

# DESIGN AND OPERATION OF A MOUNTAIN BIKE COMPETITION COURSE

**D***esign and Operation of a Mountain Bike Competition Course* provides information on how to prepare, design and operate a successful, safe, yet challenging mountain bicycle competition that both the participants and spectators will enjoy. This material will help you prepare for a small, regional competition or a grand national event. We suggest you start small if this is your first event and build on your experience. A large event can be a great venue to showcase the police bicycle as viable tool and to enhance community relations, but beware! An event like this takes on a life of its own, and a large event can become overwhelming. *Presented by T.J. Richardson, San Antonio Police Department.*

## I. Preparation

### A. Site Selection

In determining the site for your competition keep these basic criteria in mind:

- Is the area accessible and friendly to spectators?
- Can the course be “closed” to prevent pedestrians and/or vehicles from entering?
- Is there enough room for setting up obstacles?
- Are there any natural obstacles that can be used?
- What hazards are present and can those hazards be eliminated?

If the competition will be held in conjunction with another event or festival, you may have limited choices for setting up your course, but you may greatly benefit from the exposure and presence of the community already attending the main event.

### B. Sponsorship

If you are planning a small competition between a handful of local agencies, or if your competition is part of a larger event, you might not need sponsors. There are, however, certain necessities that you may not be aware of until you need them, and then you must determine how to fund them. Here are a few areas in which sponsorships may be beneficial:

- Printing for flyers, registration forms, banners and signs
- Prizes for the competition winners
- Postage for mailing the flyers to agencies and media
- Insurance — an absolute must, to cover the liability of all involved
- Refreshments for competitors, staff and/or volunteers
- T-shirts or other memorabilia

In a large event, you could use several sponsors, each helping out with a specific need or providing a special service. Many businesses or corporations are willing to provide items or services that they already produce, but there are always things that require cash. For those items, both planned and unplanned, you may need a title sponsor who is willing to finance the event up front. You may gain some operating income from registration fees, but that revenue will not be realized until close to the event and therefore cannot be counted upon to finance advance expenses.

### Potential sponsors include:

- Printing companies, to provide the printing of registrations and flyers
- Sporting goods stores, to supply prizes and giveaways
- City of \_\_\_\_\_. Having a city entity as a sponsor can facilitate many logistical needs. The parks department can provide the course location, bleachers, PA systems and possibly some obstacles. The police department may be able to help you obtain transportation, traffic support and media coverage. The fire department can provide EMS and/or triage for those minor scrapes and cuts that seem to always happen in a competition.
- Local restaurant or deli, to provide food for competitors staff or volunteers. They may benefit from the event if they are permitted to set up a booth and sell refreshments to the spectators.
- Soft drink distributors, to offer water or soft drinks at the event. As much as we may want to have our local beer distributor involved, it may be best to keep that sponsor for something after the event.
- Business districts, homeowners associations and corporations, to provide volunteers to staff the registration and help with set-up and tear-down.

Another possibility may be a non-profit organization. Why a non-profit? The competition can be held as a benefit for that non-profit, possibly making all registration fees and donations by other sponsors tax-deductible. By bringing attention to the cause and needs of that non-profit organization, you may ensure the participation of other organizations. The American Lung Association, the MS Society, and your local Children’s Shelter or Battered Women Shelter are all well-accepted non-profit organizations that need help. Avoid organizations such as labor and religious organizations.

### C. Staff

No one person can successfully run a bicycle competition. It requires the combined effort of numerous individuals, each doing his or her part to ensure that all aspects of the competition are handled effectively. The size and composition of your staff depends on the size of the event.

Here are some suggestions:

- **Commander:** a lieutenant, captain, inspector or upper level manager who has the power to assign responsibilities and demand performance. Volunteers are great and essential, but you can only ask so much from them. Give your commander a list of things that need to be accomplished and let him/her assign those duties to key personnel for you.
- **Swag Master:** someone who is good at begging and can work with sponsors to get the most services and prizes possible.
- **Media Manager:** a marketing-minded person to develop the flyers and registration forms, and to work with local media for event coverage. This person may also take responsibility for video taping or photographing the event for follow-up stories and promotion of future events.
- **Facilitator:** a person who can get things done. The facilitator coordinates volunteers and does all the legwork necessary to ensure all the logistical needs are met and the event goes smoothly.

#### D. Safety and Liability Considerations

Liability is an issue heavy on the mind of any event manager. Taking precautions that ensure the safety of the participants and spectators will greatly reduce the liability of all involved. Here are some areas to consider:

- **Waivers:** makes sure all participants, including staff and volunteers, sign a waiver. The waiver should indemnify your agency, the facility, sponsors, staff, and volunteers. Have someone in your departments' legal section assist you with drawing up a waiver that is appropriate and includes any legal terminology to lend credence to the waiver in court. See the waiver used by IPMBA as an example.
- **Rules/Guidelines:** provide a written copy of the rules and guidelines to the participants to ensure that they are made aware of what is expected of them and what they can expect from you. Be sure to include an explanation of how the event is timed and judged, as well as the equipment required. See the rules and standards used by IPMBA at the annual competition as an example.
- **Safety Officer:** this person is endowed with absolute authority to stop the competition at any time if they feel that a safety violation or hazard is present. This person is also responsible for ensuring that all participants have the required safety equipment (e.g., helmet) prior to entering the course.
- **Safety Spotters:** personnel stationed near any obstacle that has even a moderate potential for crashes or mishaps. Any obstacle with a high potential for crashes should be eliminated to ensure the safety of all involved.
- **First Aid:** first aid kits must be readily available, and, if possible, EMS and/or other medical personnel should be present to assist with injured persons.
- **Insurance:** check with your local bike shop or IPMBA for a reference to an insurance broker who may be able to provide a liability policy for the event. The cost may be high, but it is outweighed by the possibility of a lawsuit that could cost millions.

- **Weapons:** if the officers participating will be wearing their duty belts, require them to keep their sidearms holstered and secured at all times. Note: IPMBA does not endorse the inclusion of any live fire exercises in any competition course. Any competition manager who includes live fire exercise does so at considerable risk and should obtain insurance that covers the use of firearms.

#### III. The Competition

Now we get to the meat of the competition; the course itself. In designing your course, keep foremost in your mind that there is one thing for certain in a competition course: speed = danger = injuries. Anyone can get on a bicycle and pedal as fast as they can, but there is more to police/EMS bike use than speed. The goal is to create a course that will showcase and challenge the competitors' riding skills, not create a course on which crashes will be commonplace. Your course should challenge the competitor's ability to negotiate the common and uncommon obstacles that he or she might encounter while responding to a call in an urban setting.

**A. Natural Obstacles:** In choosing a site for your course, attempt to locate an area which possesses built-in urban obstacles. Trees, hills, curbs, staircases and ramps are all part of the urban gauntlet we run everyday. If these obstacles are present, use them to their fullest extent and add in other obstacles as needed.

**B. Manufactured Obstacles:** If you are limited to open parking lot for your competition site, there are many obstacles that can be constructed to simulate some of the conditions bike unit members encounter. Here are a few possibilities:

**C. Cone Obstacles:** The possibilities for cone obstacles are limited only by your imagination and the number of cones you have at your disposal. A cone can be used as the obstacle itself, or as a tool to change the contestant's direction or to slow him/her down before entering a more technical obstacle where speed would be dangerous. Sample cone obstacles include:

- **Lock-to-Lock:** Right out of the police cyclist course, this is a simple "W" that can be used as the obstacle itself or to turn the contestant in an "about face" toward a new obstacle. You can make it loose at the entrance and make it gradually tighter and more technical before the exit. *See Diagram #1.*
- **Slalom:** A basic maneuver, good for slowing down the participant. For an added twist, have a 90-degree turn built in to change direction. *See Diagram #2.*
- **Offset Serpentine:** A more technical version of the slalom. This obstacle takes up both space and time, but is a good test of balance and a good opportunity to help the participant regain his/her breath before going on to a more physically demanding obstacle like a hill or sprint.

- **Turns and Decision Maker:** Turns are often needed in tight obstacle courses such as a parking lot with limited space where the course may have to weave back and forth for distance. The decision-maker is just a turn that can go both ways, leaving the participant to figure out which way is more advantageous. *See Diagrams # 4a/4b.*
- **Keyhole:** This is a tight, technical obstacle that works well when you need the participants to do an “about face” and return in the direction from which they just came. To add a twist to the Keyhole, put a pallet or other small obstacle to cross at the entrance/exit. *See Diagram #5.*
- **Teardrop:** The name tells you this one can leave you crying. Cones are set similar to the Keyhole, but with a turn at the entrance/exit. This is set in a relatively tight pattern and used to test the slow maneuverability and balance of the participants. If penalties are assessed for knocking down cones, this is where to watch for them. *See Diagram #6.*

**D. Fences/Walls:** If a fence, wall, or guardrail is part of the natural terrain of the course, use it to test the dismount and remount skills of the participants. Avoid any unstable fence, as it will take some abuse as the contestant and bicycle cross over it. If you build one, ensure that no sharp objects protrude from any part of it and that it is sturdy enough to take the abuse. *See Diagrams #7a/7b/7c.*

**E. Limbo Bar:** Self-explanatory. Two posts set upright with a cross bar set on the EXIT side of the obstacle. The cross bar should be made of a very lightweight material (1/2 inch PVC pipe works well) and set at or about 50 inches high. *See Diagram #8.*

**F. Balance Beam:** This is the ultimate test of balance and handling. A short one (no more than 12 feet) does not offer much of a challenge. The true test of balance is to create a beam that is at least 30 feet in length and that uses planks of different widths: narrow, wide, narrow. The beam does not necessarily have to be raised to be effective. If it is elevated, keep the height at 4 inches or less. *See Diagram #9.*

**G. Teeter-Totter:** Sounds kind of silly. How often does the average bike officer go over a teeter-totter in the scope of duty? Probably never, but the obstacle itself is eye candy for spectators and a psychological obstacle for the officer. You need a relatively wide and sturdy board (2 x 10 or 2 x 12) and some wood block for a pivot point. Make sure that the overall height of the teeter-totter does not exceed 18 inches and that the pivot is offset so that the approach side of the plank is always in the down position when no rider is on it. For an extra challenge, tie two or three teeter-totter together with rope to create a moving balance beam effect. *See Diagrams #10a/10b.*

**H. Washboard:** Create a washboard obstacle using parking blocks or by securing wood blocks to a long section of plywood. If you choose to use parking blocks, set a cone obstacle just before it to reduce participant’s speed. *See Diagrams #11a/11b.*

**I. Pallets:** Pallets can be secured together to build walls or stairs and can be set on end to create narrow passages and turns. If participants will be riding over them, pick sturdy ones made of oak and reinforce them so they will not break from the abuse. Have extras for replacements when one on the course breaks. *See Diagrams #12a/12b/12c.*

### **J. The Finale**

It is one thing to ride all-out on the obstacle course and have a good run time, but patrol and EMS personnel have a job to do at the end of the ride. The finale should include a dismount and some simple action to be performed by the competitor to mark the end of the run. Possibilities include: tagging a cone to mark an apprehension, dragging a dummy or sand bag to a location to simulate moving an officer to safety, performing a short sprint on foot to simulate catching an imaginary suspect, or assisting a “victim” in need of medical attention. It is advisable to have the dismount and final exercise performed in a grassy area or in an area padded with mats to reduce the risk of injury. Competitors are usually exhausted and may have developed muscle memory in their legs that makes performing on foot difficult. It is not uncommon for the competitor to fall.

*Sample Waiver*

**POLICE ON BIKES, INC. d/b/a INTERNATIONAL POLICE MOUNTAIN BIKE ASSOCIATION (IPMBA)  
RELEASE AND WAIVER OF LIABILITY, ASSUMPTION OF RISK, AND INDEMNITY (“AGREEMENT”)**

**In consideration** of being permitted to participate in any way in the Bike Pursuit Competition (“Competition”) of the IPMBA’s Annual Conference, designed by the International Police Mountain Bike Association, I, for myself, my personal representatives, assigns, heirs, and next of kin:

**1. Acknowledge**, agree, and represent that I understand the nature of the Competition and that I am qualified, in good health, and in proper physical condition to participate in the Competition. I further acknowledge that the Competition will involve negotiating obstacles, and the hazards of obstacles are to be expected. I further agree and warrant that if at any time I believe conditions to be unsafe, or if I feel unprepared for any aspect of the Competition, I will immediately discontinue further participation in the Competition.

**2. Fully understand that:** (a) bicycling and bicycle competitions involve risks and dangers of serious bodily injury, including permanent disability, paralysis, and death (“risks”); (b) these Risks and dangers may be caused by my own actions or inactions, the actions or inactions of others participating in the Competition, the condition in which the Competition takes place, or the negligence of the “Releasees” named below; (c) there may be other Risks and social and economic losses either not known to me or not readily foreseeable at this time; and I fully accept and assume all such risks and all responsibility for losses, costs, and damages I incur as a result of my participation in the Competition.

**3. Hereby release, discharge, and covenant not to sue, now or in the future**, IPMBA, the hosting police and/or EMS agency, their respective administrators, directors, agents, officers, members, volunteers, and employers, other participants, any sponsors, advertisers, and, if applicable, owners and lessors of premises on which the Competition takes place, (each considered to be one of the “Releasees” herein) from all liability, claims, demands, losses, or damages on my account caused or alleged to be caused in whole or in part by the negligence of the “Releasees” or otherwise, including negligent rescue operations; and I further agree that if, despite this release and waiver of liability, assumption of risk, and indemnity agreement I, or anyone on my behalf, makes a claim against any of the Releasees, I will indemnify, save, and hold harmless each of the Releasees from any litigation expenses, attorney fees, loss, liability, damage or cost which any may incur as the result of such claim.

I understand that **IPMBA requires bicycle helmets to be worn by all participants at all times while on-bike**, including the Mountain Bike Competition. I agree to wear a helmet at all times while I am riding a bike.

**I have read this agreement, fully understand its terms, understand that I have given up substantial rights by signing it and have signed it freely and without any inducement or assurance of any nature and intend it to be a complete and unconditional release of all liability to the greatest extent allowed by law and agree that if any portion of this agreement is held to be invalid the balance, notwithstanding, shall continue in full force and effect.**

Printed name of participant \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Emergency Contact Name: \_\_\_\_\_

Emergency Contact Phone Number: \_\_\_\_\_

## IPMBA Annual Mountain Bike Competition Rules & Standards

### I. Course Design:

A. The obstacle course shall be a short course, covering no more than one standard city block. The course is to be conducted as a time trial, not a race. No more than one competitor may begin the course at any one time, and starts will be spaced 1-1.5 minutes apart.

### II. Obstacle Course Safety Considerations:

- A. A Safety Officer shall be designated to oversee all aspects of course from design layout to final running of competition to ensure that there are no substantial risks to the participants. The Safety Officer is autonomous and his word absolute. There is no higher authority.
- B. The Safety Officer shall review and conduct a trial run of the course prior to approving it for use by participants.
- C. The Safety Officer shall ensure that each participant conducts a full bicycle safety inspection prior to the event.
- D. The Safety Officer shall ensure that all weapons are secured in the holster prior to the event. Firearms, other than being holstered on the officers' duty belts, have no involvement in this event.
- E. An EMS unit will be present at all times to provide treatment and/or transport for injuries.
- F. Safety spotters will be placed throughout the course. They have the authority to shut down the course to address safety concerns. If a safety spotter calls the course "cold," any riders on the course must stop immediately. Riders will be permitted on the course when the course is called "hot."

### III. Eligibility

- A. Only sworn law enforcement officers and certified EMS personnel are eligible to participate in the Annual Mountain Bike Competition.
- B. The Competition is open to all registered pre-conference and conference participants; both those with regular and guest registrations.

### IV. Obstacle Course Administration

- A. Entrants will participate as teams of two, three, or four, depending on the total number of entrants.
- B. Each participant will be timed individually. In order to keep the outcome of the team competition in suspense, the members of a team will not compete consecutively, i.e., the first member in each team will run the course, then the second member in each team, and so on, until the last member of each team has run. The team with the best combined time wins the team competition. The individual with the best time wins the individual competition.

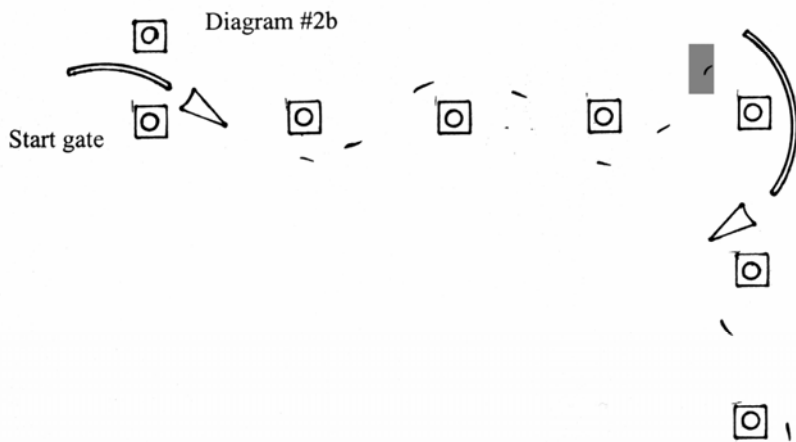
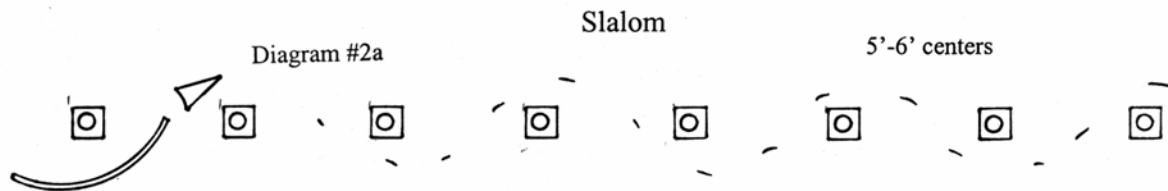
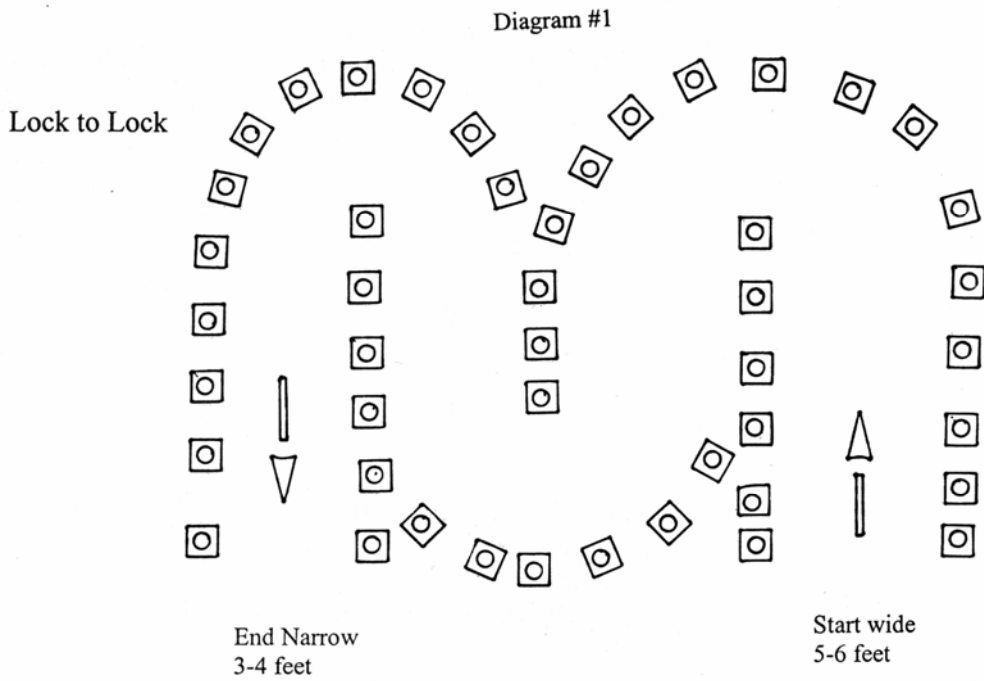
### IV. Course Rules

- A. Each participant may pre-ride the course one time and one time only.
- B. All participants must ride through the cone maneuvers. If a rider does not complete a cone course obstacle cleanly, he/she will be required to go back and attempt the obstacle again. Failure to complete it a second time will result in a five-second penalty.
- C. All other obstacles must be negotiated on bike or on foot, at the discretion of the rider.
- D. Falls, or damage to the bike as a result of a fall or operator error, are not grounds for a re-ride. A judge may award a re-ride in the event of a flat tire or other unforeseeable mechanical failure, if the rider was impeded by a spectator or another rider, or if the course is called "cold" due to some safety concern.

### V. Uniform and Equipment Requirements

- A. Police
- Mountain bike equipped with street/combo tires (26 x 1.5-2.2; off-road tires not permitted)
  - Rear rack and full size rack bag (bag can be empty)
  - Pedal retention devices
  - Uniform with full Sam Brown (duty belt), including weapon in a duty holster and at least one pair of handcuffs
  - Body armor protective vest
  - Helmet, gloves and eye protection





Off-Set Serpentine

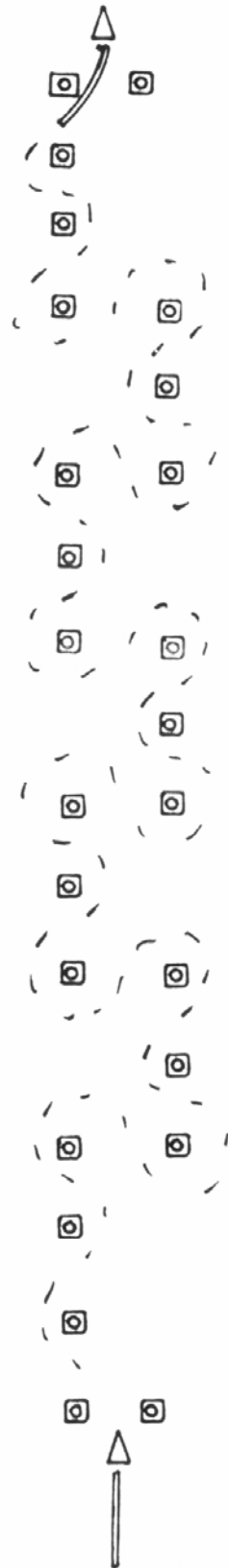


Diagram #3

Cones set at 5-6 feet



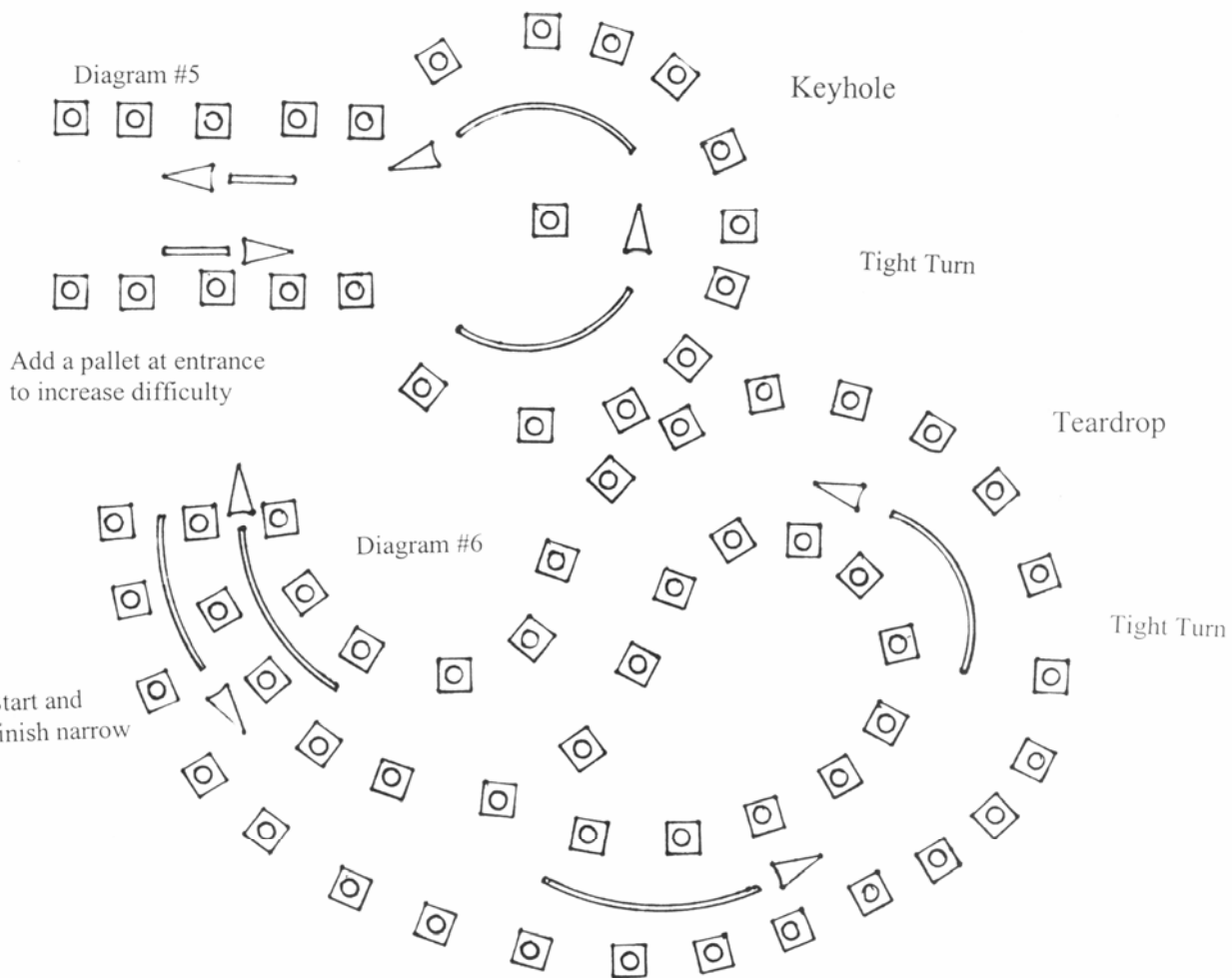
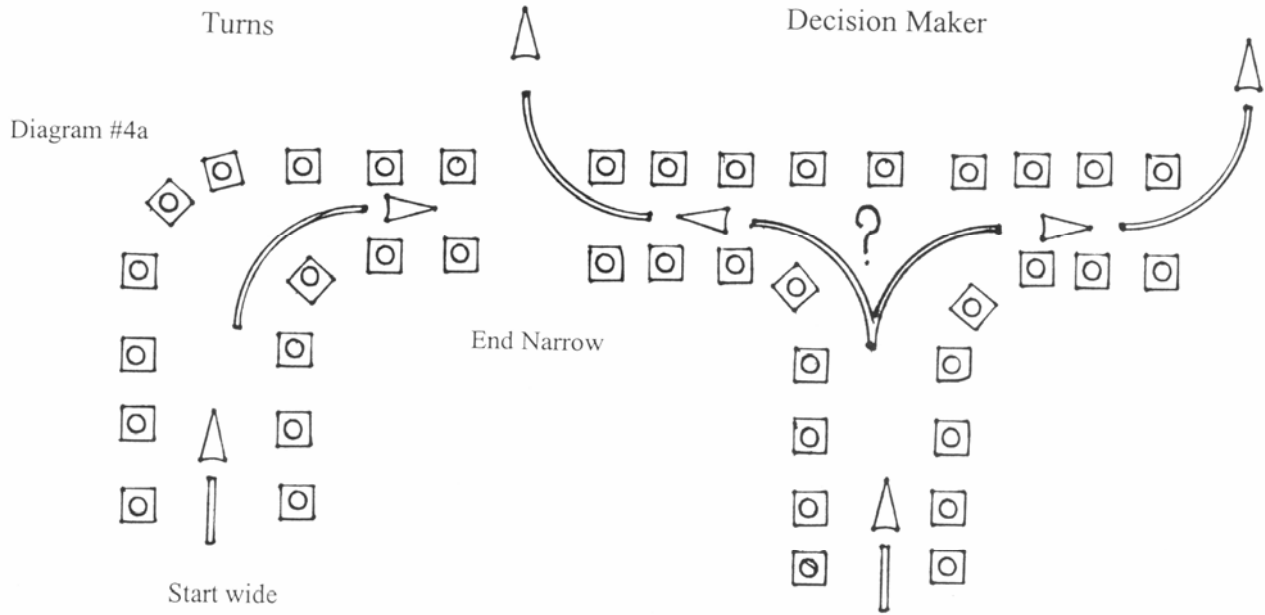
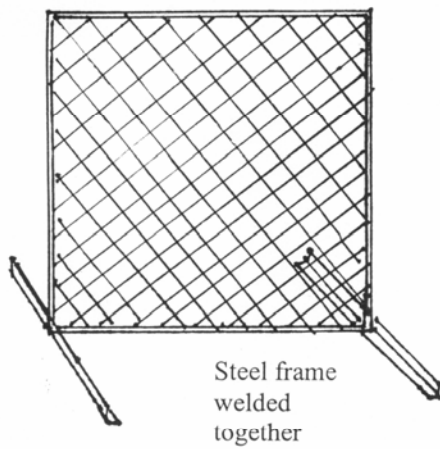


Diagram #7a  
Chain link fence



Fences/Walls

Diagram #7b  
Guard rail

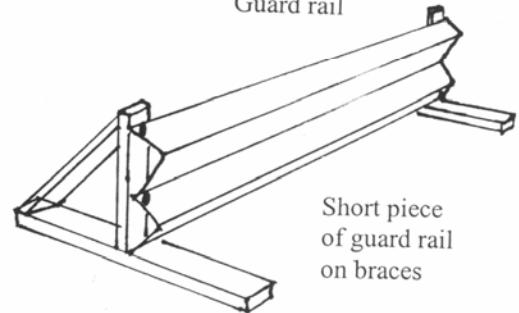
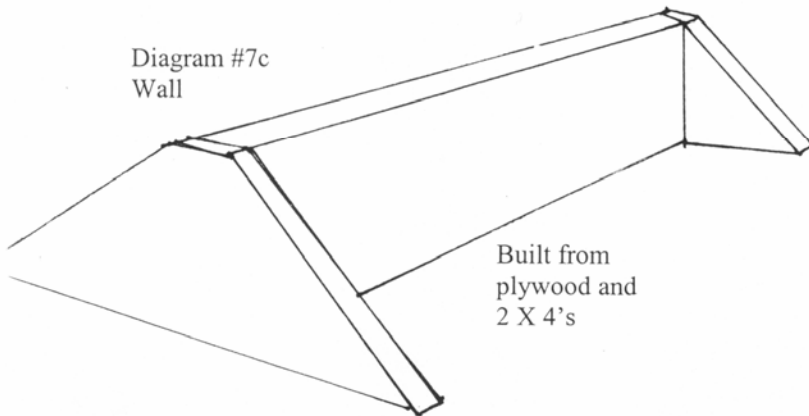


Diagram #7c  
Wall



Limbo Bar

Diagram #8

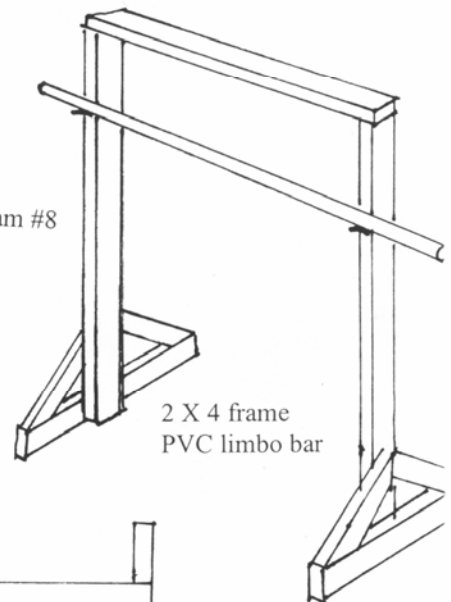
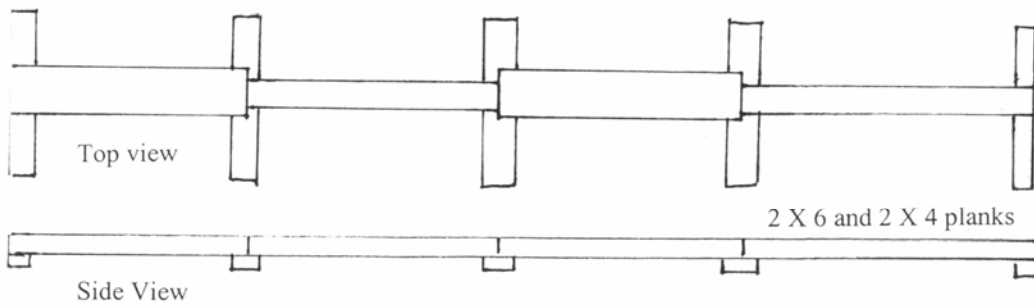
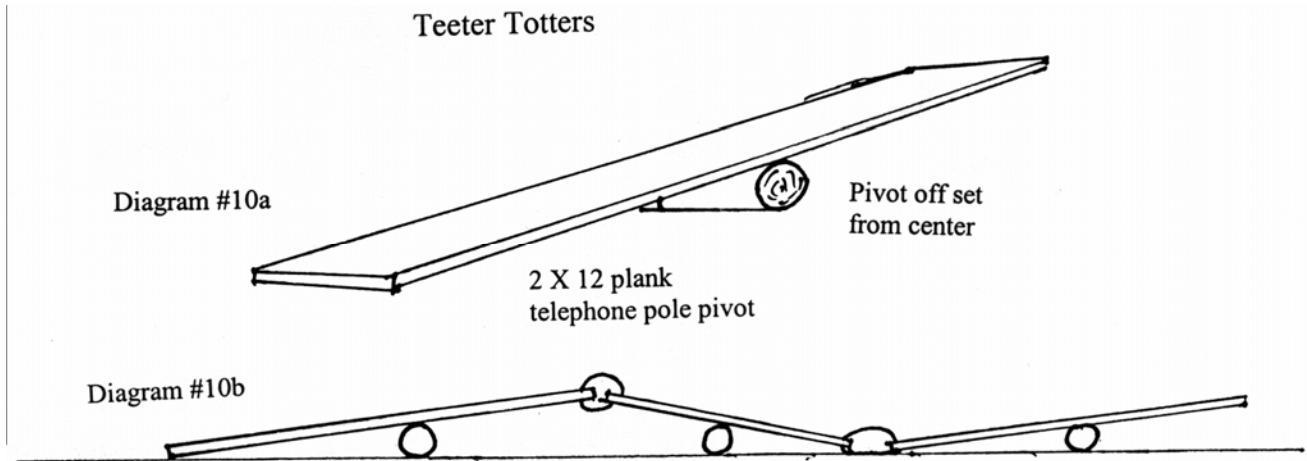


Diagram #9

Balance Beam



Teeter Totters



Washboards

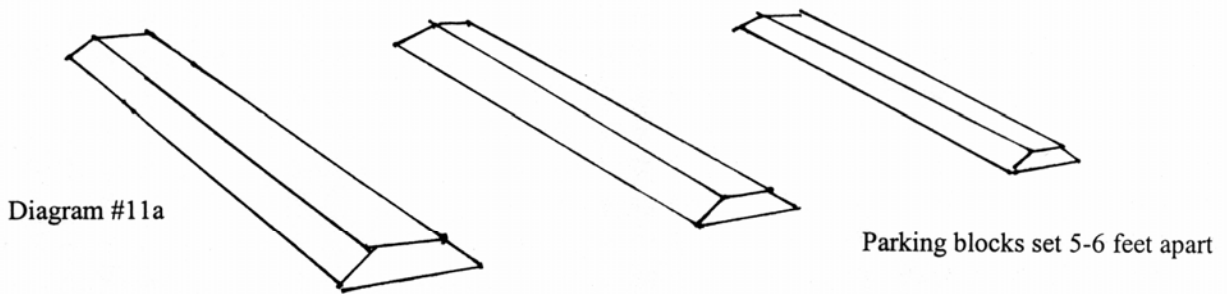
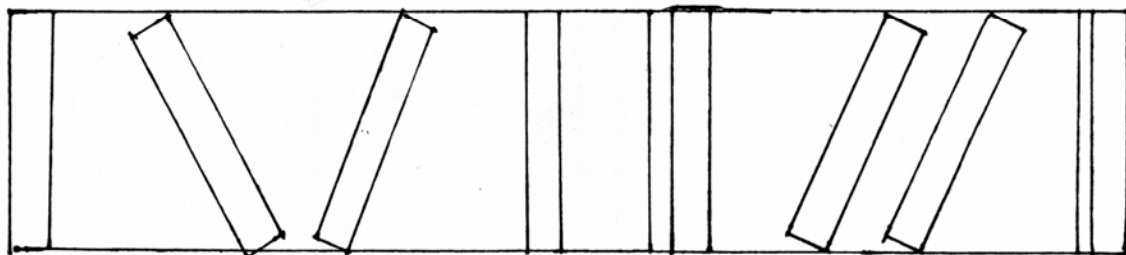
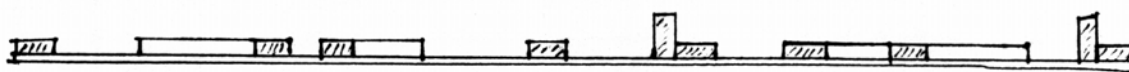


Diagram #11b

2 X 4 planks nailed to plywood



Top view



Side View

Pallets

Diagram #12a Staircase

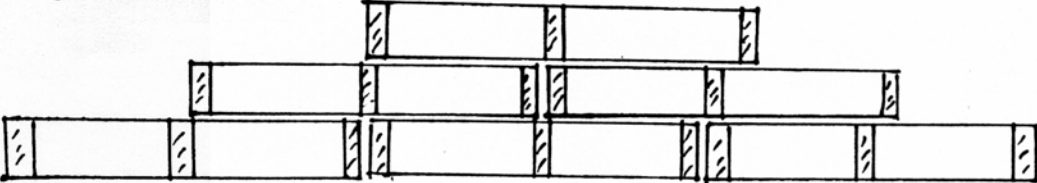


Diagram #12b Mound

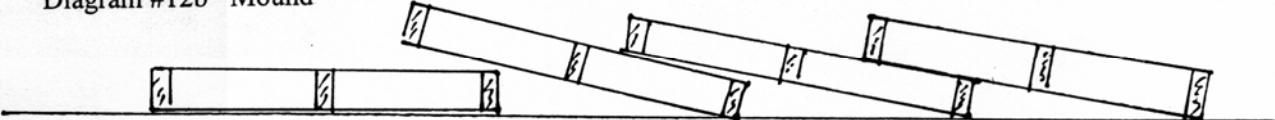


Diagram #12c Maze

