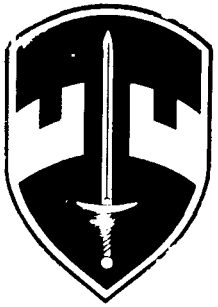

VC - NVA EMPLOYMENT OF MINES & BOOBY TRAPS

TIS-1

August 1970

COMBINED INTELLIGENCE CENTER VIETNAM

Office of the Assistant Chief of Staff, Intelligence

MACJ231-7

SUBJECT: VC/NVA Employment of Mines and Booby Traps

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1. Forwarded for your information is a revised and enlarged edition of VC/NVA Employments of Mines and Booby Traps.

2. The purpose of this handbook is to aid in the identification of mines and booby traps employed by the VC/NVA and their techniques of employment.

3. Comments and additional information pertaining to this handbook are encouraged. They should be submitted to MACJ2, ATTN: MACJ231-7.

1 Incl
as

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Brigadier General, USA
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VC/NVA EMPLOYMENT OF MINES AND BOOBY TRAPS

1. INTRODUCTION.

A. Scope. This publication covers the identity and various methods of employing land mines, water mines, anti-helicopter mines, fuzes and firing devices, explosive and nonexplosive booby traps, and sabotage devices by the VC/NVA. It also includes VC/NVA methods of marking mines and booby traps, and VC/NVA mine detection capabilities and equipment.

B. Related Publications. This booklet is limited to enemy materiel and employment of US items by the enemy and should be used in conjunction with the following publications:

1. TC 5-31, Viet Cong Booby Traps, Mines, and Mine Warfare Techniques
2. FM 5-25, Explosive and Demolitions
3. FM 20-32, Land Mine Warfare
4. TM 5-280, Foreign Mine Warfare Equipment
5. TM 9-1345-200, Land Mines
6. CICV Handbook, VC/NVA Mine Indicators, TIS-2

C. General.

1. Mine. A mine is an explosive device designed to wound or kill personnel and to destroy or damage vehicles, ships, boats, or aircraft. It may be either the blast or fragmentation type. It may be detonated by the action of its victim, by a time delay device, or by command of an enemy soldier.

2. Booby Traps. A booby trap is a device designed to maim or kill a person who disturbs an apparently harmless object or performs a presumably safe act. A booby trap may be either explosive or nonexplosive.

3. Sabotage Device. A sabotage device is a device with a time delay that is used to

destroy and damage property, or to wound or kill personnel.

4. Materiel Used. Basically, the VC/NVA employ mines and booby traps today the same as they were used in the French-Viet Minh War. The mines and booby traps are ingeniously and cunningly improvised from most any type of materiel. VC/NVA mines, booby traps, and methods of employment are less sophisticated than US, but nevertheless are effective. Although the VC/NVA employ large quantities of mines produced in the Communist Bloc, the majority of mines and booby traps are locally fabricated in village or district ordnance shops. VC/NVA exploit every conceivable source of supplies, and the majority of raw materiel for local production of mines and booby traps has come from US and ARVN sources. This materiel includes discarded hand grenades, unexploded munitions (duds), batteries, discarded LAW launchers, and all types of containers, such as beer cans and gasoline cans. Carelessly discarded materiel often falls into the hands of the enemy and is later used against Allied forces.

5. Evacuation. The policy of most units in Vietnam is that only qualified Explosive Ordnance Disposal (EOD), and engineer personnel disarm or neutralize detected mines and booby traps. Normally they are blown in place. Only when a new type mine or booby trap is found should disarmament and recovery be attempted. If disarmament and recovery are not feasible, the device should be photographed and/or sketched. All new type devices, their photographs or sketches, will be forwarded immediately to the Combined Materiel Exploitation Center, ATTN: Engineer Section, APO 96307.

6. Reporting Incidents. All incidents involving enemy mines and booby traps, whether detonated or not, should be reported on MACV Form 54, Mine/Booby Trap Report. Reference is made to MACV Directive Number 381-53, 26 July 1969, subject: Study and Evaluation of Mine/Booby Trap Incidents (SEMI).

II. DOCTRINE AND RESPONSIBILITIES.

A. Doctrine. VC/NVA mine warfare doctrine closely parallels that of the Chinese Communist Army and is heavily influenced by past guerrilla warfare experience in RVN. Extensive minefields have not been encountered in RVN, as most mining activity is nuisance-oriented. Enemy practice is to make use of numerous isolated mines and groups of mines to create casualties, fear, and overcautiousness.

B. Responsibility. The primary responsibility for employment of mines and booby traps by the enemy organization rests with sapper and engineer units. Also, the local guerrillas are fully qualified in the employment of mines and booby traps in harassment and terrorist activities. In addition, civilians in enemy-controlled towns and villages frequently provide the transportation and labor for mine-laying activities, under the supervision of sapper or engineer personnel.

C. Lower Level Responsibility. VC/NVA commanders at the lower levels of line units have the authority to install or remove mines as necessary for offensive and defensive reasons. Sapper and engineer units have been trained to install large minefields if the need arises.

III. LAND MINE EMPLOYMENT IN VIETNAM.

A. General.

1. Land Mine. A land mine is a container or explosive or other materiel designed to destroy or damage vehicles, or to wound or kill personnel. It may be detonated by the action of its victim, by delay, or by command.

2. Minefield. A minefield is a type of artificial obstacle often included in a barrier. Mines assist in protecting friendly frontal, flank, and rear areas from hostile ground, air, or water attack. In guerrilla-infested regions, mines protect positions, areas, and installations from infiltration and penetration.

3. Classes of Mines. There are two general classes of land mines: antipersonnel and antivehicular. The methods of employment differ somewhat for the two, but many of the same dangers exist for both types of mines. In this section land mine employment techniques will be discussed. Specific mines will be described in other sections.

B. Typical Methods of Actuation.

1. Trip Wires. Trip wires may be used with any type of mine, improvised explosives, and most nonexplosive booby traps, either buried or above the ground. Wires can be employed with pull release devices, tension release devices, pull friction igniters, or several types of electrical firing devices. In thick brush trip wires may be employed at head height or higher. The above head height wires are intended for antennas of radios. Trip wires are usually well concealed and difficult to detect, and may be mixed with dummy trip wires to confuse detection. Trip wires are normally used

with devices that have a zero-delay element in the fuze, producing an instantaneous explosion. When detected, trip wire devices should be avoided and carefully marked until EOD or engineer personnel can destroy or disarm them.

2. Command Detonation. There are two types of command detonation: electrical and mechanical. Electrical is the most commonly used because it is simpler, allows greater distances between firing point and munition, and is generally easier to camouflage. In both systems the command point is a location which offers camouflage, cover, and observation of the mine's location. A wide variety of batteries, blasting machines, and generators may be used with command electric devices.

3. Pressure Devices. These devices may be mechanical or electrical, and are employed with both antivehicular and antipersonnel mines. The VC/NVA employ some manufactured pressure fuzes, mainly in conjunction with manufactured mines, and make use of a wide variety of homemade devices.

C. Methods of Employment on Dirt Roads and Trails.

1. General. Dirt roads and trails are easily mined, because normally the traces can be completely eliminated. In instances where traces cannot be eliminated, the VC use a number of methods to camouflage the traces in addition to normal mine laying techniques.

2. Techniques Based on Carelessness. One technique takes advantage of the mine detection personnel's carelessness. The VC dig up the road and leave. Friendly troops fill dug up sections and the VC return to lay mines in the refilled areas. These areas must be checked day after day, even though nothing is found. The VC expect friendly troops to become careless after several days of checking and not recheck the area. The enemy then plants his mines. The VC may dig dozens of

holes in the road, lay mines in a few of them, and refill them with dirt. After the mine detecting team checks several holes and finds nothing, they expect the next hole to be empty and do not check it. The VC rely on this carelessness.

3. Camouflage. Some mines may be planted and then covered with straw, grass, dung, or any natural-looking substance. Everything must be checked to avoid casualties.

4. Detecting Mines. The above techniques are used in addition to normal methods of mine laying used by most armies. The best methods of detecting a mine can be summed up as follows:

(a) Check all places newly refilled with soil, covered with straw or grass, littered with dung, or any suspicious looking place.

(b) Do not depend solely on a mine detector. The detector works on the principle of a magnetic field and has a limited range. If the batteries are weak or the detector malfunctions, the mine will not be discovered. The enemy may also employ non-metallic mines. To counter this tactic, the suspected area should be thoroughly probed with a metal rod or bayonet in addition to using a detector. The probing should be done at about a 45 degree angle to the ground to lessen the chances of detonating the mine. Proper mine-clearing procedures are prescribed in FM 20-32, Land Mine Warfare.

(c) It is necessary to be patient and continually check and recheck possible mine locations. The mistake must not be made of assuming there is no mine in a hole because it was not present before.

(d) Local people may be able to provide information on possible VC mine laying operations.

D. Methods of Employment on Hard Surfaced Roads.

1. General. Hard surfaced roads present a more difficult problem of concealing mines than do dirt roads. The VC have some very effective ways to deceive mine-detecting teams.

2. Tunneling Under Road. The VC tunnel under the road from the shoulder and plant a mine. The mine is prepared for command detonation, usually electrical, and the tunnel carefully filled. Traces of this burrowing activity can be eliminated because of the dirt shoulder. The leads to the mine are concealed. This method of employment is very difficult to detect and requires careful inspection of the road shoulders for wires and traces of digging. If wires are found, they should be checked and cut, and then the mine must be dug up and disarmed or destroyed.

3. Techniques Based on Carelessness. Techniques are employed similar to those used on dirt roads, including digging up sections of the road. After the areas are filled in, the VC return and lay mines in a few of them. This is the same tactic used on dirt roads and is countered by constant checking.

4. Use of Mud. The VC sometimes smear mud on the road, forcing a mine-detecting team to check the area carefully. The smearing may go on for several days until one day the VC place mines in the muddied sections. The mine-detecting teams, having checked the areas before with no results, may become careless and pass over these mines. This carelessness is what the VC expect. The smeared areas must be carefully checked each time troops must cross them.

5. Use of Asphalt. Another trick is to dig up the road, lay the mine, and refill the hole with asphalt, leaving a spot that contrasts with the surrounding asphalt. To avoid detection, the VC use a tire to mark across the patch and blend it in with the road surface. To counter this tactic, the detection team must be alert for any signs of road repair. Each suspected spot must be carefully checked with a detector and a probe.

6. Mining Shoulders. The soft earth shoulders of surfaced roads are often mined. This tactic is easily accomplished and provides an effective trap for unwary troops. This method is not limited to hard surfaced roads, but also may be used on dirt roads and trails. Roadside mining is used most often in ambush sites, where the vehicles and men are to be driven off the road by fire. Heavy casualties have resulted in this type of operation. Again, the watchword is caution and thoroughness when clearing the road.

7. Countermeasures. These methods may be countered with the same techniques used in countering dirt road mining. Successful clearing operations require patience and thoroughness. The procedures prescribed in FM 20-32, Land Mine Warfare, should be used to insure maximum effectiveness and safety.

E. Other Techniques of Employment.

1. General. The VC use various methods to deceive their victims and increase the effectiveness of the mines employed. These tricks are limited only by the user's ingenuity.

2. Bait. To lure soldiers into a trap, it has been common practice in other wars to use various items as bait. The VC also use this technique. Likely looking items will be left in areas that are mined and booby-trapped. These items may be weapons, VC flags, documents, uniforms, or just about anything that a soldier would be interested in as a souvenir, for personal comfort, or from an

intelligence standpoint.

3. Location of Mines. The VC employ mines above the ground along land and water routes used by Allied forces. This is a particularly favored and effective method of using mines improvised from artillery or mortar ammunition. The mines may be placed in rotten tree trunks, on sticks, next to or in termite mounds, at the base or in the branches of trees, in bushes, or in any concealment that affords a clear path for the fragments. In high grass areas the VC may just lay the mines on the ground with no other camouflage.

4. Mines Laid in Stream Beds. Mines may be laid on the bottom of stream beds for trip wire initiation, pressure initiation, or command detonation. These mines may be placed at fords, or wherever troops could be expected to wade through the water.

5. Mines in Defensive Positions. The VC also employ mines in their defensive postions. The MDH series of fixed-directional mines are particularly effective as defensive mines. The MDH mine may be used against troops moving along roads and trails or assaulting a position. The mine is most effective when employed along restricted paths. It may be rigged with a trip wire, but normally it is electrically detonated by a concealed soldier.

F. Likely Places of Employment. Generally, mines are used wherever troops can be expected to bunch up, slow down, or present a good target. Such areas are bridges, curves in roads, canals, single-track roads, trails, junctions, hillsides, huts, and likely resting areas. Any place that is a good ambush site is usually a good mine site, and mines are often employed with ambushes. Since many of the larger mines are command detonated, the enemy many times needs a place for cover and concealment. If an ambush is to be employed with mines, then the ambushers need positions affording protection from fragments.

G. Viet Cong Methods of Marking Mines.

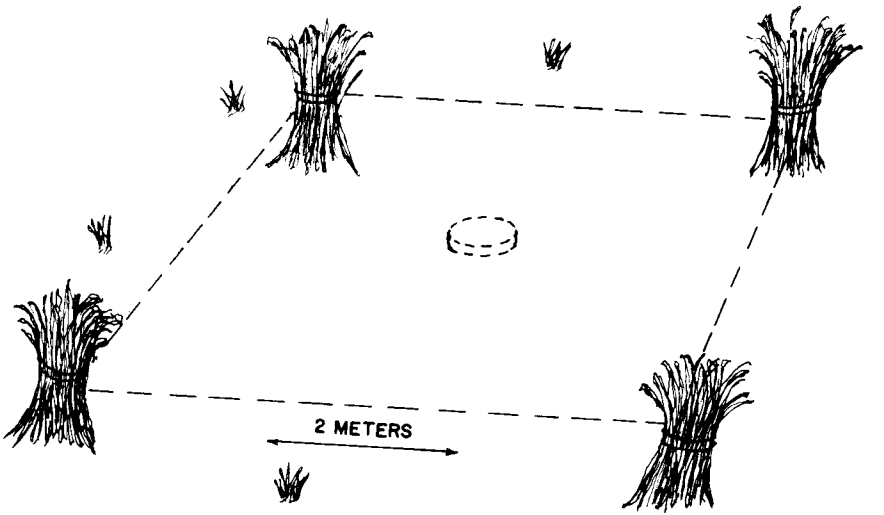
1. General. VC/NVA methods of marking mines and booby traps are thoroughly covered in CICV Handbook, VC/NVA Mine Indicators. Two examples are given in this publication.

2. Patterns. The VC/NVA have no pattern or standard method of marking their mines and booby traps. The reported markers are at best only a minor indication of enemy mine locations, because current information indicates that many mines and booby traps are not marked in any manner. Mine and booby trap markings vary in the different regions of Republic of Vietnam. Moreover, the VC/NVA will often change their methods of markings just to deceive friendly forces. However, a knowledge of these markers, coupled with an awareness of new ones, may prevent a mine or booby trap casualty.

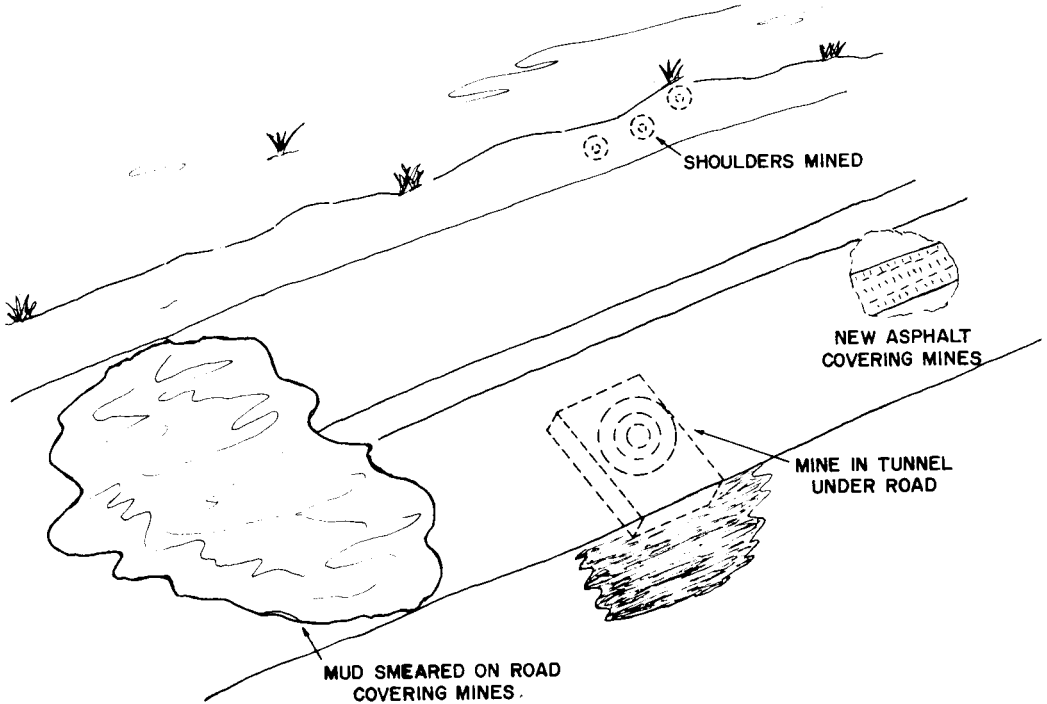
3. Grass Markers. In one tactical zone the VC tie growing grass into bunches at each corner of a two meter square. The mine is located in the center of the square.

4. Stick and Stone Markers. Along roads and trails, sticks or stones may be used to mark mine fields. For example, in one tactical zone a stick broken at a right angle and lying across the road may mean a VC booby trap or mine 200 to 400 meters ahead. Three sticks or stones, one at each side of the road and one in the center, may mean that the road should be by-passed. A circle of stones approximately one meter in diameter with a smaller circle of stones inside it, or a small circle of stones with a single stone in the center has been used to mark mines and booby traps.

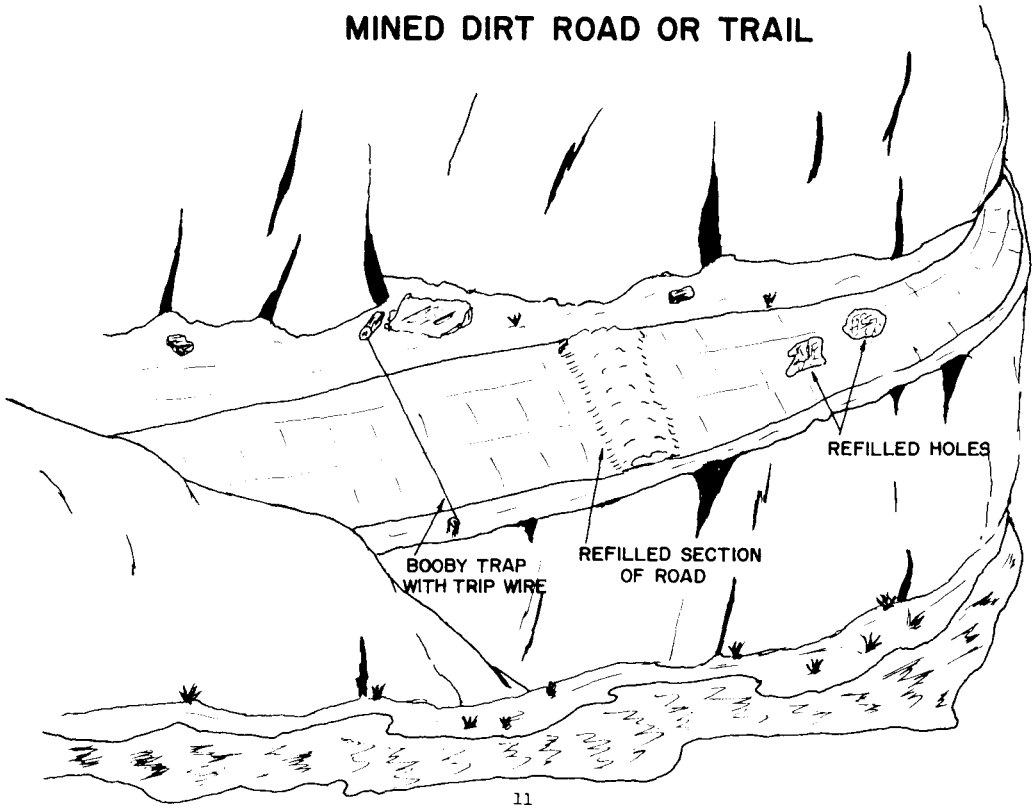
GRASS MARKERS



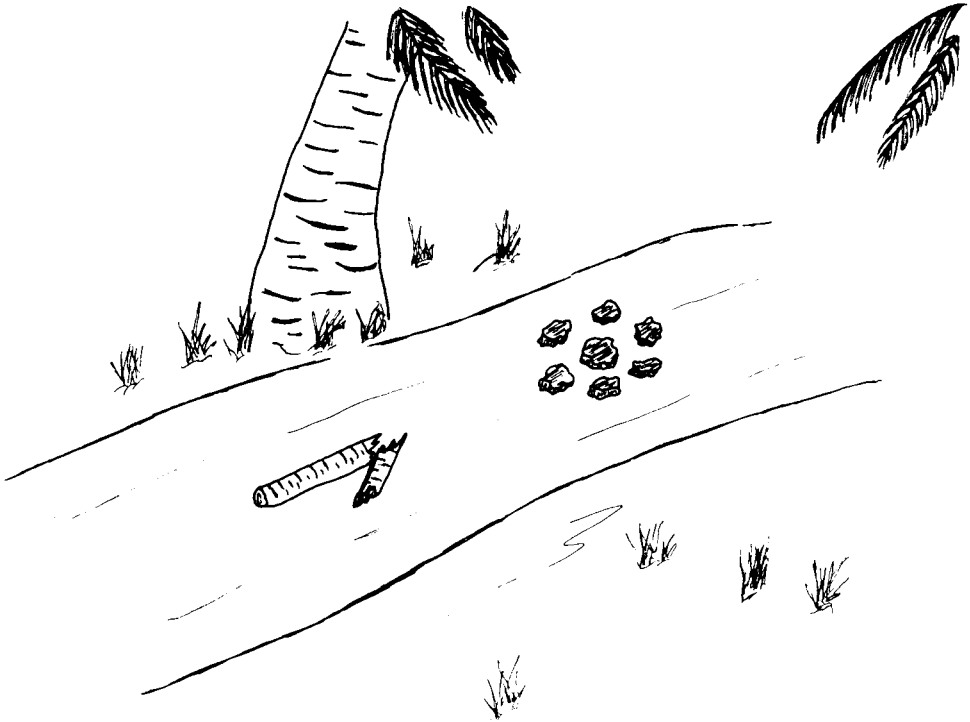
MINED HARD SURFACED ROAD



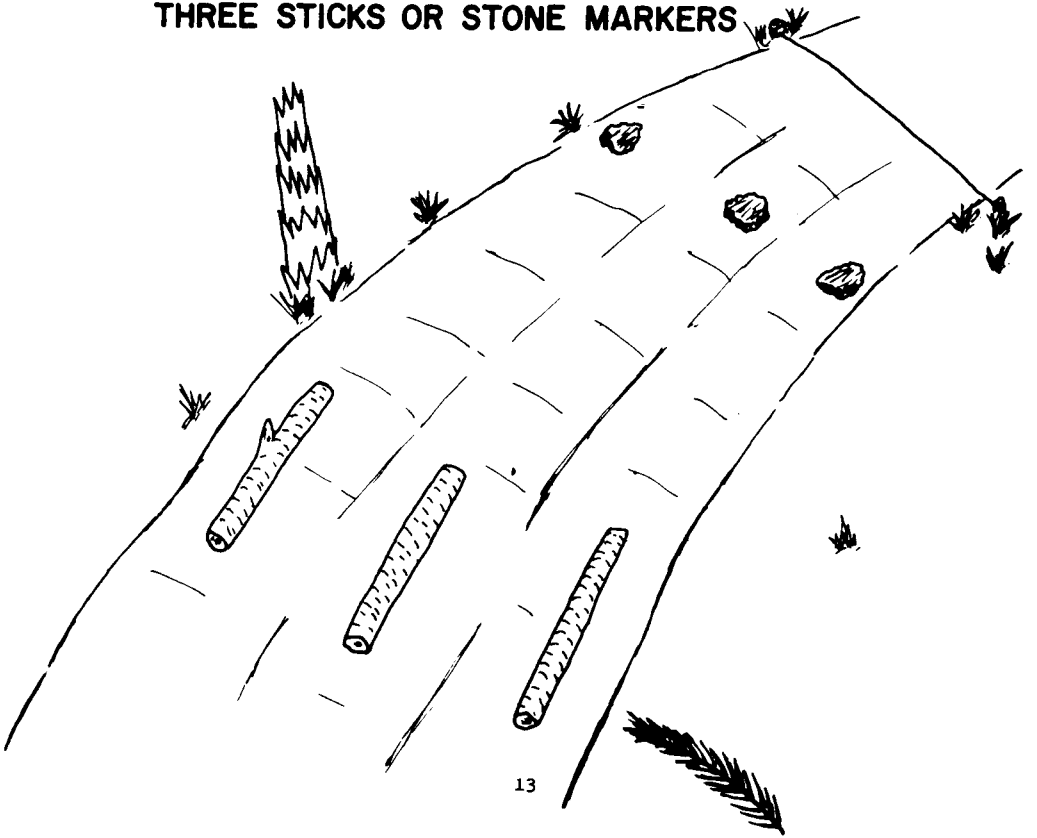
MINED DIRT ROAD OR TRAIL



STICK AND STONE MARKERS



THREE STICKS OR STONE MARKERS



IV. ANTIVEHICULAR MINES. The mines covered in this section are those known to be in use by the enemy either presently or in the recent past. The enemy may also have access to US antivehicular mines captured from US and Allied forces. These may include the M6A2 medium antitank mine, the M15 heavy metallic antitank mine, and the M19 plastic heavy antitank mine. These mines are not discussed in the section, but further information is available in FM 20-32, Land Mine Warfare, TM 9-1345-200, Land Mines, or from engineer personnel.

MINE, ANTITANK, METALLIC
TM-46 AND TMN-46 (USSR)

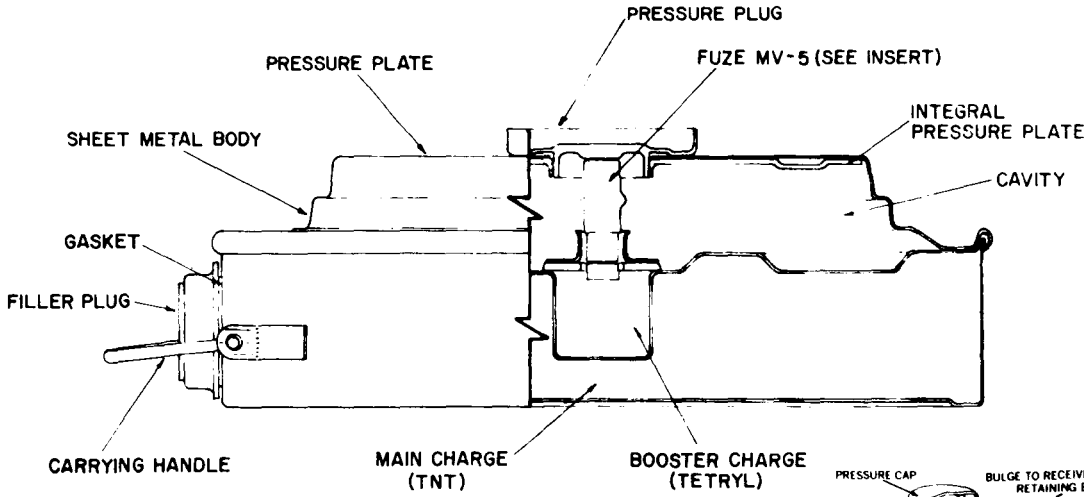
The Soviet TM-46 and TMN-46 are circular, blast-type, antitank mines having a sheet-steel casing. They contain one primary fuze well, located in the top center of the mine. The mines use the MV-5 pressure type fuze. A filler hole is located on the side of the mine beneath the carrying handle. The bottom of the mine is ribbed for additional strength. The TMN-46 also has a secondary fuze well in the bottom of the mine for booby-trapping and anti-lift purposes. There are no physical markings to distinguish the TM-46 from the TMN-46. Therefore, caution should be exercised when this type mine is encountered.

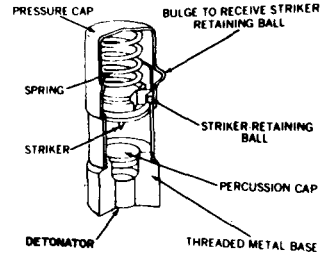
CHARACTERISTICS

Diameter	30.5 cm
Height	7.6 cm
Activating Force	182 kg
Explosive Filler	TNT
Explosive Weight	5.9 kg
Color	Dark green

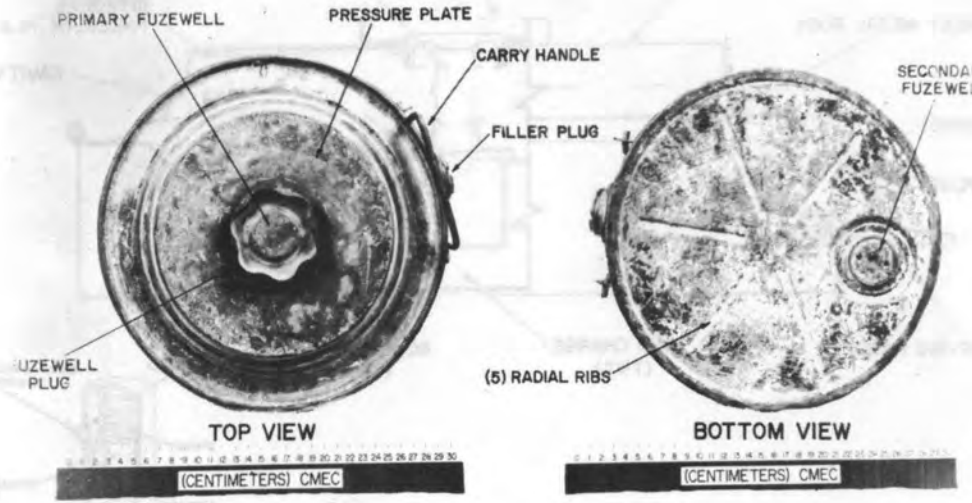
MINE, ANTITANK METALLIC, TM-46(SOVIET)

MINE, ANTITANK METALLIC, TM -46 (SOVIET)

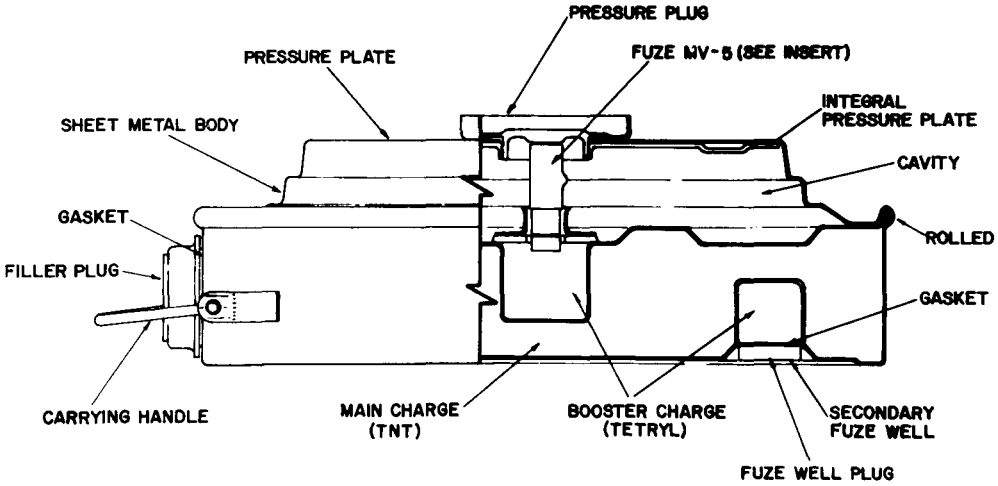


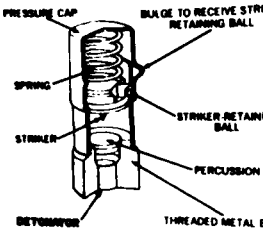


MINE, ANTITANK, METALLIC, TMN-46 (SOVIET)



MINE, ANTITANK METALLIC, TMN-46 (SOVIET)





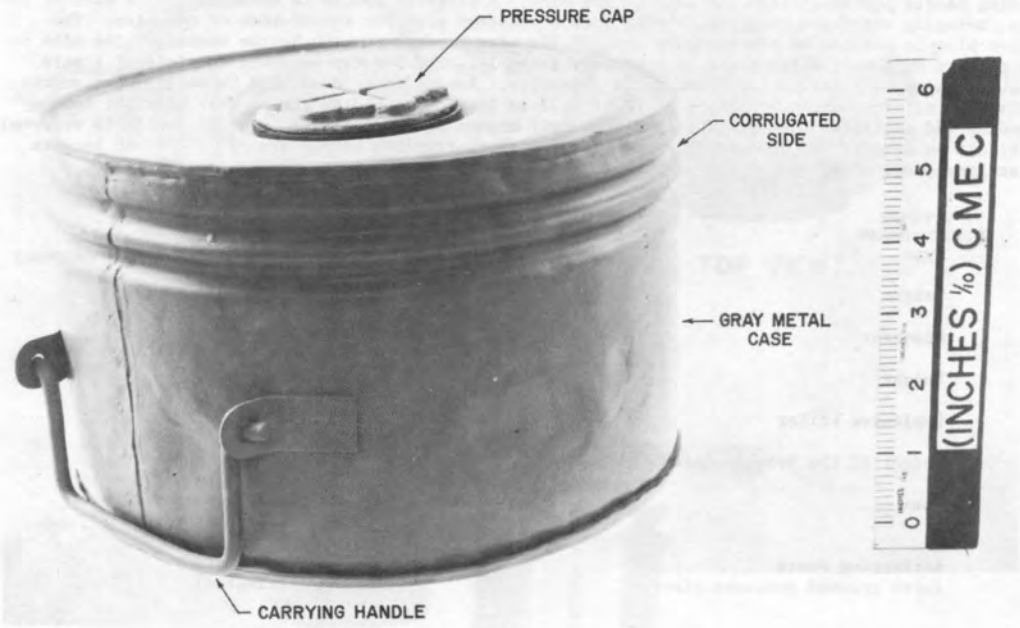
MINE, ANTITANK, TM-41 (USSR)

The Soviet TM-41 is a cylindrical, blast-type, antitank mine having a sheet-steel casing. Although introduced into service during World War II, it is still in use in the Soviet Army, as well as in several of the satellite armies which supply VC/NVA forces. The upper portion of the sidewall of the case has been corrugated to control the way in which the case crushes when a vehicle or tank runs over it. These corrugations assure reliable functioning of the MV-5 pressure fuze inside the case. An explosive filling plug is located on the bottom of the mine. Pressure on the top crushes the corrugated sides of the lid, depressing the pressure cap of the MV-5 fuze until it functions and detonates the mine.

CHARACTERISTICS

Color	Gray
Shape	Cylindrical
Maximum Diameter	25.4 cm
Height	14.7 cm
Weight	5.4 kg
Fuze	Pressure, MV-5 with MD-2 detonator
Actuating Force	182 kg (approximate)
Explosive	
Main Charge	3.9 kg amatol 80/20 or TNT
Booster	75 grams picric acid

MINE, ANTI-TANK, TM-41(USSR)



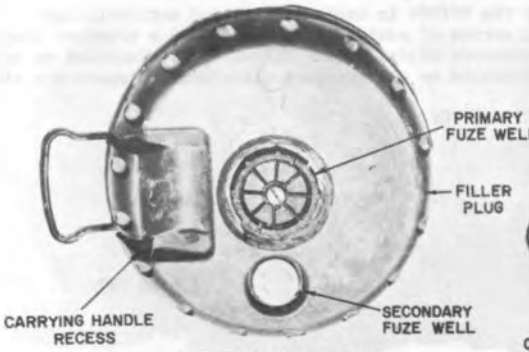
MINE, ANTIVEHICULAR, PM-60 (EAST GERMAN)

This mine is made of a black, plastic-like material, painted olive green. The pressure plate protrudes above the mine body surface 1.1 cm high and is 11.6 cm in diameter. A "Safe/Arm" rectangular sliding handle protrudes from the side of the mine. A carrying handle is attached to the side of the mine, swinging under the mine and fitting into a recessed area for emplacement of the mine. The filler plug is located on the opposite side of the mine handle. On the bottom center of the mine is the primary fuze well which houses the booster assembly. The booster assembly consists of a main booster charge, a pressure-type fuze, and a detonator. Arming is accomplished by pulling out on the "Safe/Arm" sliding handle. A secondary fuze well is located on the bottom of this mine for booby-trapping and anti-lift purposes. Due to the small amount of metal in the fuze, this mine is extremely difficult to detect. By deliberately crushing the pressure plate before arming, the PM-60 becomes an antipersonnel mine.

CHARACTERISTICS

Type	Non-metallic
Weight	11.4 kg
Diameter	32 cm
Height	11.7 cm
Explosive Filler	TNT
Weight of the Booster Assembly	1.1 kg
Fuze	Mechanical, pressure type or chemical, pressure type
Activating Force (with crushed pressure plate)	182 kg (estimated) 5 kg (estimated)

MINE, ANTI-VEHICULAR PM-60 (EAST GERMAN)



BOTTOM VIEW

TOP VIEW

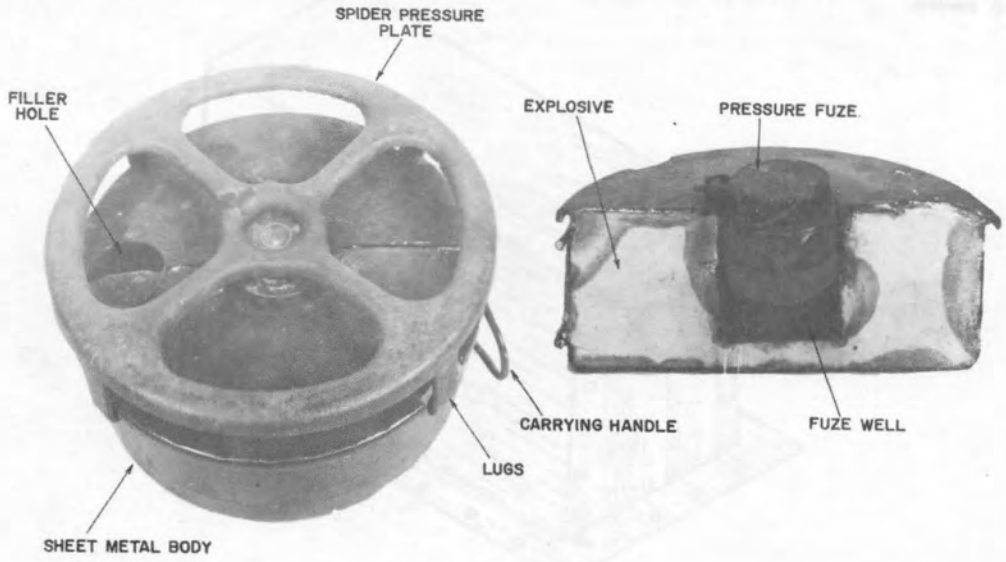
COPY OF US M1A1 AT MINE (CHICOM)

The ChiCom copy of US M1A1 AT mine is employed by the VC/NVA in both antitank and antivehicular roles. The ChiCom mine was copied from the US M1 series of antitank mines. It has a pressure plate with lugs to guide the downward pressure of the pressure plate. "Mine M1A1-TNT" is stenciled on top of the mine. Ninety kilograms (approximate) of pressure on the pressure plate will detonate the mine.

CHARACTERISTICS

Weight	5.2 kg
Diameter	20.3 cm
Height	7.6 cm
Filler	1.6 kg TNT

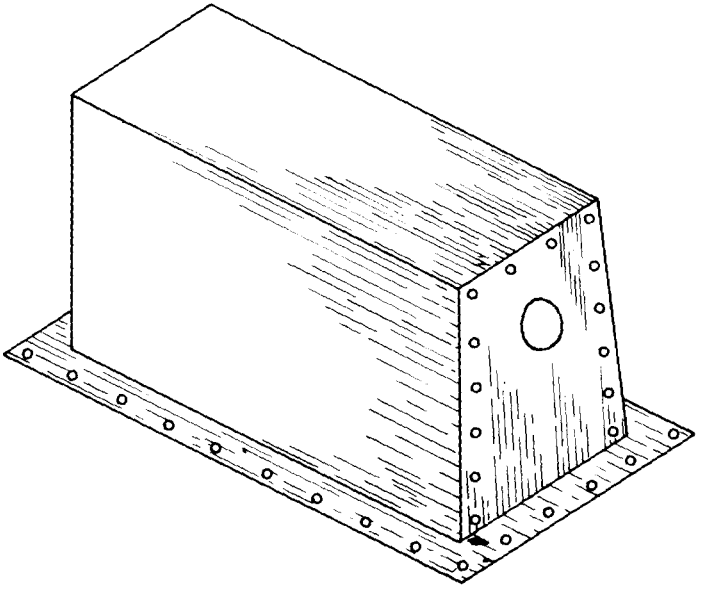
COPY OF US MIAI AT MINE (CHICOM)



VC PYRAMID SHAPED MINE, LONG TYPE

This mine, manufactured by the VC, comes in various sizes and shapes. It is either a frustum of a pyramid or a box, and is made of steel plates held together with rivets. Both ends are enclosed. One end has a well for a blasting can. It has been found containing one part TNT and one part black powder.

VC PYRAMID SHAPED MINE
LONG TYPE



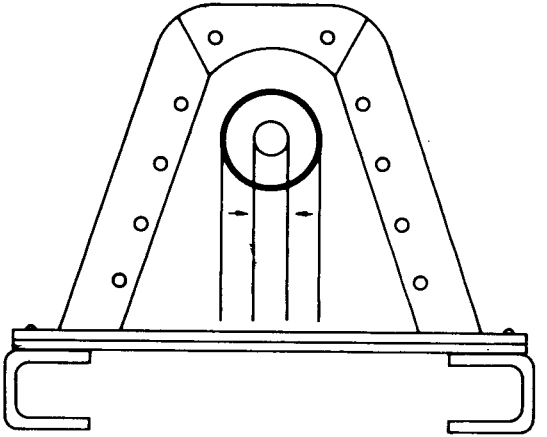
VC SHEET METAL "TURTLE" MINE

This "Turtle" mine is constructed of four separate pieces of sheet metal riveted together at the seams and coated with a waterproofing compound. A detonator well is located in the end of the mine. This mine is fired both electrically and mechanically. The electrical detonator is placed in the fuze well and sealed in wax or tar. The current for the detonator is supplied by a battery pack or hand-held generator. The mechanical device is usually a pull release device operated remotely with a pull or trip wire.

CHARACTERISTICS

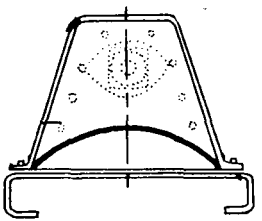
Color	Black
Weight	9.2 kg
Filler	Melinite or TNT
Weight of Explosive	3.2 to 3.7 kg
Height	12.7 to 15.4 cm

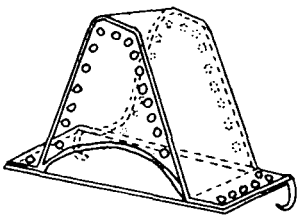
VC SHEET METAL "TURTLE" MINE

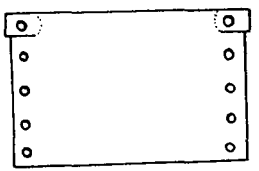


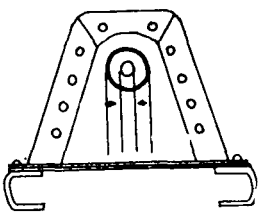
VC SHEET METAL "TURTLE" MINE

PERSPECTIVE









RIGHT VIEW

VC CAST IRON FRAGMENTATION ANTITANK MINE

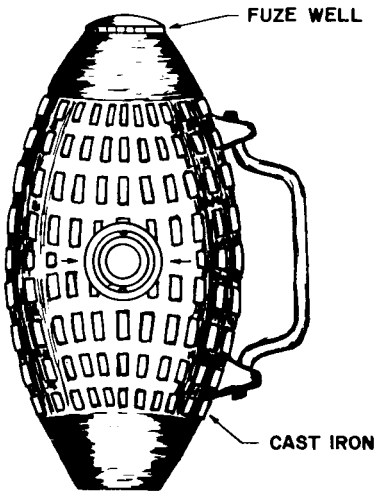
This egg-shaped mine is constructed of cast iron with serrations on its outer surface. The mine incorporates a handle for carrying. The detonator well is located in the end. The mine is fuzed with an electric detonator and is remote controlled. Current for the detonator is supplied by a battery pack or hand-held generator.

CHARACTERISTICS

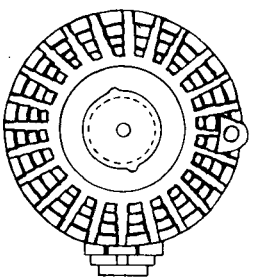
Color	Gray
Weight	5.5 kg
Length	22.9 cm
Diameter	12.7 cm
Filler	Melinite or TNT
Operation	Electrical

VC CAST IRON FRAGMENTATION ANTITANK MINE

FRONT VIEW



TOP VIEW



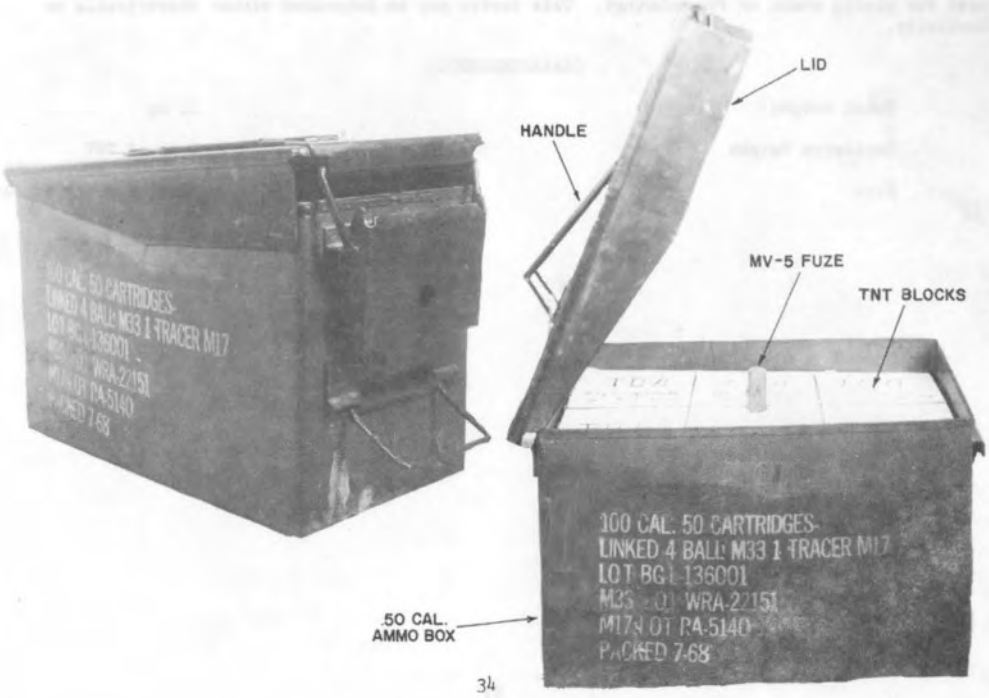
VC US .50 CALIBER AMMUNITION BOX MINE

This mine is constructed by filling a .50 caliber ammunition box with various explosives. It can be used for mining roads or for sabotage. This device may be detonated either electrically or mechanically.

CHARACTERISTICS

Total Weight	12 kg
Explosive Weight	9 kg of TNT
Fuze	Electrical or nonelectrical

VC US .50 CALIBER AMMUNITION BOX MINE



DUD SHELL MINES

This type of mine is improvised from dud artillery and mortar projectiles. Depending on its size and explosive filler, it is effective against both armored vehicles and personnel. This mine is usually employed along the sides of roads, trails, and construction work sites. The projectile fuze is removed and a hole is drilled into the explosive to accept a fuze. The mine is detonated mechanically or by an electrical charge from a battery pack or hand-held generator.

CHARACTERISTICS

Color	Varies
Weight	Varies
Explosive	TNT or any type of military explosive may be found in these types of improvised mines.

DUD SHELL MINES

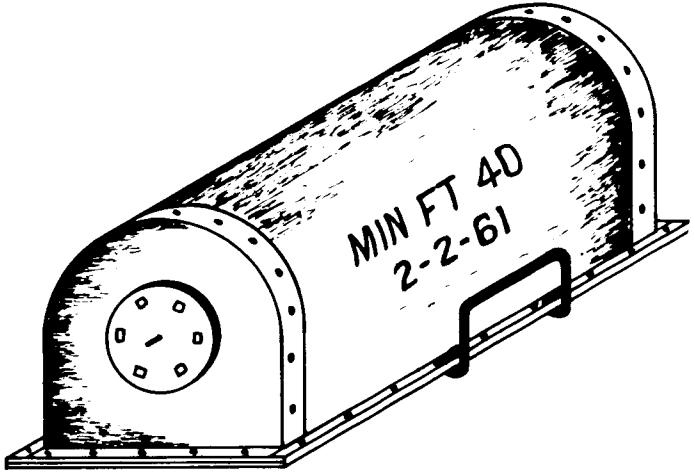
VC MINE FT40

This mine is used for mining roads and demolition work. It is made of steel and riveted together. It can either be electrically or nonelectrically detonated.

CHARACTERISTICS

Color	Black
Weight	55 kg
Explosive	Melinite, 38 kg
Body	Sheet metal

VC MINE FT 40



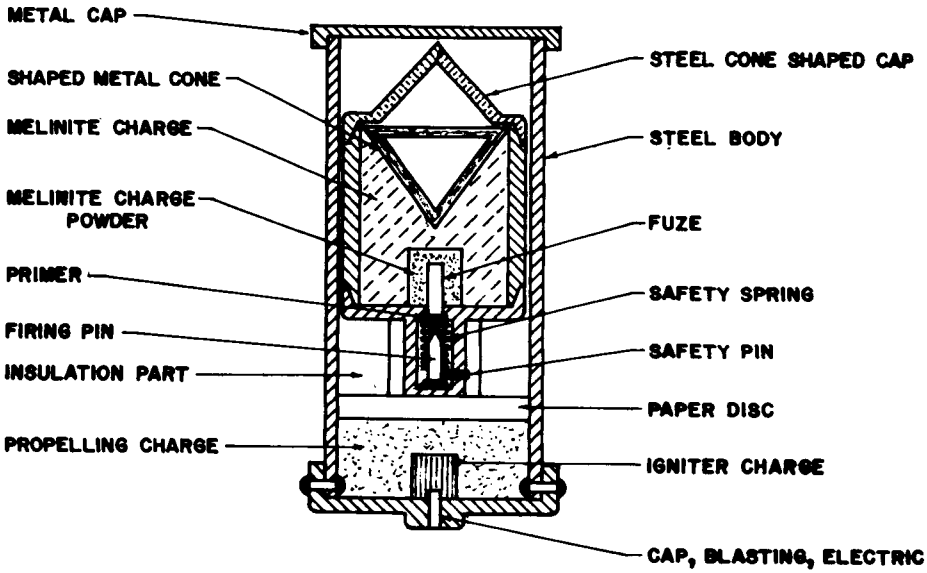
VC BOUNDING BAXOMINE SHAPED-CHARGE MINE

This is a shaped-charge mine employed as an antitank or antivehicular mine. It is constructed of steel pipe riveted to a metal base, and is also known as the Bounding Bazoo Mine. This type mine is placed in a container after the safety pin has been removed. The electric blasting cap will ignite the propelling charge and propel the mine upwards. When the mine impacts the firing pin will hit the primer, exploding the main charge.

CHARACTERISTICS

Weight	Approximately 2.0 kg
Diameter of Mine	15 cm
Height	25 cm
Diameter of Body	17 cm
Height of Body	30 cm
Body of Mine	Steel
Cap of Mine	Cast iron
Bursting Charge	Composition of melinite

VC BOUNDING BAXOMINE SHAPED CHARGE MINE



VC IMPROVISED MINE

This mine is make by using a tin can, TNT, and a US BLU 3/B bomblet as a pressure fuze. The upper half of the metal can is bent down over the BLU, providing a large pressure plate. The lower half of the can is filled with TNT or another explosive. The BLU 3/B is a complete bomblet except that the fins have been removed.

VC IMPROVISED MINE

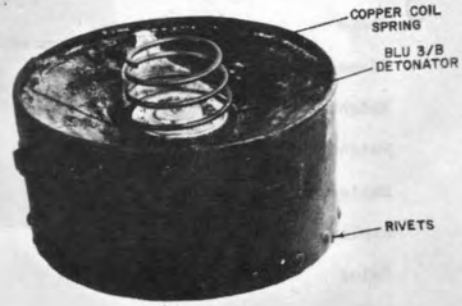
MINE, ANTIVEHICULAR (VIET CONG)

This VC mine is constructed out of scrap metal and unexploded ordnance with a US BLU 3/B bomblet as a fuze. The striker plate and fuze of the BLU 3/B is centered in the mine as an initiating device. A large spring made of soft copper-like material holds the pressure plate in the upward position. Because this spring has a very low resistance and can be easily depressed, the mine could also be employed as an antipersonnel mine. A bolt, located directly on the center of the pressure plate, rests in the center of the striker plate of the BLU 3/B. When this bolt is screwed down, the mine is armed. The pressure of a vehicle on the pressure plate overcomes the coil spring tension and pushes the bolt down on the BLU 3/B striker plate, initiating the primer and detonator in the BLU 3/B and detonating the mine. A filler hole is located on the bottom of the mine.

CHARACTERISTICS

Shape	Cylindrical
Diameter	21.4 cm
Height	11.5 cm
Weight	5 kg
Explosive Weight	2 kg
Explosive Filler	Tritonal
Color	Olive drab

MINE, ANTIVEHICULAR
(VIET CONG)



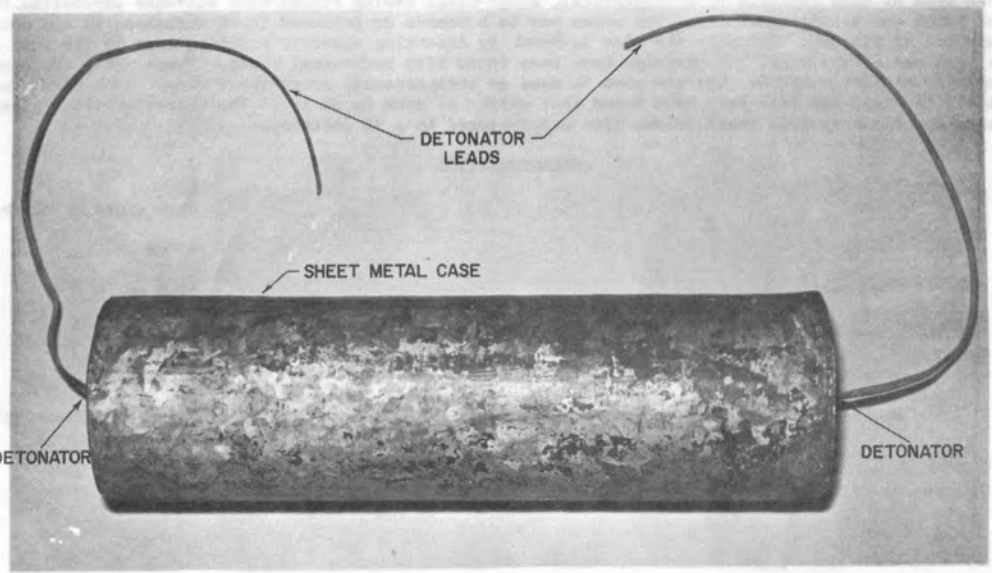
VC ROUND VOLUME MINE

This type of mine consists of a cylindrical, sheet-metal casing filled with salvaged explosives from dud bombs and artillery shells. The mines may be homemade or produced in VC workshops in and out of Republic of Vietnam. Normally the mine is fuzed by inserting electric blasting caps in the fuze wells at each end of the mine, but examples have been found with mechanical fuzes. These mines are usually employed against vehicles, but can also be used as antipersonnel or antiboat mines. The mines vary widely in size, and some have been found that weigh as much as 50 kg. The characteristics given below are for a typical round volume mine manufactured in a VC workshop.

CHARACTERISTICS

Color	Dark green or olive drab
Length	43 cm
Diameter	11.5 cm
Total Weight	7 kg
Weight of Explosive Filler	6 kg
Explosive Filler	Salvaged TNT or tritonal

VC ROUND VOLUME MINE



MCX 7A ANTIVEHICULAR MINE

The mine consists of a cylindrical body of thin sheet metal, three tetryl booster charges, three CX 7A pressure fuzes, three fuse-well covers, a secondary fuze well, and a carrying handle. The top plate of the mine has three blasting cap wells which hold the fuses and which fit into the tetryl booster charges. The pressure covers screw down over the fuzes to provide added resistance to the functioning of the fuses. The secondary fuze well on the bottom of the mine is for booby-trapping and anti-lift purposes. The CX 7A pressure fuze consists of an aluminum base, blasting cap, percussion cap, and an aluminum cap with a striker pin. Pressure on the aluminum cap forces the striker pin into the percussion cap detonating the blasting cap.

CHARACTERISTICS

Weight	8.9 kg
Diameter	28.1 cm
Height	8.5 cm
Explosive weight	7.9 kg
Markings on mine	80X1
Markings on fuze	CX 7A

VC HOMEMADE MCX 7A ANTIVEHICULAR MINE

V. ANTIPERSONNEL MINES. The enemy employs a wide variety of antipersonnel mines of both local and foreign manufacture. In this section the information will be limited to those mines which are not normally employed as booby traps or surprise firing devices. This section does not cover US mines which the enemy may have obtained from US or Allied minefields. These mines are primarily the M18A1 claymore, the M-14 Plastic Antipersonnel Mine, and the M16A1 Bounding Fragmentation Mine. Further information on these mines can be obtained from FM 20-32, Land Mine Warfare, and TM 9-1345-20, Land Mines, or through engineer personnel. In the past US and Allied troops have taken significant casualties from their own mines, which the enemy has stolen from minefields. This emphasizes the points that mines must be kept under observation, must be recorded, and must always be removed or destroyed when a unit departs a position.

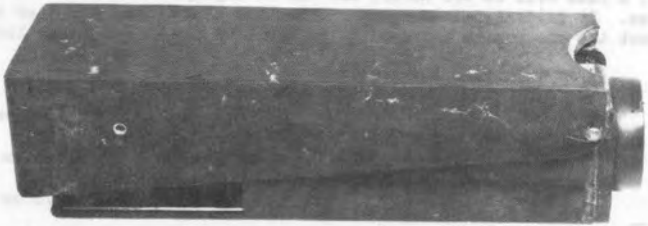
MINE, SHOEBOX, HUNGARIAN MODEL 62

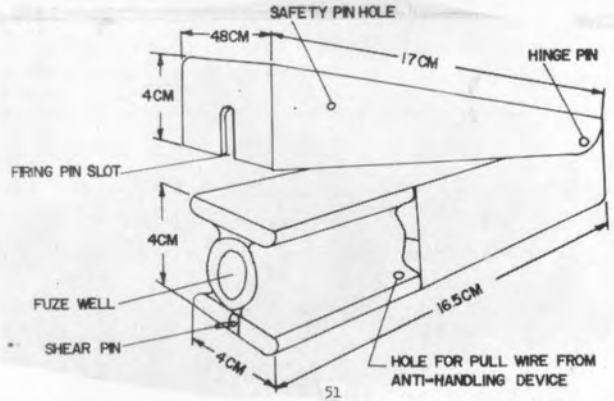
The Hungarian shoebox mine is a pressure-activated antipersonnel mine with an MUV fuze and an MD-2 detonato There is a slot in the free end of the mine's lid, which fits over the firing pin of the MUV fuze, allowing the striker to go forward, striking the primer and detonating the mine. Normally .5 kg of pressure is required to push the pin out of an MUV fuze. However, this mine incorporates a shear pin below the release pin to increase the force needed to approximately 4 kg.

CHARACTERISTICS

Material of Case	Bakelite plastic
Color	Brown
Weight	387 grams
Explosive Filler	75 grams TNT

MINE, SHOEBOX, HUNGARIAN MODEL 62





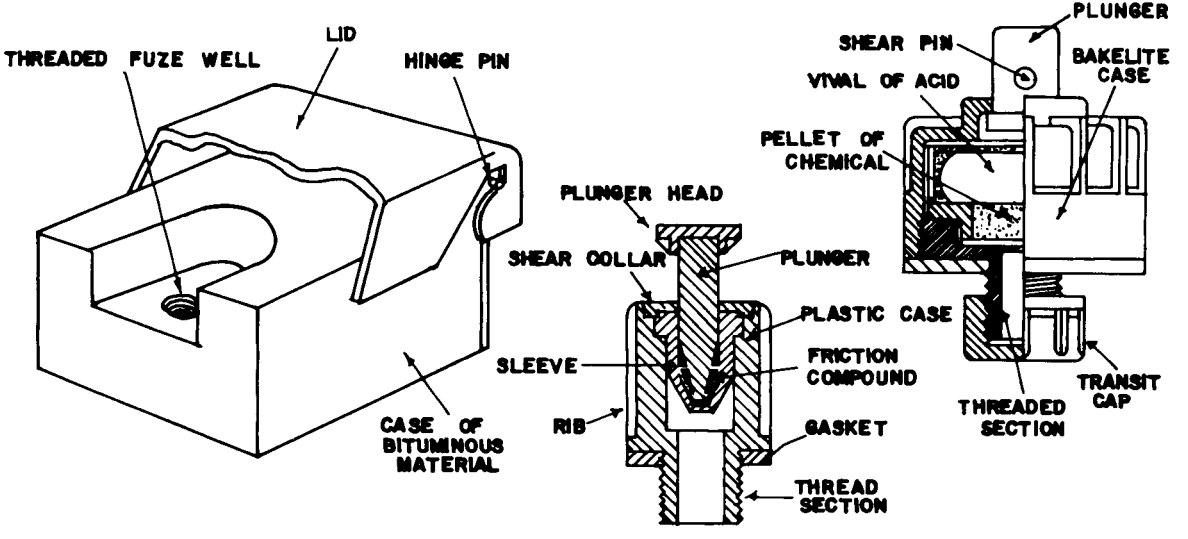
ANTIPERSONNEL MINE, MODEL 1948 (FRANCE)

This is a small SCHU-type mine in a bituminous case. It was probably captured during the Viet Minh War and is now being used by the VC/NVA forces. It has a hinged lid with a detonator well fitted with a screw plug at one end, a fuze well at the other, and can be employed with either a pressure chemical or pressure friction fuze. It is designed to wound rather than kill. The weight of a man on the mine rotates the lid about the hinge pins and applies pressure to the fuze, detonating the mine.

CHARACTERISTICS

Length	10.8 cm
Width	7.8 cm
Height	6.5 cm
Operating Force	22 kg
Explosive Filler	170 gms TNT or ammonium nitr

ANTIPERSONNEL MINE, MODEL 1948 (FRANCE)



PRESSURE FRICTION FUZE

PRESSURE CHEMICA FUZE

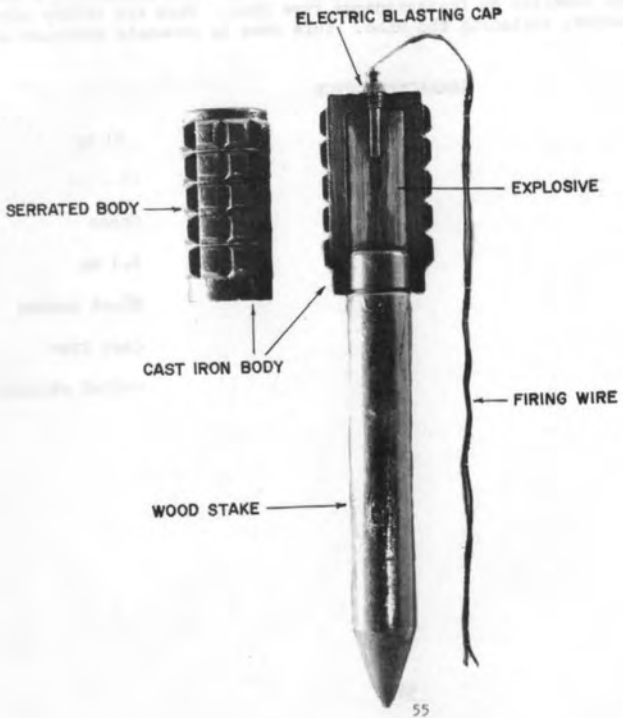
CHICOM COPY OF USSR POMZ-2M ANTIPERSONNEL MINE

This Chinese Communist antipersonnel mine (model unknown) is a copy of the Soviet POMZ-2M.

CHARACTERISTICS

Type	Fragmentation
Shape	Cylindrical serrated body mounted on a wooden stake
Weight	1.4 kg
Height of Cast Iron Body	10.7 cm
Height with Stake	40.6 cm
Diameter	6.1 cm
Explosive Filler	75 gm cast TNT
Fuse	Command detonated or trip wire
Serrations	50
Effective Fragmentation Radius	20 meters
Material	Cast iron
Color	Green

CHICOM COPY OF USSR POMZ-2M ANTIPERSONNEL MINE



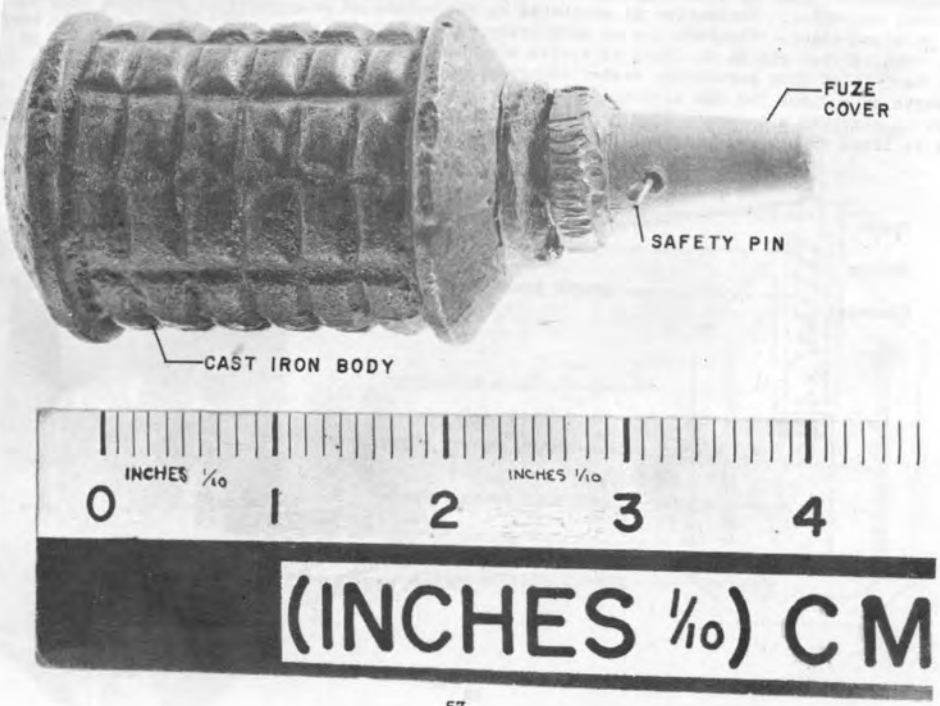
VC ANTIPERSONNEL MINE

This VC antipersonnel mine is a locally manufactured, fragmentation mine resembling a hand grenade. The mine has 60 serrations and contains an instantaneous type fuze. When the safety pin is pulled, the firing pin hits the detonator, exploding the mine. This mine is commonly employed along trails, roads, and in bivouac areas.

CHARACTERISTICS

Weight	.91 kg
Height	11.4 cm
Color	Green
Diameter	5.1 cm
Explosive Filler	Black powder
Material	Cast iron
Fuse	Cocked striker

VC ANTIPERSONNEL MINE



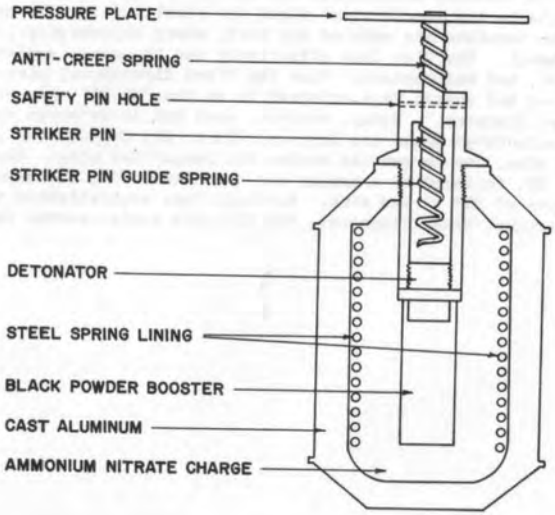
VC ANTIPERSONNEL MINE

The VC antipersonnel mine is a locally manufactured item employing a pressure-type firing fuze using an instantaneous detonator. Detonation is activated by the weight of an individual stepping on a 5.1 cm circular pressure plate. The fuze has an anti-creep spring between the pressure plate and the head of the fuze. The striker pin is designed to strike a primer cap for a 12.7mm cartridge, the head of which has been filed down permitting easier penetration of the striker pin. Another coil spring is used to serve as a guide for the striker pin. A paper-wrapped charge of black powder is attached to the primer to serve as a booster. The main charge of ammonium nitrate is encased in a cast aluminum body that is lined with a coiled steel spring for additional fragments.

CHARACTERISTICS

Shape	Cylindrical
Height	13 cm
Diameter	5.7 cm
Color	Black

VC ANTIPERSONNEL MINE



MINE, FIXED DIRECTIONAL (MDH) SERIES

"Min Dinh Huong" (MDH) in the Vietnamese language means mine, fixed directional. The VC/NVA employ numerous versions of the MDH mine, rectangular or circular in shape, varying in size, either manufactured in North Vietnam or homemade by the Viet Cong in jungle workshops. Their effective range varies from 70 meters to 200 meters according to size, shape, weight of explosive, amount and type of fragments, and methods of construction. Although designed for electrical command detonation, the MDH can easily be modified for mechanical detonation. Fragments in the manufactured mines are steel rods cut to uniform size, while those in the homemade versions are made of any hard, sharp objects;e.g., nails, rocks, glass, and scrap metal. The Viet Cong effectively use the mines against personnel, lightly armored vehicles, and helicopters. When the fixed directional mine was first encountered in Vietnam, all sizes and shapes were referred to as the "DH-10" mine or the erroneous nomenclature of "Chinese Claymore." Today, however, each MDH is referred to by its individual nomenclature. The manufactured mines are lettered MDH or DH, followed by a number which indicates the size of the mine, the larger the number the larger the mine. The homemade versions are lettered MDH or DH, followed by a number and the letter "K", the number indicating the approximate kilograms of TNT in the mine. Although less sophisticated than the US M18A1 Fragmentation Antipersonnel Mine (Claymore), the MDH mine series serves the purpose for which intended.

VC MINE, FIXED DIRECTIONAL, MDH C-40

The MDH C-40, Directional Antipersonnel Mine resembles the US M18A1 "Claymore" mine. The mine is rectangular in shape and curved to form a convex surface towards the target. The mine casing is made of sheet metal with three folding legs, or with two "D" rings on the top surface of the mine. Steel rod fragments are embedded in a tar-like matrix to provide the fragmentation effect. The body of the mine has two fuze wells accepting electrical or nonelectrical blasting caps. This mine is usually command detonated.

CHARACTERISTICS

Weight	1.66 kg
Length	22.8 cm
Width	7.9 cm
Depth	3.8 cm
Number of Fragments	400 to 750
Dimensions of Fragments	5mm diameter by 3mm to 13mm length
Explosive Filler	800 grams cast TNT with Tetrytol booster for each fuze well
Markings	Top: Directional arrow Back or top: MDH C-40

VC MINE FIXED DIRECTIONAL, MDH C-40

VC MINE, FIXED DIRECTIONAL

This is similar in design to the Mine, Fixed Directional, MDH-2, but has no identifying markings. The mine is made of thin sheet metal and is rectangular. The mine is curved to present a concave surface towards the target. The fuze well is located in the back center of the mine. The mine is supported for positioning by two sets of folding legs, and is usually electrically command detonated.

CHARACTERISTICS

Type	Fragmentation
Weight	3.41 kg
Length	22 cm
Width	12.5 cm
Depth	6.25 cm
Explosive Filler	Cast TNT
Weight of Explosives	1.14 kg
Color	Dark green
Fragments	Steel rod
Dimensions of Fragments	6 mm diameter by 6 mm to 10 mm length
Number of Fragments	300 (Approximate)

VC MINE, FIXED DIRECTIONAL

VC MINE, FIXED DIRECTIONAL MDH-2

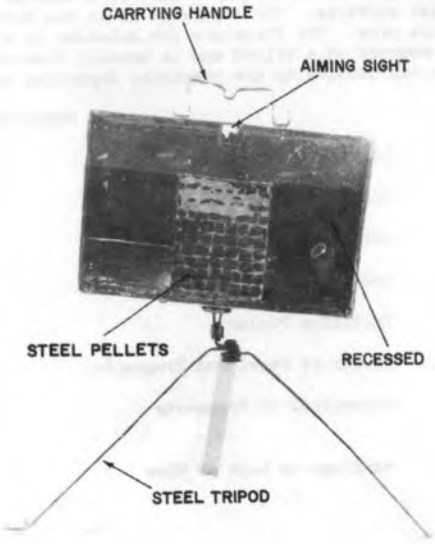
The fixed directional mine (MDH-2) is a rectangular mine made of thin sheet metal. A standard ChiCom 200 gram block of TNT is used as a booster charge. The front of the mine is recessed with three flat surfaces. The fuze well is in the bottom of the mine, and a crude sighting device is on top of the mine. The fragments are embedded in a mortar matrix under the front metal covering. The mine is mounted on a tripod and is usually electrically command detonated; however, other means of mounting and detonating are possible, depending on the type of deployment.

CHARACTERISTICS

Length	19 cm
Width	12 cm
Depth	5.4 cm
Color	Dark green
Explosive Filler	1.2 kg TNT
Number of Steel Rod Fragments	345 (Approximate)
Dimensions of Fragments	6 mm diameter by 6 mm to 10 mm length
Markings on Back of Mine	MDH-2

MINE, FIXED DIRECTIONAL MDH-2

REAR VIEW



FRONT VIEW

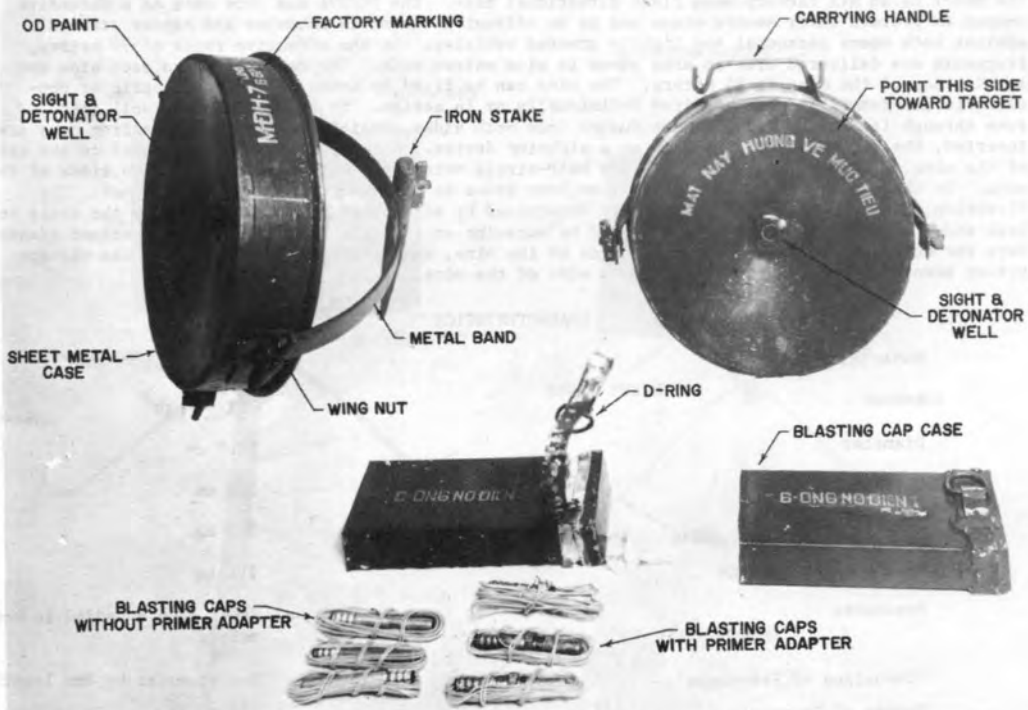
MINE FIXED DIRECTIONAL, MDH-7 (NVA)

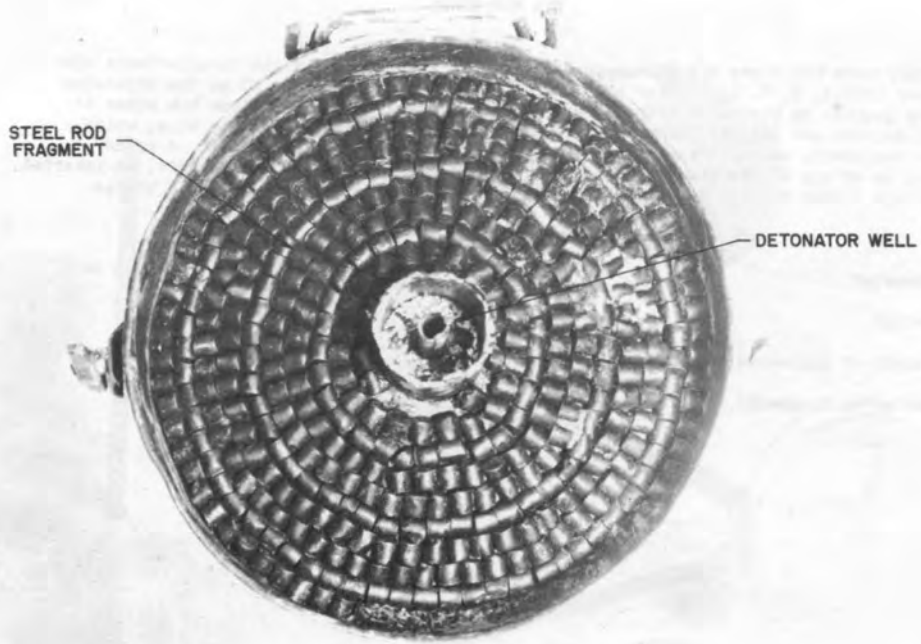
The MDH-7 is an NVA factory made fixed directional mine. The VC/NVA use this mine as a defensive weapon to protect their secure areas and as an offensive weapon in ambushes and sapper attacks against both enemy personnel and lightly armored vehicles. At the effective range of 70 meters, fragments are delivered over an area seven to nine meters wide. The danger area to each side and to the rear of the mine is 25 meters. The mine can be fired by using either an electric or non-electric detonator, and can be fired individually or in series. It has a detonator well that runs through its entire body, making fuzing from both sides possible. Before the blasting caps are inserted, the detonator well is used as a sighting device. A carrying handle is located on the side of the mine. The mine is equipped with a half-circle metal band with wing nuts on both sides of the mine. To the center of this metal band, an iron stake is attached by a bolt and wing nut. The direction of aim and range of the mine is determined by adjustment of the wing nuts on the stake and both sides of the mine. The mine is armed by screwing an electric blasting cap, with primer adapter, into the detonator well on the concave side of the mine, and putting another blasting cap without primer adapter against it from the convex side of the mine.

CHARACTERISTICS

Materiel of Case	Sheet metal
Color	Olive drab
Diameter	19.8 cm
Thickness	5.1 cm
Overall Weight	3.8 kg
Weight of TNT Charge	1.6 kg
Fragments	Steel rods embedded in mortar matrix
Dimensions of Fragments	8mm diameter by 8mm length
Number of Fragments	420 to 460

MINE FIXED DIRECTIONAL, MDH-7 (NVA)




STEEL ROD FRAGMENT
DETONATOR WELL
13
14
15
16
17
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CMEC

NVA MDH MINES

These NVA factory made MDH mines are saucer-shaped, varying in size and weight in accordance with the model number (MDH-3, 5, 8, 10). They are made of sheet metal with cast TNT as the explosive filler, and are mounted on stands or tripods made from flat steel stock that allow the mines to be pivoted 360 degrees and elevated to any desired angle. The concave face of the mine, which points towards the enemy, contains steel rod fragments embedded in a mortar matrix. A crude sighting device is on top of the mines. A blasting cap, either electric or nonelectric, in inserted into the fuze well. When the cap is fired it ignites the booster, detonating the main charge.

CHARACTERISTICS

Diameter	17.5 to 30.5 cm
Weight	5.5 to 14 kg
Weight of Explosive	1.8 to 7 kg
Number of Fragments	160 to 900

NVA MDH MINES

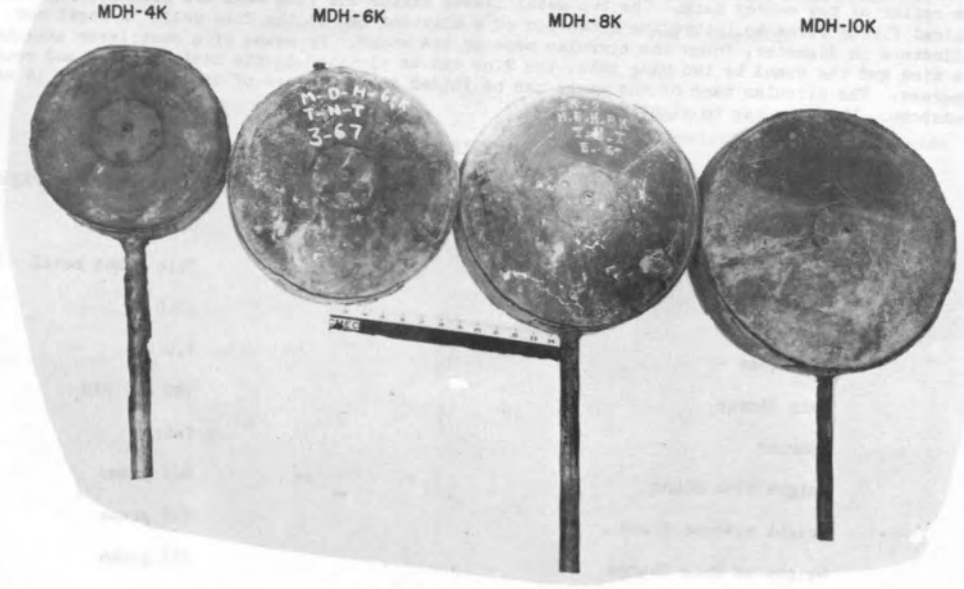
VC HOMEMADE MDH MINES

Typical homemade MDH mines made in VC jungle worksites are made of sheet metal with cast TNT used as the explosive filler, and are mounted on steel pipes. The concave face of the mine, which points towards the enemy, contains various fragments embedded in a mortar matrix. Some have crude sighting devices on top of the mine, and may be detonated by either electric or nonelectric blasting caps.

CHARACTERISTICS

	MDH-4k	MDH-6k	MDH-8k	MDH-10k
Diameter	24.5 cm	29.9 cm	32.5 cm	39.5 cm
Thickness	7.3 cm	7 cm	7 cm	7 cm
Total Weight	7.9 kg	10.7 kg	13.4 kg	16.3 kg
Weight of TNT	3.9 kg	6.1 kg	7.3 kg	10 kg
Number of Fragments	371	588	796	956

VC HOMEMADE MDH MINES



MDH-5 MINIATURE FIXED DIRECTIONAL MINE

The MDH-5 Miniature Fixed Directional Mine is circular and has a concave side which faces the target. A double row of steel pellets are embedded in a matrix of resin. The fuze well is located in the center of the convex back. The two metal cleats beside the fuze well are used to wrap the electrical firing wires to insure the retention of a blasting cap in the fuze well. A steel rod, 5 millimeters in diameter, forms the circular base of the stand. By means of a cantilever attached to the mine and the stand by two wing nuts, the mine can be elevated to the desired angle and rotated 360 degrees. The circular base of the stand can be folded into the face of the mine, making it easy to transport. The mine has no sighting device.

CHARACTERISTICS

Type	Antipersonnel-fragmentation
Color	Olive drab
Case Material	Thin sheet metal
Diameter	10.6 cm
Thickness	4.9 cm
Main Charge	TNT and RDX
Booster	Tetryl
Weight with Stand	886 grams
Weight without Stand	797 grams
Weight of Main Charge	265 grams

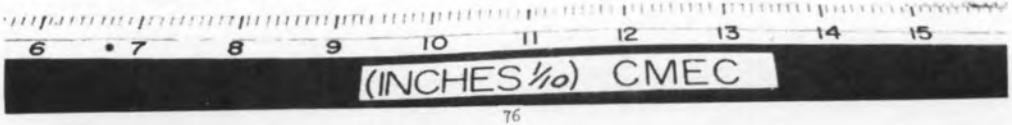
CHARACTERISTICS (Cont)

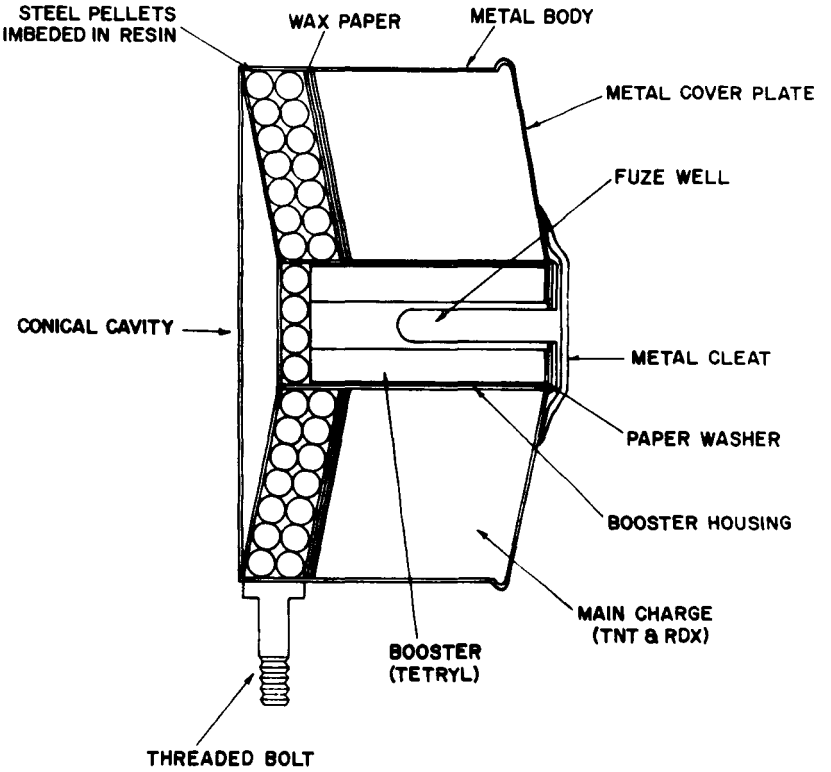
Weight of Booster		12 grams
Fragments -	Material	Pellets made from steel rod
	Dimensions	5mm X 5mm dia.
	Quantity	482
Markings:	Concave face	MAT NAY HUONG VE FIA DICH Translation: Point this side toward enemy
	Top	MDH-5 LO3-67-Y

MDH-5 MINATURE FIXED DIRECTIONAL MINE

FRONT VIEW

REAR VIEW





NOT DRAWN TO SCALE

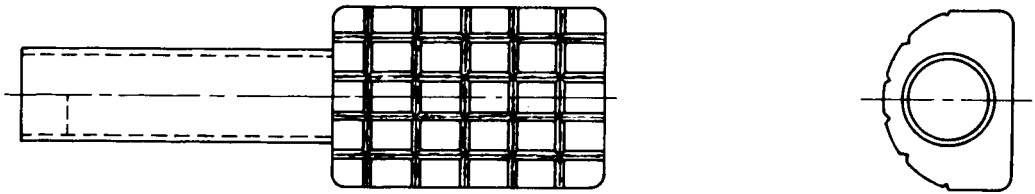
VC CYLINDRICAL CEMENT FRAGMENTATION MINE

This locally manufactured cylindrical mine is constructed of cement. It incorporates a carrying handle fabricated from a 5.1 cm piece of pipe. The pipe also serves as the housing for the detonator. The mine is fused with an electrical detonator, and is usually fired remotely from a battery pack or hand-held generator.

CHARACTERISTICS

Color	Gray
Weight	5.6 kg
Length	24.4 cm
Height	12.7 cm
Filler	TNT
Material	Iron pipe and cement

VC CYLINDRICAL CEMENT FRAGMENTATION MINE



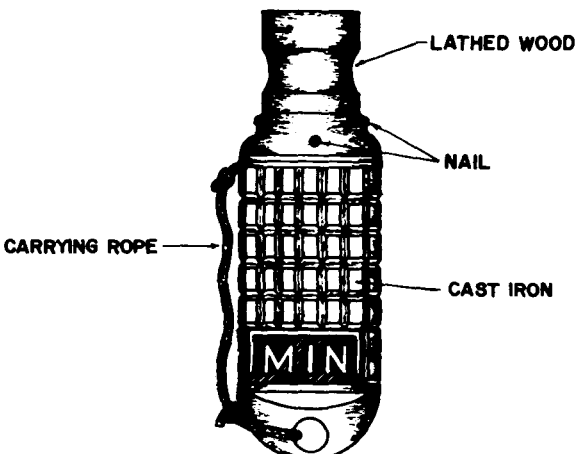
VC CYLINDRICAL, CAST IRON, FRAGMENTATION MINE

This mine is constructed of cast iron and is filled with cast TNT, and is similar to a stick grenade. A trip wire is attached to the pull wire of the friction igniter. Pressure applied to the trip wire will extract the pull wire through a match compound, igniting the delay element. Two to four seconds after the extraction of the pull wire the mine will detonate.

CHARACTERISTICS

Color	Gray or black
Weight	1 kg
Diameter	5.1 cm
Filler	TNT
Operation	Friction pull

VC CYLINDRICAL CAST IRON FRAGMENTATION MINE



VC MODIFIED FOUGASSE

This homemade fougasse is a can with a shaped-charge mine on one end, and the other end open. Two wires lead to an electrical detonator in the rear center of the mine. The VC fill the can with fragments of rocks, broken glass, nails, and other sharp objects and make it into a directional mine. It could effectively be employed as an antipersonnel, antivehicular, or anti-helicopter device.

CHARACTERISTICS

Height of Can	50.80 cm
Diameter of Can	26.03 cm
Diameter of Mine	25.40 cm
Thickness of Mine	6.35 cm
Total Weight of Fougasse without Fragments	7.43 kg
Weight of Explosive	3.5 kg
Can Material	Galvanized sheet metal
Mine Material	Sheet
Type of Mine	Shape charge
Explosive	Nitrate black powder
Method of Detonation	Electrical

VC MODIFIED FOUGASSE

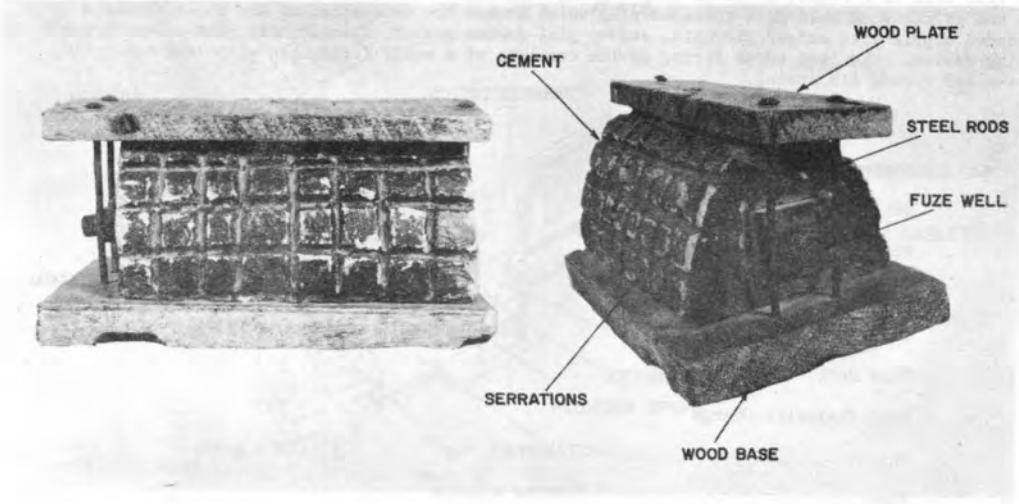
VC CEMENT "TURTLE" MINE

This is a locally manufactured mine with a body of cement. The mine is usually employed as a demolition charge by attaching it to a long pole and placing it against buildings and fortifications. The mine is fuzed both electrically and mechanically. A hand grenade friction igniter is used as the nonelectrical device.

CHARACTERISTICS

Color	Gray
Weight	5.6 kg
Length	22.9 cm
Diameter	12.7 cm
Filler	TNT
Material	Cement and wood

VC CEMENT "TURTLE" MINE



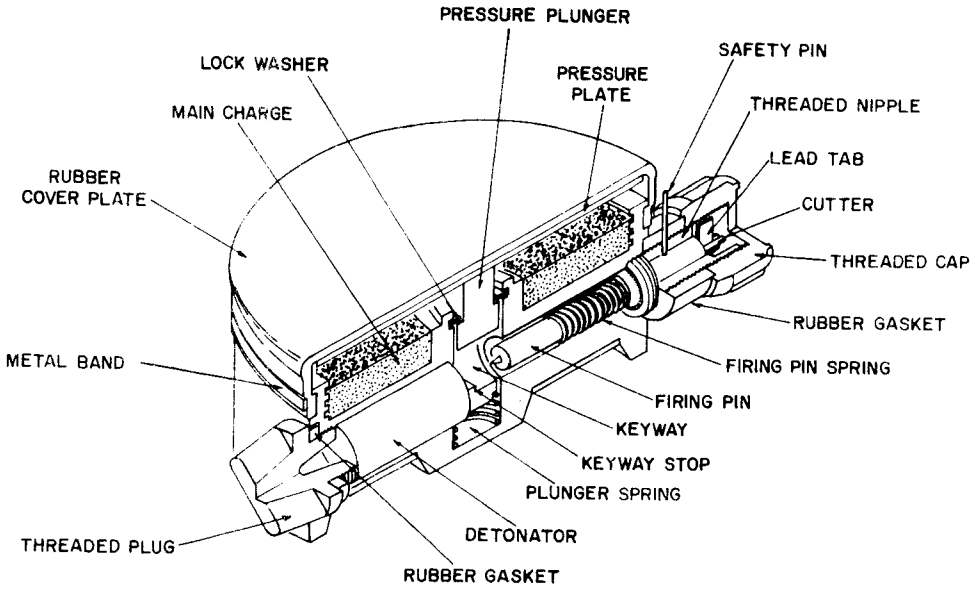
SOVIET MODEL PMN ANTIPERSONNEL MINE

The PMN Antipersonnel mine is a delay type mine. The mine consist of three main components: a rubber pressure plate, a duroplastic body, and a lead break firing device. The top pressure plate consist of two parts: a molded rubber cover and a plastic disk, which are bonded together. The rubber cover pressure plate is held securely to the outer upper portion of the mine by a metal band. The mine has a centrally located cylindrical well which houses a firing pin retainer plunger and a plunger spring. The plunger has a slotted keyway and keyway stop. The fuze well is a round, hollowed tunnel going completely through the diameter of the mine. At one end of the fuze well is a threaded plug which houses the detonator; at the other end is a threaded nipple with safety pin hole, safety pin, rubber gasket, threaded cap, and a lead break firing device. The lead break firing device consists of a metal firing pin with lead tab cutter and firing pin spring.

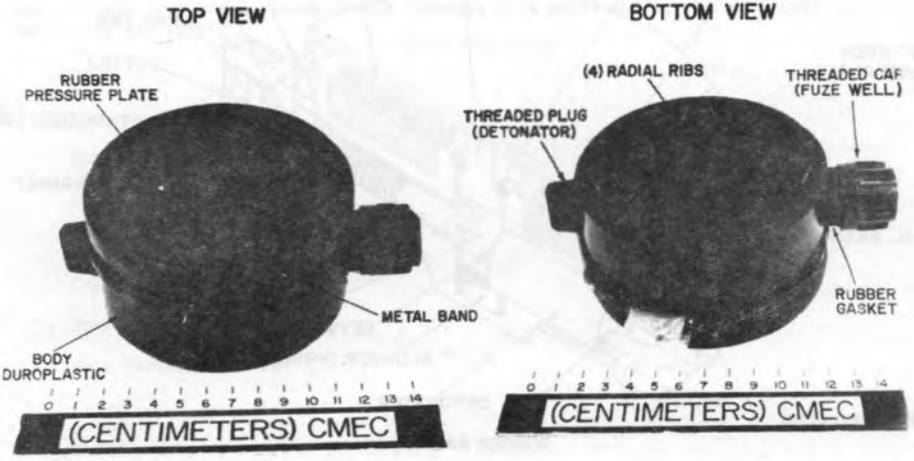
CHARACTERISTICS

Type	Blast
Maximum Diameter	11 cm
Height	5.35 cm
Weight	680 grams
Activating Force	5.5 kg to 9 kg
Case Material	Duroplastic
Fuze Well	1
Main Explosive Charge	TNT
Weight	212 grams
Fuze	
Model	Integral
Type	Pressure
Safety Device	Time Delay

MINE, ANTIPERSONNEL, NONMETALLIC, MODEL PMN (SOVIET)



MINE, ANTIPERSONNEL, NONMETALLIC, MODEL PMN (SOVIET)

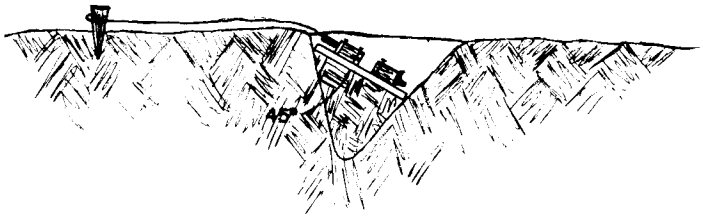


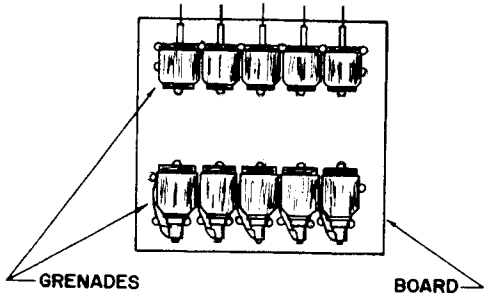
VI. ANTI-HELICOPTER MINES. Due to the nature of the Allied operations in Vietnam, the VC/NVA have introduced a new category of mine warfare, anti-helicopter mining. Most of the devices used are adaptations of mines or hand grenades employed with special methods and/or special fuzes. They are usually directed at landing or low flying helicopters. Most of them require the helicopter to be directly above or close to the mine in order for the mine to be effective, but when the right situation occurs these mines can be devastating. These mines are either command detonated or detonated by some action of the helicopter, such as rotor wash or physically touching trip wires.

GRENADE LAUNCHER

A funnel-shaped hole is dug 60 cm in diameter and 75 cm deep. A TNT charge of approximately 3 lbs is placed in the bottom of the hole. The charge is capped and lead wires extend along the ground. The charge is then tamped with dirt to within 8 cm of the top of the hole. A board 60 cm square is placed over the hole. Nails are driven into the board 7 cm apart and grenades are placed between the nails which hold the spoons (handles) in place as the safety pins are pulled. Lead wires are attached and run to a place of concealment from which the device is command fired. When a helocopter is about 120 meters from the launchers, the charge is detonated. The grenades are tossed from 120 to 150 meters into the air within a perimeter of 120 meters. The device is also used as an antipersonnel device.

GRENADE LAUNCHER

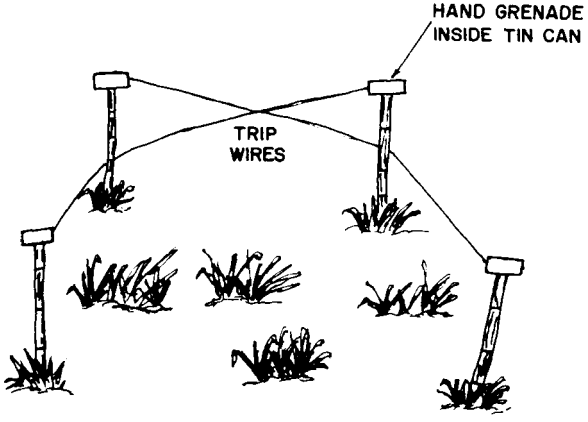




HELICOPTER TRAP

Bamboo poles are placed in the ground with a tin can attached to the top of each pole. Hand grenades with safety pins removed are placed inside the cans. Trip wires are attached to the grenades from one pole to another in an "X" pattern. The grenades drop to the ground and detonate when a helicopter touches the trip wire.

HELICOPTER TRAP



MDH MINE HELICOPTER TRAP

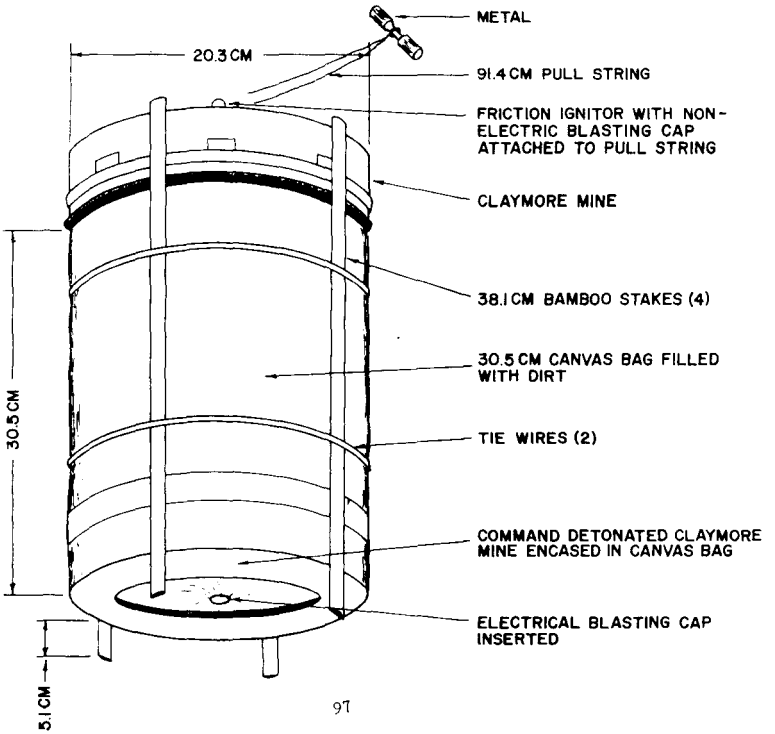
This technique employs an MDH mine mounted in a tree as an anti-helicopter mine. There are two methods of employment. The first method is aimed at reconnaissance helicopters. The mine is mounted in a tree on the edge of a clearing and dummies are set up under the trees. When a helicopter makes a low pass to check out the dummies the VC command detonate the mine. The second method is used against assault helicopters. Several mines are planted around a suspected landing zone and when the helicopters slow to land, the mines are command detonated. The large MDH-10 mines are used for these traps because of their greater range.

MDH MINE HELICOPTER TRAP

VC FLYING MDH MINE

This mine is a combination of two VC MDH mines. Between the two mines is a dirt-filled canvas bag. The entire assembly is held together with bamboo sticks and baling wire. The mine is employed approximately 25.4 cm in the ground at a 45° angle toward the target. Activation is achieved by command detonation of the lower claymore, causing the canvas bag and upper claymore to be blown in the air approximately 23 meters. There is a friction, 4-second delay, igniter-type fuze in the upper claymore, anchored to the ground with a pull string, which activates the upper mine and provides an air burst.

VC FLYING MDH MINE



VII. WATER MINES.

A. General. Vietnam's numerous waterways have resulted in the use of watercraft by all military services, making water mines a hazard. The VC/NVA swimmer sappers employ several types of sophisticated Communist Bloc water mines. These mines are usually employed against ships and larger vessels. In addition, the enemy uses a wide range of homemade anti-boat mines, many of which are also used as antivechicular or antipersonnel mines.

B. Typical Methods of Initiating. Water mines are exploded almost exclusively by command detonation, either electrically or by a pull wire.

C. Methods of Employment.

1. Water mines have been used in canals and rivers. The techniques are similar in both applications.

2. The VC tie mines and explosives to tree trunks or put them into boats and place them in the middle of the waterway. When a target passes by, the mine is exploded. This method is particularly effective since it will lure someone in a friendly craft to investigate. When the tree trunks are employed, some form of camouflage, such as duckweed, is needed. The command detonation technique makes it necessary to check suspicious looking objects from a distance to spot wires leading to the shore.

3. The VC have been known to plant command detonated mines in the bottom of shallow waterways, such as canals that are less then a meter in depth. Friendly forces should be on the lookout for wires running to the shore, which enable the VC to explode a mine when a vessel passes.

4. In deep channels mines are set up at varying depths for different vessels. The mines can also be employed in such a manner that VC on the river banks can position them in the paths of targets.

5. Most water mines appear to have one thing in common: the detonation is usually initiated electrically. Conventional mine sweeping operations will detect these mines, but there is the danger that during the course of the operation a mine will be command detonated by an enemy and make provisions to eliminate a mine threat.

D. Likely Places of Employment.

1. Water mine locations are similar to those for land mines. The VC seek to place water mines where vessels must slow down, bunch up, or stop.

2. The mines may be found at bends, narrow straits, and in midchannel. Some water mines can be positioned by the operator on the shore, and may be located anywhere in a channel. Since water mines are often used with ambushes, possible ambush sites are also likely mine sites.

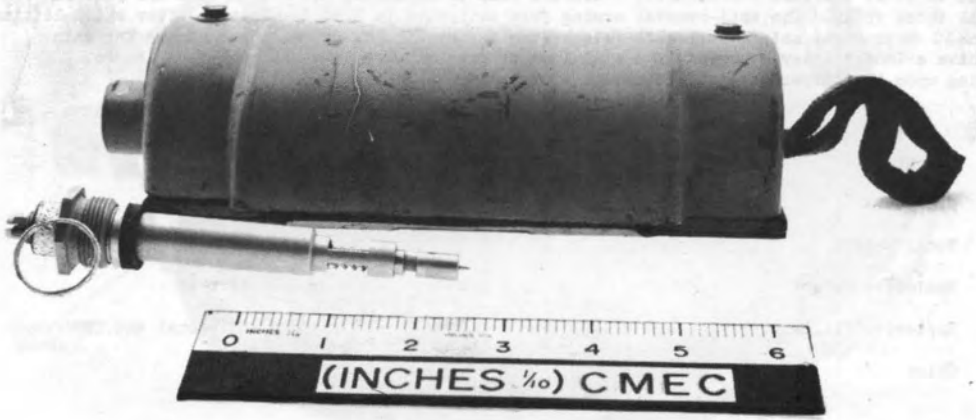
LIMPET MINE (USSR)

This magnetic mine is being employed by the VC/NVA forces against Allied shipping in the Republic of Vietnam. It consists of a semi-cylindrical bakelite case with one kg of cast tritonal. The mine is attached to the metal surface by two horseshoe magnets located at each end of the case. The initiating device is a machined, anodized-aluminum, mechanical time device operated by a spring-loaded firing pin. The spring is restrained by a wire passing around a lead delay tab. Water temperature and the thickness of the tab determines the length of time required for the wire to cut through the tab and detonate the mine. The time delay varies from a minimum of five minutes to a maximum of 832 hours.

CHARACTERISTICS

Type	Blast
Weight	4.5 kg
Length	26.7 cm
Diameter	11.4 cm

LIMPET MINE (USSR)



LIMPET MINE, BPM-2 (USSR)

This mine is a hemispherical, magnetic water mine designed to be emplaced by swimmer sappers. The aluminum outer case has three lead break, delay fuzes projecting from it, two on one side and one on the opposite side. The two adjacent fuzes are detonating fuzes, and the single fuze is a short delay which arms an anti-removal device. (This mine is often employed with supplementary charges fastened to it to increase its effect.) When the mine is emplaced, the safety pins are removed from all three fuzes. The anti-removal arming fuze activates in 5 to 20 minutes, after which lifting the mine 10 mm from the ship's hull will release the firing pin and detonate the mine. The main fuzes have a longer delay, varying from a minimum of five minutes to a maximum of 832 hours, depending upon the temperature and thickness of the lead delay tab.

CHARACTERISTICS

Height	11.4 cm
Diameter	25.4 cm
Total Weight	6.4 kg
Explosive Weight	2.8 kg
Explosive Filler	Tritonal and TNT
Color	Gray

LIMPET MINE, BPM-2(USSR)

SOVIET MARK MKB WATER MINE

The Mark MKB water mine is a floating, moored, contact mine with chemical contact horns. The mine consists of two hemispheres connected by a cylindrical section. There are five contact horns spaced equally around the upper hemisphere. Other recognition features are the arming switch on top of the upper hemisphere, and five lifting and mooring eyes, two on the upper hemisphere, two on the central section, and one on the bottom of the lower hemisphere. Because of size and weight, this mine is normally transported and placed by boat. The mine can be used as a free floating contact mine. When a contact horn impacts against a ship or other solid object, the spring-loaded horn crushes an acid vial. The acid reacts with a flash compound, exploding the detonator and detonating the main charge.

CHARACTERISTICS

Shape	Cylinder with hemispherical ends
Color	Green
Diameter	87.6 cm
Length	126 cm
Explosive	TNT
Explosive Weight	230 kg
Maximum Depth for Mine Casing	5 fathoms (9.14 cm)

SOVIET MARK MKB WATER MINE

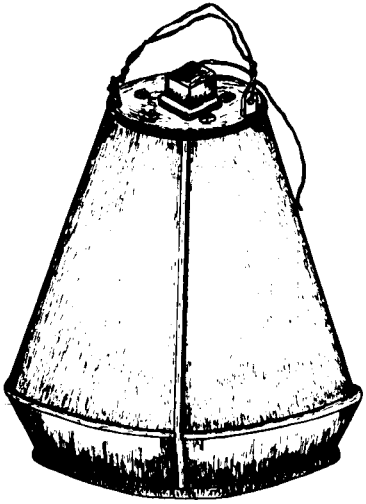
SMALL VC WATER MINE

This locally manufactured water mine is constructed of sheet metal, rolled into a short conical shape, and fastened with rivets. The mine is placed in the channel of a river or stream and the depth adjusted according to the draft of ships in that particular body of water. The mine is fuzed electrically and detonated by means of a battery pack.

CHARACTERISTICS

Weight	12.4 kg
Height	32 cm
Diameter	26.7 cm
Filler	TNT
Weight of Explosive	6.9 kg

SMALL VC WATER MINE



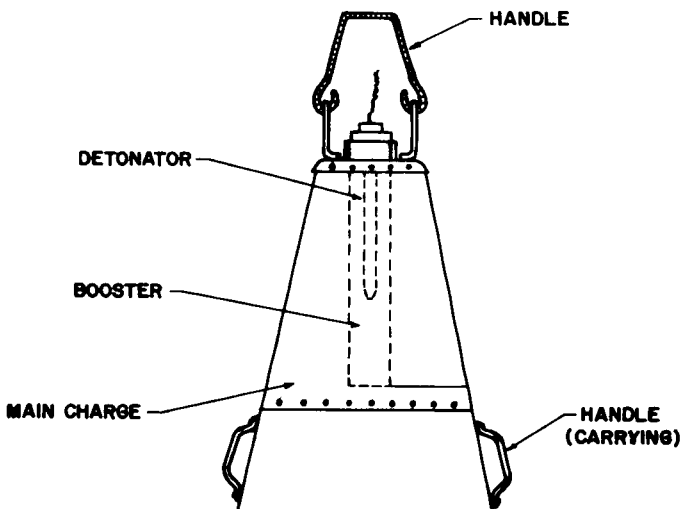
LARGE VC WATER MINE

The water mine is composed of two parts, the explosives chamber and the flotation chamber, separated by a sheet metal partition. The mine is employed against shipping. The flotation chamber built into the mine serves to keep the mine off the bottom and suspended in midstream. The mine is constructed of medium weight sheet metal with riveted seams. All seams are covered with waterproofing compound. The mine is fired electrically from the shore, using a series of batteries or a hand generator. With the approach of a ship, the mine is adjusted by a series of ropes from the shore to the proper depth, giving the optimum effect from the blast.

CHARACTERISTICS

Weight	38.2 kg
Diameter	43.7 cm
Height	63 cm
Filler	TNT
Weight of Filler	18.8 kg

LARGE VC WATER MINE



FREE FLOATING CONTACT MINE

This mine is approximately the size and shape of a five gallon bucket or office trash can, with a low conical cover from which two cylindrical contact horns project. The mine is generally employed by fastening two mines together and allowing them to float down stream into moored ships; but they could be employed as anchored mines. The mine is produced in local workshops for employment by VC/NVA water sapper units. When pressure is applied to the contact horns, an electrical circuit is completed, detonating the electric blasting caps and the main charge.

CHARACTERISTICS

Height	27.9 cm
Maximum Diameter	30.5 cm
Weight	27.2 kg
Main Charge	4, US 75mm projectiles

FREE FLOATING CONTACT MINE

VC MANUFACTURED, BOUYANT, SEGMENTED, WATER MINE

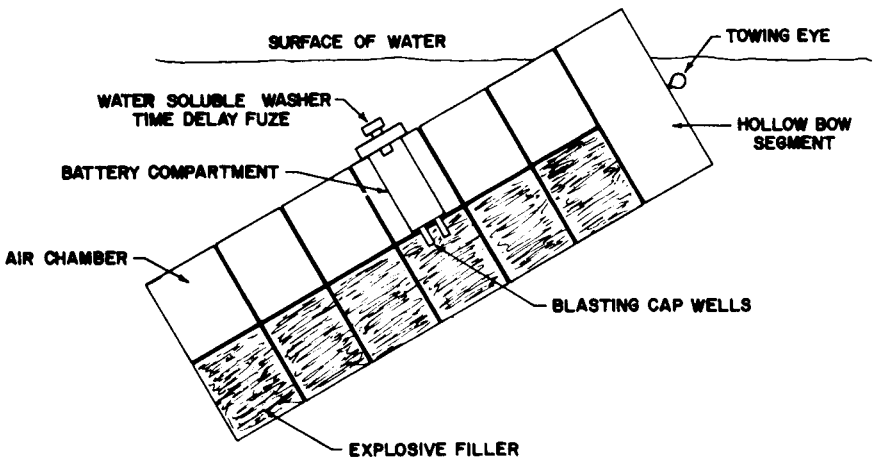
The VC manufactured, bouyant, segmented, water mine consists of seven sheet metal, block-shaped segments connected by two steel transverse rods running through loops welded to the side of each segment. A third steel rod connects the two transverse rods and forms a towing eye at the front of the mine. The bow segment is hollow, with a prism point that acts as a prow facilitating the towing of the mine through the water. The remaining six segments are sheet metal blocks, with the bottom portions of each filled with recast TNT and the upper portions hollow. A water soluble washer, time delay fuze is located in a cylindrical fuze well in the fourth segment. (See Section IX, Fuzes and Firing Devices, page concerning this fuze.) The mine is designed to be used by swimmer sappers. The mine can be divided into seven segments for overland transportation, and rapidly assembled at the site of employment. When assembled, ropes are attached to the towing eye on the bow and the mine is towed to the target. The mine floats at an angle of 30° to 45° with the hollow portions of the segments up. About 20 centimeters of the bow segment floats above the surface of the water.

CHARACTERISTICS

Height	45.7 cm
Width	28.4 cm
Length	121 cm
Weight	146 kg
Explosive Weight	130 kg
Explosive Filler	Recast TNT
Color of Case	Olive drab

VC MANUFACTURED, BUOYANT, SEGMENTED, WATER MINE
COMPLETE MINE

VC MANUFACTURED, BOUYANT, SEGMENTED, WATER MINE
CUT-AWAY



VIII. BOOBY TRAPS AND SABOTAGE DEVICES.

A. General. Booby traps have been used from the earliest days of recorded history. Ranging from a simple hole in the ground to a complicated explosive device, the booby trap is an effective way to cause enemy casualties and hamper enemy operations at low cost. The effective use of booby traps also undermines the morale of enemy forces. This section is intended to orient the soldier on the potential uses of explosive and nonexplosive booby traps encountered in Vietnam.

B. Explosive Booby Traps Employment.

1. Explosive booby traps are extensively employed by the VC/NVA in all phases of their operations, from combat to sabotage. The traps vary from the simplest devices to fairly complicated items. Explosive booby traps are initiated in the same manner as mines, using the same firing devices and fuzes. The tricks used to lure victims into mined areas are also used to lure them into booby-trapped areas.

2. One of the most common uses of explosive booby traps is with mines. When mines are being cleared, each one must be checked for booby traps. This involves searching for various devices, in addition to the main fuzes, that could possibly detonate the mine.

3. Items such as weapons, uniforms, bodies, binoculars, flags, vehicles, and a host of other objects may be rigged with explosive booby traps.

4. Buildings of all types offer the enemy unlimited booby-trapping opportunities. Entranceways, furniture, windows, floorboards, plumbing, and electrical circuits can be effectively booby-trapped.

5. Another type of booby trap is the device that looks innocent but is deadly. Such devices take the forms of fountain pens, cigarette lighters, packages, and other ordinary items. These devices have been used extensively in the towns and cities.

6. Roads, trails, and paths offer excellent locations for booby traps. The booby traps are usually attached to obstacles such as rocks or tree limbs. Troops in a hurry may brush by these, or hastily remove them, without checking for trip wires or pressure release devices. There may be dummy traps among the real ones, which may annoy the average soldier to the point of becoming careless.

7. Areas containing supplies are easily booby-trapped. All caches of weapons, food, ammunition, and other materiel must be carefully searched for booby traps before they are moved or destoyed.

8. The number and types of explosive booby traps are unlimited. As booby traps are restricted only by the user's ingenuity, some tricky devices are encountered. Proper procedures for handling booby traps are prescribed in FM 5-31, Viet Cong Booby Traps, Mines, and Mine Warfare Techniques.

C. Nonexplosive Booby Trap Employment.

1. Nonexplosive booby traps will generally be employed in a manner similar to mines. The locations are the same, but these nonexplosive traps are primarily aimed at personnel. Nonexplosive booby traps take various forms, but all take advantage of local materials and natural camouflage.

2. Nonexplosive booby traps are often employed with mines and at ambush sites. Such booby traps provide a means of hindering the progress of troops moving along roads and trails. Muddy roads and trails provide the necessary camouflage for pits, and heavy vegetation will cover a multitude of traps. Open, grassy areas are not immune, as spiked plates and pits may be used. Stream beds are often booby-trapped at fords, or wherever troops are likely to pass.

3. The VC are extremely good at disguising their traps, and only a thorough, patient check of a route will reveal the traps. The indicators to watch for are shiny metal, flat areas, differences in color of vegetation, trip wires, and anything that appears to be out of place. Again, it is emphasized that the best way to avoid these hazards is to obtain information from the local people, who generally know where the traps are located.

D. General Precautions.

1. Do not be in too much of a hurry, if at all possible. As the name "booby traps" implies, they are used to catch the careless soldier.

2. When sweeping an area, remember that both explosive and nonexplosive booby traps may be employed with mines.

3. Be suspicious of all objects that appear to be loose. When checking captured factories, supply dumps, or materiel, watch for booby traps.

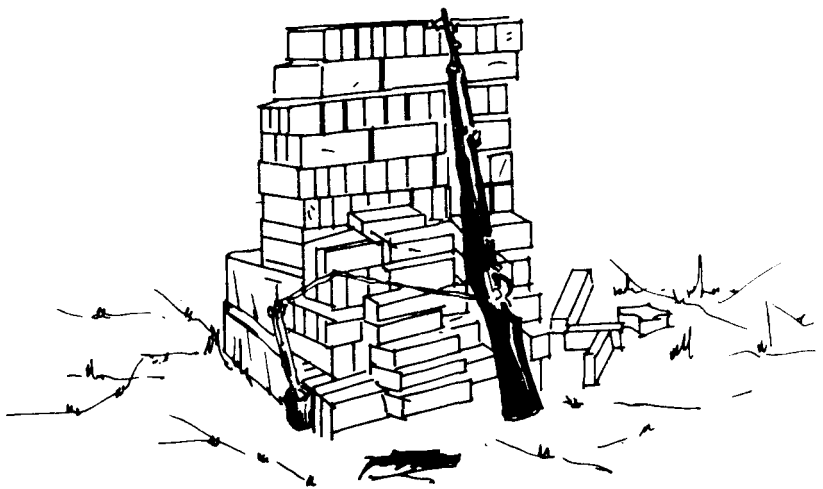
4. Before cutting taut trip wires, check both ends for booby trapping. One end may be attached to a tension release device. Before disturbing any object, check it for wires and pressure release devices.

5. If you find explosive booby traps, destroy them in place or mark them and leave them alone. Unless it is absolutely necessary for you to move them, let explosive ordnance disposal personnel take care of removal and disposal.

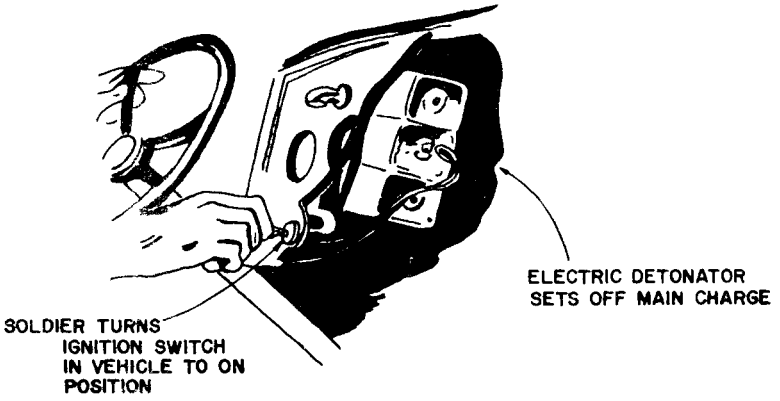
6. Do not take anything for granted. An object may appear to be innocent, but if it is found in suspicious circumstances, expect a trap.

7. Booby traps are dangerous, effective weapons, but if you show a healthy respect for them and handle them properly, you should not be a casualty.

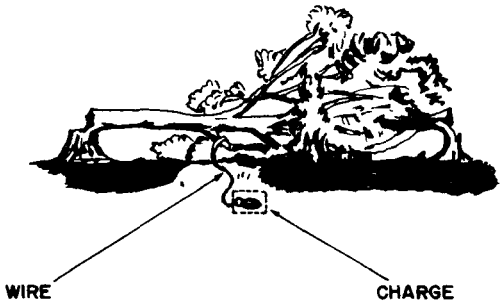
WAR TROPHY BOOBY TRAP



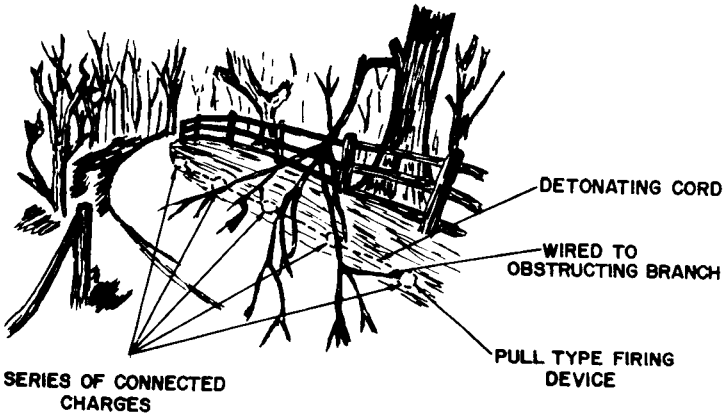
IGNITION BOOBY TRAP



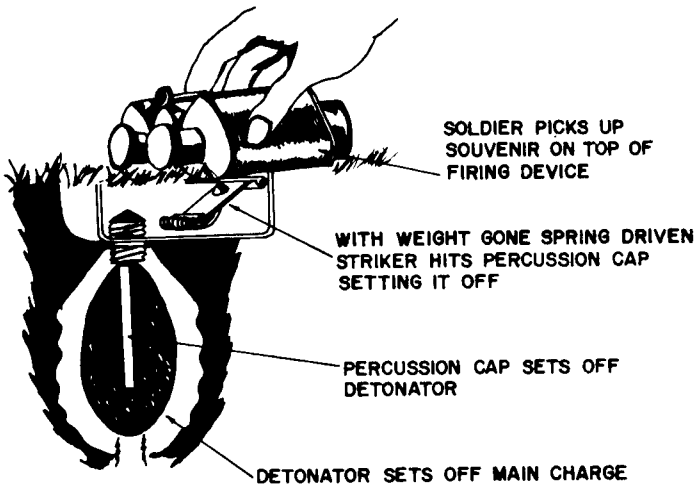
OBSTACLE BOOBY TRAP



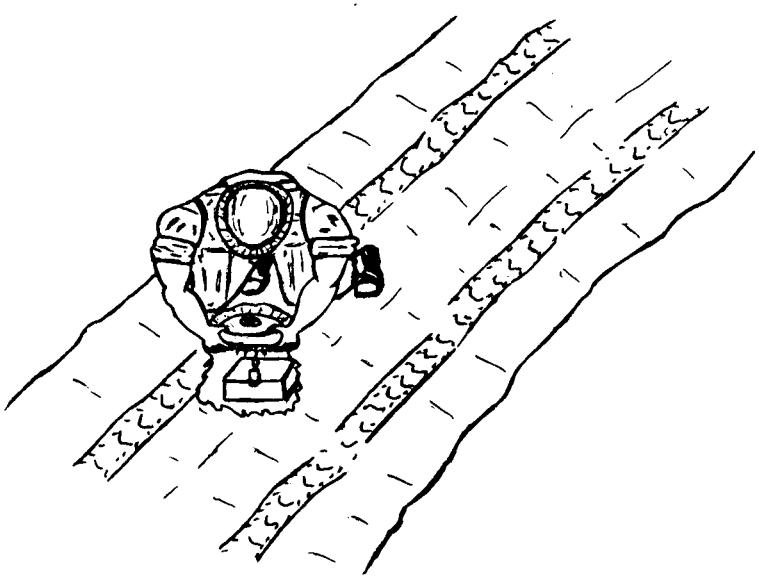
ROADSIDE BOOBY TRAP



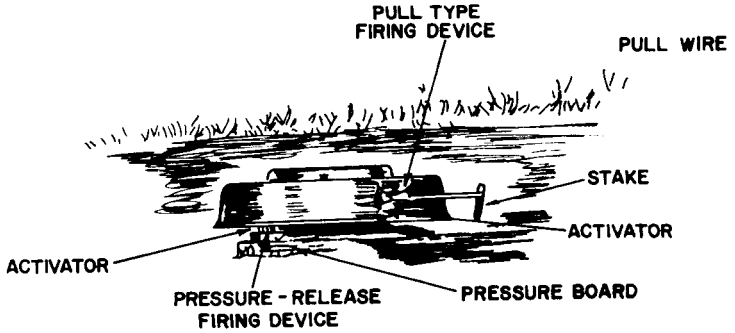
BOOBY-TRAPPED SOUVENIR



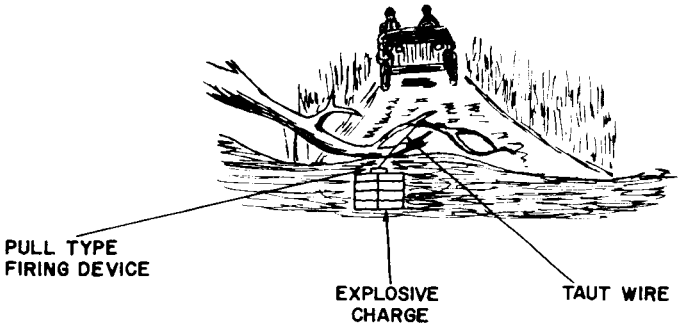
BOOBY-TRAPPING ONE MINE TO ANOTHER



MULTIPLE BOOBY-TRAPPED MINE



WHEEL-TRACK BOOBY TRAP

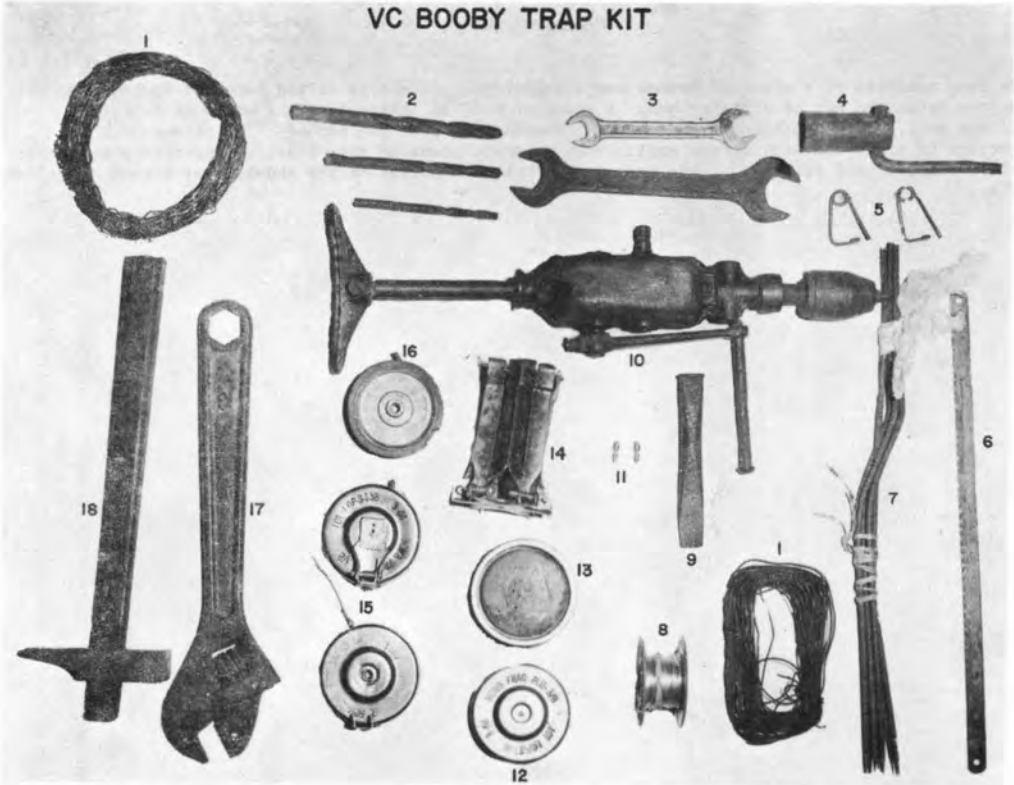


VC BOOBY TRAP KIT

The tools in this kit were used to construct booby traps using the US BLU 3/B. Included in the kit were several US BLU 3/Bs in various stages of modification. The tools were in an old US Army fuze box which measured 43.2 cm x 26.7 cm x 22.9 cm. Due to the relatively soft impact conditions found throughout much of RVN, i.e., double and triple canopy jungles, the BLU 3/B often does not function, since it is a point detonating device. The enemy recovers these bomblets and modifies them for antipersonnel booby traps or as detonators for antitank mines and satchel charges. Using tool kits similar to the one described above, these modifications are carried out in VC munitions shops located throughout RVN.

The following listed items were found in this kit. This list serves as a key to the photograph.

1. Copper Wire
2. Drill Bits
3. Open-end Wrenches
4. 3/4" Socket Wrench
5. Safety Pins
6. Hacksaw Blade
7. Wire Stakes (Used to set up trip wire)
8. Monofilament Wire
9. Chisel
10. Hand Operated Drill
11. Firing Pins
12. Detonator Cover
13. Body of US BLU 3/B
14. Stabilizer Fins
15. Modified Detonator Cover
16. Detonator for US BLU 3/B
17. 12" Crescent Wrench
18. Homemade Hammer


VC BOOBY TRAP KIT
1
2
3
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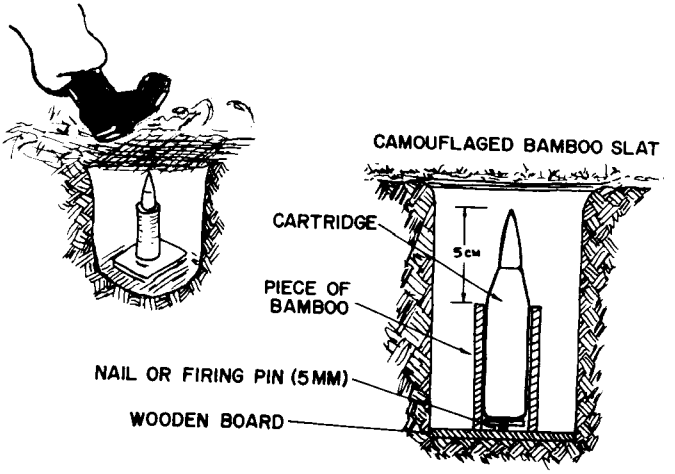
16
17
18

CARTRIDGE TRAP

This trap consists of a piece of bamboo and a cartridge. A nail is driven into the bamboo 5cm from the bottom to act as a firing pin. A piece of wood is fastened to the piece of bamboo to hold the nail. The cartridge will protrude 5 centimeters from the bamboo. The primer of the cartridge is above the head of the nail. When a person steps on this trap, the cartridge is driven against the nail and is fired. This trap is generally installed on the shoulder of a road and along paths.

CARTRIDGE TRAP



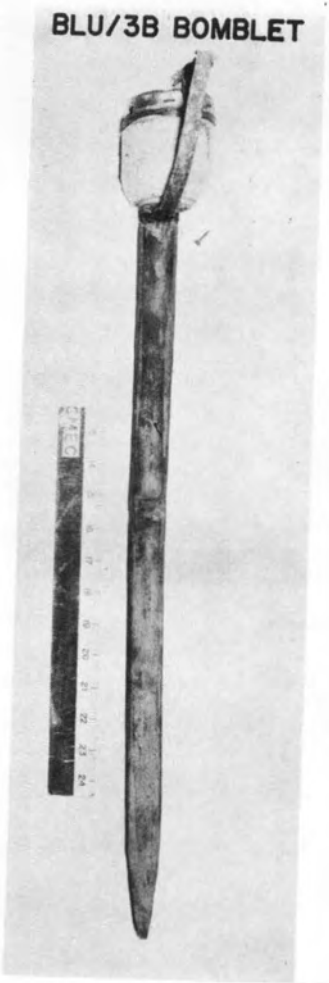
MODIFIED US BLU 3/B BOMBLET

Dud US BLU 3/B Air Force Bomblets are being picked up by the VC/NVA, stripped down, and rigged with a pull-release device which fires instantaneously. A prefabricated metal stand, approximately 16 centimeters high, is attached to the bottom of the bomblet. The firing device used is the standard ChiCom grenade fuze rigged with a pull ring and trip wire. When the pin is pulled, a spring-loaded firing pin is driven into the detonator, firing the round.

CHARACTERISTICS

Markings	None on fuze; all markings on bomblet are US
Fusing	Pull-release, instantaneous

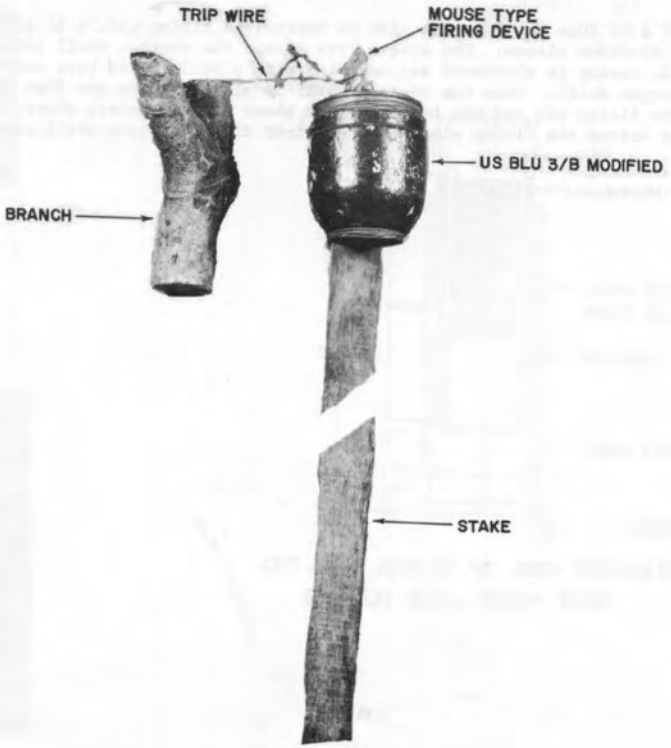
CAUTION: When found, the area around the bomblet should be carefully checked. US BLU 3/B bomblets are also used as antipersonnel mines. They are buried in the ground and the standard bomblet fuze serves as a pressure actuated device.


BLU/3B BOMBLET

US BLU 3/B ANTIPERSONNEL BOOBY TRAP

The US BLU 3/B bomblet has been modified for use by the Viet Cong as a booby trap. The original striker has been removed, and a nail protruding about three millimeters has been put in its place. A mouse-trap type firing device is attached to the bomblet, with trip wire attached to the release lever of the mouse trap. A light tug on the trip wire will pull the release lever allowing the striker plate to go forward hitting the nail. This initiates the detonator, setting off the main charge. This booby trap is employed on roads, trails, and in heavily foliaged areas. The monofilament line used as a trip wire with this booby trap makes detection difficult.

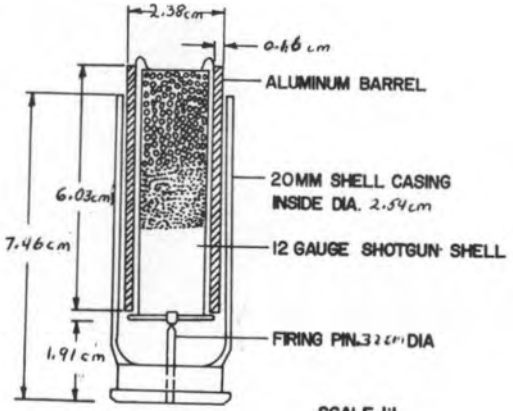
US BLU 3/B ANTI PERSONNEL BOOBY TRAP



SHOTGUN SHELL BOOBY TRAP

The device consists of a US 20mm shell casing with an improvised firing pin, a 12 gauge, 00 shot, shotgun shell, and an aluminum sleeve. The sleeve fits around the shotgun shell and serves as a barrel. The 20mm shell casing is shortened and modified with a nail at its base serving as the firing pin for the shotgun shell. When the shotgun shell is placed inside the 20mm shell casing, the primer rests on the firing pin and the top protrudes about 10 millimeters above the casing. Pressure on the device drives the firing pin into the primer of the shotgun shell causing it to explode.

SHOTGUN SHELL BOOBY TRAP

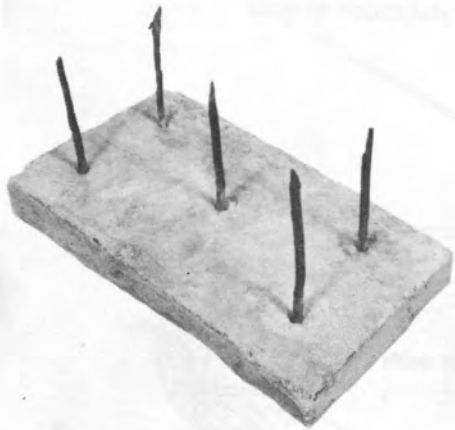


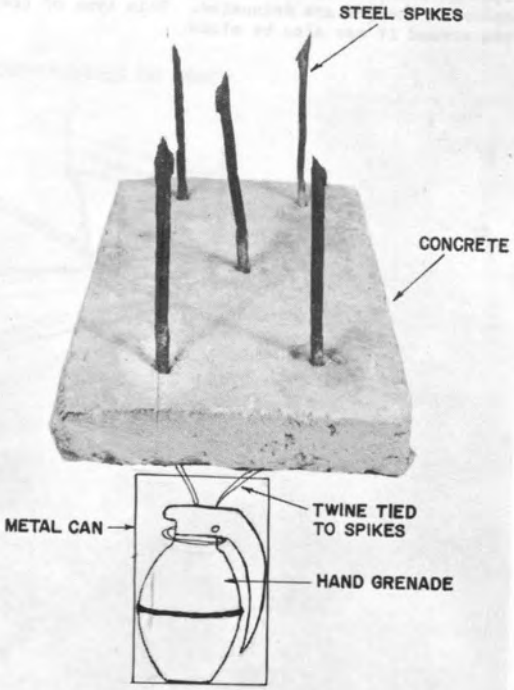
CUT AWAY VIEW OF VC ANTI-PERSONNEL
SHOTGUN SHELL BOOBY TRAP

BOOBY-TRAPPED STEEL SPIKES

Steel spikes are embedded in cement or a heavy metal block and placed in a camouflaged hole. A pressure release fuze is attached to a grenade or explosives and placed under the block holding the steel spikes. Picking up the block detonates the grenade or explosives.

BOOBY-TRAPPED STEEL SPIKES

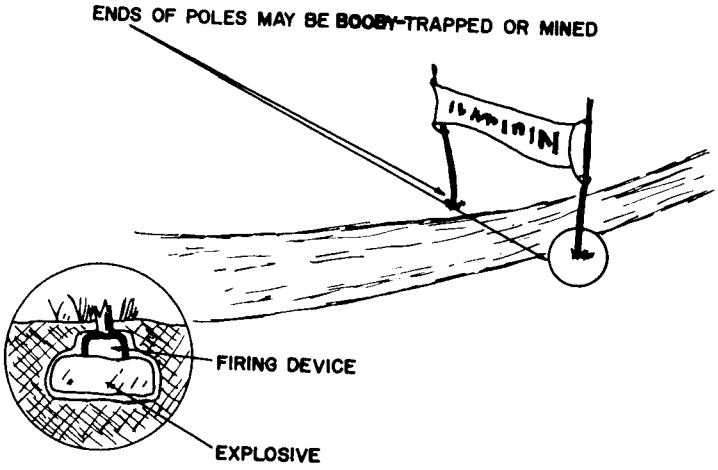




VC BANNER

This is a very effective booby trap. On the surface it appears to be a VC banner stretched between two poles. However, the ends of the poles are attached to firing devices, either pull or pressure-release types. When a person tries to pull up the poles to tear down the banner the explosive charges are detonated. This type of trap must be carefully approached because the area around it may also be mined.

VC BANNER


ENDS OF POLES MAY BE BOOBY-TRAPPED OR MINED
FIRING DEVICE
EXPLOSIVE

GRENADE TRAPS

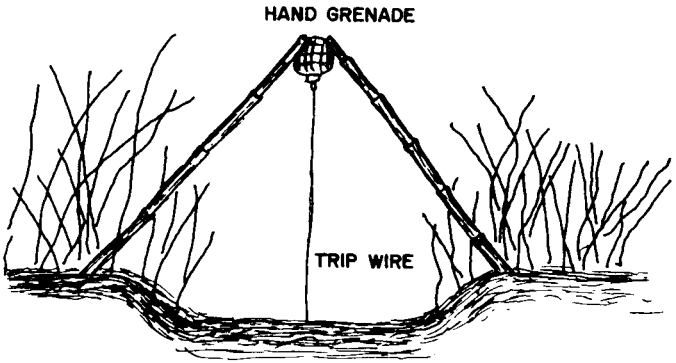
There are several methods of employing grenades as booby traps. The more common ones are discussed here, but the employment of this type of booby trap is limited only by the user's ingenuity and the material at hand. The illustration shows some typical grenades used and one of the most common devices. A grenade is placed in a can, the safety pin is removed, and a trip wire is attached to the grenade. When the victim hits the trip wire, the grenade is pulled from the can and explodes. Normally a zero time delay fuze is used. Another common method is to weight the lever of a grenade with some object and pull the safety pin; when the victim picks up the object the grenade explodes. Tying a wire to the pull ring on a grenade and securing the grenade to an object is also used; when the victim hits the wire, the ring is pulled and the grenade explodes. These traps are laid on both sides of routes that troops are likely to use. They have also been placed in hens' nests and bunches of bananas, low hanging coconut palms, orange trees, under boxes, tied to tree trunks, and at both ends of foot bridges. In the last case the handrail can be rigged to a trip wire. Grenade traps are often encountered in areas vacated by the VC.

TYPICAL GRENADES

BAMBOO ARCH

A grenade is secured at the top of a bamboo arch, and a trip wire is secured to the grenade. Any contact with the trip wire will detonate the grenade. The location of the grenade achieves a large casualty radius. At night this is employed most effectively as a warning device. During the day the trip wire is loosened from the ground and wrapped around the bamboo arch to allow use of the path by the Viet Cong.

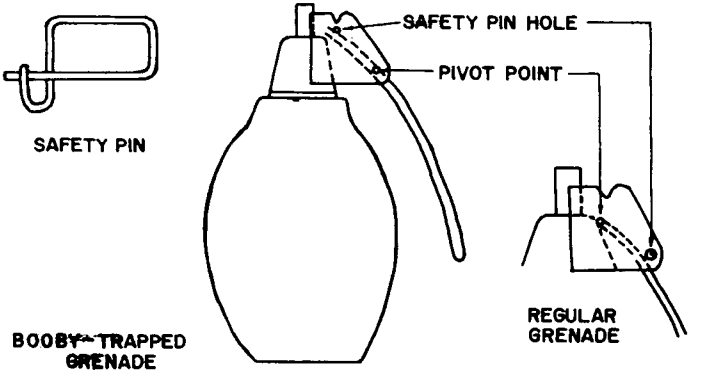
BAMBOO ARCH



VC BOOBY TRAP GRENADE

Another method of converting hand grenades into booby traps consists of modifying a VC or ChiCom grenade fuze. The grenade appears normal except that the pivot pin and safety pin holes are reversed and the handle sticks out from the grenade body. When a soldier pulls the safety pin, the handle pivots inward rather than outward and releases the firing pin. These grenades normally have no delay element. With some grenades of this type it is not necessary to remove the safety pin to fire it; just squeeze the handle against the grenade. Another method the enemy uses is to remove the delay element from a standard US M-26 hand grenade. When the soldier tries to throw the grenade, it detonates as soon as the handle is released.

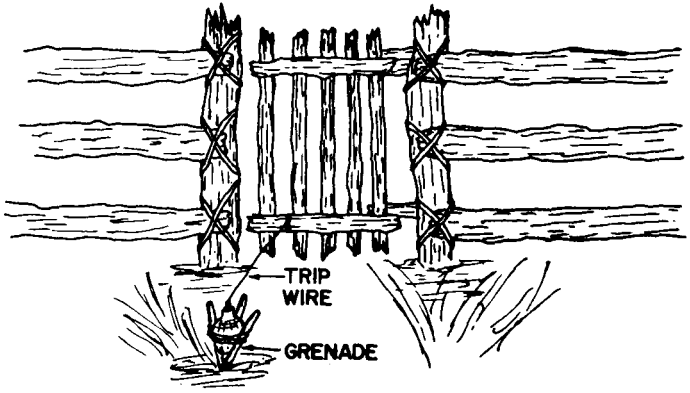
VC BOOBY TRAP GRENADE



BOOBY TRAP GATEWAY

A grenade is buried just below the surface of the ground, and a short trip wire is attached from the gate to the ground. The grenade detonates when the gate is opened. Where a pressure release fuze is used, the grenade and fuze are placed directly under one of the uprights of the gate. The grenade detonates when the upright is moved in any direction. If there is heavy growth around the gate, the grenade will usually be hidden in the growth.

BOOBY TRAP GATEWAY



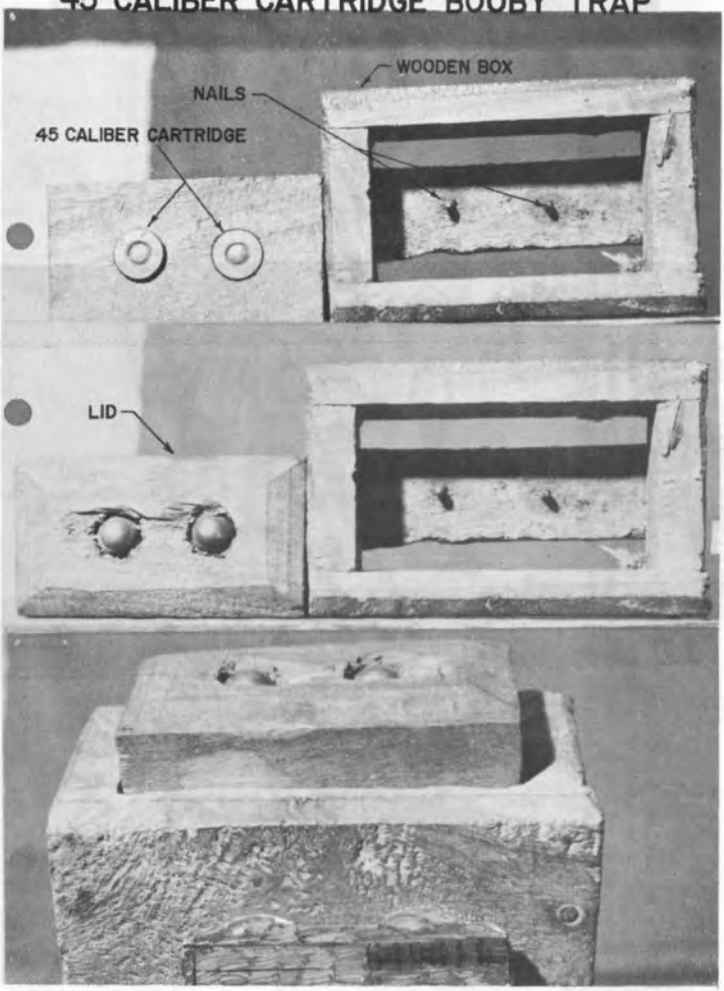
.45 CALIBER CARTRIDGE BOOBY TRAP

This booby trap consists of a wooden box and lid. Two nails in the bottom of the box act as firing pins for .45 caliber cartridges. Two cartridges are placed in holes drilled in the lid. When the lid is placed on the box the primers of the cartridges rest on the nails. Pressure on the lid forces the nails into the primers and fires the cartridges. The VC employ this booby trap along jungle trails to harass and maim personnel.

DIMENSIONS OF BOX

Length	12 cm
Width	7 cm
Height	4.5 cm

45 CALIBER CARTRIDGE BOOBY TRAP

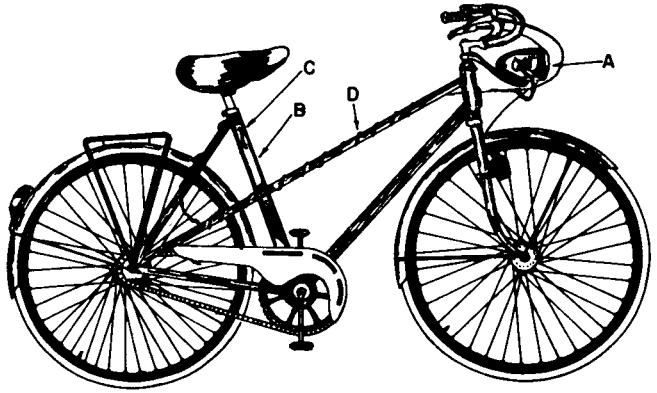


VC BICYCLE MINE

This bicycle is used as a sabotage device. The explosive within the bicycle frame is fused and fired electrically by means of a watch time delay device or by means of the bicycle generator. A bicycle suspected of being mined should never be ridden or pushed, nor should its wheels be rotated. No attempt should be made to remove the detonators or to disassemble any part of the bicycle.

VC BICYCLE MINE

A. TIMING DEVICE & BATTERIES
B. EXPLOSIVE
C. DETONATOR
D. ELECTRICAL WIRES



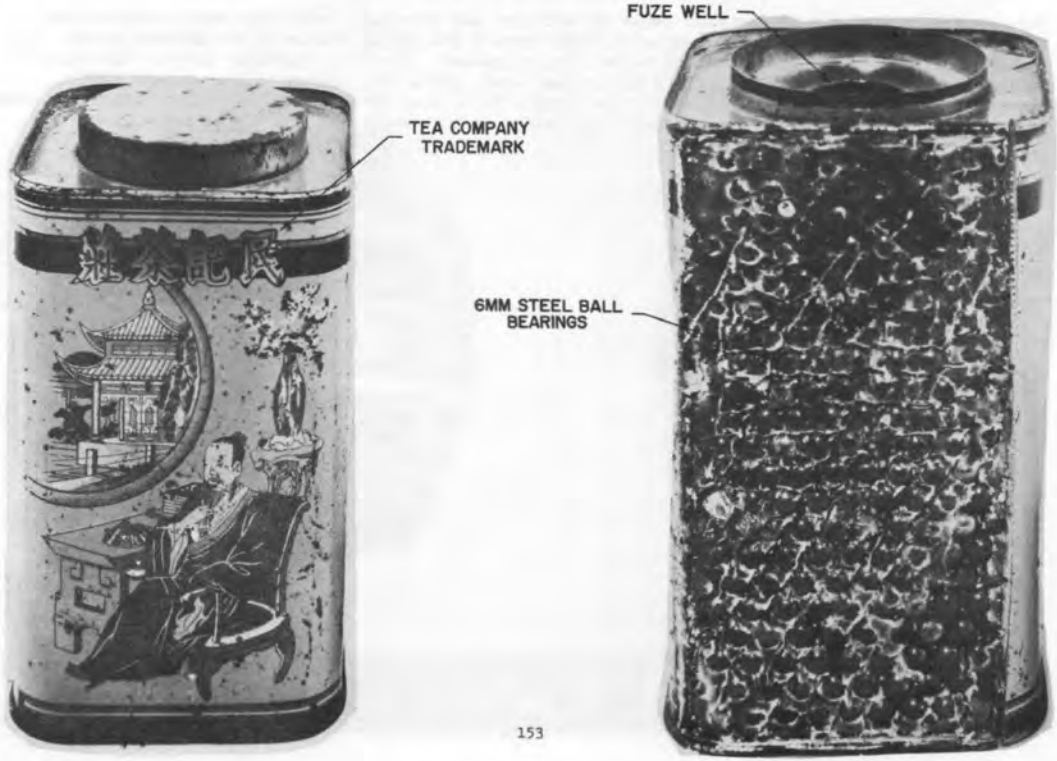
VC TEA CAN SABOTAGE DEVICE

This sabotage device, camouflaged as an ordinary can of tea, was manufactured in Cholon, RVN. The casing is made of thin sheet metal, painted yellow with red, blue, and black markings and designs of the tea company's trademark. The can contains a sleeve with 800 6mm steel balls imbedded in wax. The balls are the same type employed in the US BLU 3/B bomblet. The explosive filler is 500 grams of TNT and the charge is detonated by a chemical delay detonator.

CHARACTERISTICS

Shape	Rectangular
Total Weight	1.6 kg
Length	7.6 cm
Width	7.6 cm
Height	12.7 cm

TEA CAN SABOTAGE DEVICE



HAND GRENADE SABOTAGE DEVICE

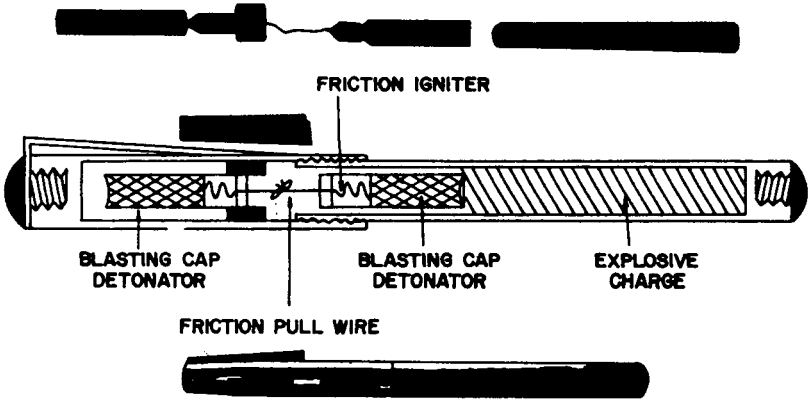
This device is placed into the fuel tanks of vehicles and into fuel drums in static installations by VC saboteurs. Rubber bands or adhesive tape wrapped around the handle of the grenade keeps the grenade from functioning when the safety pin is pulled. The fuel gradually softens the adhesive on the tape or reduces the strength of the rubber bands until the tension on the grenade handle overcomes the resistance. At this point the handle flies open detonating the grenade. The time delay ranges from a few minutes to several hours depending on how secure the grenade is bound.


HAND GRENADE SABOTAGE DEVICE
0 1 2 3 4 5 6
(INCHES 1/10) CM

FOUNTAIN PEN SABOTAGE DEVICE

This device is constructed from a fountain pen. It consists of an explosive booster, two blasting caps, and two friction igniters. The explosive components and ignition devices are contained in the ink bladder housing and in the cap of the pen. This device explodes when the cap is removed. Removing the cap pulls the wire on one or both of the friction igniters, sending a flash into the blasting caps and exploding the device.

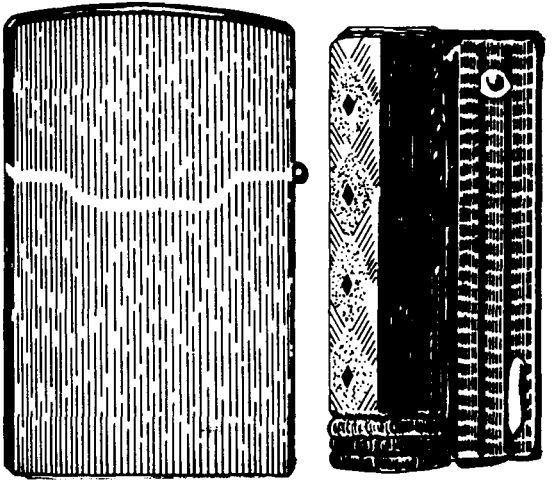
FOUNTAIN PEN SABOTAGE DEVICE



CIGARETTE LIGHTER ASSASSINATION DEVICE

This device looks like a common, commercial cigaratte lighter. The explosive device is in the fluid compartment and is composed of a detonator and an explosive charge. The detonator is cotton saturated with flammable powders and replaces the wick. Striking the flint ignites the detonator, setting off the explosive charge.

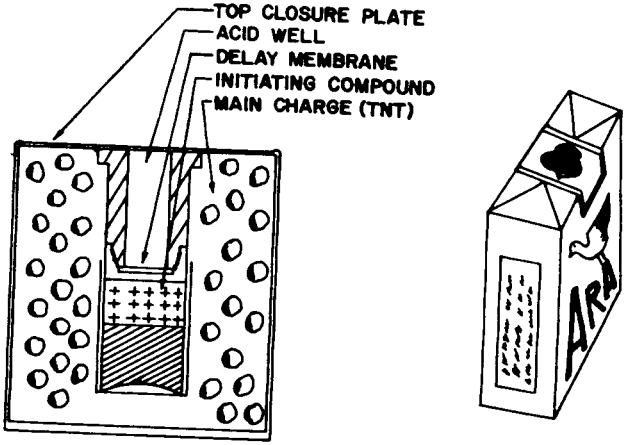
CIGARETTE LIGHTER ASSASSINATION DEVICE



CIGARETTE PACK ANTIPERSONNEL BOMB

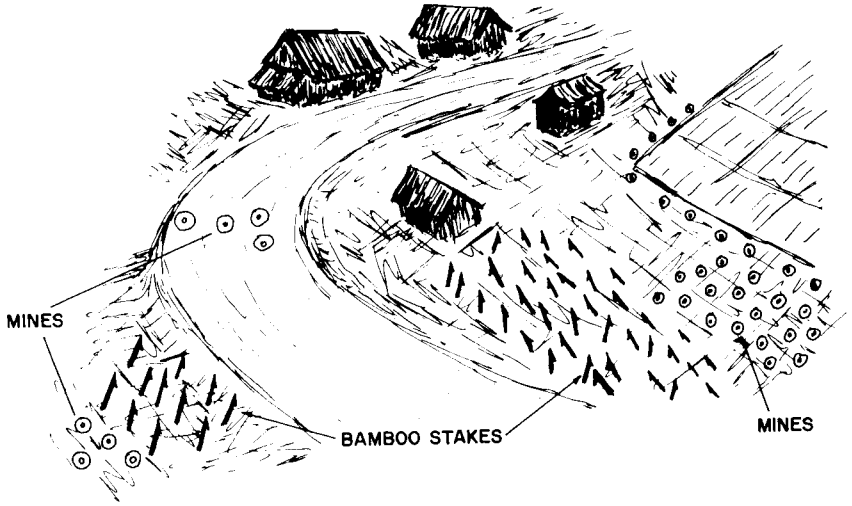
This device has the outward appearance of a cigarette pack. A metal container is placed inside a cigarette pack and filled with a fuze and ball bearings. Acid is poured into the top of the fuze and dissolves a delay membrane. The acid then detonates the initiating compound, causing the main charge (TNT) to detonate.

CIGARETTE PACK ANTIPERSONNEL BOMB



POINTED BAMBOO STAKES

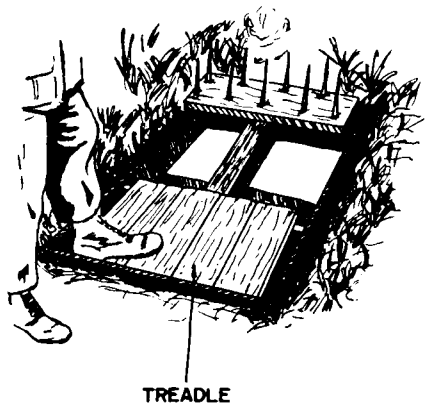
The stakes are made of bamboo, pointed at one end, and stuck into the ground and covered with grass. Troops leaping to roadsides impale themselves on the stakes. Stakes are generally used along the road leading into a village and in ambush sites.


MINES
BAMBOO STAKES
MINES

PIVOT BOARD TRAP

The pivot board trap is used with a foot pit and is camouflaged with natural vegetation. When a person steps on the treadle, a spiked board pivots about an axle, dropping the victim into a pit and striking him in the chest or face with the spikes.

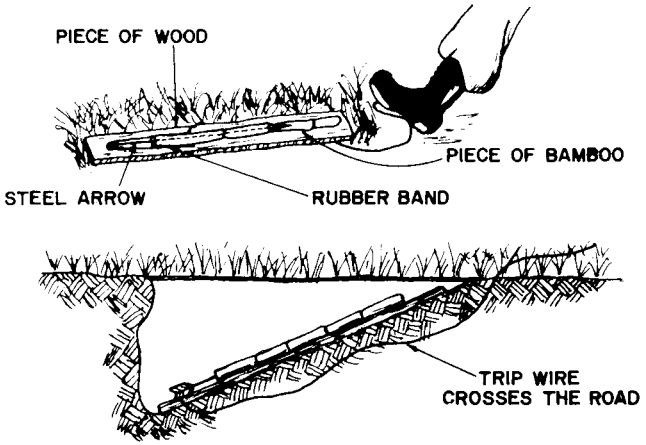
PIVOTED SPIKE BOARD



STEEL ARROW TRAP

The steel arrow trap consists of a length of bamboo; a homemade steel arrow approximately 30 cm long; a strong rubber band, usually cut from a vehicle inner tube; a homemade catch; a board; and a trip wire. The bamboo tube is fastened to the board as a guide for the arrow. The board is placed in a shallow trench and aimed at a point above the trip wire. When the victim trips the wire, the pull activates the catch mechanism, which releases the cocked rubber band and the arrow. The arrow is propelled through the length of bamboo and strikes the victim in the chest or stomach.

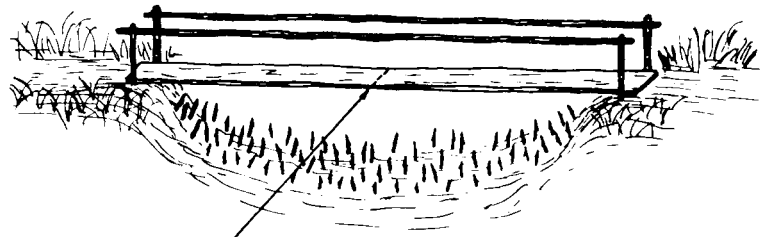
STEEL ARROW TRAP



TRAP BRIDGE

A trap bridge is an old bridge, partially cut at the middle, across a ditch. The cut is covered with mud. Barbed stakes are laid in the ditch. The ditch is sometimes blocked at one end to retain the water so that the spikes cannot be seen, or if the ditch is not blocked, steel barbed spikes are driven into the ditch, level with the mud. Both sides of the ditch may be lined with spikes. Trap bridges are used to hinder the progress of search and clearing operations. The weight of a person at the cut collapes the bridge.

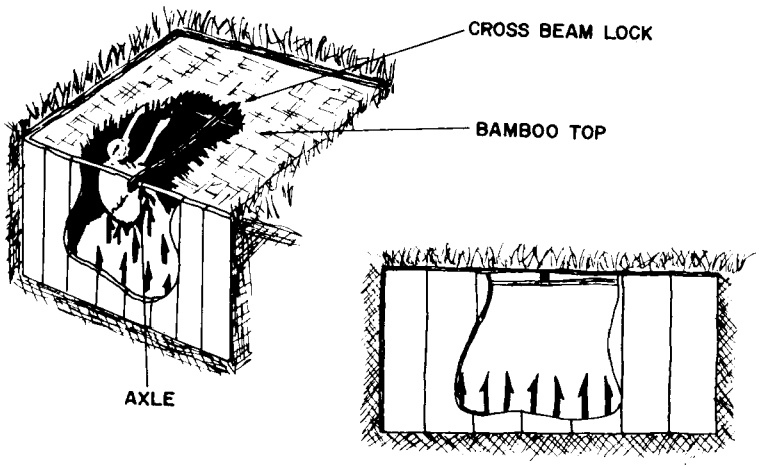
TRAP BRIDGE



SPIKE TRAP PIT

A spike trap pit is a variation of a method used to trap wild animals. The trap consists of a hole about 4 meters square and 2.5 meters deep, with bamboo or metal spikes about 50 centimeters long in the bottom. The top of the pit is covered by a woven bamboo top supported by a pole frame. The frame is pivoted on an axle and delicately balanced. When the victim steps on the camouflaged pit top, the top pivots on the axle and drops the victim into the spikes below. When the victim falls off the lid, it pivots back to its original position, closing the trap. When the enemy is using the trail he places a cross beam under the trap top to lock it in place.

SPIKE TRAP PIT



SPIKE TRAP BOX

This a wooden box sunk into the ground. Spikes pointing upward are placed in the bottom of the box. The top of the box is camouflaged. A person stepping on the camouflage materiel falls into the box and impales his foot on the spikes.

CHARACTERISTICS

Size:	40 cm square
	60 cm deep

SPIKE TRAP BOX

BAMBOO WHIP

A bamboo whip consists of a piece of bamboo, one or more meters long, with spikes mounted on one end. A trip wire is used to bend the bamboo like a crossbow. When a victim hits the wire, the curved bamboo will strike him in the leg or stomach. Generally, the victim is hit suddenly and cannot take time to defend himself. Camouflage of the whip is difficult because of the length of the bamboo.

BAMBOO WHIP

IX. FUZES AND FIRING DEVICES. The enemy employs a wide variety of foreign and homemade fuzes and firing devices. The fuzes described in this section include known foreign-made fuzes presently in use in Vietnam and a selection of Viet Cong produced fuzes.

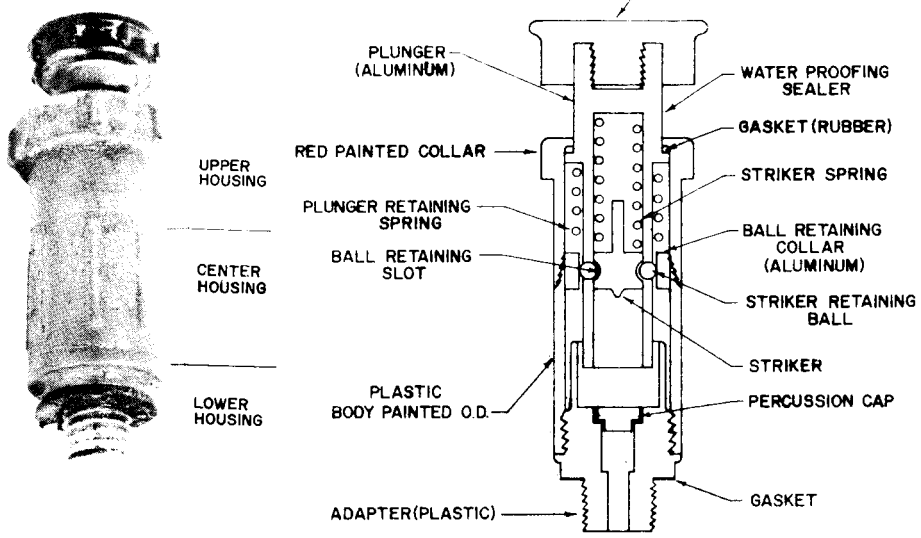
FUZE, PRESSURE
FOR ANTIVEHICULAR MINE, PM-60 (EAST GERMANY)

Because the pressure fuze used with the all plastic PM-60 anti-vehicle mine is mostly made of non-magnetic material, the detection of the PM-60 is difficult with a magnetic mine detector. The body of the fuze is plastic, the pressure cap is bakelite, and the plunger and ball retaining collar are aluminum. The only magnetic parts of the fuze are the plunger retaining spring, striker, striker spring, and two striker retaining balls. The body of the fuze is in three parts: upper housing, center housing, and lower housing. The upper and center housings contain the plunger and striker mechanism. The lower housing contains the percussion cap and has a threaded adapter for attachment to the mine. Four to five kilograms of pressure applied to the pressure cap overcomes the resistance of the plunger retaining spring and drives the plunger down. This movement frees the striker retaining balls from the striker and the ball retaining collar, and the striker spring drives the striker into the percussion cap that fires the detonator and explodes the mine.

CHARACTERISTICS

Shape	Cylindrical
Diameter	2.5 cm
Length	6.9 cm
Case Material	Plastic
Color	Olive drab
Internal Action	Pressure mechanical, with ball release

FUZE, PRESSURE,
FOR ANTIVEHICLE MINE, PM-60 (EAST GERMANY)



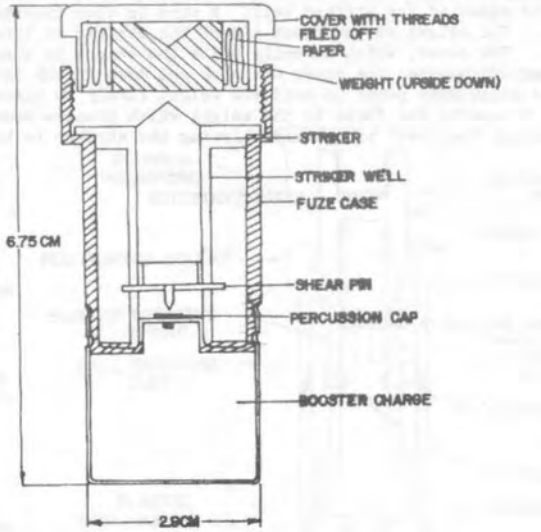
CHICOM B40 FUZE, MODIFIED FOR PRESSURE USE

The fuze is made by modifying a ChiCom B40 Antitank Grenade fuze. The percussion cap and booster are left intact, however, alterations are made to the striker and the striker cover. Two horizontal slots are cut in opposite sides of the striker well. A wire is then inserted through these slots to serve as a shear pin. The weight at the front end of the striker is turned upside-down, allowing it more downward travel. The cover, which normally holds the weight in place on top of the striker, has had the threads filed off so that the cover moves up and down freely inside the fuze body. The inside of the cap is lined with paper to hold the weight firmly in place. When pressure is applied to the cover it transmits the force to the weight which presses down on the striker. When the pressure is great enough the shear pin shears allowing the striker to hit the percussion cap and start detonation.

CHARACTERISTICS

Length	6.75 cm
Diameter	2.90 cm
Weight Without Explosive Booster	75 gm

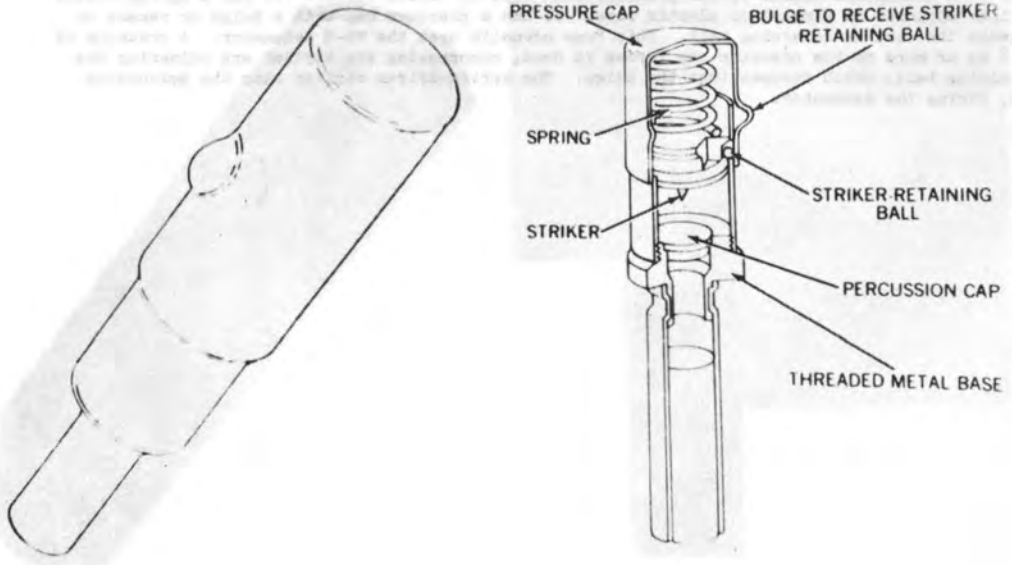
CHICOM B40 FUZE, MODIFIED FOR PRESSURE USE



PRESSURE FUZE, MV-5 (USSR)

This is a mechanical-action Soviet pressure fuze used by VC/NVA forces. It has a spring-loaded striker enclosed in a metal or plastic case. It has a pressure cap with a bulge or recess to release the striker retaining ball. This fuze normally uses the MD-2 detonator. A pressure of 11.8 kg or more on the pressure cap forces it down, compressing the striker and releasing the retaining ball, which escapes into the bulge. The spring-driven striker hits the percussion cap, firing the detonator.

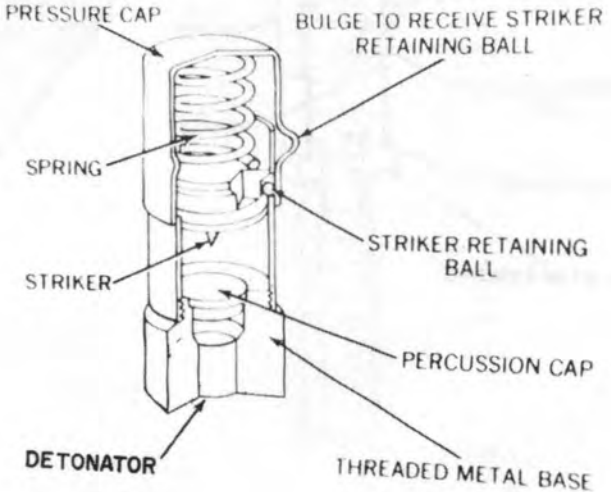
Pressure Fuze, MV–5 (U.S.S.R.)



PRESSURE FUSE, MV-5
FOR ANTITANK MINE, TM-46 OR TMN-46

The fuze used with the Antitank Mine, TM-46 or TMN-46, is the pressure fuze, MV-5 (USSR), with a standard threaded base that houses a percussion cap and a detonator. The base measures only 1.1 centimeters in height and is used in lieu of the standard MD-2 detonator, which is too long for use with the TM-46 or TMN-46.

PRESSURE FUZE, MV-5 (USSR)
FOR ANTITANK MINE, TM-46 OR TMN-46



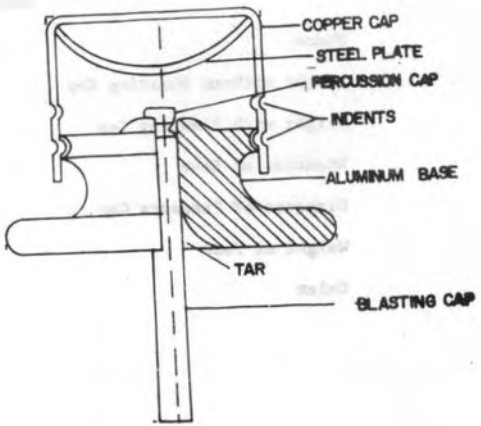
VC HOMEMADE PRESSURE FUZE

This pressure fuze consists of two parts, a copper pressure cap and an aluminum base. The pressure cap contains a convex steel disk which acts as a striker. The pressure cap is securely fastened to the aluminum base column by means of indentations on the sides of the pressure cap which fit the grooves around the head of the base column. The aluminum base, through which a hole is drilled, contains the percussion cap and nonelectric blasting cap. The fuze is completely sealed and water tight with paraffin and tar. The nonelectric blasting cap is sealed in place with tar. When pressure is placed on the copper cap, the cap is forced down over the column allowing the steel disk to press on the percussion cap. When the pressure is great enough, it will cause the percussion cap to detonate, which in turn detonates the blasting cap and the main charge.

CHARACTERISTICS

Shape	Cylindrical
Height without Blasting Cap	3 cm
Height with Blasting Cap	5.5 cm
Diameter of Base	4 cm
Diameter of Pressure Cap	2.7 cm
Weight of Fuze	49 gm
Color	Black and gray

VC HOMEMADE PRESSURE FUZE



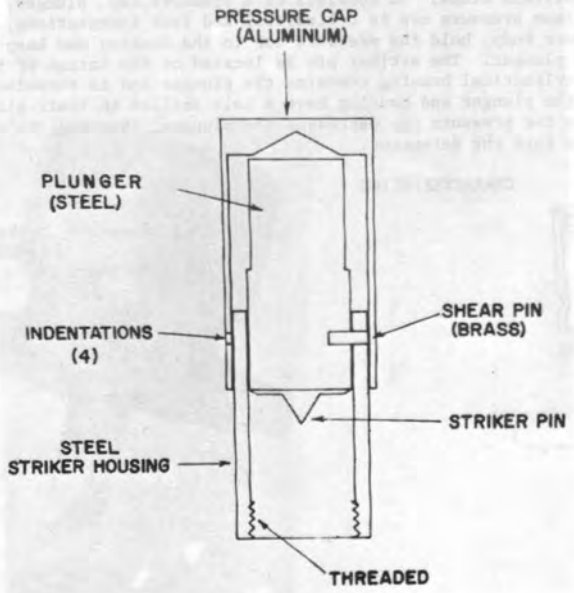
U/I PRESSURE FIRING DEVICE

This unidentified firing device resembles the Soviet MV-5 Pressure Fuze in appearance and can be used in lieu of it in Soviet TM-41 and TM-46 antitank mines. It consists of a pressure cap, plunger, housing, and shear pin. The hollow, alumimum pressure cap is cylindrical and four indentations, evenly spaced around the circumference of its lower body, hold the pressure cap to the housing and keep the pressure cap from resting directly on the plunger. The striker pin is located on the bottom of the solid steel plunger. The hollow, steel, cylindrical housing contains the plunger and is threaded on the bottom to receive a detonator. Both the plunger and housing have a hole drilled in their sides to receive a brass shear pin. Pressure on the pressure cap depresses the plunger, shearing the shear pin, and allowing the striker pin to drive into the detonator.

CHARACTERISTICS

Type	Pressure, mechanical
Shape	Cylindrical
Diameter	1.6 cm
Height	4.5 cm
Weight	34 gm

U/I PRESSURE FIRING DEVICE



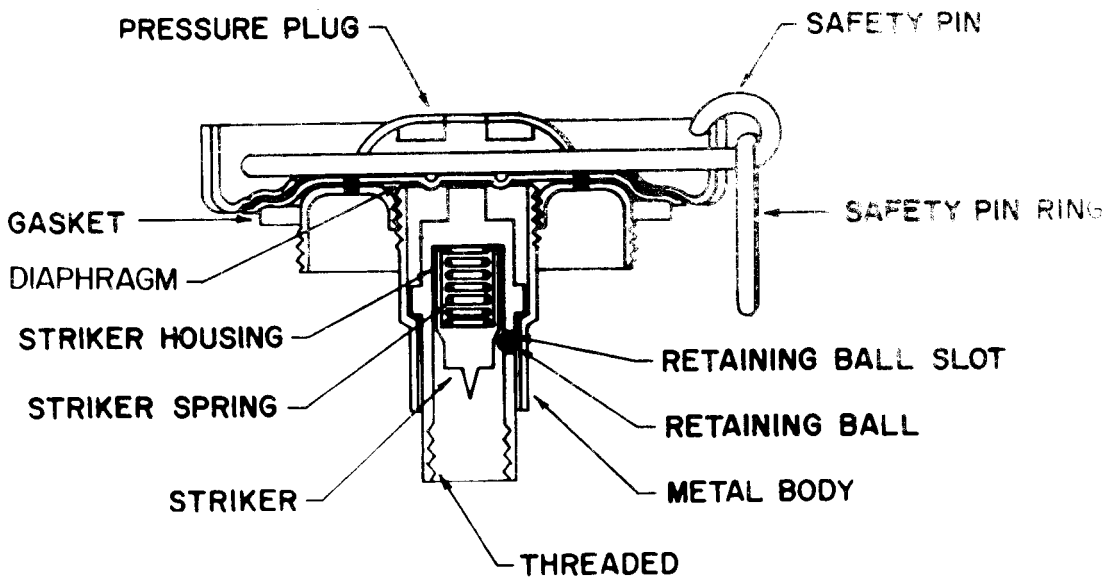
PRESSURE FUZE, MVM (SOVIET)

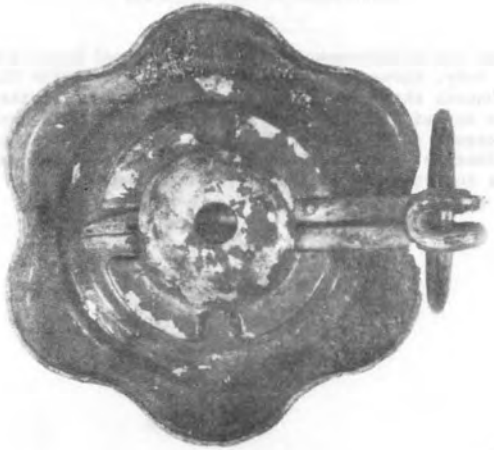
The MVM Pressure Fuze is designed primarily to be used in antitank mines that are laid by mechanical means, and mines which are transported while armed. This fuze consists of a modified TM-46 pressure plug, a threaded, cylindrical metal body, diaphragm, striker housing, striker spring, striker, retaining ball, and a two-pronged safety pin. The safety pin, which is inserted through the pressure plug, acts as a bridge and is a positive safety protecting the diaphragm. With the safety pin removed, pressure on the pressure plug will collapse the diaphragm, forcing the pressure plug downward, compressing the striker spring and releasing the retaining ball which escapes into the cavity between the striker housing and the metal body. The spring-driven striker, thus released, hits the percussion cap and in turn sets off the detonator and explodes the mine.

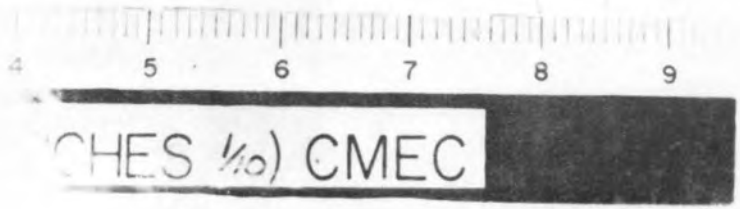
CHARACTERISTICS

Type	Pressure, mechanical
Diameter	8.7 cm
Height	4.8 cm
Weight	178 grams

PRESSURE FUZE, MVM (SOVIET)






4
5
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CHES 1/10) CMEC

TILT/PRESSURE FUZE (SOVIET)

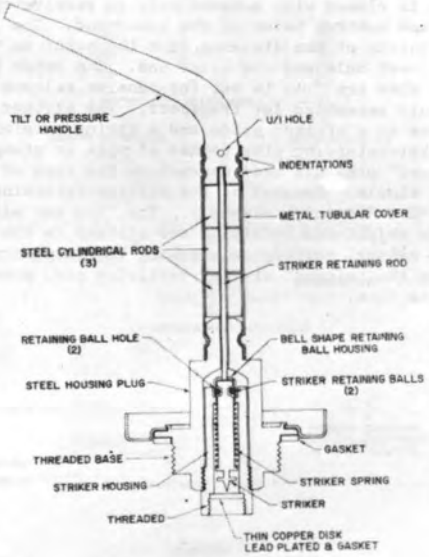
The three main components of the tilt/pressure fuze are the steel body, a metal tube, and a metal tilt/pressure handle. The body, threaded to fit the TM/TMN-46 Antitank Mine, houses the striker assembly. The metal tube houses three steel rods through which the striker retaining rod passes. The tilt/pressure handle is angled at about 20 degrees and its base is threaded to accept the striker retaining rod. Pressure in any direction on the tilt/pressure handle lifts the striker retaining rod about 3 millimeters. This releases the striker retaining balls allowing the striker spring to drive the striker into the percussion cap, firing the mine.

CHARACTERISTICS

Weight	526 gm
Height	20.2 cm
Diameter	7.7 cm

FUZE, TILT/PRESURE(SOVIET)

SIDE VIEW

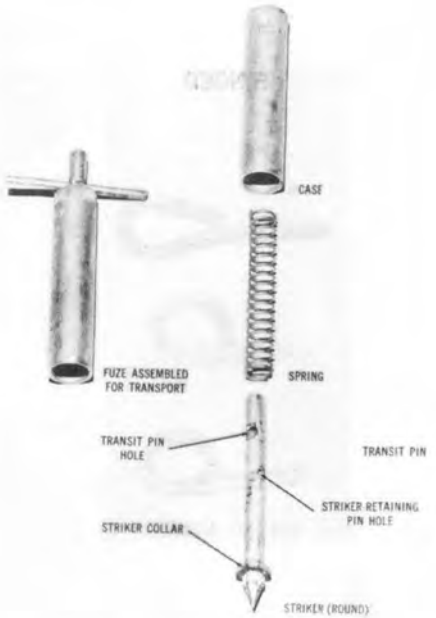


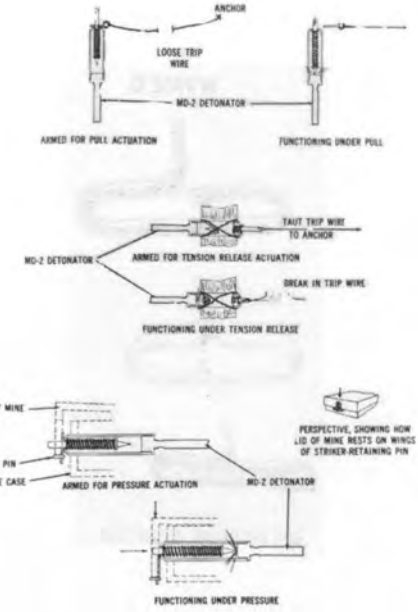
(INCHES ½) CMEC

PULL FUZE, MUV (USSR)

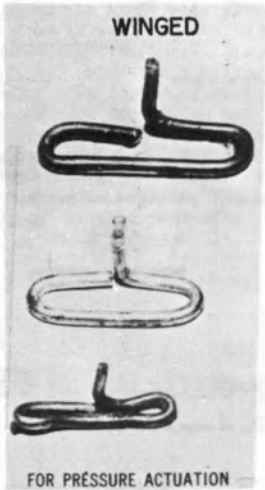
The MUV is one of the fuzes most widely used by the VC/NVA. The MUV is a mechanical fuze of simple design. It consists of a case, striker, spring, and striker-retaining pin. The lower end of the cylindrical case is threaded internally to receive the standard MD-2 detonator. The top end of the case is closed with a round hole to receive the striker. The striker is a rod pointed on the lower end and has two holes on the blunt end. The lower hole, for the striker-retaining pin, is approximately two thirds of the distance from the point to the blunt end; the upper hole is about half way between the lower hole and the blunt end. The upper hole has two possible uses: for attachment of a trip wire when the fuze is set for tension release; and to receive a transit pin for holding the fuze components assembled for transport. The striker has a triangular collar above the pointed end, which serves as a striker guide and a spring-retaining collar. The fuze may be fitted with a variety of striker-retaining pins formed of wire or stamped from flat metal stock. Whether the "winged" or "ringed" pins are used depends on the type of mine which is employed. The functioning of the fuze is very simple. Removal of the striker-retaining pin by pull allows the spring-loaded striker to fire the MD-2 detonator assembly. The fuze may also be used as a tension release fuze by fixing it firmly to an object and retaining the striker in the cocked position by a taut trip wire. When rigged in this manner, cutting or breaking the trip wire will allow the striker to fire the detonator. When using the "winged" striker-retaining pin, pressure on the hinged lid of a mine pushes the pin out of the fuze.

PULL FUZE, MUV(USSR)





STRIKER-RETAINING PINS



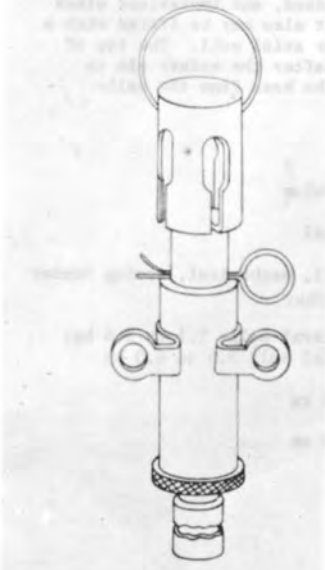
PULL FUZE, VPF (USSR)

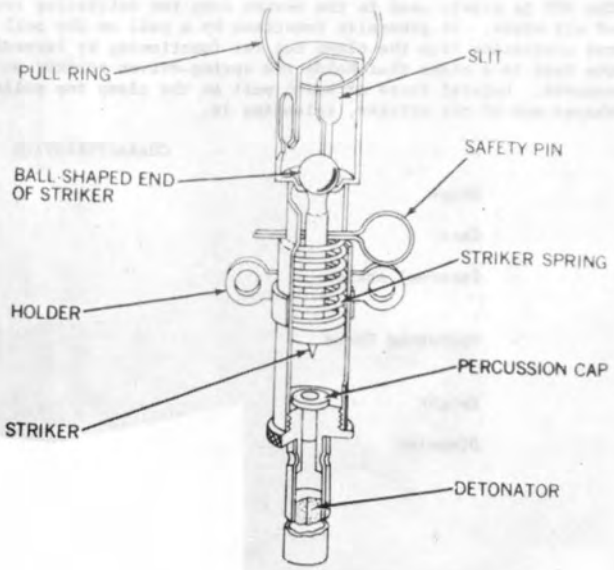
The VPF is widely used in the Soviet Army for initiating tripwire, standard, and improvised mines of all kinds. It generally functions by a pull on the pull ring; but it also may be fitted with a rod projecting from the clamp top for functioning by lateral pressure or axial pull. The top of the fuze is a clamp that holds the spring-driven striker under tension after the safety pin is removed. Lateral force or axial pull on the clamp top pulls the clawlike base from the ball-shaped end of the striker, releasing it.

CHARACTERISTICS

Shape	Tubular
Case	Metal
Internal Action	Pull, mechanical, spring loader striker
Operating Force	Lateral pull, 1.1 to 1.6 kg; axial pull 3.6 to 6.3 kg
Height	7.6 cm
Diameter	1.5 cm

Pull Fuze, VPF (U.S.S.R.)





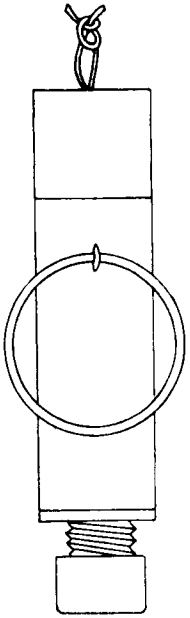
PULL FUZE, MODEL 1951 (FRANCE)

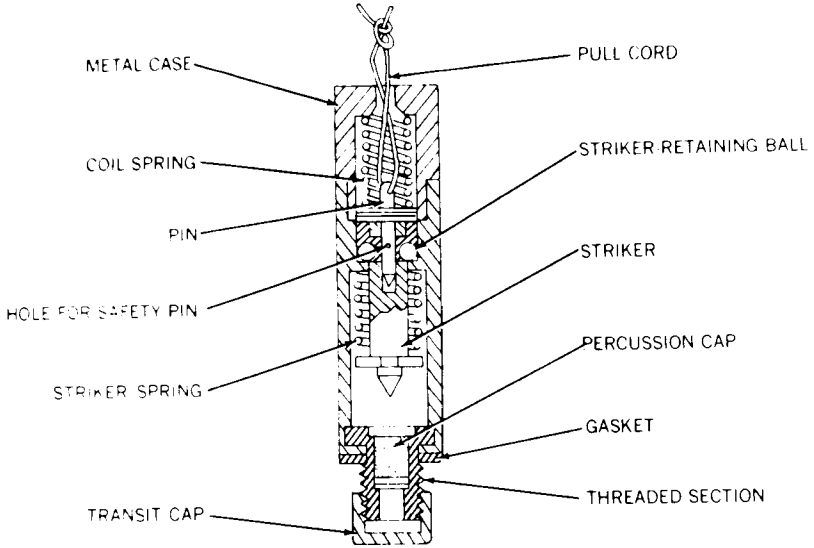
This pull-type fuze, model 1951, is of French origin and was probably captured during the French - Viet Minh War. This spring-actuated, ball-retained striker device is in a metal case, the lower end of which is threaded and protected by a transit cap. The two retaining balls are held in place by a pin fitted into the hollow upper end of the striker. This pin, with its pull cord, is held in position by a coiled spring and drilled to receive the safety pin that passes through it and the case. When adequate pull is applied to the pull cord, it compresses the resistance spring and withdraws the pin from the interior of the striker, which permits the displacement of the retainer balls and the slamming down of the striker on the percussion cap.

CHARACTERISTICS

Shape	Cylindrical
Case	Metal
Internal Action	Mechanical, with pin and ball release
Operating Force	1.1 to 3.5 kg
Height	7.0 cm
Diameter	1.5 cm

Pull Fuze, Model 1951





FUZE, CHEMICAL DELAY, MY-8

The MY-8 Chemical Delay Fuze is probably of Soviet origin. The fuze consists of a two-part, metallic, tubular case, the upper tube made of thin copper, and the lower tube made of thin brass. The two tubes are joined by a copper coupling. Inside the copper tube is an ampul of chemical solution. Inside the lower tube are the striker pin, striker spring, and detonator. A flat safety band, passing through the center of the lower case between the striker and detonator, acts as a positive safety. A restraining wire, held by a screw on top of the copper tube, passes alongside the ampul and is attached to the striker spring. When the safety band is removed and the glass ampul crushed, the chemical solution slowly dissolves the restraining wire until it breaks, allowing the striker spring to drive the striker pin into the detonator causing it to explode. Each fuze is packed in a plastic tube and five fuzes are packed in a tin container. Normally the container is olive drab in color and marked in gray paint with Vietnamese writing, the English translation of which is "5 MY-8 Time Fuze." There are three types of these fuzes which are identified by numerals stamped on the tip of the brass tube of the fuze, by numerals etched in the chemical solution ampul, by painted dots on the body of the plastic tube, and by numerals stamped on the lid of the tin container. At a temperature of 31° to 32° C, the time delay of each type of fuze is as follows:

1 or 1 dot: approximately 15 minutes

2 or 2 dots: approximately 25 minutes

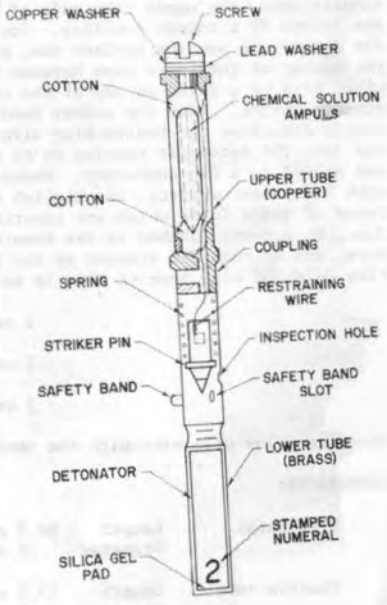
3 or 3 dots: approximately 60 minutes

The time delay will vary with the temperature; the colder the weather the longer the delay.

DIMENSIONS:

MY-8 Fuze:	Length	10.8 cm	Tin container:	Height	14.3 cm
	Diameter	.8 cm		Width	8.3 cm
				Thickness	1.7 cm
Plastic tube:	Length	13.3 cm			
	Diameter	1.6 cm			

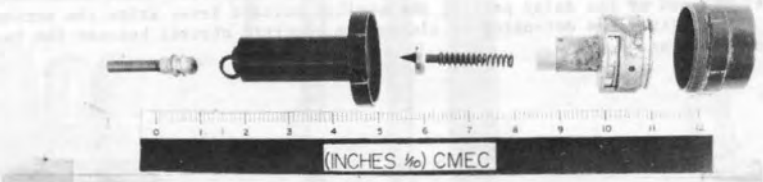
FUZE, CHEMICAL DELAY, MY-8
(SOVIET ORIGIN(?))

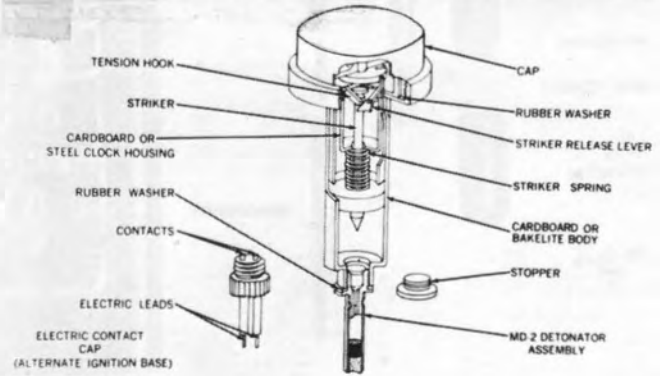


DELAY FUZES ChMV-10 AND ChMV-16 (USSR)

These fuzes are of the mechanical or electrical, spring-loaded, striker type, with a clockwork mechanism. The ChMV-10 has a 10-day delay, and the ChMV-16 a 16-day delay. The two are identical in appearance except for the numerals on the dial. The clockwork is housed in the mushroom-shaped head of the fuze. A striker release lever, geared to the clockwork, holds the spring-loaded striker under tension in the narrow base of the fuze. A standard MD-2 detonator or an electric contact cap with leads for wiring into an electric circuit is screwed into the bottom of the fuze. The joint is made watertight by a rubber washer. A recent model found in Vietnam has a bakelite body 11.4 cm in height and 5.3 cm in diameter. At the end of the delay period, the striker release lever trips the spring-loaded striker, which either fires the detonator or closes the electric circuit between the two contacts on top of the contact cap.

DELAY FUZES CHMV-10 AND CHMV-16 (USSR)





LEAD BREAK DELAY FUZE

This lead break delay fuze is of probable Soviet origin. Its configuration is similar to the fuze used in the Soviet BPM-2 Limpet Mine. The fuze is made of anodized aluminum except for the lead tab and the safety pin, lead tab retainer cap, steel spring, and steel striker, The fuze functions on the principle of a wire cutting through a soft metal. A spring encircles the striker and applies tension to the striker. A safety pin retains the striker. On the end of the striker shaft, which protrudes through the striker-spring retainer, is a loop opening where a lead density tab is inserted. The lead tab is held in place by a retainer cap placed on the end of the striker-spring retainer. When the safety pin is removed, the wire loop cuts through the lead tab until it eventually breaks and frees the striker. The striker-spring drives the striker into the percussion cap, which in turn fires the MD-2 detonator, detonating the mine. The four lead density tabs received with the fuze had the following markings and dimensions:

Tab #1: No color and no notches - .86mm thick x 5mm length x 4mm width

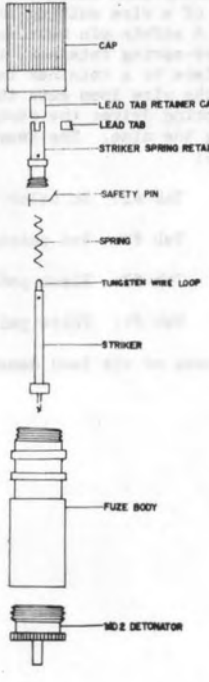
Tab #2: Red paint one end, one notch other end - 1.09mm thick x 5mm length x 4mm width

Tab #3: Black paint one end, two notches other end - 1.37mm thick x 5mm length x 4mm width

Tab #4: White paint one end, three notches other end - 1.45mm thick x 5mm length x 4mm width

The thickness of the lead density tabs determines the length of the time delay.

LEAD BREAK DELAY FUZE



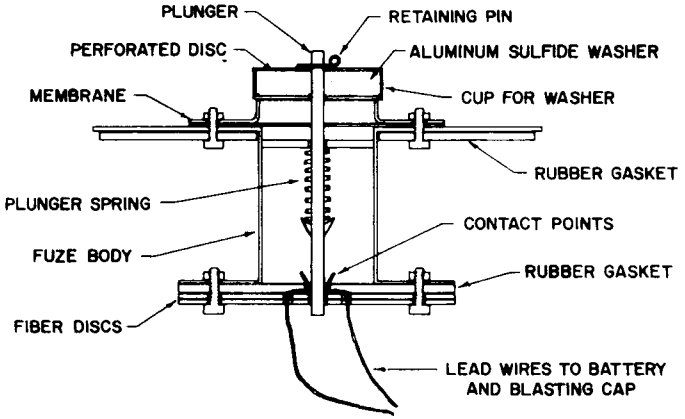
WATER SOLUBLE WASHER TIME DELAY FUZE

The water soluble time delay fuse is used with various types of water mines. The fuse consists of a sheet metal body which contains a spring-loaded plunger restrained by an aluminum sulfide washer. When submerged in water the washer slowly dissolves, allowing the plunger to move downward until it closes an electrical circuit, detonating the mine. A rubber diaphragm around the plunger prevents water from entering the mine. The delay time will vary. It is known that the fuse may delay detonation as long as 29 hours.

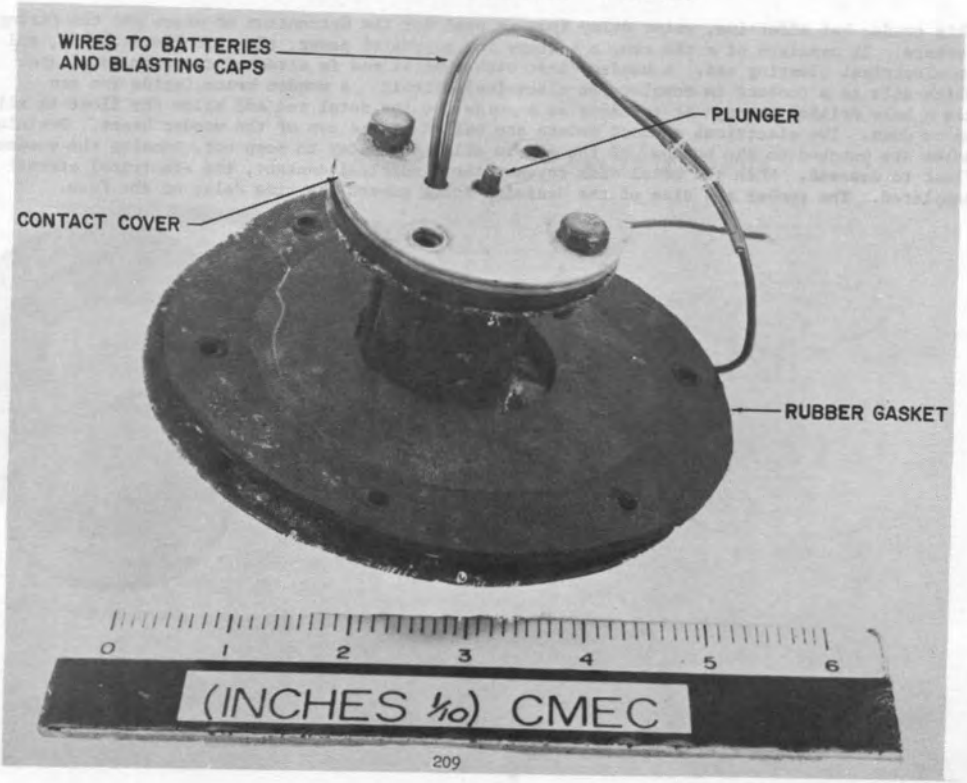
CHARACTERISTICS

Diameter	13.3 cm
Height	7.37 cm
Weight	425 gm
Delay Element	Water soluble aluminum sulfide washer.

WATER SOLUBLE WASHER TIME DELAY FUZE SECTION



UNDER SIDE OF DELAY FUZE

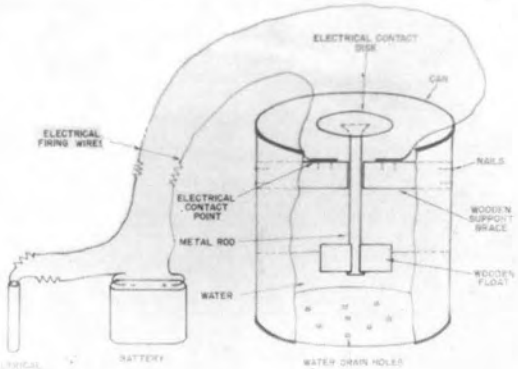


WATER DELAY FUZE

This crude, but effective, water delay fuze is used for the detonation of mines and the firing of rockets. It consists of a tin can, a battery for source of power, electric firing wires, and an electrical blasting cap. A wooden float with a metal rod is attached to a tin metal disk which acts as a contact to complete an electrical circuit. A wooden brace inside the can has a hole drilled through it to serve as a guide for the metal rod and allow the float to slide up or down. Two electrical contact points are nailed on the top of the wooden brace. Draining holes are punched on the bottom of the can to allow the water to seep out, causing the wooden float to descend. When the metal disk touches the electrical contact, the electrical circuit is completed. The number and size of the draining holes govern the time delay of the fuze.

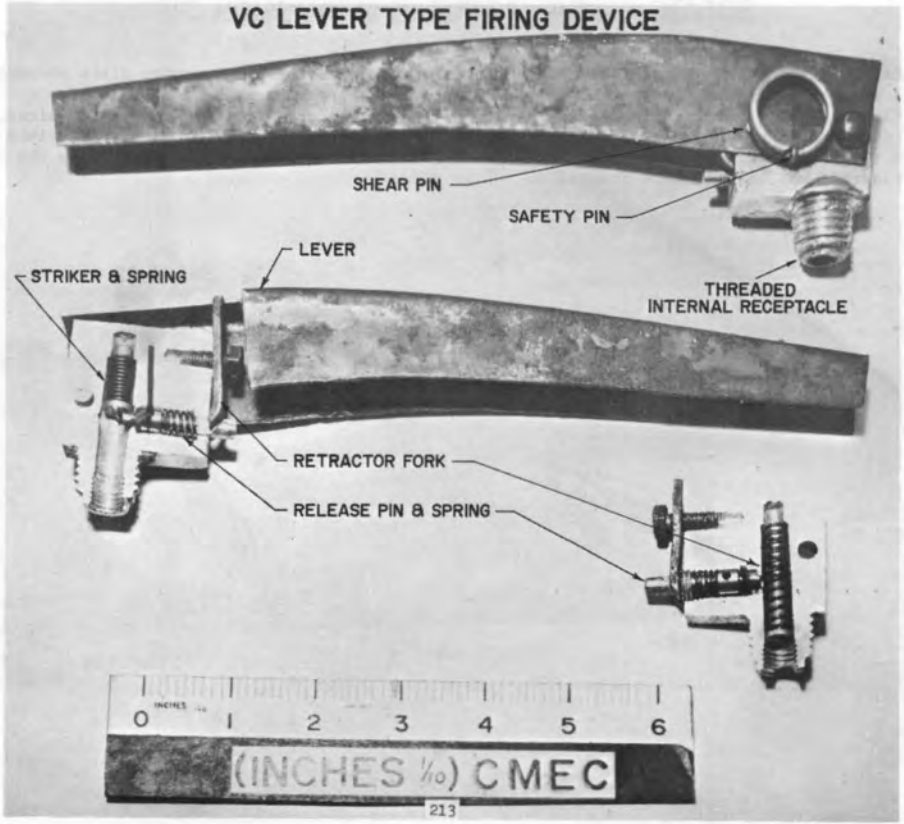
WATER DELAY FUZE

WATER DELAY FUZE



VC LEVER-TYPE FIRING DEVICE

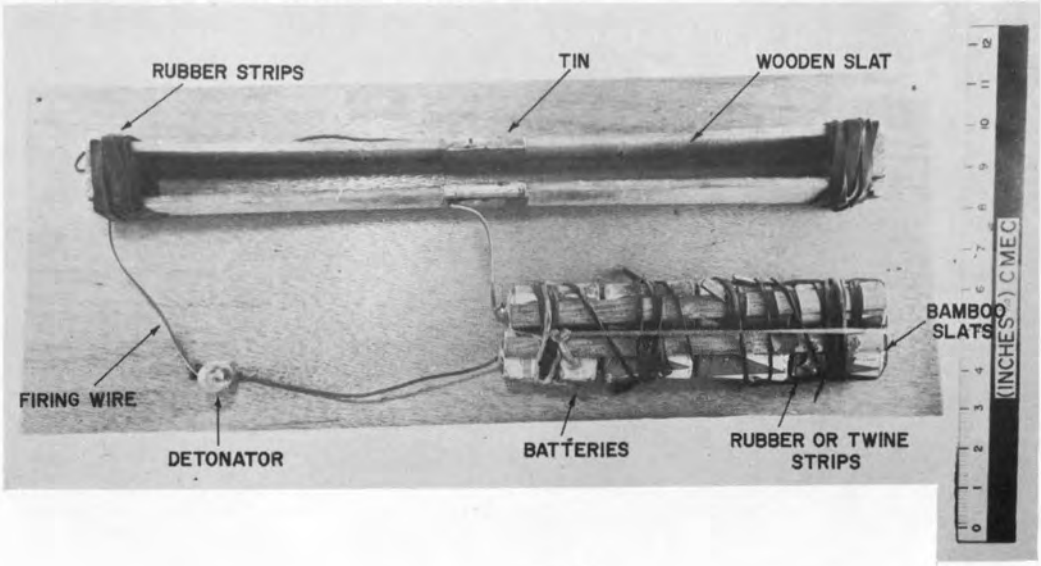
The Viet Cong lever-type firing device is designed to be used with a mine or explosive charge equipped with a threaded internal receptacle, which receives the threaded base of the firing device. The device is armed by the removal of the safety pin. Once the safety pin is removed, pressure exerted on the lever will cause it to pivot downward, breaking the shear pin. Continued downward pressure on the pivoted lever causes the retractor fork to pull the release pin and the spring to the rear. Once the release pin clears the spring-loaded striker, the striker is forced downward and strikes a percussion cap, which is screwed into the base of the mine or explosive charge.


VC LEVER TYPE FIRING DEVICE
SHEAR PIN
SAFETY PIN
LEVER
STRIKER & SPRING
THREADED
INTERNAL RECEPTACLE
RETRACTOR FORK
RELEASE PIN & SPRING
0
1
2
3
4
5
6
(INCHES 1/10) CMEC

VC HOMEMADE ELECTRIC FIRING DEVICE

This electric firing device is of local VC manufacture and consists of two wooden slats or bamboo, two blocks of wood or wooden dowels, two metal contacts, rubber strips, a battery pack, an electric blasting cap, and electric wire, The device is used as an initiating action for mines, grenades, dud shells, and booby traps. When a vehicle passes over the device or a person steps on it, the two metal contacts come together completing the electrical circuit, which fires the electric blasting cap and the main charge.

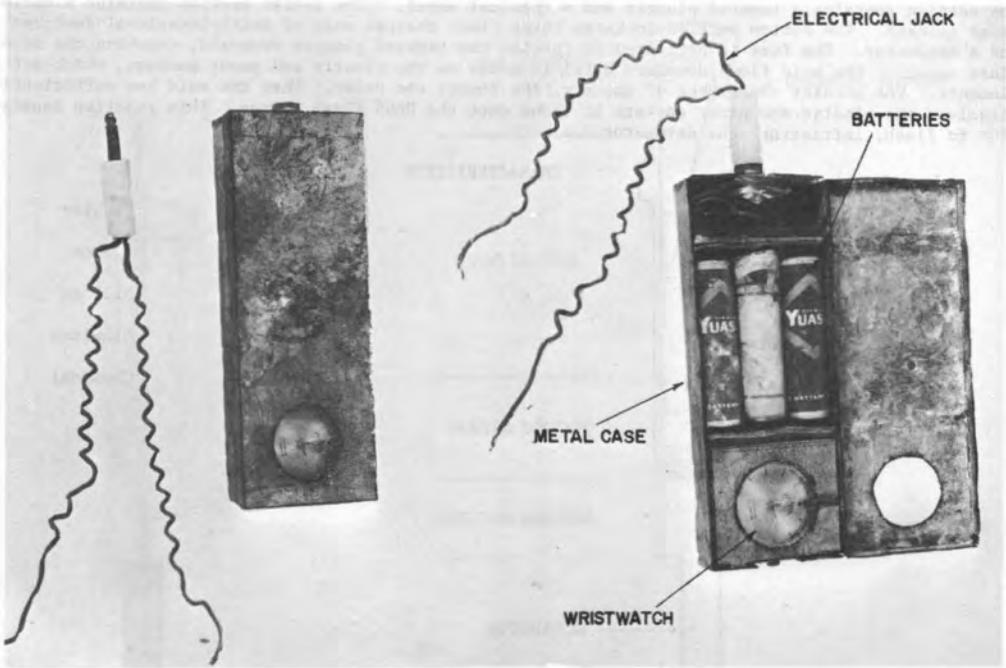
VC HOMEMADE ELECTRIC FIRING DEVICE



WRISTWATCH FIRING DEVICE

The wristwatch firing device is of local manufacture by the Viet Cong. It consists of a wristwatch, an electric blasting cap, an explosive charge, and a source of power (batteries). It is used to provide a time delay for the firing of mines or rockets. The delay period can range from a few minutes to 12 hours according to how the watch is altered and set. Either the minute hand (if the desired delay is in hours) or the hour hand (if the desired delay is in minutes) is broken off. One electric lead is connected to the stem or case of the watch and the second lead is connected to a screw passing through a hole in the crystal. When the remaining hand touches the screw the circuit is completed, firing the detonator.

WRISTWATCH FIRING DEVICE



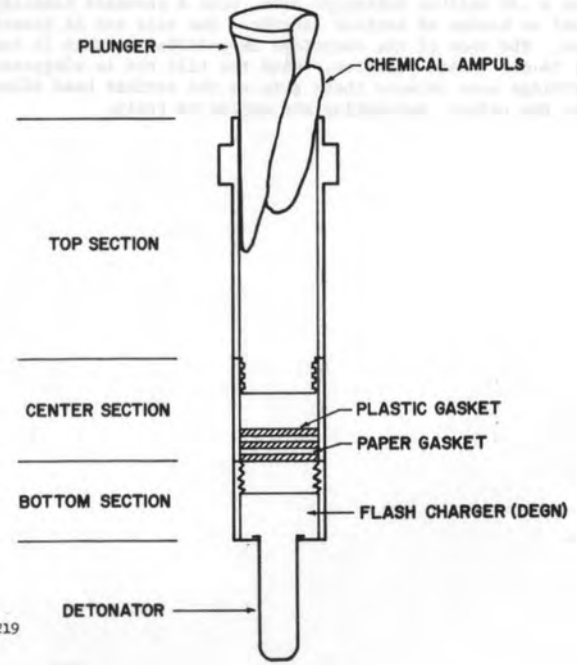
VC CHEMICAL DELAY FUZE

This chemical delay fuse of Viet Cong manufacture consists of three threaded aluminum sections. The top section contains a tapered plunger and a chemical ampul. The center section contains plastic and paper gaskets. The bottom section contains three flash charges made of deithyleneglecal denitrate (DEGN) and a detonator. The fuze is activated by forcing the tapered plunger downward, crushing the acid-filled glass ampul. The acid flows downward until it pools on the plastic and paper gaskets, which act as delay elements. The greater the number of gaskets, the longer the delay. When the acid has sufficiently dissolved the plastic and paper gaskets it flows onto the DEGN flash charge. This reaction causes the DEGN to flash, initiating the detonator.

CHARACTERISTICS

Shape	Tubular
Diameter	1.6 cm
Length	11.4 cm
Case Material	Aluminum
Internal Action	Chemical

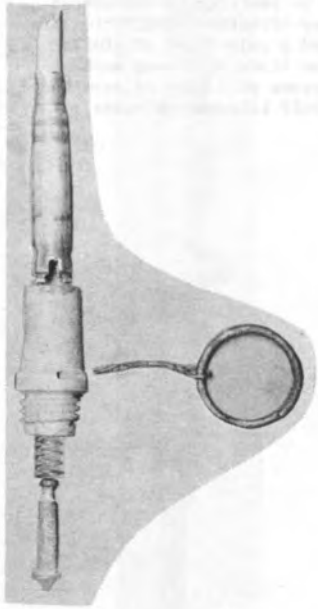
VC CHEMICAL DELAY FUZE

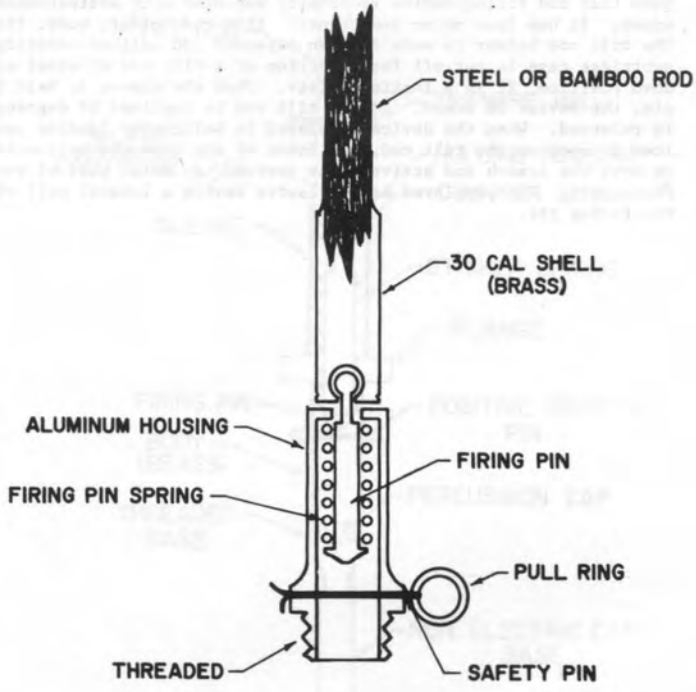


VC TILT ROD FIRING DEVICE

This tilt rod firing device is usually employed with antivehicular, anti-helicopter, or antipersonnel mines. It is a Viet Cong homemade device of simple but efficient design. The firing device is made from a .30 caliber cartridge case, with a standard blasting cap inserted. Captured tilt rods have been steel or bamboo of various lengths. The tilt rod is inserted into the projectile end of the cartridge case. The head of the cartridge is modified so that it has four claws which hold the spring-loaded striker in the cocked position. When the tilt rod is subjected to lateral movement, the holding claws of the cartridge case release their grip on the striker head allowing the striker spring to drive the striker into the primer, detonating the explosive train.

VC TILT ROD FIRING DEVICE

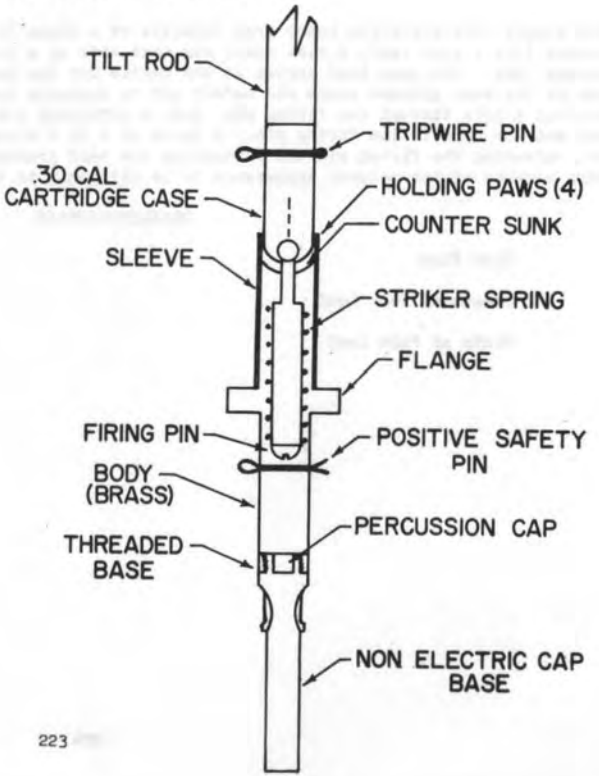




VC TILT ROD FIRING DEVICE

This tilt rod firing device is usually employed with antipersonnel, antivehicular, or anti-helicopter mines. It has four major components: tilt rod holder, body, firing pin and spring, and sleeve. The tilt rod holder is made from an expended .30 caliber cartridge case. The upper end of the cartridge case is cut off for insertion of a tilt rod of steel or bamboo. When the sleeve is in the down position, it is a locking safety. When the sleeve is held in the up position by the cotter pin, the device is armed. If the tilt rod is inclined 10 degrees in any direction, the firing pin is released. When the device is placed in helicopter landing zones, and a palm frond or similar item is used as the tilt rod, the force of air from the helicopter rotor blade is strong enough to move the branch and activate the device. An axial pull of two kilograms will also release the firing pin. When employed as a tripwire device a lateral pull of one half kilogram releases the firing pin.

VC TILT ROD FIRING DEVICE

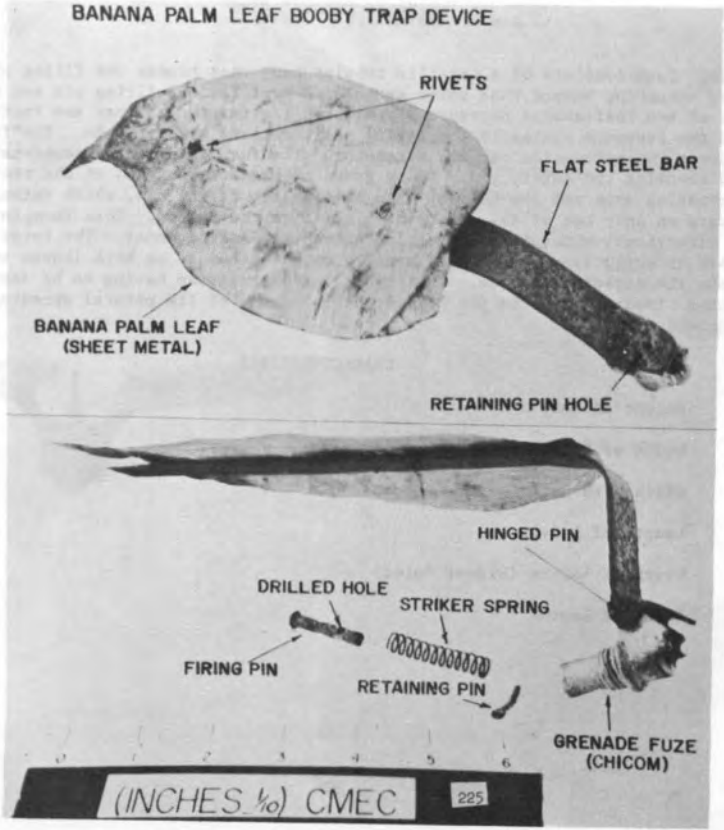


BANANA PALM LEAF FIRING DEVICE

This simple, but effective booby trap consists of a piece of thin metal that is shaped and colored like a palm leaf, a flat steel bar that acts as a stem for the palm leaf, and a ChiCom hand grenade fuze. The palm leaf serves as the handle for the hand grenade fuse. The stem is hinged to the fuse of the hand grenade where the safety pin is normally inserted. The ChiCom fuze is modified by drilling a hole through the firing pin, and, a retaining pin is inserted through a hole in the tip of the stem and the hole in the firing pin. A force of 4 to 6 kilograms on the palm leaf extracts the retaining pin, releasing the firing pin and detonating the hand grenade. It is employed along trails in the jungle, where because of its natural appearance it is difficult to detect visually.

CHARACTERISTICS

Type Fuse	Pressure, mechanical
Length of Palm Leaf	36 cm
Width of Palm Leaf	12.3 cm


BANANA PALM LEAF BOOBY TRAP DEVICE
RIVETS
FLAT STEEL BAR
BANANA PALM LEAF
(SHEET METAL)
RETAINING PIN HOLE
HINGED PIN
DRILLED HOLE
STRIKER SPRING
FIRING PIN
RETAINING PIN
GRENADE FUZE
(CHICOM)
(INCHES 1/0) CMEC
225

VC "CONG TRUONG" FUZE

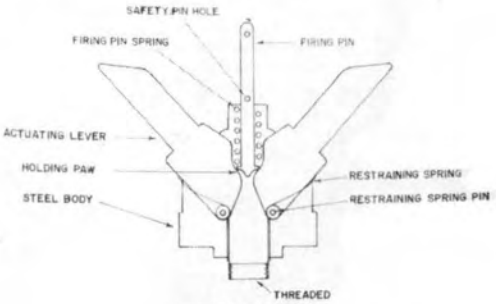
The "Cong Truong" fuze consists of a metallic tubular body that houses the firing pin and the firing pin spring, two actuating levers that serve as holding paws for the firing pin and as blades for the attachment of two leaf-shaped pressure plates, two restraining springs and restraining spring pins that hold the pressure plates in the firing position, and a safety pin. The fuze body is threaded to accept the percussion cap and detonator. The fuze is armed by compressing the firing pin spring and removing the safety pin. Forty grams of pressure on each of the pressure leaves rotates the actuating arms and the holding paws release the firing pin, which detonates the device. Pressure on only one of the leaves will not fire the device. This fuze, coupled with a fragmentation directional mine, is employed in helicopter landing zones. The rotor wash of a helicopter, when directly over the device, applies enough pressure on both leaves to actuate the fuse and explode the directional mine. The feature of both leaves having to be depressed before the fuze actuates insures a hit on the helicopter. Because of its natural appearance, it is difficult to detect visually.

CHARACTERISTICS

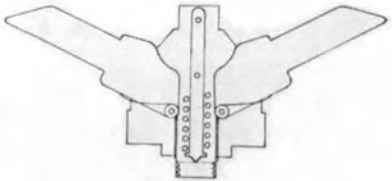
Height of Body	5 cm
Width of Body	5 cm
Width with Both Leaves Attached	47 cm
Length of Leaves	17 cm
Width of Leaves (Widest Point)	12.8 cm
Color of Leaves	Olive drab

VC "CÔNG TRÙNG" FUZE

CÔNG TRÙNG FUZE



ARMED POSITION



FIRED POSITION

X. DEMOLITIONS. Described in this section are the explosives, satchel charges, time fuses, fuse lighters, blasting caps, and blasting machines presently in use by the VC/NVA forces in Vietnam. Enemy sappers and engineers make extensive use of demolitions to cut lines of communication, to attack public buildings, and other targets as a part of his terrorist activities, and to breach fortifications as part of coordinated attacks on Allied positions.

SOVIET AND CHICOM TNT BLOCKS

The VC/NVA use both USSR and ChiCom TNT blocks. They are issued in rectangular, paper-wrapped blocks weighing either 200 or 400 grams. A purple spot on the wrapper usually indicates the location of the blasting cap well. In general, these blocks are used in the demolition of objects or structures, in improvising bangalore torpedoes, and as the booster or main charge in some standard land mines and booby traps.

	CHARACTERISTICS	
Block	200 grams	400 grams
Shape	Rectangular	Rectangular
Length	10.2 cm	10.2 cm
Width	5.1 cm	5.1 cm
Height	2.54 cm	5.1 cm
Explosive	TNT	TNT

SOVIET AND CHICOM TNT BLOCKS

CHICOM RED PHOSPHORUS

ChiCom red phosphorus is a powder type product having only slight sensitivity. The temperature required to burn in air is 260°C. At normal temperature this substance is mixed with potassium chlorate or potassium nitrate to increase its sensitivity. The mixture is used as an explosive filler in mines, grenades, flying bombs, mortars, and artillery shells, and will provide a thick screen of smoke and a mild explosive effect.

CHARACTERISTICS

Case	Sheet metal
Color	Gray
Length	15 cm
Width	15 cm
Height	23 cm
Net Weight	5 kg
Markings	Label "Red Horse" in English and Chinese characters

CHICOM RED PHOSPHROUS

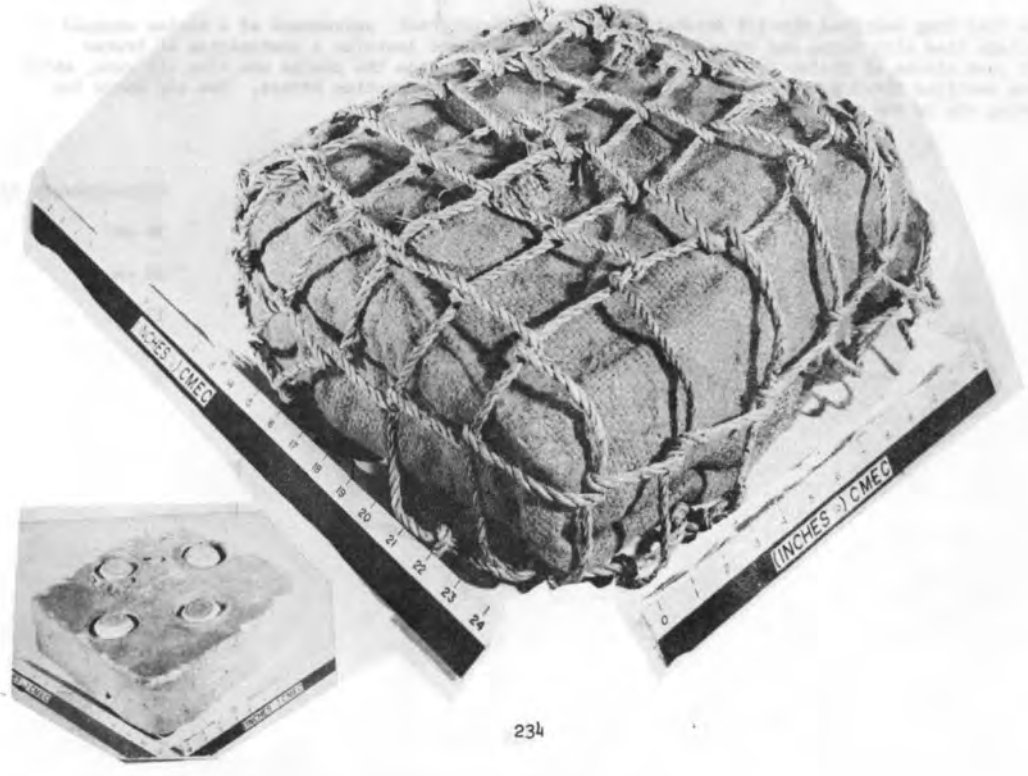
MODIFIED BLU-3/B SATCHEL CHARGE

The Viet Cong modified BLU-3/B satchel charge has the external appearance of a burlap wrapped package tied with twine and smooth wire. The satchel charge contains a combination of broken 200 gram blocks of ChiCom TNT mixed with cast tritonal. Inside the charge are four tin cans, which have modified BLU-3/B bomblets placed in them for added fragmentation effect. Two cap wells for fusing are in the top surface of the satchel charge.

CHARACTERISTICS

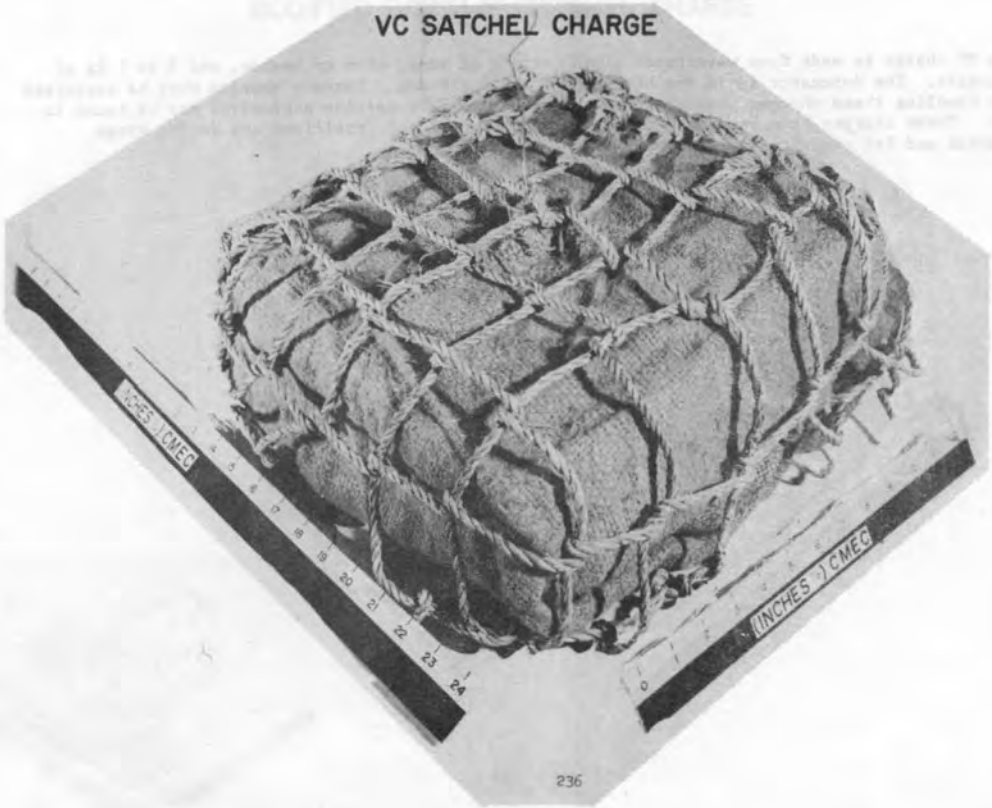
Weight	Approximately 13.6 kg
Length	36 cm
Width	36 cm
Height	13 cm

MODIFIED BLU-3/B SATCHEL CHARGE



VC SATCHEL CHARGE

This VC charge is made from waterproof cloth, strips of rope, wire or bamboo, and 3 to 5 kg of explosive. The detonator is in the handle of a stick grenade. Extreme caution must be exercised when handling these charges, because potassium chlorate (a sensitive explosive) may be found in them. These charges have been used for destroying bunkers and fortifications during enemy assaults and for other types of demolition work.


VC SATCHEL CHARGE
INCHES
CMEC
INCHES
CMEC
236

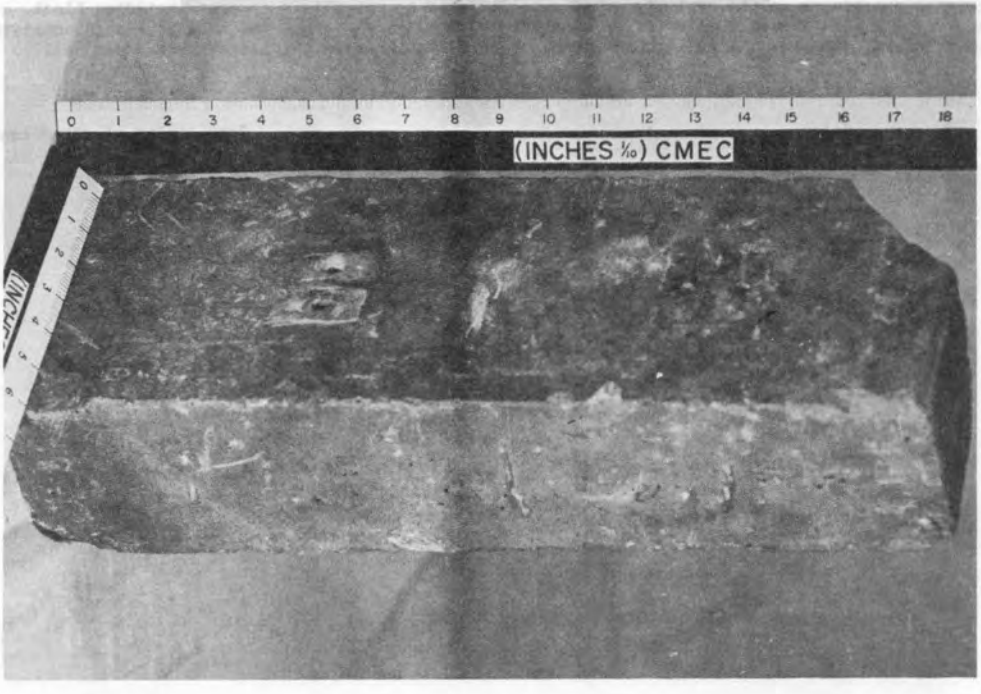
VC "BUILDING BLOCK" EXPLOSIVE CHARGE

The general appearance of the explosive charge is designed to resemble a concrete building block. The explosive charge consists of tritonal with two TNT booster charges. The booster charge consists of two standard, 200 gram blocks of ChiCom TNT. Each of the booster TNT blocks have a cap well.

CHARACTERISTICS

Color	Gray (color of mixed concrete)
Total Weight	13.6 kg
Lenght	48.3 cm
Width	17.1 cm
Depth	11.4 cm

VC "BUILDING BLOCK" EXPLOSIVE CHARGE

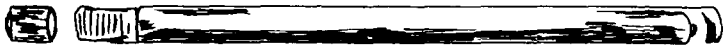


VC BANGALORE TORPEDOS

Although the bangalore torpedo was designed originally for the breaching of barbed wire defenses, the VC have made extensive use of it as an antitank and an antipersonnel mine. The illustrations give an idea of the general construction of a bangalore. The appearance and the construction of all bangalores are generally the same. The bangalore may be made of either bamboo or metal. Enemy troops lay the torpedoes on a likely vehicle or troop approach, conceal themselves some 12 to 15 meters away, and upon the approach of vehicles or assaulting troops detonate the torpedo.

BANGALORE TORPEDOES

SCRAP METAL



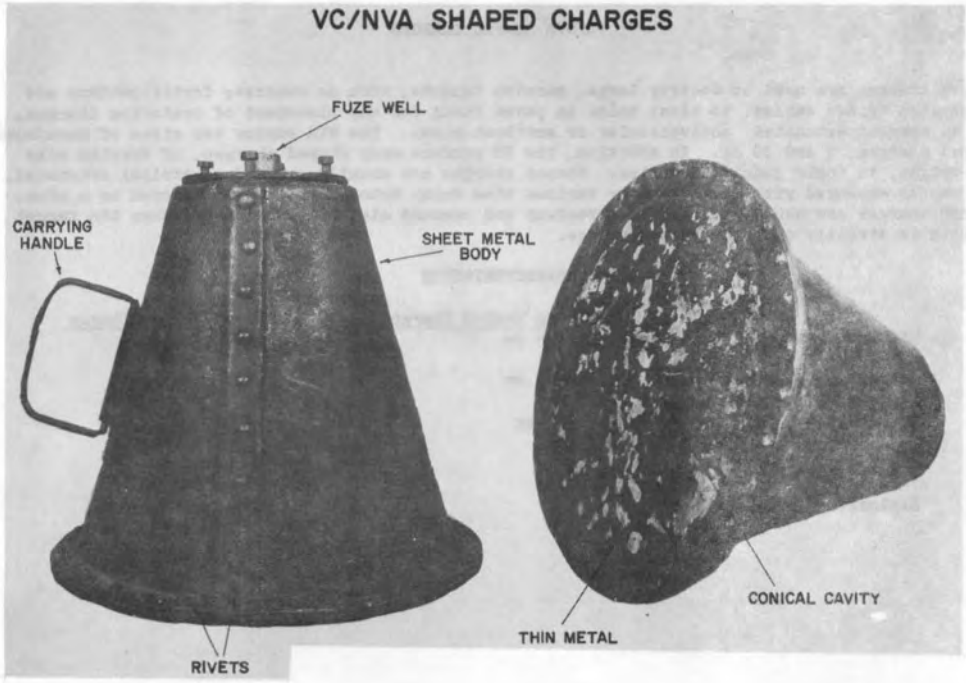
BAMBOO

VC/NVA SHAPED CHARGES

Shaped charges are used to destroy large, massive targets, such as concrete fortifications and suspension bridge cables, to blast holes in paved roads for the placement of cratering charges, and as command detonated antivehicular or antiboat mines. The NVA employ two sizes of manufactured shaped charges, 5 and 10 kg. In addition, the VC produce many shaped charges, of varying size and weight, in their jungle worksites. Shaped charges are usually command electrical detonated, but can be employed with mechanical or various time delay detonators. When employed as a mine, shaped charges are usually buried in a roadway and command electrical detonated when the target vehicle is directly over the shaped charge.

CHARACTERISTICS

	5 kg Shaped Charge	10 kg Shaped Charge
Maximum Diameter	22.9 cm	27.9 cm
Length	24.1 cm	25.4 cm
Total Weight	8.6 kg	18 kg
Explosive Weight	5 kg	10 kg
Explosive	TNT	TNT


VC/NVA SHAPED CHARGES
FUZE WELL
CARRYING HANDLE
SHEET METAL BODY
RIVETS
THIN METAL
CONICAL CAVITY

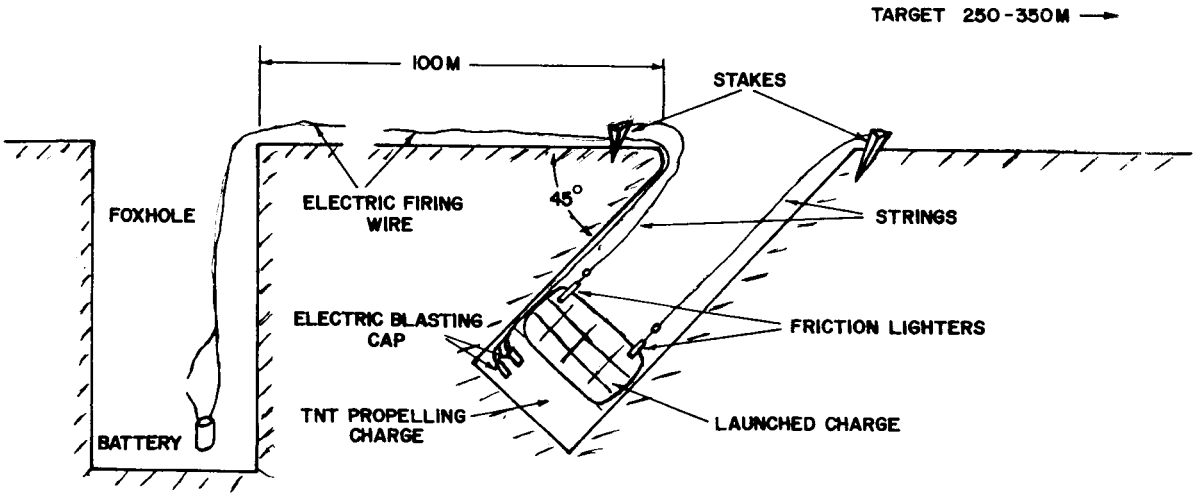
VC/NVA LAUNCH BOMBS AND CHARGES

This technique is aimed at base camps, either as harassing fire or as preparation for a ground attack. It is employed to launch dud bombs, satchel charges, or containers of CS agent over a base camp perimeter. This technique is normally employed with charges of 30 kg or less, but in at least one instance a 500 lb bomb has been thrown into a base camp. A hole is dug the same size as the charge and at an angle of 45° towards the target. The hole is usually about 80 cm deep (for a 20 kg charge). A propelling charge is placed at the bottom of the hole and the dud or prepared charge placed on top of it. The propelling charge is usually fired electrically. The launchedbomb or charge usually has two or more friction fuse lighters, which are attached to stakes driven in the ground by string or wire. When the propelling charge is fired it propels the launched charge out of the hole. The strings activate the fuse lighters which light lengths of time fuse. When the time fuse burns down it sets off the nonelectric blasting cap and detonates the charge.

CHARACTERISTICS

Launching Charge:	
Weight	2 to 3 kg
Explosive	TNT
Firing System	2 ea electric blasting caps
Launched Charge:	
Weight	20 kg
Contents	TNT, broken glass, scrap metal
Size	60 cm X 30 cm X 40 cm
Range	250 to 350 m

VC/NVA LAUNCH CHARGE



LINEAR SHAPED-CHARGE GRENADES

These grenades are constructed of thin sheet metal, painted olive drab. The fuze body, which also serves as a handle, is made of tubular aluminum and is threaded at both ends. The fuze is the pull friction type having a delay of 4.5 seconds. These grenades are probably used as demolition charges and as sabotage devices. Due to their design they lend themselves to being placed on or between bombs, artillery shells, or POL dumps, but also have the capability of being employed as trip wire booby traps and of accepting an electric blasting cap for command detonation. The grenade is detonated by unscrewing the cap and pulling on the pull cord. This action pulls the friction wire through a chemical compound that ignites the delay charge. The delay charge burns through, firing the detonator and the main charge.

	CHARACTERISTICS	
	Single, Linear Shaped Charge	Double, Linear Shaped Charge
Height	5.98 cm	5.71 cm
Width	7.42 cm	5.98 cm
Length with Fuze Handle	16.5 cm	16.5 cm
Weight	650 gm	532 gm
Filler	TNT	TNT
Filler Weight	435 gm	342 gm

LINEAR SHAPED CHARGE GRENADES

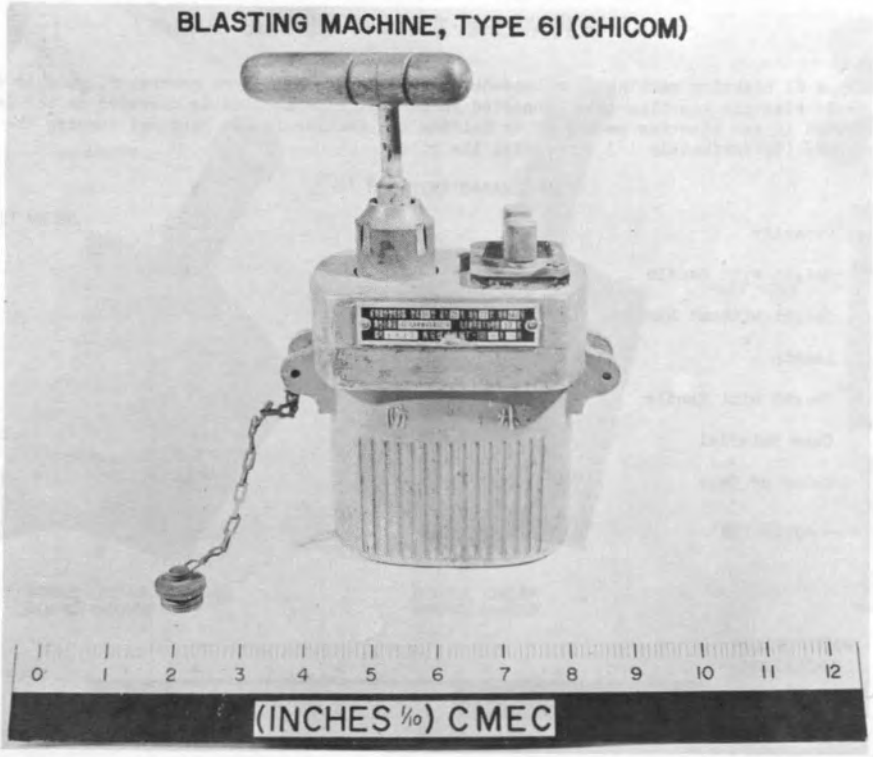
BLASTING MACHINE, TYPE 61 (CHICOM)

The ChiCom Type 61 blasting machine is a hand-held, electric impulse type generator, capable of firing up to 25 electric blasting caps connected in series. The machine is operated in the same manner as the US 10 cap blasting machine: by holding the machine in one hand and turning the handle clockwise (approximately 1/3 turn) with the other.

CHARACTERISTICS

Capacity	25 Caps
Height with Handle	10.8 cm
Height without Handle	8.5 cm
Length	13 cm
Weight with Handle	3.9 kg
Case Material	Cast aluminum or aluminum alloy
Color of Case	Gray or olive drab

BLASTING MACHINE, TYPE 61 (CHICOM)



BLASTING MACHINE MFD-25 (CHICOM)

This machine is a 25 cap blasting machine. The source of power is three BA-3D (D-cell) batteries or the equivalent. The key is inserted into the slot and turned counterclockwise until it stops (about one-quarter of a turn). This closes the switch and allows current to flow from the batteries to a capacitor. The indicator light will glow when the capacitor is fully charged. The key is then turned clockwise until it clicks (one-quarter turn), opening the charging circuit and discharging the capacitor through the firing circuit.

CHARACTERISTICS

Length	17 cm
Width	10.8 cm
Height	9.5 cm
Weight	1.842 kg
Color	Light gray

BLASTING MACHINE MFD-25(CHICOM)

BLASTING MACHINE MFD-25(CHICOM)

BLASTING MACHINE, LA 2B (CHICOM)

The LA 2B blasting machine is a hand-held, electric-impulse type generator, capable of firing up to 10 electric blasting caps connected in series. The machine is operated in the same manner as the ChiCom Type 61.

CHARACTERISTICS

Capacity	10 cap
Width	7.7 cm
Height with Handle	24.8 cm
Height without Handle	17.5 cm
Length	16.9 cm
Weight with Handle	2.3 kg
Case Material	Cast aluminum or aluminum alloy
Color of Case	Gray or green

BLASTING MACHINE, LA 2B (CHICOM)

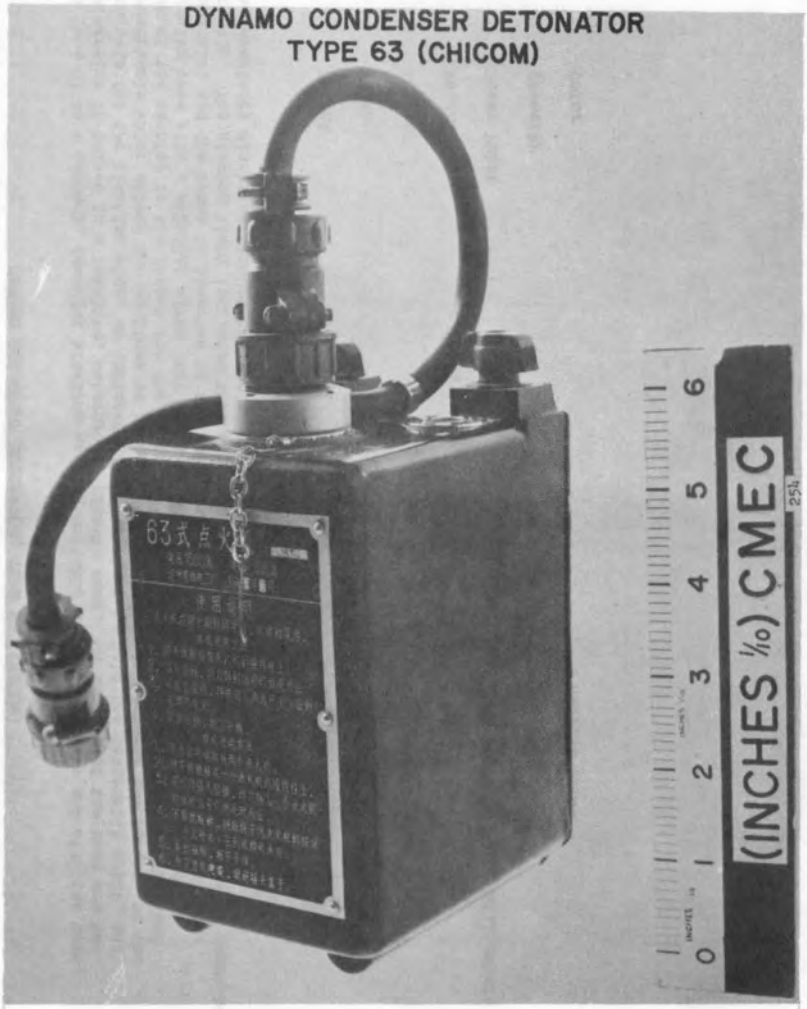
DYNAMO CONDENSOR DETONATOR, TYPE 63 (CHICOM)

The Type 63 is a compact, powerful blasting machine suitable for all military and civilian uses. The machine is housed in a bakelite, waterproof, plastic case. On the top of the case are two terminals for the blasting wire, an indicator light, a clamp to hold the detachable crank, and a receptacle which allows two machines to be connected in series to increase the power. On the back of the machine is the socket for the crank and firing button. The machine has a leather carrying case with a shoulder strap (not shown here). The firing wires are attached to the terminals, and the crank is inserted in the socket and turned until the indicator light glows brightly. The glowing light indicates that the capacitors are charged. When the button is depressed the capacitors discharge through the firing circuit.

CHARACTERISTICS

Height	17.2 cm
Width	8.6 cm
Length	10.8 cm
Weight	2 kg
Power Pulse	1,500 volts DC, at 2 milliampere
Capacity	350 caps
Color	Reddish brown

DYNAMO CONDENSER DETONATOR
TYPE 63 (CHICOM)



BLASTING MACHINE
(CZECHOSLOVAKIA)

This blasting machine, manufactured in Czechoslovakia, is hand-wound, spring-released, armature type, capable of firing up to 100 blasting caps connected in series. It has two sockets for the firing handle; one is used for winding the spring loaded armature, and the other is used to release it, sending an electrical current to the two external connecting terminals.

CHARACTERISTICS

Capacity	100 caps
Height without Handle	20.3 cm
Width	10.8 cm
Length	14 cm
Weight with Handle	6 kg
Case Material	Cast aluminum or aluminum alloy
Color	Gray or green

BLASTING MACHINE
(CZECHOSLOVAKIA)

BLASTING MACHINE M-524 (EAST GERMAN)

The M-524 is a compact, powerful blasting machine suited to all military and civilian uses. The machine is housed in a waterproof aluminum case. On one side is a detachable crank and on top are terminals for the firing wires, an indicator lamp window, and a protected firing button. The firing wires are attached to the terminals, and the crank is attached to the machine. As the crank is turned, a direct current generator charges the capacitors. When the indicator light glows brightly the capacitors are charged. To discharge the capacitors the cover is removed from the firing button and the button is depressed.

CHARACTERISTICS

Length	11.5 cm
Width	9.0 cm
Height	14.5 cm
Weight	2.35 kg
Capacity	100 caps


BLASTING MACHINE M 524
EAST GERMAN

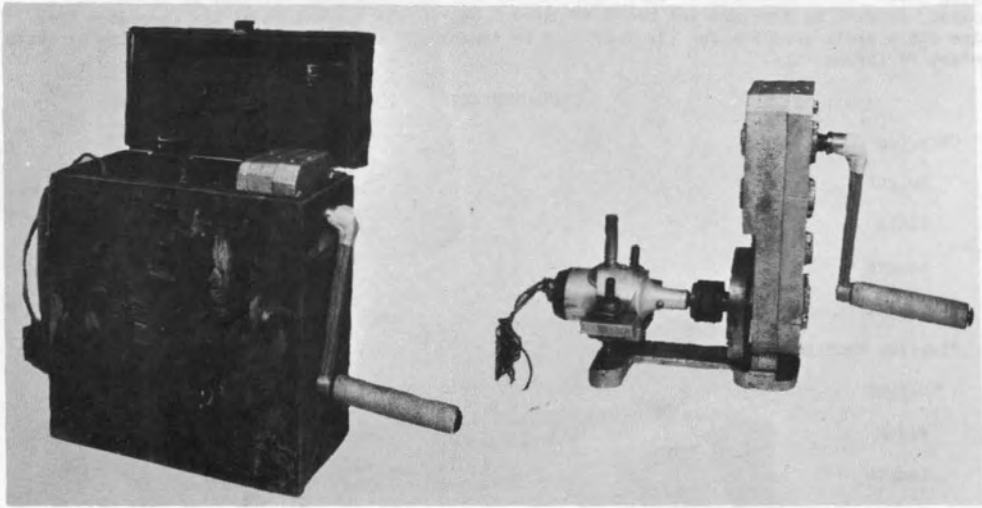
VC BLASTING MACHINE

This VC blasting machine is housed in a wooden carrying case with a canvas carrying strap. The mechanism consists of a bicycle generator and a four-stage gear train mounted on a cast aluminum base. The machine has a detachable, cast aluminum crank which is inserted through the side of the carrying case. The components of this machine are well made and show evidence of extensive machining, as well as aluminum and brass founding. Due to the limitation of the generator this machine has a small capacity for its size. It is capable of detonating only one blasting cap with 38 meters of firing wire.

CHARACTERISTICS

Carrying Case:	
Height	25.5 cm
Width	11.3 cm
Length	21.8 cm
Weight	1.5 kg
Blasting Machine:	
Height	22.4 cm
Width	8.8 cm
Length	19.6 cm
Length with Crank	34.1 cm
Weight	2.4 kg

VC BLASTING MACHINE

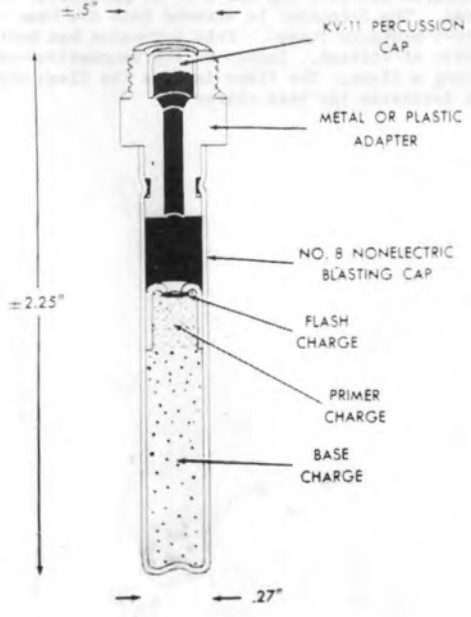


DETONATOR, MD-2 (USSR)

This detonator was first used by the Soviet Army during World War II. It consists of a No. 8 nonelectric blasting cap and a KV-11 percussion cap assembled to a threaded metallic or plastic adapter. The detonator is screwed into the base of the standard Soviet mine fuze (the MUV pull and MV-5 pressure fuzes). This detonator has been recovered in considerable quantities in Republic of Vietnam. Impact on the percussion cap (usually by a spring-driven striker) sets if off, creating a flame. The flame ignites the flash charge of the blasting cap, then the primer charge, which detonates the base charge.

Detonator, MD-2

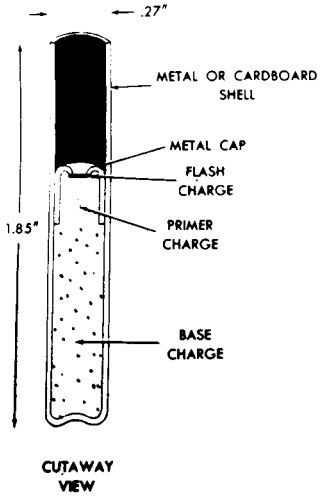
(Mechanical Detonator, MD-2)



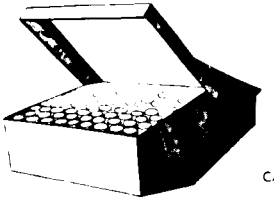
NONELECTRIC BLASTING CAP, NO. 8 (USSR)

There are six different models of the Soviet No. 8 nonelectric blasting cap differing in the explosive filling and the material of the shell. The six models are classified into three general groups: GRT, TAT, and TAG, according to the explosive charge. The abbreviation GRT designates the two explosives, mercury fulminate and tetryl; TAT designates TNRS, lead azide, and tetryl; and TAG designates TNRS, lead azide, and hexogen. The No. 8 nonelectric cap is also combined with a KV-11 percussion cap in a threaded adapter to form the MD-2 detonator. Soviet nonelectric blasting caps are exploded by the flame from a percussion cap (as in the MD-2 detonator) or from a burning time fuse.

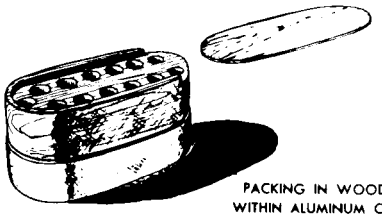
Nonelectric Blasting Cap, No. 8



CUTAWAY VIEW



PACKING IN CARDBOARD CASE

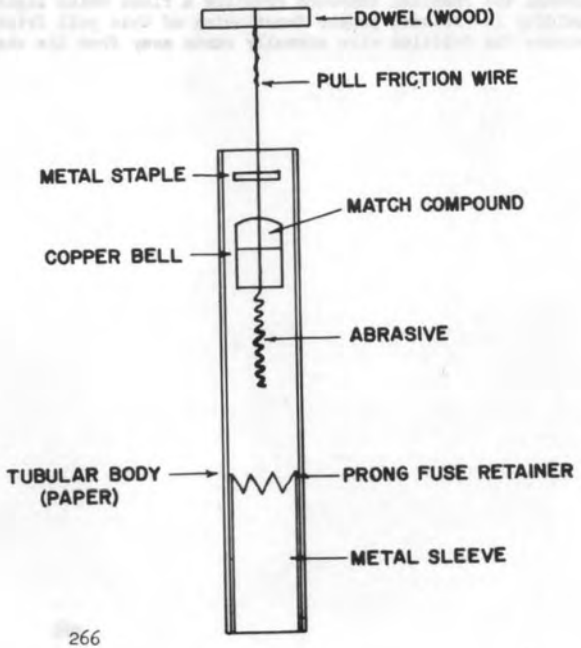


PACKING IN WOODEN BOX WITHIN ALUMINUM CONTAINER

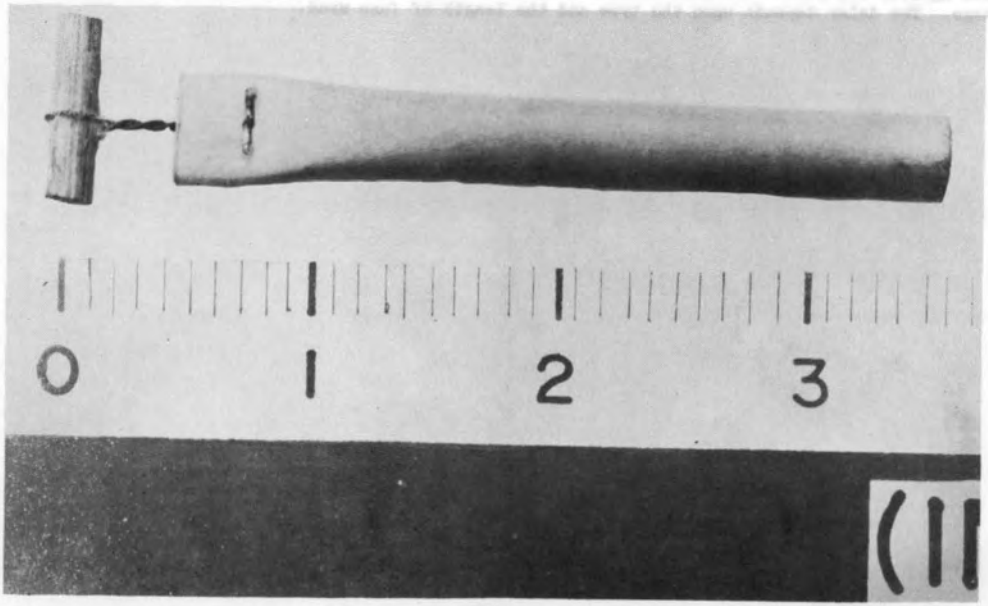
PULL FRICTION FUSE LIGHTER

This fuse lighter is constructed of tubular paper. The tube is stapled at one end and acts as a retainer for the pull friction wire assembly, which consists of a wooden handle, friction wire, and a copper cup containing a chemical compound. The opposite end of the tube contains a metal sleeve into which a time fuse is inserted. A pull on the wooden handle pulls the friction wire through the chemical compound creating a flame which lights the time fuse. Due to the high humidity in Vietnam, proper functioning of this pull friction fuse lighter is very unreliable because the friction wire normally rusts away from the chemical compound cup.

FRICTION FUSE LIGHTER

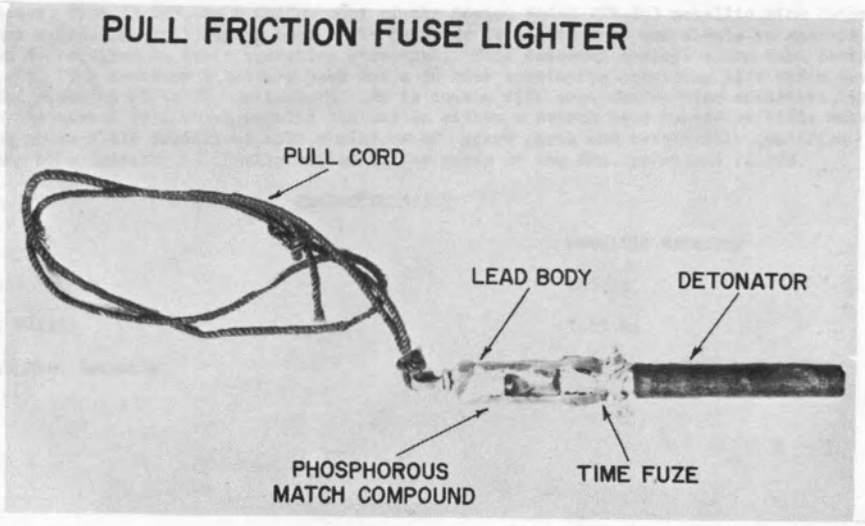


PULL FRICTION FUSE LIGHTER



PULL FRICTION FUSE LIGHTER

This fuse lighter is probably made by the VC in their jungle worksites. The fuse lighter consists of a cylindrical lead body containing a copper bell cup filled with a phosphorous match compound and a coiled copper wire, a length of time fuse, a detonator (nonelectric cap), and a pull cord. A three kilogram pull draws the copper wire through the phosphorous match compound creating a flame which ignites the fuse. The fuse burns through and fires the detonator, which explodes the main charge. The delay depends upon the type and the length of fuse used.


PULL FRICTION FUSE LIGHTER
PULL CORD
LEAD BODY
DETONATOR
PHOSPHOROUS
MATCH COMPOUND
TIME FUZE

XI. MINE DETECTORS. There are two basic types of mine detectors employed by the VC and NVA main force troops. They are discussed in this section.

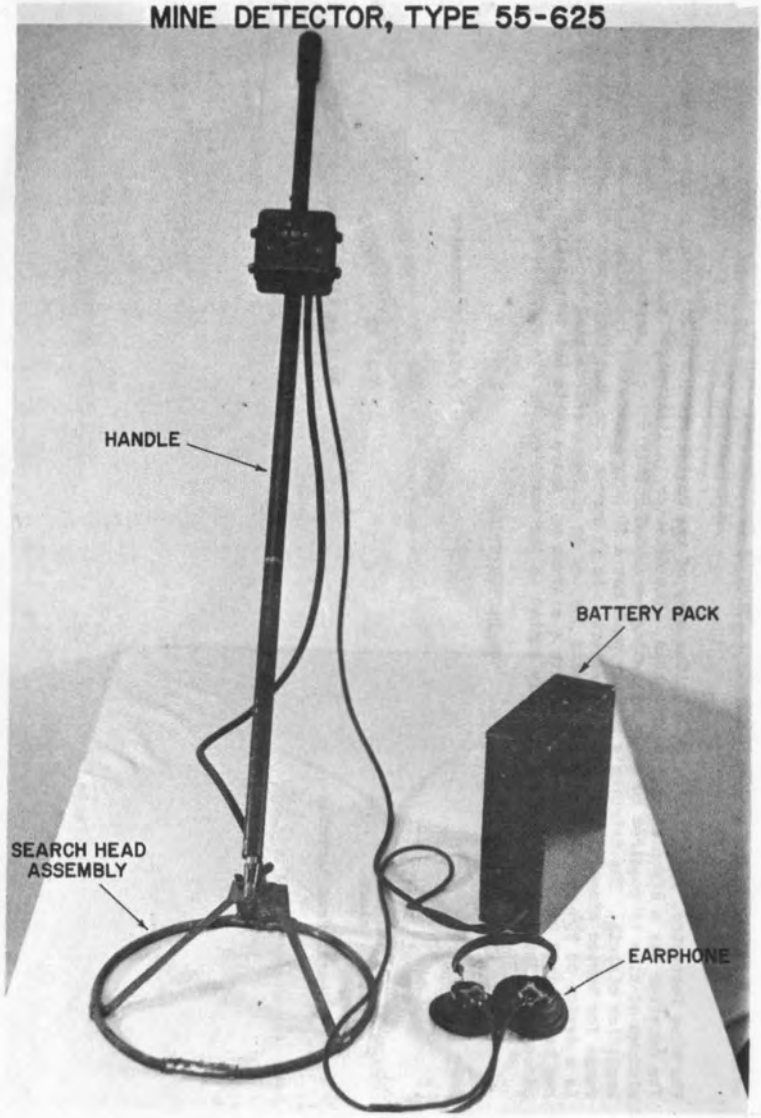
MINE DETECTOR, TYPE 55-625 (CHICOM)

The Mine Dectector, Type 55-625, is a ChiCom copy of the Soviet Model VIM-203 metallic mine detector. The detector has a circular coil search head. The detector is lightweight and simple to operate, and a minimum of time is required to train operating personnel. This detector employs a two tube oscillator-amplifier circuit. The detector's battery pack has a 30 hour continuous operating life and a detection range for buried mines of 20 to 30 centimeters. As is common with most ChiCom mine detectors, there is a device on the search coil which permits its use on either a search head handle or rifle muzzle. It can be repaired under field conditions with a minimum of spare parts and technically qualified personnel. This mine detector is ideally suited to the needs of the NVA operations in RVN.

CHARACTERISTICS

Type	Metallic detector
Overall Length	160 cm
Total Weight	7.15 kg
Search Head Assembly	33.1 cm in diameter

MINE DETECTOR, TYPE 55-625



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MINE DETECTOR MODEL IMP (USSR)

The Model IMP is a portable, lightweight, all transistorized mine detector of Soviet design and manufacture. Although not as sensitive as the US P153, the IMP is effective against metallic mines at depths up to 22 centimeters in Vietnamese soil conditions. It will also detect non-metallic mines with metallic fuses at depths up to 10 centimeters. The IMP is completely waterproof and will operate in water up to one meter deep. The operation of this mine detector is identical with that of the US P153. Operators can effectively use the detector for 15 minutes at a time. The power supply is four, BA-30 type, 1.6 volt, dry cell batteries, and the mine detector will operate effectively for 70 to 80 hours between battery changes.

CHARACTERISTICS

Type	Mine detector, induction semi-conductor
Number of Transistors	5
Weight of Carrying Case (Empty)	1.6 kg
Weight Complete Detector	6.3 kg
Weight Search Head Assembly	2.3 kg
Length of Search Head Assembly	40.8 cm
Length of Assembled Handle (4 Sections)	1.56 m
Dimensions of Amplifier	18 cm X 4.2 cm X 16.8 cm
Weight of Amplifier plus Batteries	2 kg
Dimensions of Carrying Case	18 cm X 20.4 cm X 45.6 cm
Weight of Carrying Case	2 kg

MINE DETECTOR MODEL IMP (USSR)