impetus to the study, revolutionary progress has been made in pigeon science.

It is not so many years ago that a sustained homing flight of 200 miles in a day and a mile-a-minute clip were considered outstanding performances, by any pigeon. Now, 500-mile-a-day trips and bursts at over 70 miles per hour are common among the best pigeons.

A first-class racing pigeon, going all out, is one of the speediest things in nature. Occasionally its passage through the air produces a rushing noise like the sound of escaping steam. Collisions between pigeons in mid-air sometimes have fatal results. I understand that the highest speed ever maintained by a pigeon over a long distance was 93 miles per hour for eighty miles. But I think it is fair inference that for all such exceptional records the pigeon was getting considerable help from the wind.

The modern training of pigeons has not stopped at improving their natural capabilities—new flying qualities altogether, of great importance to message-carrying in wartime, have been bred in a few selected strains. Intensive work has been carried on at the lofts of the U. S. Army Signal Corps at Fort Monmouth, New Jersey, and it is chiefly the results achieved there that I am outlining in what follows. It may well be, of course, that our own Signal Corps have a few pigeon wrinkles of their own but obviously our results are not being publicized for the benefit of the German pigeoners.

A normal homing-pigeon will fly from dawn to dusk and then, if away from home, will seek out a convenient tree and bivouac. But in a war that bird may be carrying a message upon whose prompt delivery may hang the lives of thousands of men. Within recent years it has therefore become an aim of utmost importance among pigeoners to develop a strain of night flyers—and they have succeeded!

At first pigeons were noted which flew earlier in the morning and later in the evening than other birds. These birds, which had a tendency to fly in dim light, were chosen for breeding stock.

The squeakers from this brood were trained at dawn. Gradually the start of the training period was set earlier until the pigeons were flying in absolute darkness. At the beginning the birds used to wheel and circle in uncertainty, but usually they stayed in the air. As soon as they could see anything at all they were off to their destination. Eventually the birds could make their way home in complete darkness.

To aid the birds to land blue lights were placed on their lofts. So well have these night-fliers been trained that at the end of the course one batch covered fourteen miles in eighteen minutes through darkness.

One of the trainers commented; "Yes, it's against pigeon nature. Their instinct is to come down when it gets dark. What we do is teach them self-confidence. They can fly at night. We simply prove to them that they can. Once they have self-confidence there's nothing to it. . . . The night fliers, of course, don't do any day flying. They've just got that one job. They're specialists."

Hardly less important from a military point of view than a message carrier that will not call it a day at nightfall is a bird that will fly back from its objective with an answer. And to meet this desideratum the pigeoneers have evolved a breed of two-way pigeons.

At Fort Monmouth a true blue-blooded pigeon named Mister Corrigan was taken, whose ancestry was known for 525 pigeon years of life. 167 famous champion racing pigeons appeared in his pedigree, including the names of some famed army message carriers.

On such aristocratic material Major John K. Shawvan, of the U. S. Signal Corps, set to work. A short while ago it was announced that under the Major's tutelage Mister Corrigan had made pigeon history. He flew twelve miles from his home loft to a small container around which crouched a small group of soldiers. Five minutes later this history making pigeon was winging his way back on the return trip to the loft he had left not many minutes before.

Today Fort Monmouth claims to have a flock of nearly a hundred of the only two-way homing pigeons in the world—birds able to carry messages on round trips across battlefields.

Just how these birds were trained is a closely guarded military secret. Some indication of the methods adopted, however, may be gained from some French experiments which were carried out in the last war in an attempt to evolve a two-way pigeon.

In these tests a pigeon which was rearing young was taught to fly to a distant loft for food, carrying a message at the same time. When the pigeon had fed

it returned to its own loft to feed its young (pigeons feed their young on "pigeon's milk" which is produced in the crop of both sexes) and brought back a message at the same time.

These early two-way pigeons proved useful in some instances in keeping up communications between forward trenches and the rear. But as pigeons trained by such methods were effective over limited distances only, it may well be that the pigeons bred at Fort Monmouth by the U. S. Signal Corps have been trained by ways as revolutionary as their success has been complete.

But even with two-way night-fliers the needs of the Signal Corps will not be quite complete so the experts have had once again to start experimenting. This time it was to produce a bird that would return to its base even if it were moved after the bird had left.

The military need for such a pigeon is obvious to anyone who has studied the tactics of *blitzkrieg*. In this method of warfare a breakthrough by panzers may cause headquarters, i.e., the birds' home loft, to move hastily to the rear. And in such an eventuality messages sent back by hard-pressed forward troops could never be entrusted to an army pigeon trained on World War I standards.

The modern army pigeon, like every other unit, is therefore being trained on the *blitzkrieg* model. As the essence of this type of warfare is mobility, pigeons are now being accustomed to home to mobile lofts. Here, in the words of an American army pigeoneer, who is engaged on training the "*blitzkrieg* pigeons," is how the birds are taught.

"The pigeons," he says, "are trained from the trailer. That's their home. That's where they live and that's where they are fed. From the first day of training we start them flying to the mobile loft. In time they learn to spot that loft as easily as they would the fixed loft. The lofts are specially painted. As pigeons have a well-developed color sense such painting aids them in returning.

"Then we move the trailer a little way. They are uncertain at first, but they come down to it and are rewarded. We move it again. Finally we move it quite a distance, and before we take them away for a flight we let them out for exercise. They circle up and look around, fly off in one direction, then in another, apparently getting their bearings. Then when we take them out several miles, and toss them, they go straight back to the mobile loft."

Such then are the up-to-the-minute streamlined pigeons which are at the disposal of the American (and British?) army of today. And when, in one bird, can be combined night-flying, two-way message carrying to movable bases, a weapon will have been forged which has been the dream of army commanders since the dawn of organized warfare.