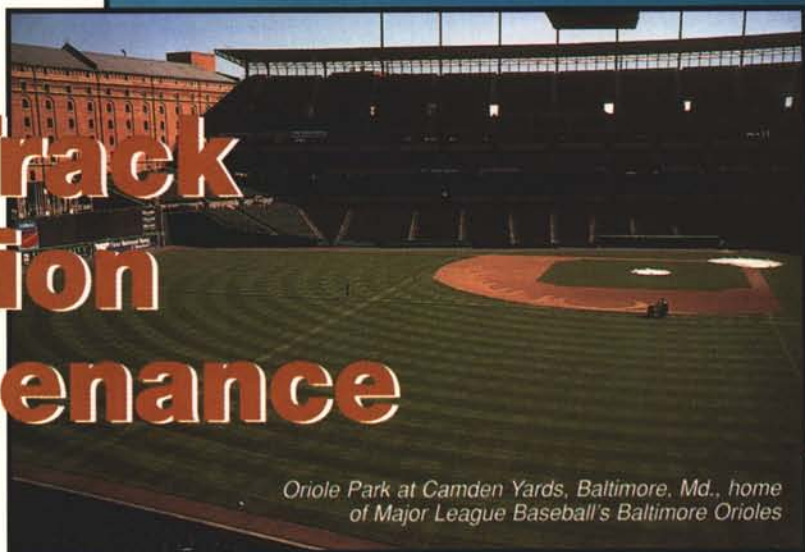


# Warning Track Construction and Maintenance



Photos courtesy: STMA

Oriole Park at Camden Yards, Baltimore, Md., home of Major League Baseball's Baltimore Orioles

by Tom Burns and Paul Zwaska

The primary function of a warning track is player safety. As the name implies, it serves to "warn" players that they are approaching a physical boundary such as a fence, railing or dugout. But there are additional benefits to be considered.

We all work countless hours mowing complex patterns and grooming our fields so they look their best. Think of a warning track as the frame for your "Mona Lisa." A well-edged track of a contrasting color will

enhance the aesthetic appeal of your field.

A warning track also serves as a utility road. Driving equipment over the same path will lead to compaction and may cause ruts to form, leading to player injury. We have a large amount of tours, pre-game parades and promotions on our field. The track virtually eliminates the on-field wear from these activities.

continued on page 32

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continued from page 31

Warning tracks may be composed of "natural" or "artificial" materials. Installation and maintenance costs vary depending on the type of track selected and the materials used.

### Dimensions

The dimensions of a warning track are largely dependent

on the level of play and the size of the playing surface. For a stadium setting, the recommendation would be a minimum of 12 feet in the outfield and 8 feet around the stands. Most Major League tracks are 15 feet in the outfield and 12 to 15 feet in foul territory. This will vary from field to field due to the proximity of the seats to the playing surface. A good rule of thumb is to give the player at least two strides from the field to the obstruction.

### Natural Track Materials

There are several materials suitable for constructing a warning track. The first consideration should

be texture. By using a coarse or gritty material, the player will feel the change in texture and be warned of the approaching obstacle. This type of material also tends to drain better, which also leads to increased player safety. The most popular type of track material is a crushed aggregate. Granite, cinders, crushed brick and limestone are some examples. There are many fields in

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Florida that have tracks constructed of crushed shell. Although the texture and drainage fit the need, the sharp edges and glare of these light colored materials do not make them a good choice.

Size is another important issue. It is important to choose a material with a wide distribution of particle sizes, generally smaller than 3/8 inch. They should also be angular in shape. Sand or soil is often added as a binder. This will allow the material to lock together and provide firm, stable surface.

Cost will be a factor in your choice. Trucking is a significant portion of the cost. Check with local construction supply companies to try to keep transportation costs to a minimum.

### Natural Warning Track Installation

The depth of the track will be influenced by factors such as budget and availability of material. A filter fabric is highly recommended if your budget allows. A depth of three to four inches will generally be sufficient, although you may want to increase the depth to six inches if you will have heavy equipment traffic such as forklifts and trucks.

Subsurface drainage is usually not very effective due to the high rate of compaction of the track material. A channel drain along the outside perimeter, when combined with a slight grade, is much more effective. This is especially true when a concrete wall is present. An edging material such as wood or plastic will be helpful along the outside of a chain link fence to prevent washouts. A concrete curb is another option but will be a significant expense.

Once the dimensions have been established, excavate and compact the area. Spread the material and level to the edge of the grass. Make allowances for settling and compact with a roller. You will most likely need to re-grade several times during this process. Soaking with a hose will help in the compaction process and help to keep dust to a minimum.

### Maintenance of Natural Warning Tracks

From time to time you will need to add material due to erosion and edging. This is also a reason to have a local source. A topdresser may be used to apply the additional material. Scarify the surface, grade and roll to incorporate the new material.

Regular grooming will help to prevent weeds and keep the track looking fresh. Regular edging will also enhance the look of your new track. A gas-powered edger or string trimmer, used on a regular basis, will help prevent the necessity of using a sod cutter and the constant adding of new material. It is inevitable that weeds will appear at some point. Grooming or using a hoe will control most weeds. Occasionally you may encounter a stubborn weed problem. These can be controlled with non-selective or pre-emergent herbicides.

### Artificial Warning Track Construction

Artificial warning tracks are not new to baseball; they have been around as long as artificial turf playing fields. Artificial warning tracks on natural turf fields, however, have only surfaced in the last decade. Oriole Park at Camden Yards was the first Major League park to have natural grass with an artificial warning track.

The typical construction of a porous rubber warning

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track begins with a minimum 8-inch base of stone with a 4- to 6-inch drain tile buried down the center of the track. On top of the stone layer is a 2-, 4-, or 6-inch layer of porous or popcorn asphalt. Water can rapidly drain right through the large pores of this asphalt. Finally a 1/2-inch layer of rubber granules coated with a polyurethane binder is screeded to finish grade atop the asphalt. The rubber granules come in a standard

red brick color but can be specially produced in custom colors as well.

### Artificial Warning Track Maintenance

While the initial cost of this track is more expensive than a natural track, the savings come in long-term maintenance. With an artificial track, it takes only one crew member one hour with a walk behind vacuum to clean it up. The entire track is hosed

down every third home game. With a natural track, it can take a couple hours for two crew members to hand rake the trash, peanut and sunflower seed shells and cigarette butts. Then the track has to be dragged and wet down for dust control. After heavy downpours, you often have to replace the natural material that has washed out around surface drains in the track. Over the course of 10 to 15 years, the minimum life of an artificial track, the cost of replacing that material adds up. With an artificial track you just watch the water percolate down through the pores. The foul lines on a rubber warning track only need to be painted once a year.

### Protection of Artificial Warning Tracks

There are some practices that must be carefully monitored with a rubber warning track. First, pesticide applications: Always try to prevent any spraying of pesticides on the warning track. Over time it will stain and become quite visible on the track. Always make at least one full boom width application along and parallel to the edge where the turf meets the rubber. This gives you plenty of room to shut off the booms as you come to the end of a pass with your spray rig. The same goes for any granular broadcast applications. Try having two co-workers parallel you on the edge of the rubber dragging a 4 x 8 foot sheet of plywood. This will help deflect the granular materials back onto the turf away from the track.

Most importantly, you must identify early in the life of the track any areas where sediment can flow onto the track from outside sources during a rainfall runoff. Stop these water and sediment flows either before they reach the track or with a trench surface drain right on the leading edge of the track. This should direct the sediment away from the track and into the drain system, preventing clogging of the pores in the rubber over time.

*Paul Zwaska is head groundskeeper for the Baltimore Orioles. Tom Burns is director of grounds for the Texas Rangers and an STMA board member representing Category I, those in charge of professional sports facilities. Both are frequent contributors to sports turf-related publications and frequent speakers at turf-related conferences.*

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