

UNITED STATES MARINE CORPS
School of Infantry
Infantry Training Battalion
PSC Box 20161
Camp Lejeune, NC 28542-0161

11 OCTOBER 2005

AM1502

STUDENT OUTLINE

URBAN MOBILITY BREACHING CHARGES

LEARNING OBJECTIVES FOR THIS LESSON

a. **TERMINAL LEARNING OBJECTIVE.**

(1) Given a target, explosives, and required construction materials, while wearing a fighting load, construct a detonation cord oval charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.16)

(2) Given a target, explosives, and required construction materials, while wearing a fighting load, construct a detonation cord linear charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.18)

(3) Given a target, explosives, and required construction materials, while wearing a fighting load, construct a doughnut charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.20)

(4) Given a target, explosives, and required construction materials, while wearing a fighting load, construct a uli-knot slider charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.22)

b. **ENABLING LEARNING OBJECTIVES.**

(1) Given a target, breaching charge, Assault Breacher's Kit, and necessary materials, while wearing a fighting load, construct an oval charge priming system in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.16d)

(2) Given a list of choices, identify the characteristics of a detonation cord oval charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.16b)

(3) Given a target, breaching charge, Assault Breacher Kit, priming system, and necessary materials, while wearing a fighting load, determine the stand off distance for an oval charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.16e)

(4) Given a target, explosives, non-explosives, Assault Breacher's Kit, and necessary material, select materials needed for construction of an oval charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.16c)

(5) Given a list of choices, identify the characteristics of a detonation cord linear charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.18a)

(6) Given a target, breaching charge, Assault Breacher's Kit, priming system, and necessary materials, determine the stand off distance for a detonation cord linear charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.18b)

(7) Given a target, determine the materials to construct a detonation cord oval charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.18c)

(8) Given a list of choices, identify the characteristics of a doughnut charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.20a)

(9) Given a target, explosives, non-explosives, Assault Breacher's Kit, and necessary materials, select materials needed to construct a doughnut charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.20b)

(10) Given a target, explosives, non-explosives, Assault Breacher's Kit, and necessary materials, determine the standoff distance of a doughnut charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II. (51TR.02.20c)

(11) Given a list of choices, identify the characteristics of an uli-knot slider charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II.
(51TR.02.22a)

(12) Given a target, explosives, non-explosives, Assault Breacher's Kit, and necessary materials, select materials needed to construct an uli-knot slider charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II.
(51TR.02.22b)

(13) Given a target, explosives, non-explosives, Assault Breacher's Kit, and necessary materials, determine the standoff distance of an uli-knot slider charge in accordance with the Guidebook for Assault Entry Techniques, Volume I and II.
(51TR.02.22c)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to introduce you to Urban Mobility. This instruction applies directly to all other Urban Mobility lessons.

CLASS PREPARATION: Read this outline prior to class.

OUTLINE

1. **DOUGHNUT CHARGE. (20 MIN)** The Doughnut Charge uses the "Blast" principle to defeat its target. The Doughnut Charge is a very effective means for assuring 100% penetration through an inward opening door. Although primarily used for interior doors, the Doughnut Charge can be effectively utilized on both metal and wooden exterior doors, combined with the ability to penetrate any target encountered, substantiates the Breacher as an important asset of the assault force.

a. **Charge Materials.**

(1) Explosives:

(a) 42" of 50gr/ft Detonation Cord (Det Cord)

(b) A priming system of your choice

(2) Non-Explosives:

(a) Tape (Electrical)

b. **Charge Construction.**

(1) From the 42" piece of 50gr/ft det cord, cut an 18" and a 24" piece.

(2) Using the 24" piece of 50gr/ft det cord, tie an uli-knot onto the 18" piece of 50gr/ft det cord.

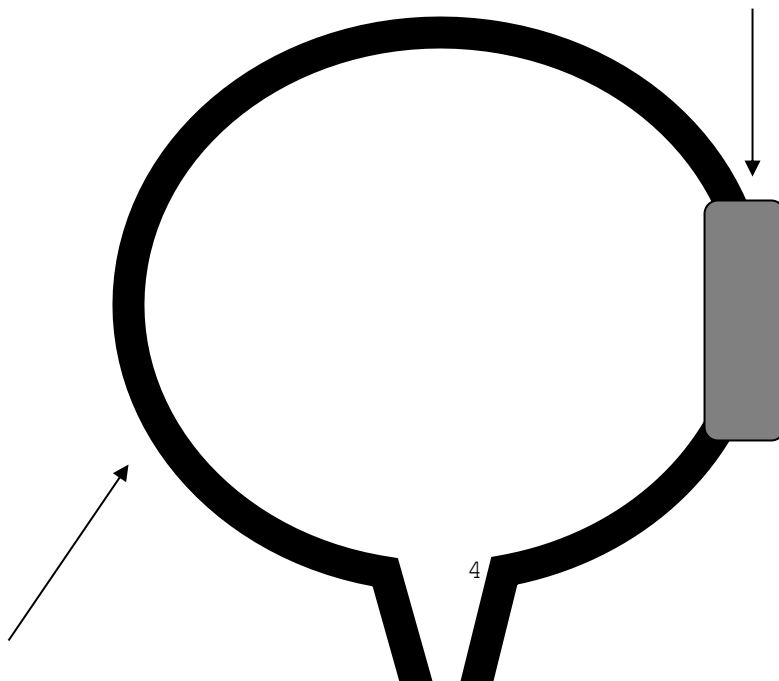
(3) Fold the 18" piece of 50gr/ft det cord into a loop, and with electrical tape, tape the ends of the det cord together.

(4) Utilizing a piece of electrical tape, make a sliding tape knot on the det cord loop. To do this, take a 6" strip of tape; fold a 2" section over upon itself to create a non-stick surface. Now place the detonation cord loop onto the non-stick surface and wrap the tape around the detonation cord. Continue wrapping until the tape is finished. The tape knot should slide easily on the det cord loop. Finally slide the tape toward the ends of the loop to provide sufficient room to slide the loop over a doorknob.

(5) Ensure both the uli-knot and the tape slide freely.

(6) Construct and attach a priming system at the running ends of the loop.

24" 50GR/FT DET CORD



18" 50GR/FT DET CORD



SLIDING TAPE KONT

c. Advantages/Disadvantages

(1) Advantages:

(a) The charge is easily constructed, and one individual can carry multiple charges.

(b) The charge is quick and easy to employ.

(c) The charge provides sufficient power to ensure opening of the door and damage to the door strike.

(2) Disadvantages:

(a) Charge is violent on target; if non-combatants are involved, serious injury may result.

(b) The doorknob, strike, and throw may become fragmentation within the room.

2. DETONATION CORD LINEAR CHARGE. (30 MIN) The Detonation Cord Linear Charge is an exterior charge that is effective against inward and outward opening wooden and metal doors. The charge uses the blast principle to cut the door along the length of the charge thereby defeating the attachment mechanisms and the security of the door. This charge has been tested on doors with barriers built to protect against entry and the charge has defeated all barriers.

a. Materials Required.

(1) Explosive Materials:

(a) (Minimum) 21' of 50gr/ft detonation cord. 92"

is used for the first strip to ease the N.E.W. computation when using three strips of detonation cord. This also allows sufficient length for a priming pigtail. 80" is used for each additional strip required. Three strips of detonation cord are used for all doors except extremely rugged security doors. Four strips of detonation cord are used for a secure structure such as solid oak or ribbed metal.

(b) Detonation Cord Loop Priming System

(2) Non-Explosive Materials:

(a) Tape (Rigger's, $\frac{3}{4}$ ", and Mac Tac)

(b) Spray Adhesive

(c) Detonation Cord connector

b. **Charge Construction.**

(a) Cut a piece of Mac Tac 80" long and 4" wide. Lay this piece of tape flat on a table with the sticky side up.

(b) Place the 92" detonation cord strip down the center of the tape, keeping the detonation cord as straight as possible. One end of the detonation cord will be flush with the tape (this will be the top of the charge) and the other end will extend past the end of the tape. Press the detonation cord firmly in place.

(c) Cut 2 lengths 80" long of detonation cord and place one on each side of the center strip of detonation cord until the desired quantity has been achieved.

(d) Using 4" wide rigger's tape, cover the detonation cord and double-sided tape. Keep the charge flat and smooth while taping. Cut the rigger's tape at the end of the double-sided tape.

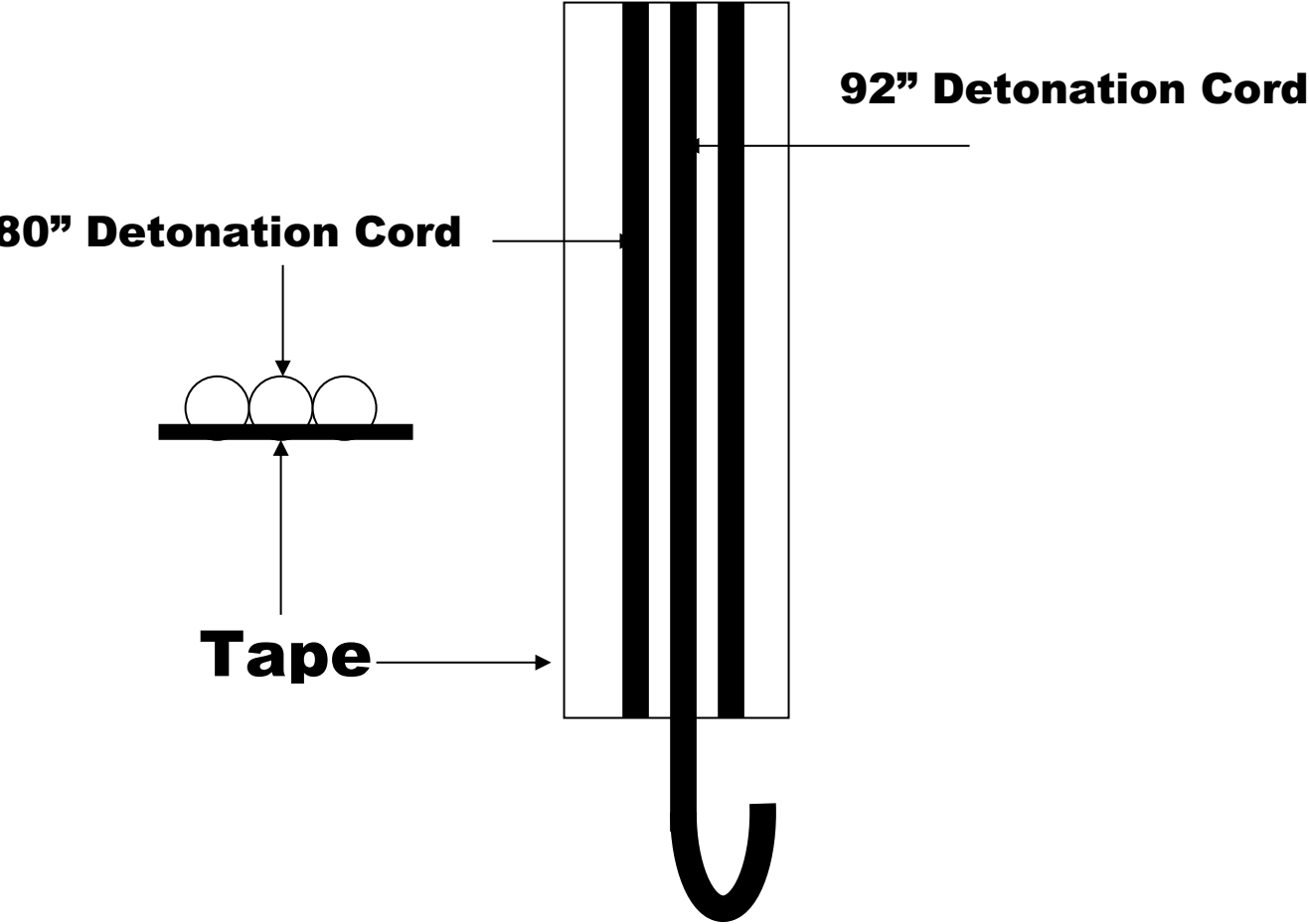
(e) Form a priming pigtail with the end of the detonation cord that sticks out.

(f) Since the major problem with this charge is the tearing of the paper backing on the double-sided tape, reinforce the paper backing by using rigger's tape and buddy tabs at the top and bottom of the charge.

(g) Roll the charge, starting at the bottom, with

the paper side inboard. This ensures ease of employment and keeps the double-sided tape from cracking or coming off.

(h) Prepare a detonation cord loop, dual instantaneous priming system and the charge is ready for use.



c. Advantages/Disadvantages

(1) Advantages:

(a) The charge is compact when rolled, allowing one individual to carry multiple charges.

(b) The charge is designed to defeat a variety of doors to include barriers.

(c) The charge is forgiving as to exact placement while achieving desired results.

(2) Disadvantages:

- (a) Some doorframes may prevent a complete cut.
- (b) Mac Tac will not adhere well to wet or dirty surfaces.
- (c) Mac Tac backing has a tendency to rip while being removed during charge placement.

3. DETONATION CORD OVAL CHARGE. (30 MIN) Known as the "Breacher's Workhorse," the detonation cord oval charge can be used on a variety of targets. The detonation cord oval charge uses the blast principle to destroy the target, creating a man-sized hole from its shape.

a. **Material Requirements**

(1) Explosive Materials

(a) 12 foot wraps of 50gr/ft detonation cord. The number of wraps depends on the target.

1. 5 wraps for an exterior wall, lap siding/stud/sheet rock.

2. 6 wraps for a roof, shingle/plywood.
Priming system of your choice.

3. 8 wraps for an unfilled cinder block wall.

(2) Non-Explosive Materials

(a) Waterproof tape.

(b) 2 E-silhouette targets.

(c) Prop stick.

(d) Grease.

b. **Construction.**

(1) Tape the silhouettes together butt to butt.

(2) To make the charge rigid tape a strip of silhouette on the fold.

(3) Cut the head off at the shoulder of one silhouette. This creates the top of the charge.

(4) Cut a single carrying handle out of the backing. If folding the charge, remember to cut slots to allow the detonation cord to fold.

(5) Add a prop stick pocket. This can be made from the head of the silhouette that was removed.

(6) Select the number of wraps based on the type of target, and cut 12' strips of 50gr/ft detonation cord to match.

(7) Place strips together in a line.

(8) On each end of the strips, pull one strip out approximately nine inches.

(9) Tape the strips about every six inches throughout the entire length.

(10) Bring ends together to form an oval.

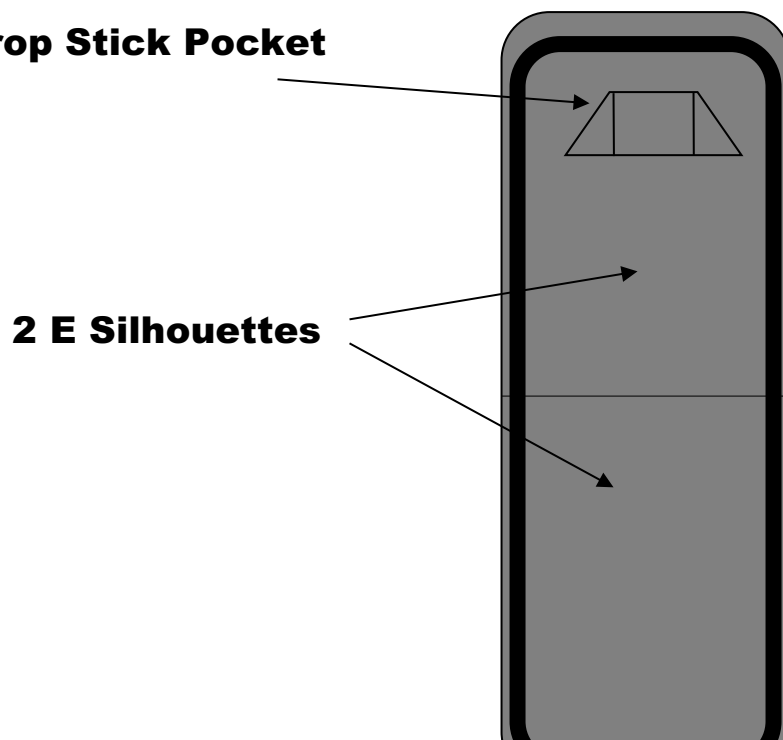
(11) Using a small overlap, tape the ends together and bring out the pulled out strands and tape them to make a priming loop.

(12) Lay out the oval on the backing and tape it in place.

(13) Attach the prop stick pocket.

(14) Apply adhesive to the charge (grease, tape, etc.).

Prop Stick Pocket





12' Lengths of 50gr/ft Detonation Cord

d. Advantages/Disadvantages

(1) Advantages:

(a) Creates an opening where there was not one before.

(b) Easy to make and employ.

(2) Disadvantages:

(a) Hard to move through rough terrain with charge.

(b) Once greased, there is no way to protect it from dirt.

(c) Throws a considerable amount of debris into the target site.

4. ULI-KNOT SLIDER CHARGE. (30 MIN) Originally designed as a charge to defeat outward opening metal doors, The Uli Knot Slider Charge has been widely accepted as an effective means of attacking the attachment points of both metal and wooden inward or outward opening doors. The charge uses the "Push" principle, explosively forcing a non-explosive medium against a target. The intent of the Uli-Knot Slider Charge is not destroying the hinges but to remove the door from the hinges. By using the push principle, the door is ripped off the hinges, causing minimum collateral damage. When constructed and employed correctly, the Uli-Knot Slider Charge is an effective means for assuring 100% penetration through a door.

a. **Material Requirements**

(1) Explosive Materials

- (a) 18' of 50gr/ft detonation cord.
- (b) Detonation Cord Loop Priming System.

(2) Non-Explosive Materials

(a) B330 Rubber or other medium, i.e., something that will convert blast dynamic pressure into impulse pressure without disintegrating. Examples include mud flaps, a plastic cutting board, sections of a truck tire, etc.

- (b) Waterproof tape.
- (c) Electrical tape.
- (d) Double sided tape.

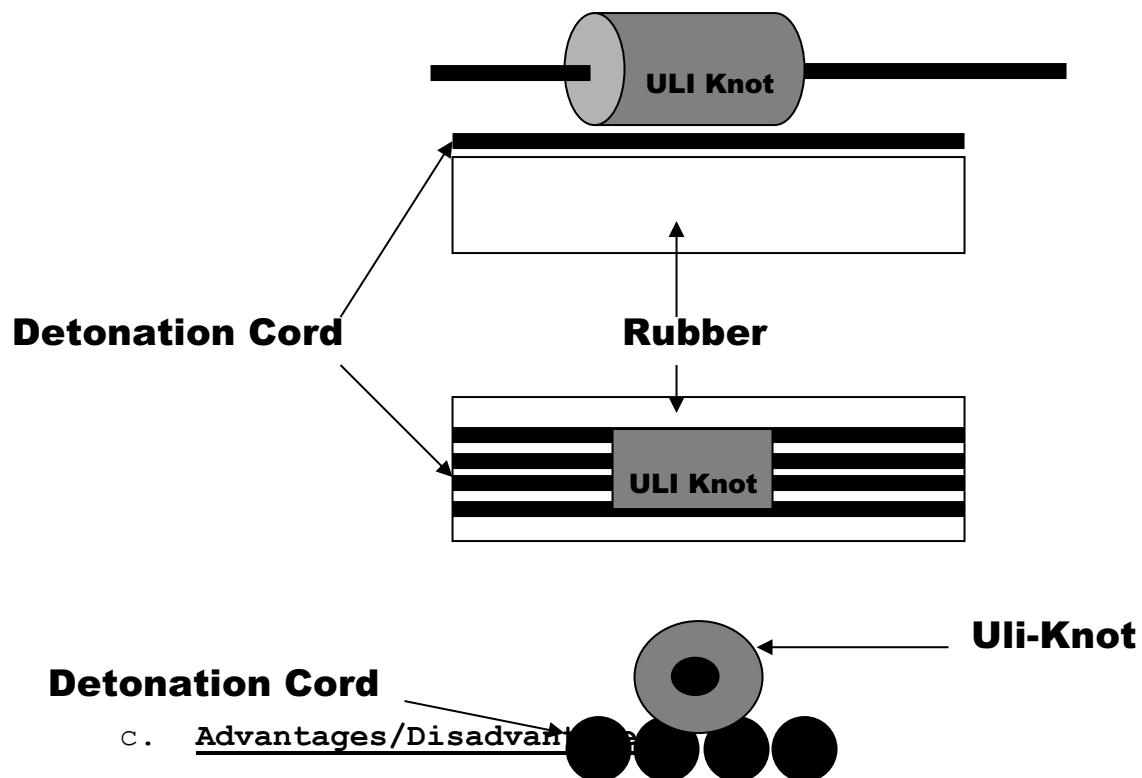
b. **Construction.**

- (1) Cut three 1" x 5" strips of rubber.
- (2) Cut one 8' piece of detonation cord.
- (3) Cut twelve, 5" pieces of detonation cord.
- (4) Cut the remaining detonation cord into 3 equal lengths (each piece should be approximately 20" long).
- (5) Using tape, secure four 5" pieces of detonation cord to one side of each rubber piece. Be sure to leave an untapped area on the top center of the detonation cord. This is where the Uli Knot will lay.
- (6) Using the three 20" pieces of detonation cord, tie 3 Uli Knots on the 8' piece of detonation cord.
- (7) Secure one charge body to each Uli Knot. Ensure that the detonation cord of the Uli Knot has positive contact with the detonation cord taped to the rubber pieces. Also, be sure that the 8' section of detonation cord slides easily through the Uli Knots.
- (8) Apply double sided tape to the backs of the rubber.

(9) Tie an overhand knot in the end of the 8' piece to ensure the charges do not slip off.

(10) Form a priming loop on the other end of the 8' length.

(11) Construct and attach a priming system.



(1) Advantages:

(a) Easily adjusted at the target to compensate for different hinge placement.

(b) Can be used through screen doors.

(c) Can be used on barricaded doors.

(2) Disadvantages:

(a) Charge is violent on target.

(b) Incorrect placement on wood doors creates a hazard within the target.

(b) Incorrect placement, especially on inward opening doors, can cause a failed breach.