UNITED STATES MARINE CORPS
COMBAT ENGINEER INSTRUCTION COMPANY
MARINE CORPS ENGINEER SCHOOL
MARINE CORPS BASE
CAMP LEJEUNE NORTH CAROLINA 28542-0069

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(00 POI)

STUDENT HANDOUT

LOG OBSTACLES

1. PURPOSE: The purpose of this period of instruction is to provide you the skills necessary to construct the various log obstacles. This will aid you when you get to the FMF and start supporting the Infantry.

2. LEARNING OBJECTIVE (S):

a. TERMINAL LEARNING OBJECTIVE

(1) Provided a mission, a designated area, personnel, engineer tools, and references, construct log obstacles to tie into existing natural or other manmade obstacles so enemy movement/maneuvers are fixed, turned, blocked, or disrupted as required by the mission while observing safety precautions per the references. (1371.03.03)

b. ENABLING LEARNING OBJECTIVE (S):

(1) Without the aid of references, given a countermobility mission, state, in writing, the purpose of log obstacles per the references. (1371.03.03a)

(2) Without the aid of references, given a countermobility mission, state, in writing, the principles of employment of log obstacles per the references. (1371.03.03b)

(3) Without the aid of references, given a scenario involving log obstacles, state, in writing, the dimensions of log obstacle components for a given type of log obstacle per the references. (1371.03.03c)

(4) Without the aid of references, given a scenario involving log obstacles, state, in writing, the spacing between the support posts for a given type of log obstacle per the references. (1371.03.03d)

(5) Without the aid of references, given a scenario involving log obstacles, state, in writing, the depth of placement for support posts for a given type of log obstacle per the references. (1371.03.03e)

(6) Without the aid of references, given a scenario involving log obstacles, state, in writing, the finished height for a given type of log obstacle per the references. (1371.03.03f)

(7) Without the aid of references, given a scenario involving log obstacles, state, in writing, the purpose of placing wire for a given type of log obstacle per the references. (1371.03.03g)

(8) Without the aid of references, given a scenario involving log obstacles, state, in writing, the purpose of backfill for a given type of log obstacle per the references. (1371.03.03h)

(9) Without the aid of references, provided a mission, a designated area, personnel and engineer tools, as a member of a team, construct log obstacles per the references, as required by the mission. (1371.03.03i)

BODY

1. LOG OBSTACLES: There are many different types of log obstacles that can be constructed using local materials. Log obstacles are most effective when the lack of a bypass forces the enemy to breach them. Although they are time and labor intensive, and locations for their employment are limited, they do not require much logistical support. Log obstacles can be constructed entirely by hand. The availability of chain saws and bucket loaders or backhoes will significantly reduce construction time. Log obstacles can and should be used in conjunction with other obstacles to increase their stopping power.

a. PURPOSE OF LOG OBSTACLES: The purpose of log obstacles are:

(1) Stop the enemy.

(2) Delay the enemy.

(3) Channelize the enemy.

b. PRINCIPLES OF EMPLOYMENT: In order to be effective, log obstacles must be:

(1) Under friendly observation and covered by fire.

(2) Erected in irregular traces or staggered.

(3) Tied in with other man made or natural obstacles.

2. TYPES OF LOG OBSTACLES:

a. Log Hurdles

(1) Log hurdles can be constructed using logs 10 inches in diameter or greater. The size of the logs will dictate if the hurdles should be constructed of single logs or multiple logs tied together. On level ground, log hurdles will not stop tanks, but will cause them to slow down. Hurdles will improve the effectiveness of other obstacles by slowing enemy vehicles and making them more vulnerable to direct weapon fire.

(2) Log hurdles can stop tanks on uphill grades. The significant factor is determining how high to build the hurdle. The hurdle should be

sited on the steepest part of the slope and as near to the top as possible. Figure 3-19 (FM 5-34) shows different types of hurdles.

b. Log Cribs

(1) Rectangular or Triangular log cribs are used effectively as roadblocks where standing timber is available, and where such an obstacle cannot be readily bypassed. Unless substantially built, obstacles of this type are not effective against heavy-tracked vehicles. Filling them in with earth strengthens cribs. It is preferable to obtain the earth by digging a shallow ditch in front of the obstacle. Log hurdles in front of a log crib will force vehicles to reduce speed and add to the effectiveness of the roadblock.

c. Log Post

(1) Posts are among the best anti vehicular obstacles because each post presents breaching problems to the attacker. There are no fast methods of breaching a belt of posts. Normally, the attacker will try to bypass such an obstacle. Therefore, post obstacles should be placed where bypass requires much time and effort. Posts should be hardwoods with a minimum diameter of 16 inches (40 cm).

3. CONSTRUCTION OF LOG OBSTACLES

a. Log Hurdles

(1) Materials needed:

(a) Four post, 4 foot in length (two per side, unless road way or log is greater than 14 feet).

(b) Logs roadway width long or shorter.

(c) Wire to secure the logs to post.

(2) Procedures:

(a) Lay long log/logs across the road, perpendicular or at slight angle.

(b) Dig four holes for post at two feet deep (May require more post).

(c) Put all post in position next to log/logs.

(d) Wire logs to post.

Log hurdles. Log hurdles should be sited at steepest part of slope (Figure 3-19).

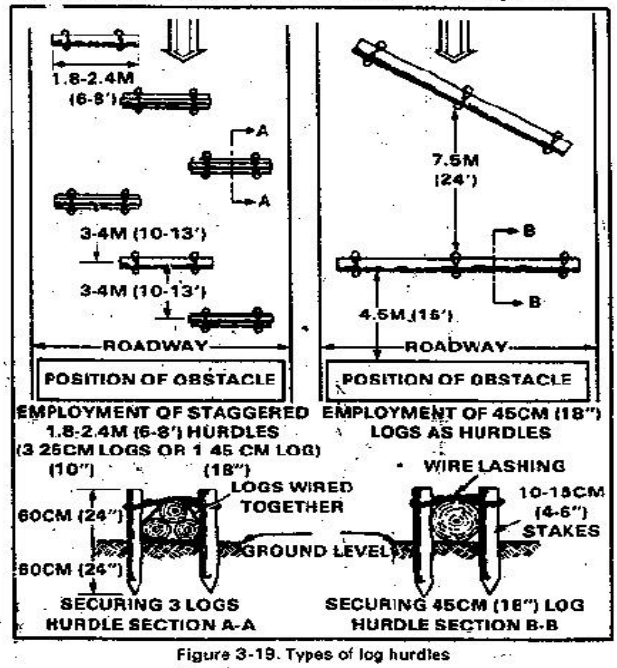


Figure 3-19. Types of log hurdles

b. Log Cribs

(1) Rectangular log crib

(a) Materials needed.

1 Twelve posts, 10 feet in length (six posts per wall on post opposing design) Ten posts, 10 feet in length (five posts per wall on off set post design).

2 Two anchor post, 4 feet in length (one buried behind each bracing on back of wall).

3 Four pieces of diagonal bracing, 6 feet in length (placed on rear of front and back walls).

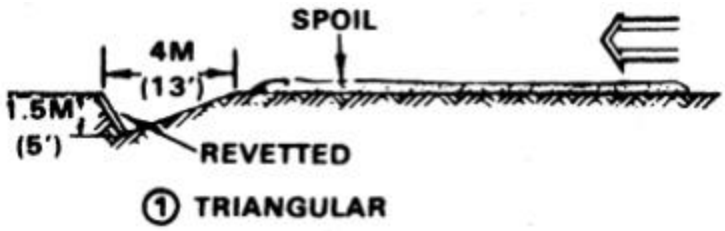
4 Horizontal logs – a minimum of 8 inches in diameter that are 16 feet or longer and as many logs as required to obtain a finished height of 5 feet on both walls.

5 Wire to secure logs to post.

6 Earth (to fill the crib).

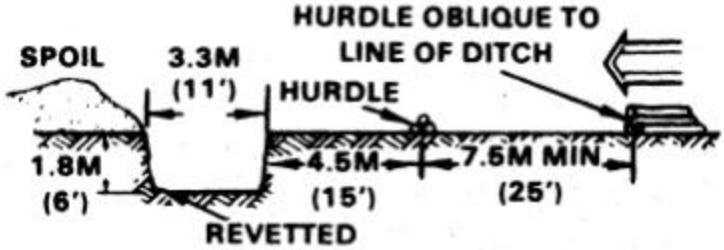
a It is preferable to obtain the earth to fill the log cribs by digging a ditch in front of the obstacle.

(1) There are three basic ditch designs illustrated below. The situation will dictate which ditch to employ. However, all three ditches are effective in strengthening both the rectangular and triangular log cribs.



① TRIANGULAR

② SIDEHILL CUT



③ RECTANGULAR

(b) Procedures:

1 Lay out a log across the roadway.

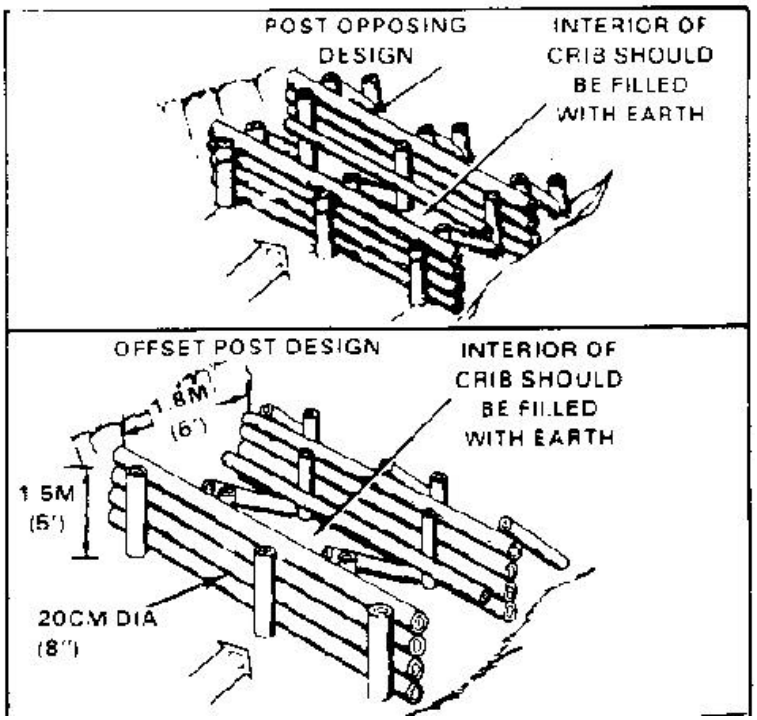
2 Next to the log, dig a hole 2 paces in from it's ends and 5 feet deep for each post.

3 Place a 10-foot post into each hole next to the log.

4 Continue to lay logs across the roadway until your wall height is 5 feet.

5 Measure out 6 feet for diagonal bracing (on backside of the front wall).

Log or bs See Figures 3 16 and 3 17 and Table 3 6



6 Lay out a log across the road (for the 2nd wall).

7 Dig a hole 5 feet deep for each post on back wall.

8 Place a 10-foot post into each hole next to the log.

9 Continue to lay logs across roadway until your wall height is 5 feet.

10 Measure out 6 feet for diagonal bracing on back wall.

11 Dig holes 2 feet deep (for 4 feet anchor post).

12 Place four foot anchor posts into holes.

13 Put up all diagonal bracing.

14 Wire logs to post.

15 Fill the center with earth from ditch dug in front of obstacle.

(2) Triangular log crib.

(a) materials needed.

1 Twelve post - 10 feet in length.

2 Horizontal logs – a minimum of 8 inches in diameter that are 16 feet or longer and as many logs as required to obtain a finished height of 5 feet on all three walls.

3 Wire to secure logs to post.

4 Earth to backfill center.

(b) Procedures:

1 Lay (3) 16-foot logs on roadway to form a triangle. (Point faces enemy direction).

2 Dig holes five feet deep and 2 paces from the ends for 10-foot post (dig inside holes first, then outside holes).

3 Place 10-foot post into holes next to logs.

4 Lay remaining 16-foot logs (keep the logs even all the way around).

5 Wire logs to post.

6 Fill the center with earth from ditch dug in front of

obstacle.

c. Log Post

(1) Material needed:

(a) 8 foot posts with a diameter of 16 inches (as many as necessary to complete an obstacle barrier).

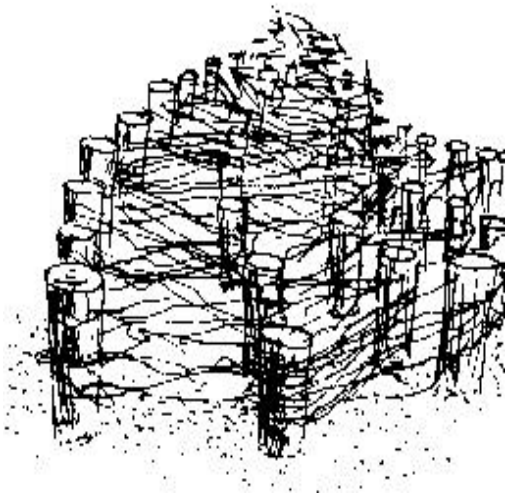
(2) Procedures:

(a) Dig holes 5 feet deep (as many as needed).

(b) Post positioned 1 - 2 meters apart staggering each row.

(c) Place post in the ground, either vertically or at a slight angle toward the enemy (height should vary between 30 to 48 inches).

(d) If time permits, barbed wire may be used between posts. The barbed wire should crisscross inside the dead space. The dead space is the space between the posts on the inside.



REFERENCE(S):

FM 5-102 COUNTERMOBILITY

FM 5-34 ENGINEER FIELD DATA