

Destruction of Enemy Traps and Mines

By Colonel J. Frank Barber, Engineer Officers' Reserve Corps

A week or so after the armistice, the 304th Engineers were visited by a staff officer from G. H. Q., a Colonel of Engineers. Regimental headquarters were still on Samogneux Hill, along the Meuse and north of Verdun some 11 or 12 kilometers. It was here on this barren and muddy slope that the regiment had dug in on November 1, and it was here that regimental headquarters stayed until December 26, the day after that memorable Christmas of 1918.



Enemy Traps Prepared for Destruction

The staff officer had under his arm a great roll of maps, American, French and German. These were unfolded, and then ensued a long conference which included general instructions and details for the clearing of several extensive areas of enemy traps and mines, as well as removing (policing) from these designated areas "duds," grenades, flares and, in short, every article of an explosive or dangerous nature. The Colonel's orders were explicit, direct, and definite. The task was uncanny and, to the mind of a man with troops, unwise and a hazard unnecessary for our men to undertake. However, war is war, and orders are orders; so, with due dispatch, the regiment went to its task.

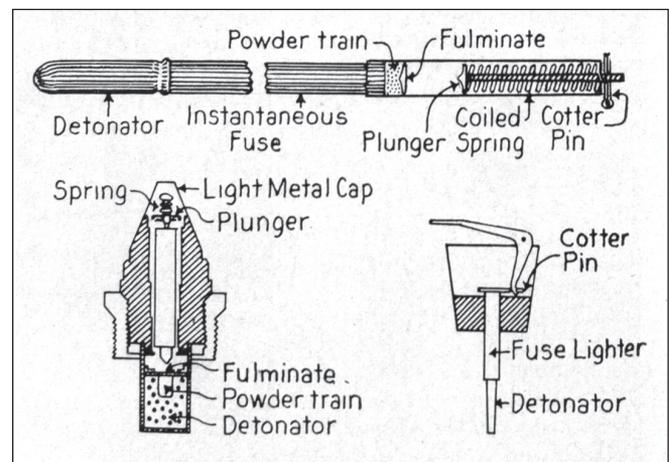
The orders covered the removal of traps, mines, "duds," mined dugouts, etc., in three major areas and five minor areas, all known to be intensively organized by this means of defense and generally shown on the captured German maps with more or less accuracy. These maps, both German and French, would, in some cases, show traps and mines which did not exist but, more frequently, whole

series of traps, which had never been plotted on the maps, would be discovered.

In the first case, it was assumed that it had been planned to place mines in a certain location for certain defense purposes and, for lack of time, labor, or other reason, the scheme or location had been neglected or abandoned. In the second instance, which was by far the more frequent, it was a case of a local sector commander's being more enthusiastic in this mode of defense and more energetic, with the result that he attempted to mine every logical strategic position but had neglected to record properly, both for his own use and, as it proved subsequently, for ours, the location and type of these mines on his battle sheets.

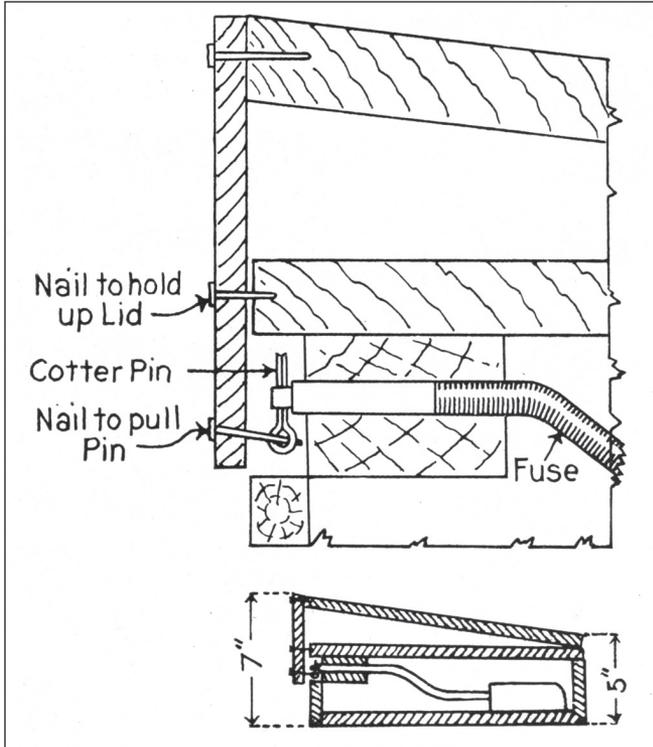
These were the conditions under which the regiment undertook its task. The weather was typical: rainy, misty, and with inches of mud under foot. The areas were, in general, distant from the then-regimental area, so that the assigned details had to move out and bivouac temporarily in the location in which they were to work.

Especially qualified officers and men were selected for this work with great care, as the hazard was fully realized. To this end, men who had been accustomed to handling explosives—mining engineers, contractors, and men with quarrying experience, were chosen. They were instructed emphatically that caution was to be observed as the first element of their duty, and that haste and carelessness were to be avoided.



German Percussion Ignition Devices

Our men met with two minor accidents which, luckily, were not fatal; but from the amount of explosives handled, the several types, and the varied and totally unknown conditions and circumstances, the toll might have been much heavier, as it proved in other engineer regiments during similar work. But, owing to caution, experience and good judgment on the part of the officers and men of the several details, we succeeded in our task with a minimum cost.



Details of firing mechanism

It would be tiresome to go into detail as to the type and number of mines taken out from the several areas, but it is interesting to note that more than three tons of explosives were removed and destroyed and, in all, a total area of 167 square kilometers were fairly well cleared. The work covered the period from November 17 to December 24, 1918, and a total of 7 officers and about 200 men were employed.

The territory to be policed was divided into three areas: Areas No. 1, Ornes-Maucourt in the Verdun Sector; Area No. 2, Ville-en-Woevre and Fresnes-en-Woevre; and Area No. 3, Samogneux and Brabant. In the third area, it was largely a case of destroying "duds," grenades, flares, etc.

The work in Area No. 1 consisted principally of removing and destroying German mines and explosive traps, mostly of the anti-tank type. A great number of these, of the box type, and each consisting of two 3-inch shells, were found.

These traps were buried in the ground in rows with the top flush with the surface, and staggered one or two meters apart. The rows extended on both sides of the road for a distance of over half a kilometer and were guarded on either side, both front and rear, by a line of barbed wire entanglement. These particular traps were rendered harmless by

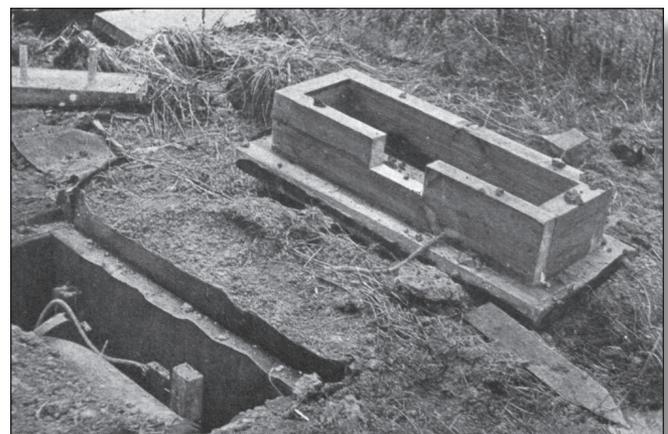
lifting the box lid and cutting the fuses in several places, the traps being left open to the weather.

There were also located a large number of traps consisting of one 6-inch shell each, buried in the roadway, with a plunger igniter and detonator in the nose of the shell. These were planted, as usual, in a staggered and more or less irregular design across the roads and for some distance on either side of the highways. These traps were all destroyed by placing a small charge of T. N. T. with detonator and time fuse, on each plunger, and exploding the shells in place.

Also, in this area were located a large number of mines consisting of a box with about 20 kilograms of H.E., set flush with the surface of the ground; when the box lid was forced down, the fuse was ignited and caused the explosion. These traps were placed parallel and alongside the road at a distance of some three or four meters apart and were evidently intended to destroy wagons and tanks. They were dug up and placed in piles, and were detonated by means of a small portion of T. N. T. discharged by a time fuse.

In another section of this area, a great number of anti-tank mines, of the shell and box type, were found, each having four 3-inch shells, laid on their sides, and two igniters and fuses. These traps were set in rows running at right angles to the road, and lay between two lines of barbed wire. The fuses were cut or disconnected and the shells left exposed to the weather.

Later, in an adjacent area, over 300 anti-tank mines of the "yoke" type were located, dug up, and destroyed. This type consisted of about 8 kilograms of H.E. (perdit, usually) placed in a small box about 4 inches deep and 12 inches square. This box had a yoke and a trigger connecting four igniters which, in turn, connected with four detonators and then, to instantaneous fuses. A pressure of some 40 or 50 pounds on the yoke would cause the explosion. These mines were set at intervals of about a meter in a double



Common Type of Enemy Trap

row across a ravine and were surrounded by barbed wire. The yokes and triggers were carefully detached from the boxes, and the latter were piled together and destroyed by a T. N. T. mud-cap.

A quantity of 6-inch shells was located in this same area, buried in the usual manner, with plunger detonators up. These were destroyed in place by blasting or mud-capping.

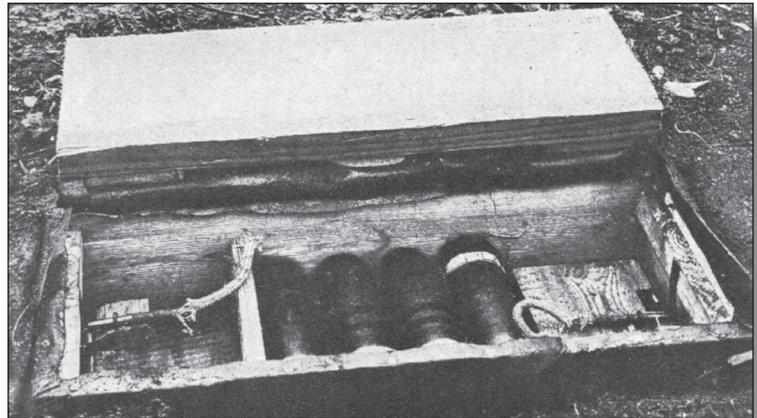
In sub-area seven of this same area, a large quantity of contact mines were located in an old quarry near Ornes. These consisted of a box containing about 10 kilograms of perdit placed at one end. They had two igniters and instantaneous fuses leading to the charge, fastened in such a manner that, upon raising or pressing down the lid, the mine would explode. The lid was held in position by five wires and made a mine which was very sensitive and dangerous, and which required very great care in the unloading. The mines were usually set at irregular intervals, without system, and slightly below the surface of the ground, being covered with a light layer of earth, grass or brush. The safest way to destroy these traps, it was found, was to detonate them in place with a half block of T. N. T., well-placed under a heavy mud-cap.

A road mine, consisting of four charges of perdit of about 60 kilograms each, placed four feet under the roadway and connected with time fuse and detonators, was found at another location in this area. This mine was not indicated on the maps. It was unloaded and the contents blown.

Many of the planted or road mines, when uncovered and deloused, as the men termed it, were found to be of rather an ancient vintage, having been affected by surface water, and often rendered harmless. This condition, however, was

obstacle to advancing troops and, consequently, an effective defensive element. The dams were usually blown by using some of the enemy's own perdit. The charges had, however, to be placed in water-tight containers and planted well at the base of the structures.

In this area, a highway bridge prepared for demolition by placing five charges of H.E., of approximately 45 kilograms each, at vital points on the girders; a foot-bridge with two charges, each containing 55 kilograms of perdit,



Anti-tank Box Type Mine

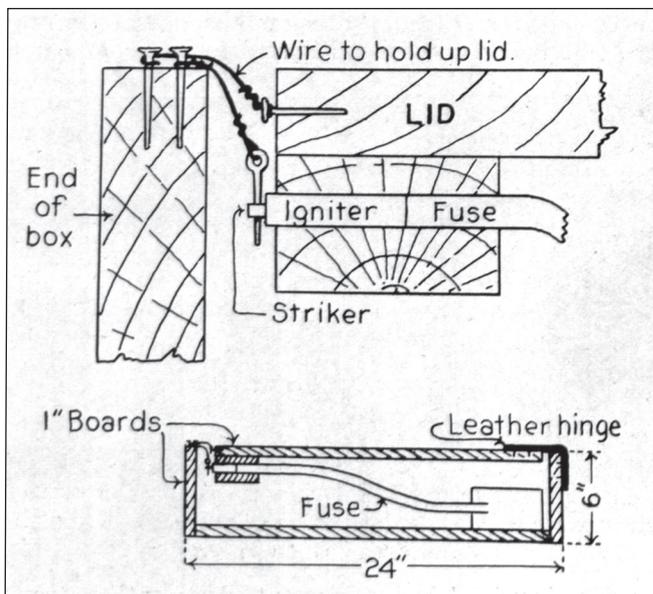
placed on the supports; and a light railway bridge with several charges placed about the supports were found.

Late in November, one of the details located, under a bridge over the Ornes river, near the town of Ornes, nine mines set in sheet-iron containers and arranged with time fuses. They also located several bangalore or pipe torpedoes in this area. These were usually made of 2-inch pipe and ranged anywhere from 12 to 20 feet in length. In some instances, they would be arranged with a trip igniter and in others with a time fuse, but they were invariably heavily charged.

Another scheme or method of defense was to blow a large crater in the road and then plant a series of tank and infantry mines on either side for a kilometer or more. Throughout, the enemy's organization of the ground evidenced unlimited energy and the expenditure of a vast amount of labor. Many of their devices were crude, yet generally practical. The most pertinent criticism would be in the matter of weather-proofing their containers. This seemed a universal fault.

Many bridges were encountered, especially in, and adjacent to, the town of Ornes. These had all been prepared for demolition with ample charges placed on the struts or major members but, through lack of time or for other reasons, they had not been fired.

Dugouts were a special problem. Groups or settlements of these dugouts were found where, in many instances, the entrances had been planted with a trap or mine. Many an American soldier, particularly of the souvenir-hunting type, has met his death through this scheme of trickery on the part of the enemy.



Details of Firing Mechanism

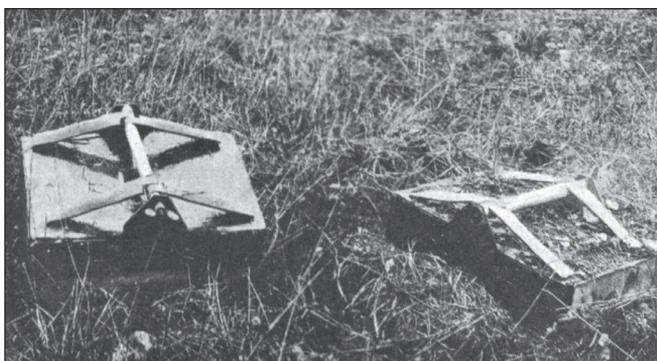
not ascertainable until the men had undergone the uncertainty and hazard of opening them up.

This detail encountered also several concrete dams, backing up the water of small streams and flooding areas of many acres. These flooded areas made an effective

The general and most popular plan was to place a charge of from 25 to 50 kilograms of perdit in a container within the entrance of the dugout, and connect it with the igniter and instantaneous fuse. These igniters were so placed that when any pressure was exerted on the step, it exploded the charge. The method adopted in destroying this style of trap was to shoot the whole dugout by means of an ample charge of perdit, the enemy's own explosive, it not being deemed worthwhile to hazard the life of an American soldier by entering and exploring a subterranean habitation which never would or could be of future benefit to anyone.

The Ville-en-Woevre and Fresnes area was handled by another detail. While they encountered some of the same type of traps, it was apparent that this section had been under a different sector commander.

There were two types of mines generally used. These consisted of a charge of from 8 to 12 kilograms of perdit in



Yoke Type of Anti-tank Mine

a light wooden box covered with tarred felt and arranged with a detonating device. Often, the mine was enclosed in a heavy wooden box and buried just under the surface of the ground and camouflaged with grass, earth or other material. In some cases, the mine was placed inside a trapezoidal, wooden box that was set in the top of the ground. The detonators of the mines were connected with the traps by trip wires so that the slightest jar would explode the mine.

A line of over 760 anti-tank mines was left by the enemy just southwest of Ville-en-Woevre. These mines consisted

of either a 150-millimeter or 220-millimeter shell enclosed in a wooden box. The lids of the boxes were so connected with the detonating mechanism of the shells that they would be exploded when a tank or heavy object passed over it. A man's weight was not sufficient to detonate them. The planting of these mines usually followed the contours and extended more than 1 1/2 kilometers on either side of the road. They had all been carefully camouflaged.

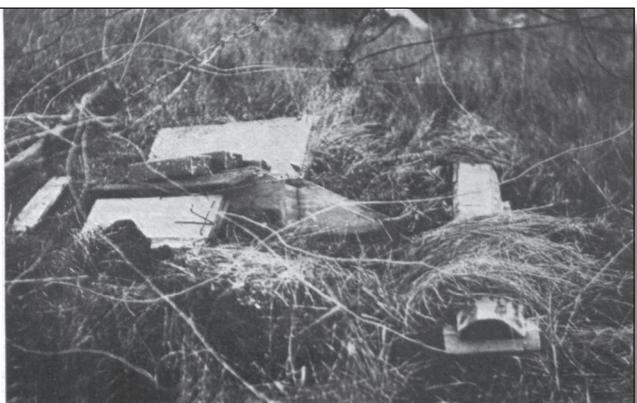
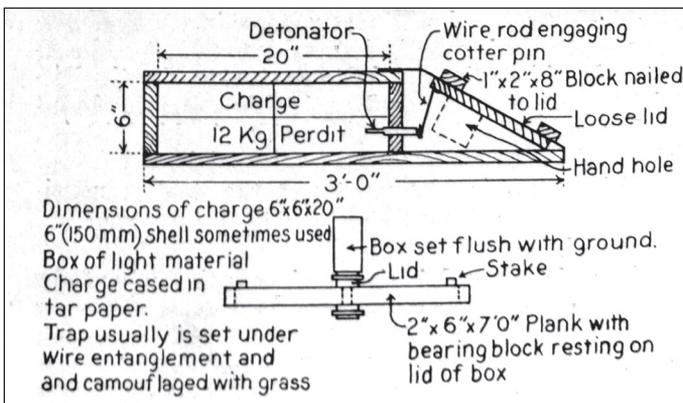
In most instances, the mines were set with top flush with the ground surface and camouflaged with grass, brush or a light covering of earth typical of the immediate area.

The detonators were sprung by the exertion of pressure on the lids of the containing cases. In some places, a very light or delicate pressure was sufficient, yet in others, the mechanism was such that material pressure was required to obtain detonation.

Usually, in the case of the 155-millimeter mines, about two feet of instantaneous fuse connecting the detonators, which were sprung by pressure on the supporting blocks, were used.

In the case of the 250-millimeter shells, the detonator and fuse lighter were enclosed in the shell with tip or nose up. In this type, a trip wire was attached to the cotter-pin of the fuse lighter and strung across the box so that if the lid were forced down, the cotter-pin would be jerked out, allowing the fuse lighter to explode the mine. These detonators were cemented into both sides of the shells, so it was impossible to remove them, making it necessary to destroy the whole mine.

To destroy these mines, the shells were collected in piles, after cutting the wires or fuses, and a block of T. N. T. was mud-capped against the nose of one of the shells. This was fired by cap and battery. Each group contained 10 or 12 shells, and several groups were wired up together. The detonation of one shell usually was sufficient to explode all in the group. The explosion of such a series was very violent, and splinters sometimes flew a kilometer or more, while craters of 30 feet in diameter and 12 feet deep were blown. It was necessary to protect the men by constructing temporary dugouts, or using other suitable shelter.



Ingenious Tripping Device for German Trap Mine

In the town of Ville-en-Woevre, the Germans had constructed a deep gallery shelter and road mine under the main street, parts of which were used as a storehouse for their immense stock of explosives, and other chambers loaded for discharge. In one room 500 kilograms of perdit were stored, and in the main chamber some 200 kilograms of the same explosive. At the entrance to the gallery, however, was a charge of 3,000 kilograms and, unquestionably, it was the intention of the Germans to blow up the cross-road before evacuating the town. It was assumed that the armistice was responsible for their change of mind. The perdit was removed from all the galleries and fired.

In addition to clearing the several areas of the deliberately placed traps and mines, the details collected and destroyed tons of "dud" shells, grenades, trench mortar ammunition, pyrotechnics, cartridges and shell.

In disposing of this material it was the custom to lay a base of grenades first, then successive tiers of shells, mortar bombs, rockets, etc., and more shells. The pile was detonated by means of a stick grenade with a time fuse cut for several minutes.

The material was placed for demolition in old dugouts or deep trenches, in order to confine or localize the effect of the explosion. Gas shells were treated by burying in deep shell holes and covering with a layer of chloride of lime and several feet of earth.

The Germans were partial to two typical positions for anti-tank defense. A gap or ravine which would be the probable course selected by the tanks in an advance was heavily mined in their anticipation. Elsewhere a road mine would be exploded, thus diverting the tanks to either side of the road, where a warm reception had been prepared for them.

About the 24th of December, the details were relieved and rejoined their respective outfits, and the work was continued by captive Germans.

The work was carried on over a period of seven weeks, and tons of explosives were destroyed or rendered harmless. Some 200 men were employed in the ultra-hazardous task, yet they met with but two minor accidents, due largely to the care, caution, judgment and experience of the officers and noncoms in charge and to the courage and skill of the enlisted personnel.

On December 26, the day after the most unique Christmas ever experienced by American troops, spent in the same desolate and shell-torn area where the last days of fighting of the Meuse-Argonne had left us, the regiment was ordered with the division back to the Souilly area, which proved to be the first step on our long journey home.



For the purposes of this feature, the article "Destruction of Enemy Traps and Mines," by J. Frank Barber, is printed as it appeared in *The Military Engineer*, Volume XVI, Issue Number 89, page 374, copyright September-October 1924, reprinted with permission of the Society of American Military Engineers (SAME).