

ENGINEERING

Crisis Communication

Army Would Welcome a Volunteer Force of Individuals Who Could Dispatch Messages By Signals or Pigeons

By MARJORIE VAN DE WATER

IF EMERGENCY should hit any local community, temporarily disrupting or putting excessive burdens upon telegraph, telephone, radio and other ways of getting public and personal messages from place to place, simpler methods of communication may become of great value.

With amateur radio "hams" off the air or with their activities limited, an emergency such as an earthquake, a flood, a serious fire, explosion, or air attack might bring an urgent need for older and simpler methods of sending messages.

Communication is the vital blood stream which makes all-out war possible.

The Army would welcome the voluntary services of a civilian force of communication personnel who could dispatch messages from hilltops by semaphore flag signals, who could signal rescue airplanes with the accepted panel displays stretched on the ground, who could rig up an emergency field telephone or who could accept or send notes by carrier pigeon.

The official "Basic Field Manual" used by the Army to train selectees for service in the U. S. Army Signal Corps can now be purchased for training purposes by any civilian from the Government Printing Office. Its price is only 45 cents. In case you send for one, however, do not be disappointed at a delay. It is a best seller. Ask for FM 24-5.

The manual contains a wealth of material for the information of any voluntary civilian message unit, all of which would conform exactly to the standard practice of the U. S. Army.

Any individual can learn the standard semaphore code signals so that in an emergency he would be able to send messages. A group trained in this wig-wag language could pick out favorable posts at which they could station themselves so as to relay the messages for considerable distances.

It is relatively easy for the ordinary person to familiarize himself with the International (dot-dash) code so that he would be able to understand buzzer signals or those transmitted by blinking lights if necessity demanded.

Much more difficult, but entirely possible for the amateur engineer or handyman who has perhaps already built his own radio receiver, is the rigging up of a battery field telephone or telegraph. While the operation of amateur radio transmitters must obviously be restricted during wartime, the construction of instruments for wire transmission of telegraph messages by International code would not be subject to the same limitations. The wire instrument is just as much fun to construct and to operate.

In case a community should be cut off by flood or some such local disaster, it would be extremely helpful if brief messages could be flashed to airplanes surveying the scene from overhead.

For this purpose, you should be familiar with the standard Army procedure for signaling airplanes with panel displays stretched out on the ground or rooftop.

Cotton Fabric Used

The panels are merely pieces of cotton fabric, ordinarily two feet, four inches wide and 12 feet long. White is used under most conditions, black for spreading on the snow or other white surface. If communication must be with airplanes flying at high altitudes, larger panels measuring six feet by 30 are used.

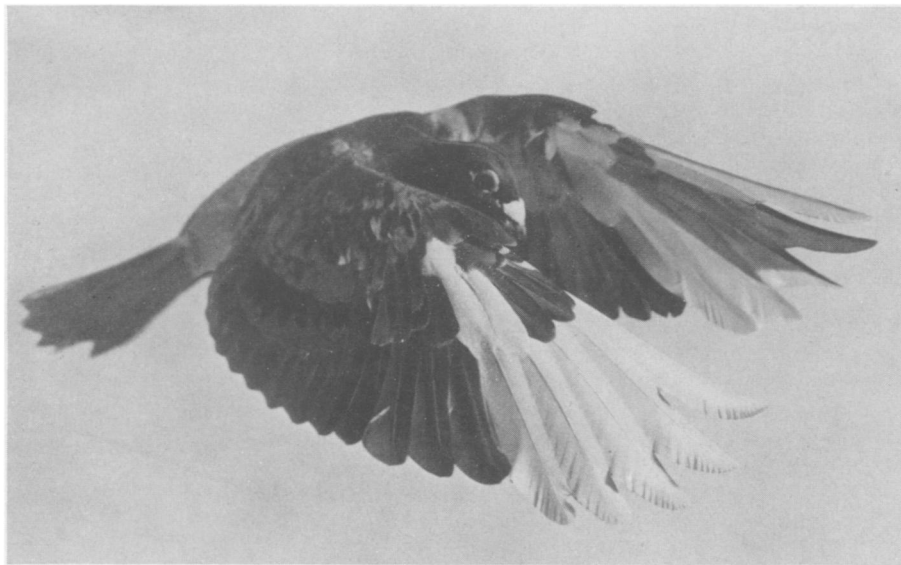
A regular code language for use in displaying these panels to form letters and numbers is provided in the Signal Corps Communication Manual.

If a suitable place is available where an airplane can safely swoop down close to the ground, it is possible for the plane to pick up packaged messages in flight even though a landing might be out of the question on account of rough or wet ground or for other reasons.

An open area 300 yards or more in length is needed. There must be no obstacles in the direction of the wind that would keep the plane from flying very close to the ground. Direction of the wind is very important, because the airplane must fly directly into (against) the wind.

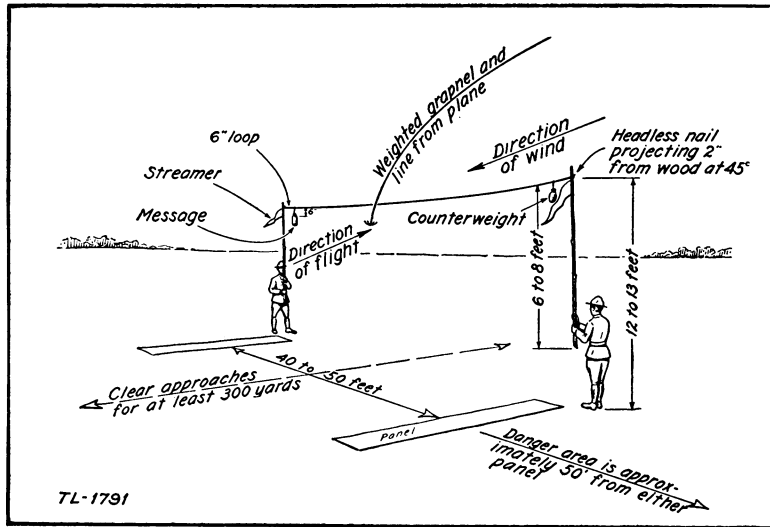
Here is all the equipment you would need to get your message aboard the plane: Two 10-penny nails. Two poles. (In place of the nails and poles, soldiers use rifles with bayonets attached.) Sixty feet of cord about 1/16 inch in diameter, preferably waxed.

A nail is driven through each pole about six inches from the top so that



MISTER CORRIGAN

Champion of champions among the wrong-way pigeons, this bird not only brings back a message but can carry one away from his home loft. This stop-motion picture shows the delicate feathering of his wing tips.



WHEN PLANES CAN'T LAND

Airplanes can pick up messages without landing if this equipment is used to aid them.
From the U. S. Signal Corps Communication Manual.

the nail point will protrude about two inches and point up at an angle of about 45 degrees. It is important that the nails be carefully smoothed off so that the cord cannot foul.

A six-inch loop is made in each end of the cord with a knot that will not slip. About eight inches of cord is left free between the knot and the end of the line. To one free end is tied the message in a bag and to the other a balance weight. The loops are placed over the nails and the poles held upright so that the points of the nails are directed against the wind.

The airplane, flying low between the poles and into the wind, is trailing a weighted line to which is attached four hooks. The hooks snare the cord with messages attached and they are then pulled into the airplane.

The raising and training of homing pigeons is an activity requiring much more skill than these methods of communication, but providing a great deal of fun and a really important means of getting messages out. Specially trained Army birds can make flights as long as 1,000 miles and their speed on a 400-mile trip is about 42 to 45 miles an hour. The maximum speed is 60 miles an hour. Thus they can cover distance faster than an automobile in traffic.

To raise pigeons, it is necessary to know how to give expert care to the birds, to prevent or cure illnesses, repair feathers, and to feed them properly.

In the Army, the homing pigeons are pampered pets. They live in luxurious quarters and when in the field may

occupy the latest in trailers. Everything possible is done not only to keep them physically fit, but to insure that they are happy and pleased with their surroundings and companions. To be sure, the motive behind this is to make the birds anxious to hurry back to quarters whenever they are released—perhaps long distances away.

“Pigeoneers” are selected by the Army on the basis of personality as well as skill. According to the manual on the Homing Pigeon the man must be regular, prompt, kind, able to obtain the confidence of the pigeons, patient, neat, and firm.

The birds carry messages written on tissue paper and placed in a tiny container on one leg. They can carry slightly heavier weights on their backs.

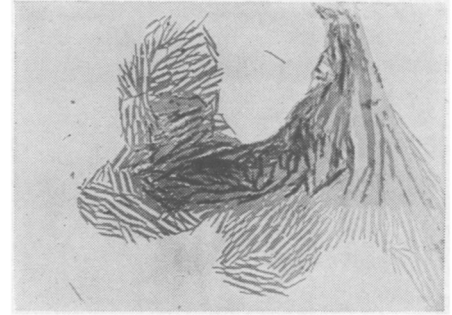
Training of homing pigeons begins while they are still fledglings on the nest. Separate birds are trained for day flying and for night flying.

First lesson is merely to recognize the rattle of dry peas in a can as a signal that food is coming up. This is later the lure that brings them home.

At four weeks they can be taught to enter the loft at the sound of the can rattle inside when they are released on the lighting board outside.

After they have learned to fly, they can be taught to fly from the hand to the lighting board and then to go into the loft as before. At first the distance is only a few feet. Gradually it is increased until the loft is just barely visible—about a mile away.

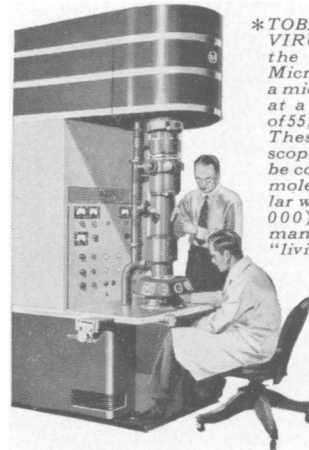
During the following week, the train-



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Engineering Products Division

ing is made harder. Training flights are three times a day and the distance is longer and longer until five miles is attained by the end of the week.

Later, flights are less frequent but distances are increased gradually to 75 or 100 miles and then even longer.

Pigeons trained to fly at night are never flown in the daytime, because that would spoil them for night flying.

Even after years of experience, the birds never lose their fear of flying at night. But it is especially bad in youngsters. Two-week-old birds are released for exercise late in the afternoon so that they get back to the loft at dusk, or a little later. First long flights are started before dawn. The bird learns that if he only remains in the air long enough, the dark is gone and he can find his way home. Later he can complete the flight in darkness.

Night flying pigeons are highly directional, however. A bird taught to fly from the south is not reliable when flown from other directions. No attempt is made to deviate more than 45 degrees from the training course.

Pigeons are now subject to draft as are young men. The Army takes them from their owners and breeds them. The young are trained for Army service. But when the year is up, the parent birds go back home.

Latest development of Army pigeon training unfortunately cannot be used by civilians raising the birds, for it is wrapped in deepest secrecy. It is the remarkable method originated by Major John K. Shawvan for teaching the birds to fly two ways. Although armies have used homing pigeons for centuries, never before since Noah sent the dove out to



DELIVERING MESSAGE

The new two-way pigeons will carry messages as far as from Washington, D. C., to Boston to a cage like this, deliver a message, pick up another and return. With the birds is Major John K. Shawvan, who originated the method of training these new two-way pigeons. All these pigeon pictures are official photographs of the U. S. Signal Corps.

return with the olive branch have birds been trained to carry a message from their home loft and return with a reply.

Now, pigeons can be sent to new locations to which they have not been previously trained to fly and will return

again to their base. They can even take orders to a parachute trooper dropped behind enemy lines and bring back his report without disclosing his presence to the foe.

Science News Letter, March 7, 1942

PSYCHIATRY

Military Authority Useful To "Steady" Nervous Soldier

THE MILITARY authority of Army doctors, if judiciously used, can "steady" a soldier showing signs of neurotic behavior, Capt. Robert P. Kemble, M.C., U. S. Army, told members of the American Orthopsychiatric Association meeting in Detroit.

This, however, apparently does not mean confirmation of a once-popular belief among laymen that military service should be prescribed to make a man of a timid nervous youth, for Capt. Kemble stated:

"In no way should these remarks be construed as advocating military service for psychoneurotics at any time. The

Army has at hand the primary job of winning the war, rather than the treatment of psychoneurotics."

In civilian practice, Capt. Kemble pointed out, psychiatrists try to use as little authority as possible, seeking instead to develop the patient's independence to the point where he can take responsibility and make decisions for himself.

In military practice, on the contrary, the psychiatrist is faced with the question of how much psychiatric treatment "should be allowed to creep into one's authority."

The knowledge that the performance of duties will be required has a steadying

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LUXURIOUS QUARTERS

Two-way pigeons of the U. S. Army have been trained to fly from mobile lofts in trailers like this that can be maneuvered in battle areas.

effect and in this way the military authority becomes effective treatment.

"The very clarity and simplicity of military regulations and the fairness with which they are applied offer some measure of security to those who need it," Capt. Kemble declared. "Each commander can be a symbol of this authority and when confronted with neurotic behavior brief, clear presentation of the requirements, penalties, and alternatives should be helpful. Special liberties or privileges would tend to delay improvement, while risking dissatisfaction among other members of the command. On the other hand, the imposition of extra hardships or punishments risks the precipitation of acute crises or justified resentment. The procedures suggested are fully compatible with the commander's duties and the limited time at his disposal."

Science News Letter, March 7, 1942

Help Delinquent Children

BRAIN WAVE studies may help delinquent children, it appears from a report by Dr. R. L. Jenkins and Dr. B. L. Pacella of studies at the New York State Training School for Boys and the New York State Psychiatric Institute.

Such studies, they found, will detect those cases in which the delinquency is

due to or aggravated by organic brain defect and for which the customary treatment for delinquency is not likely to succeed.

Most cases of delinquency, particularly of group stealing and kindred activities, do not suggest the presence of any brain defect and do not show a large number of abnormal brain wave records.

The abnormal brain wave records, indicating brain defect, appear frequently in children with assaultive tendencies resulting from emotional instability, irritability and poor self-control and whose school maladjustments are related to restlessness, distractibility, short attention span, inability to concentrate, inability to adapt to a program of high restricted activity and sedentary study.

A "defeatist attitude" is not justified merely because of an abnormal brain wave record, the psychiatrists declared. These delinquent boys are often capable of responding in some degree to treatment, but may need special and longer treatment than other delinquents.

Schools should take account, the psychiatrists urge, of the "handicapped personality" as well as of handicaps in seeing, hearing and heart action. The brain wave records may become a valuable aid in recognizing many of these handicapped personalities in time.

Science News Letter, March 7, 1942

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