



Conditioning/Endurance Course Inspection And Standardization Criteria

PROPONENT: TRADOC COMMAND SAFETY
March 2004

Initial Military Training Conditioning/Endurance Course Checklist

Course: _____

Location: _____

Date of Inspection: _____

Inspector:

Name _____ Org. _____

POC:

Name _____ Phone _____

Org. _____

1. Courses will be evaluated to identify any safety hazards/concerns. Deficiencies found during the inspection will be annotated and corrective actions initiated by the responsible organization.

2. This evaluation will also assist in standardizing courses used at TRADOC activities.

3. Obstacle Category: Conditioning and Endurance.

Note: Surface refers to the area beneath and around obstacles to include travel lanes. Impact absorbing material depth under obstacles is 18 inches for sand, 12 inches of shredded rubber and 24 inches for saw dust.

4. Standards for Conditioning/Endurance Course are a combination of those found in Engineer Drawings 28-13-95, Obstacle Course Layout Plan FM 21-20, Physical Fitness Training, and TR 350-6, Enlisted Initial Entry Training (IET) Policies and Administration.

Section I

General Inspection Criteria, Administrative

	Area	STANDARD	GO	NO GO
1	Training Requirement 1-1	Training event is supported by TSP, POI, or lesson plan.		
	1-2	Standing Operating Procedures (SOP) are published and on hand at each course.		
2	Admin 2-1	Condition Service logs are maintained on all ropes used for surmounting and suspension.		
3	Risk Management 3-1	Generic risk assessment maintained is on site.		
	3-2	Daily risk assessment is on site during training identifying hazards associated with personnel, equipment, and environment.		
4	Inspections 4-1	Copy of last safety inspection conducted by professional safety staff on site.		
	4-2	Copy of daily pre-operations inspection maintained at site.		
	4-3	Existing deficiencies are documented and maintained by the responsible organization.		
	4-4	Copy of current work orders maintained by responsible organization.		
5	Accident trends 5-1	A list of all injuries sustained on obstacles is maintained by responsible organization and safety office.		

SECTION II, General Inspection Criteria

#	Area	STANDARD	GO	NO GO
1	WOOD TIMBERS 1-1	There are no signs of rot, warping, severe weathering, or impact damage.		
	1-2	No protruding nails or splinters that may cause injury when obstacle is negotiated.		
	1-3	All timbers are connected securely together to prevent movement when put under stress.		
2	Wall boards 2-1	All boards are securely attached to structure with proper hardware (bolts and nuts).		
	2-2	All boards free of protruding nails, splinters, rot or damage.		
	2-3	Edges of boards rounded/smooth where used to support individual's weight.		
3	Hardware 3-1	All bolts, nuts, and washers in place and of the designated type, size and placement.		
	3-2	All anchors are made of 3 or more strand galvanized guy wire.		
	3-3	Take up galvanized turnbuckles are used at anchor points of each cable to allow adjustment.		
	3-4	All cable clamps are positioned with U-bolt placed on the dead or short end of cable.		
4	Fiber Ropes 4-1	All ropes are free of rips, tears, cuts, frays, rot or unraveled sections.		
	4-2	All ropes designed for surmounting are 1.5 inches in diameter.		
	4-3	Ropes are securely mounted to supporting timbers with ends tied and taped.		
	4-4	Ends of ropes are tied in a knot or wrapped to prevent fraying.		
	4-5	Condition/Service logs are maintained on all ropes used for surmounting and suspension.		
5	Design 5-1	Professional safety staff reviews obstacle construction plans.		

6	Fall Protection 6-1	The surface under conditioning obstacles will be free of any tripping hazard and covered with sand or saw dust.		
	6-2	Any obstacle requiring negotiation at an elevated level (in excess of 6 feet) will have impact absorbing material beneath it.		
	6-3	Forged steel hooks are used to fasten net to its supports.		
	6-4	Nets are weight tested by competent person every 6 months by dropping a 500 lb, 5 cubic feet weight onto it from a height of 25 feet.		
	6-5	All nets are suspended below high obstacles (in excess of 10 feet) have padding or small mesh material to prevent limbs from penetrating net.		
	6-6	All padding is in good condition with no tears, holes, or loose material to trip personnel when dismounting.		
	6-7	All pole-vaulting pads are placed properly at base of designated high obstacles.		
7	Padding on timbers 7-1	All safety padding attached to timbers is in good condition without signs of damage.		
	7-2	All pads are securely attached to the timber supports to prevent movement when impacted.		
8	Base containment box 8-1	Base containment box is adequate to contain all absorbent material located at base of obstacle.		
	8-2	Containment box does not display signs of rot, damage, or instability.		
	8-3	Containment box extends far enough from dismount point of obstacle to prevent creating a tripping hazard.		
	8-4	Containment box is filled with either 18" sand, 12 inches of shredded rubber or 24" of sawdust.		
9	Surfaces 9-1	All surfaces beneath low obstacles are free of hazards that have the potential to cause injury when crawled upon.		
10	Course condition 10-1	Designated course is free of tripping hazards.		
	10-2	Course surface is well maintained to prevent injury in case of falls.		
	10-3	Course surface is raked and policed prior to each use.		

	10-4	Course surface is free of large rocks, stones, or concrete materials that may cause injury in the event of a fall.		
11	Safety 11-1	Installation safety staff conducts quarterly inspections.		

Section III

Obstacle Specific Inspection Criteria

1. The accompanying checklists and sketches supplement FM 21-20, Physical Fitness Training, chapter 8, and Department of the Army Corps of Engineer Drawings 28-13-95, Obstacle Course Layout Plan. They serve as a minimum construction/safety standard for Conditioning/Endurance courses used by Initial Military Training facilities.

2. Detailed obstacle safety inspection checklist and sketches are provided for:
 - a. Obstacles for Vaulting
 - b. Obstacles for Jumping
 - c. Obstacles for Vertical Climbing and Surmounting
 - d. Obstacles for Horizontal Traversing
 - e. Obstacles for Crawling.

 - f. Obstacles for Balancing
 - ** Climbing ropes that are 1 1/2 inches wide and either straight or knotted.
 - ** Walls 7 or 8 feet high

4. Ground covering should be maintained to prevent excessive erosion and compaction.

Obstacles for Vaulting

#	Area	STANDARD	GO	NO GO
1	Wood Timbers 1-1	Wall is constructed of wooden boards attached to a support post with nails or bolts.		
	1-2	Top of wall is capped with a solid board 10 inches in width.		
5	Design 5-1	Professional safety staff reviews obstacle construction plans.		
	5-2	Height of obstacle does not exceed 54 inches.		
	5-3	Width of obstacle is 16 feet.		
9	Surface 9-1	The surface on the approach and dismount sides of obstacle are free of tripping hazards.		
	9-2	Surface beneath obstacle is covered with sand or saw dust.		
14	Fence 14-1	All points of contact are free of splinters, sharp edges and rot.		
	14-2	Obstacle is firmly emplaced into the ground and displays no signs of movement when negotiated.		

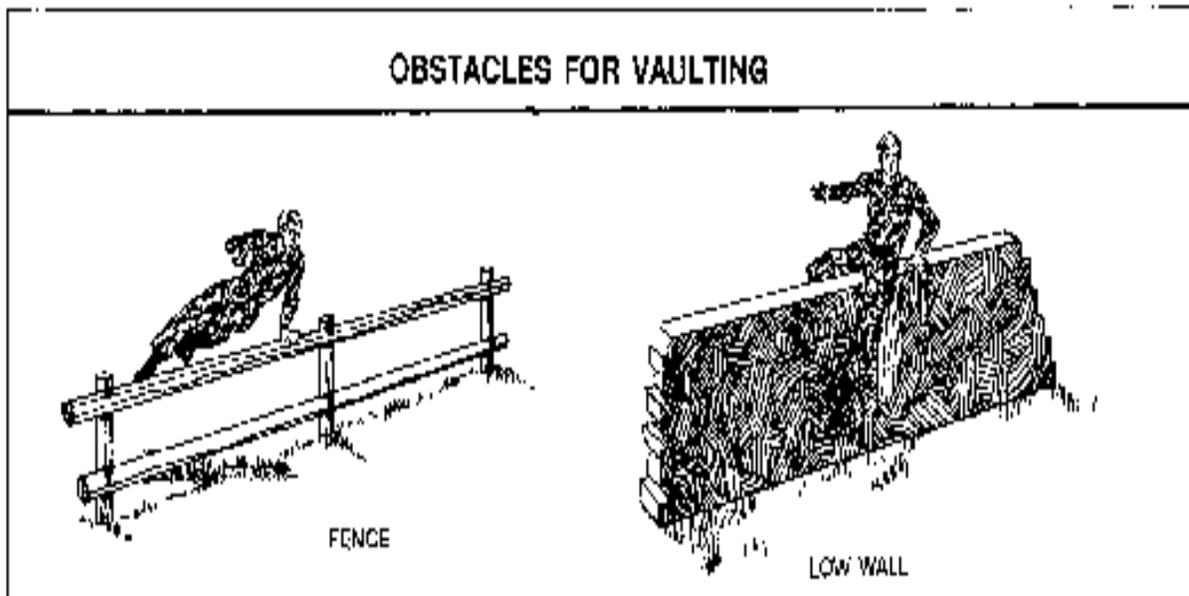


Figure 8-6

Obstacles for Jumping

#	Area	STANDARD	GO	NO GO
1	Wood Timbers 1-1	Platform is constructed using 4x4 or similar timbers for vertical supports.		
	1-2	Platform surface is even and display no signs of rot, splintering, or exposed screws/nails.		
3	Hardware 3-1	All bolts and nuts are countersunk to prevent physical contact by soldiers negotiating obstacles.		
	3-2	Bolts, nuts, and washers are of sufficient size to properly support timbers during use.		
5	Design 5-1	Professional safety staff reviews all obstacle designs.		
6	Surface 9-1	The surface on the approach and dismount sides of obstacle are free of tripping hazards and is semi-level.		
	9-2	Surface is covered with a sufficient amount of sand or saw dust IAW paragraph 3.		
12	Trenches 12-1	Width of trench allows free entry without walls collapsing.		
	12-2	Depth of trench does not exceed 60 inches.		
	12-3	Walls of trench are re-enforced to prevent erosion and to maintain proper width.		
	12-4	Bottom of the trench is free of sharp objects or debris that may cause injury.		
	12-5	Width of ditch does not exceed 4 feet with ledge firmly supported to prevent collapse.		
	12-6	Depth of ditch does not exceed 4 feet.		
13	Hurdles 13-1	Wooden timbers used, as hurdles are free of rot, splinters, and exposed hardware (bolts and nuts).		
	13-2	Height of hurdles does not exceed 40 inches at the highest point.		

OBSTACLES FOR JUMPING

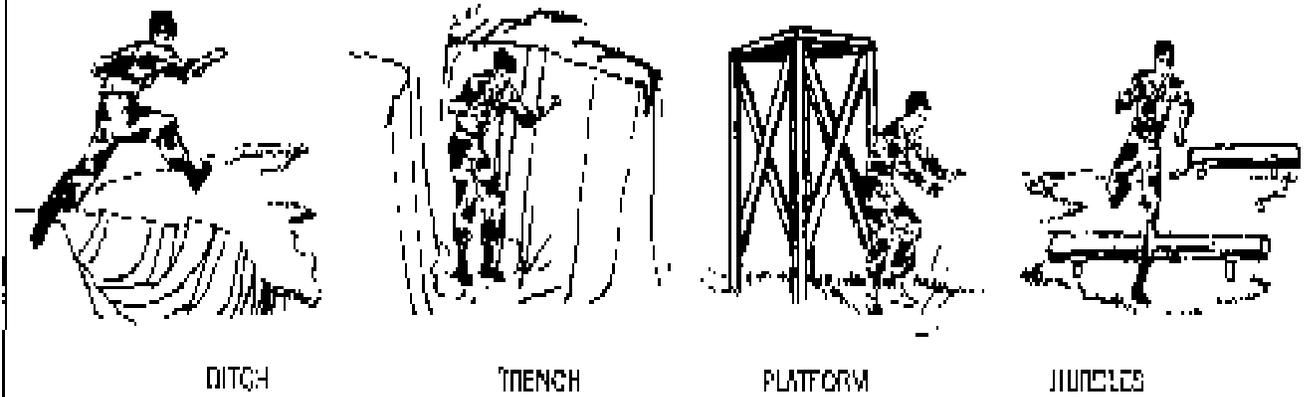
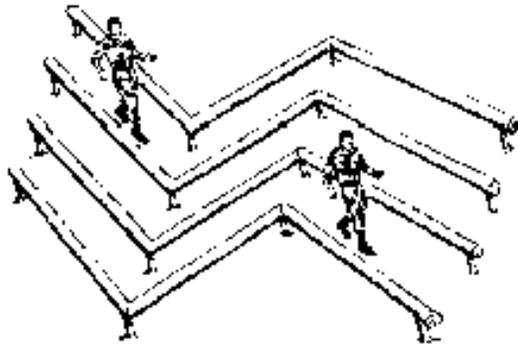


Figure 8-1

Obstacles for Dodging

#	Area	STANDARD	GO	NO GO
1	Lanes/Mazes 1-1	Width of lane/maze is sufficient to allow soldiers to negotiate obstacle without injuries due to striking lane barriers.		
	1-2	Lanes/mazes are constructed of wooden timbers 6 inches in diameter with a vertical height of 40 inches.		
	1-3	Wooden timbers are free of rot, splinters, and exposed hardware (bolts and nuts).		
	1-4	Lanes are covered with sand, saw dust or soil that is raked to create a semi-even running surface.		
2	Hardware 2-1	All hardware (bolts and nuts) are countersunk to prevent contact by soldiers negotiating obstacle.		
	2-2	Bolts, nuts, and washers are of sufficient size to properly support timbers during normal use.		
3	Surface 3-1	The surface on the approach and dismount sides of obstacle are free of tripping hazards and is semi-level.		
	3-2	Surface is covered with sand or saw dust.		
	Design 5-1	Professional safety staff reviews all obstacle designs.		

OBSTACLES FOR DODGING



LANES TO GUIDE
CHANGE OF DIRECTION



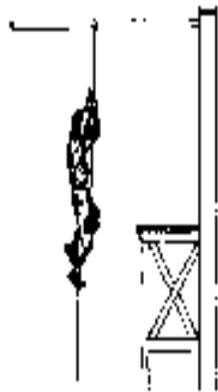
MAZES TO CAUSE
CHANGE OF DIRECTION

Figure 8-2

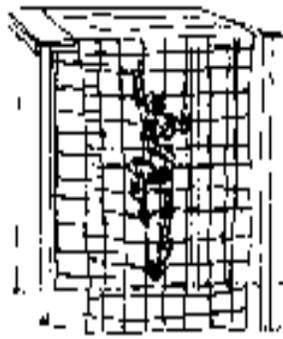
Obstacles for Climbing and Surmounting

#	Area	STANDARD	GO	NO GO
1	Climbing Rope 1-1	Ropes are in good condition with no sign of rot, tears, cuts, or severe weathering.		
	1-2	Ropes are secured with 5 continuous wraps around upper support and tied with 2 separate knots with taped ends.		
	1-3	When multiple ropes are positioned together, they will be separated by a minimum of 6 feet.		
	1-4	Ropes will be inspected each quarter to verify serviceability.		
2.	Cargo Nets 2-1	Nets are securely attached to horizontal supports.		
	2-2	Nets are in serviceable condition with inspection log maintained by responsible organization.		
	2-3	Nets are manufactured and certified for outdoor use with 10-inch mesh.		
	2-4	Nets are weight tested semiannually by suspending 500 pounds from a 5 square foot section of netting near center mass.		
3	Walls 3-1	Surmounting walls are 7 feet high with top horizontal edge of wall rounded to prevent splintering.		
	3-2	Wallboards are securely mounted with appropriate hardware (bolts and nuts) to prevent movement during negotiation.		
	3-3	Wall timbers are free of rot, splintering, excess preservative, and damage.		
4	Hardware 4-1	All bolts and nuts are countersunk to prevent physical contact by soldiers negotiating obstacle.		
	4-2	Bolts, nuts, and washers are of sufficient size to properly support timbers during use.		
5	Surface 5-1	The surface on the approach and dismount sides of obstacle is free of tripping hazards and is semi-level.		
	5-2	Surface is covered with sand or saw dust.		
	Design	Professional safety staff reviews all obstacle designs		

OBSTACLES FOR VERTICAL CLIMBING AND SURMOUNTING



CLIMBING ROPE



CARGO NET



WALL



POLE

Figure 8-3

Horizontal Traversing

#	Area	STANDARD	GO	NO GO
1	Horizontal Beams 1-1	Each beam is elevated 10 feet above the ground.		
	1-2	Beams are supported by vertical posts/timbers.		
	1-3	Mounting platform is constructed of 2x8 timbers elevated 48 inches above the ground.		
	1-4	Platform vertical supports are 4x4 timbers or equivalent diameter posts.		
2	Horizontal Ladder 2-1	Vertical support timbers are treated 8 inch diameter LOGS 10 feet in height.		
	2-2	Mounting rails for ladder rung are 4x4 treated timbers.		
	2-3	Ladder rungs are 1 1/4 inch metal tubing.		
3	Hardware 3-1	All hardware (bolts and nuts) are countersunk to prevent contact by soldiers negotiating obstacle.		
	3-2	Bolts, nuts, and washers are of sufficient size to properly support timbers during normal use.		
4	Ropes 4-1	Rope diameter is 2 to 2.5 inches suspended above the ground anchored to wooden or metal column supported with wire rope and an adjustable turnbuckle.		
	4-2	Area under suspended ropes is free of debris, and if suspended over water, a safety net will be used.		
4	Surface 4-1	The surface on the approach and dismount sides of obstacle is free of tripping hazards and is semi-level.		
	4-2	Surface is covered with sand or saw dust.		
5	Design 5-1	Height of obstacle does not exceed 10 feet.		
	5-2	Length of obstacle is 10 feet.		

OBSTACLES FOR HORIZONTAL TRAVERSING

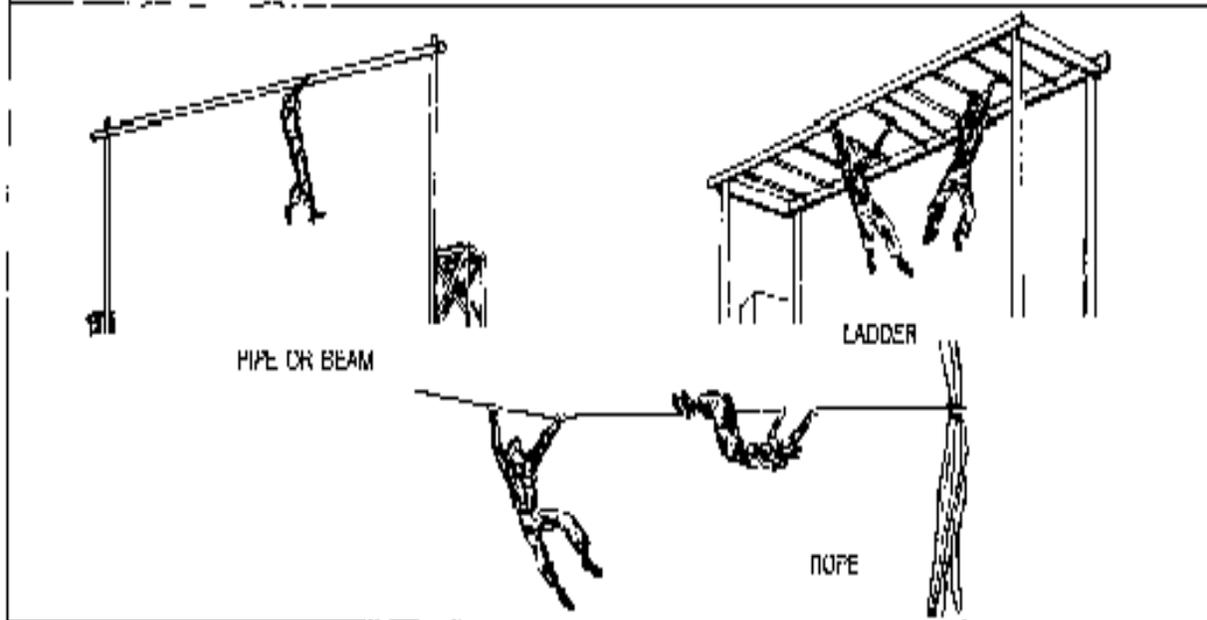


Figure 8-4

Obstacles for Crawling

#	Area	STANDARD	GO	NO GO
1	Culverts 1-1	Entrance and exit points of culverts are padded with impact absorbing material to prevent injury to soldiers.		
	1-2	Culvert is supported on either side with earthen mounds or filled sand bags to prevent movement when negotiated.		
	1-3	The interior of culvert is free of any protruding hardware (bolts and nuts) or obstructions.		
	1-4	Bottom surface of culvert is covered with 3-5 inches of sand, earth, or saw dust.		
2	Low Rail 2-1	Timbers are free of splinters, exposed nails and bolts.		
	2-2	Horizontal timbers are tightly secured to vertical posts with sufficient hardware (bolts and nuts).		
3	Low Wire 3-1	Wire is stretched tightly enough to prevent sagging lower than 18 inches.		
	3-2	Vertical posts are free of rot, exposed splinters, and nails.		
4	Surface 4-1	The surface on the approach and exit sides of obstacle is free of tripping hazards and is semi-level.		
	4-2	Surface is covered with sand or saw dust.		
5	Design 5-1	Diameter of culvert is 36 inches minimum.		
	5-2	Culverts are spaced a minimum of 6 feet apart.		

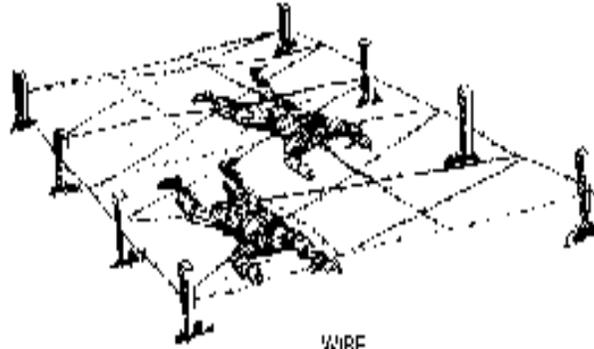
OBSTACLES FOR CRAWLING



TUNNEL



LOW RAIL



WIRE

Figure 85

Obstacles for Balancing

#	Area	STANDARD	GO	NO GO
1	Timbers 1-1	Timbers are 10 inches in diameter.		
	1-2	All timbers are free of rot, splinters, exposed nails and bolts.		
	1-3	All timbers are securely connected at joints with no sign of movement.		
	1-4	All timbers are free of chemical coating or any other hazardous substance.		
2	Hardware (bolts and nuts) 2-1	All hardware (bolts and nuts) are countersunk to prevent contact by soldiers negotiating obstacle.		
	2-2	Bolts, nuts, and washers are of sufficient size to properly support timbers during normal use.		
3	Surface 3-1	The surface on the approach and dismount sides of obstacle is free of tripping hazards and is semi-level.		
	3-2	Surface beneath obstacle is covered with sand or saw dust.		
5	Design 5-1	Professional safety staff reviews obstacle construction plans.		
	5-2	Height of obstacle does not exceed 30 inches.		
	5-3	Distance between balancing timbers is a minimum of 4 feet.		

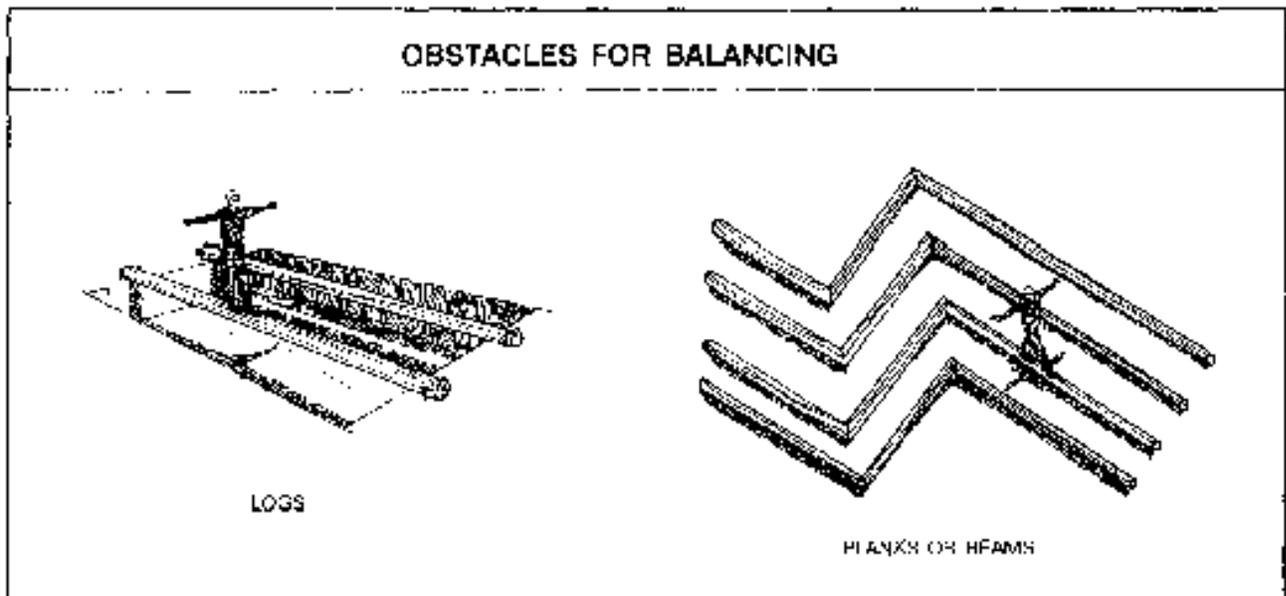


Figure 8-7