

COMMON SENSE CART PATHS

by DAVID A. OATIS

Director, Northeastern Region, USGA Green Section

AS A GREEN SECTION agronomist who sees more than 150 golf courses each year, I believe that the vast majority of cart path projects do not accomplish their most basic objectives, which are to minimize wear problems and improve aesthetics. This truly is one of the most overlooked areas in golf course maintenance.

Although there are more than a few ugly cart paths in existence, I contend that they all have one or more of several characteristics in common: poor design, construction, or

location. Traffic from golfers and their carts can make it impossible to grow healthy turf, and the resulting worn turf and rutted or bare soil is unattractive and provides a poor playing surface. Rules problems also can result. Under the Rules of Golf, relief cannot be granted unless the area is marked "ground under repair" or is deemed to be a part of the road or path and is so marked. When these situations occur in high-play areas, definition and marking complications ensue.

Aside from the remedial cultural programs that can be employed to minimize the effects

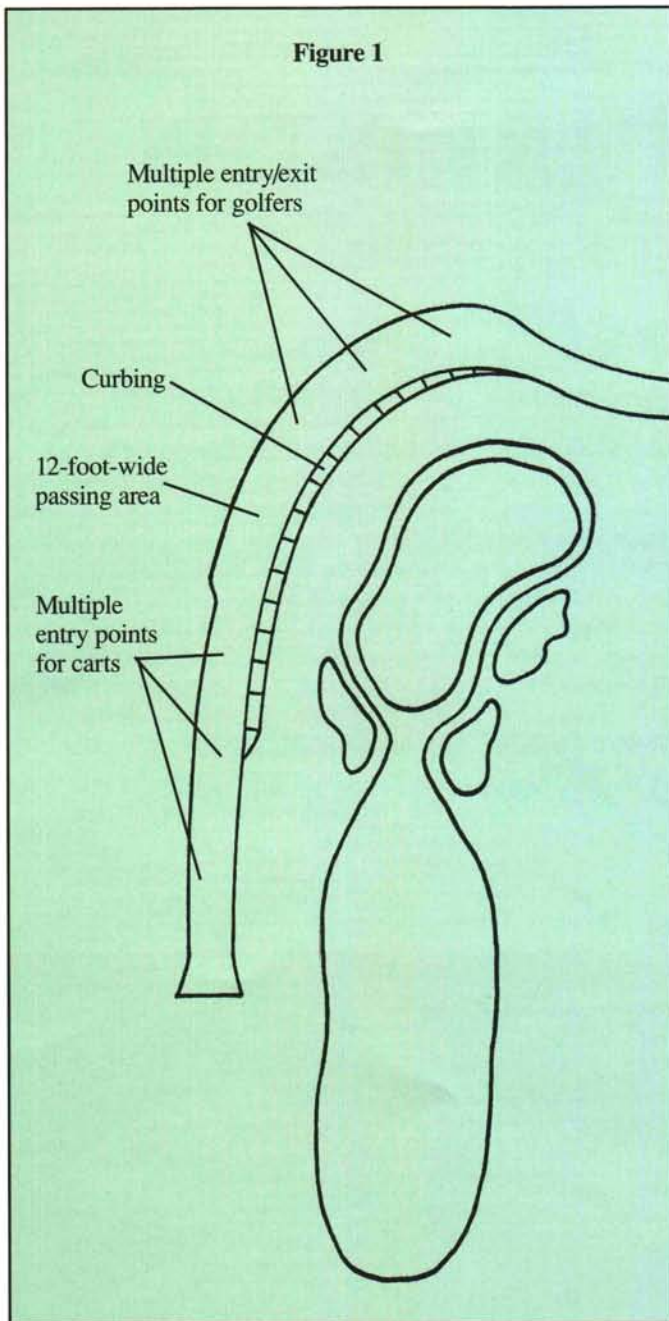
of traffic on turf, there are two basic ways of handling traffic successfully: channel the traffic on hard, impervious surfaces or spread it out over as large an area as possible. Although these concepts may seem elementary, it is more complicated when the prospect of making a transition from one method to the other is considered.

Somewhere along the line, concentrated wear usually occurs. If a continuous system of paths is not to be installed, or if golfers will be allowed to venture off the paths, provisions must be made for getting the carts

Funneled traffic results in unmanageable wear.



Figure 1



Effective cart path design for green complex.

on and off the paths without causing excessive wear at those locations. The paths themselves must be wide enough and durable enough to withstand traffic and retain definition without being a burden to the maintenance staff and the budget. They also must be designed in such a way as to be easily used by the golfers, but they must not be so obtrusive as to affect playability adversely. The project is getting a bit more complicated now, isn't it?

“We Have Met the Enemy and They Are Us”

Some of the most intelligent people in the world play golf, yet when these same people drive golf carts, intelligence often is conspicuous by its absence. Simply put: golfers sometimes commit incredibly foolish acts of thoughtlessness when they are behind the wheel of a golf cart. Generally they are concentrating on their game, trying to locate their golf ball, or talking to other golfers when operating golf carts. Little thought is given to how their carts should be operated. Since it is not like driving an automobile, where the threat of personal danger tends to keep one's thoughts more focused on driving, many golfers don't think much about obeying golf course traffic rules. Thus, traffic patterns and cart path usage should be kept as simple as possible.

The nature of the clientele at a course also must be considered. Golfers at some courses respond favorably to direction and make a concerted effort to operate carts safely and in a non-destructive manner. On the other hand, golfers at some courses are practically impossible to control. For courses with a difficult clientele, directional accessories (signs, stakes, ropes, barriers, etc.) should be sturdy and resistant to damage. They also should be more obvious. For instance, a single stake with an arrow or simple message may be sufficient to direct carts to enter or exit a path at a course with conscientious golfers. But even sturdy stakes and nylon rope may not be entirely effective at courses where golfers are less mindful. All directional

accessories should be easy to move so that traffic patterns can be adjusted frequently.

It also may be possible to locate cart paths farther from play at courses where golfers are more cooperative. Although it may slow play slightly, keeping paths farther from play can reduce their impact on play and course aesthetics. Entry and exit opportunities should be provided only where appropriate.

Planning

It is essential to avoid safety problems regardless of the nature of the golfers. Serious accidents can result in disability or death, and expensive lawsuits are a possibility that must be planned for. Where possible, avoid dangerous design features such as steep slopes and sharp, improperly banked turns. For particularly difficult projects it is wise to involve a qualified engineer in the design phase and to research local construction codes. It is also a good idea to discuss proposed cart path projects with your insurance agent. Golfers are out for fun and competition; while safety may not be uppermost in their thoughts, liability and safety should be uppermost in yours.

Whether or not there are immediate plans to install a system of tee-to-green cart paths, a comprehensive plan to do so should be developed. A qualified golf course architect can be an invaluable aid in planning a cart path system. Such a plan can be implemented over a period of years to spread disruption and cost and reduce the possibility of waste. Installing a system of paths in piecemeal fashion without a sound plan is likely to create as many problems as it corrects.

Avoiding Wear Around Cart Paths

Since the reason for establishing cart paths in the first place is to eliminate wear problems, it does not make sense to install them so that the goal cannot be accomplished. Unbelievably, that is precisely what is done at many courses. With many cart paths, wear problems are common at entry and exit points, around the feature areas (greens, tees, and primary landing zones), and at points where carts frequently have to pass each other.

One key to avoiding wear around paths is to *maximize the number of entry and exit points* for the carts. This may sound basic, but it is overlooked more often than not. Forcing carts to enter and exit in just a few restricted areas causes unmanageable wear problems. The solution usually is to extend cart paths well out in front of the feature area to provide 20 to 40 linear yards of potential entry and exit points. If the location of the path is along the perimeter of the hole, the extensions may start or end in a straight line parallel to the line of play (see Figure 1). Unfortunately, the presence of

mounding or bunkering (particularly in an approach) may make this difficult or impossible. If that is the case, the cart path can be extended beyond the obstacle, or the entry point at least can be located in a less important play area. If the location is more towards the center of the hole (in front of a tee), the path should end in a wide arc (see Figure 2).

The shading and root competition effects of trees are magnified in high-traffic areas. Thus, entry and exit points should not be located in heavily treed areas. Further, avoid cart path locations that place trees between the entry and exit points and the primary traffic flow. Trees form immovable barriers that funnel traffic in addition to competing with turf.

It is a common practice to build wide, fan- or ball-shaped entry/exit pads for cart paths. Often this is helpful, but rarely is it sufficient by itself. Combining the extensions with the widened starting and stopping points is much more effective. Regardless of which method(s) are used, some type of barrier usually is needed to indicate where carts should enter and exit the paths. Again, keep it as simple as possible when selecting signs and/or barriers.

Topography must be carefully considered when the location and length of the extensions are determined. Paths should never start or stop on or near slopes. Aside from obvious safety concerns, the slopes will tend to channel traffic. More friction and slippage between tires and turf result when carts change speeds on slopes, and this will cause even more wear damage.

Location

The locations chosen for cart paths have a big impact on playability, wear, and safety, but they also greatly affect aesthetics. Unfortunately, their locations sometimes are chosen by default. That is, the path is installed wherever the wear spots develop. This amounts to taking the path of least resistance, and it falsely assumes that paths should necessarily be located where the golfers currently drive carts.

Assuming that the carts have multiple entry and exit points, getting golfers to and from the feature areas must now be considered. Routing a cart path to the edge of a green and off to the edge of the next tee guarantees wear problems because it provides a very limited number of entry and exit points for the golfers. This is made worse by the presence of immovable obstructions between the path and green or tee. Trees, shrubs, severe mounding, bunkers, etc. all serve to funnel traffic.

Wherever possible, wrap paths around tees and greens so that multiple entry and exit points are provided for the golfers



Simple directional aids often work best for traffic control.

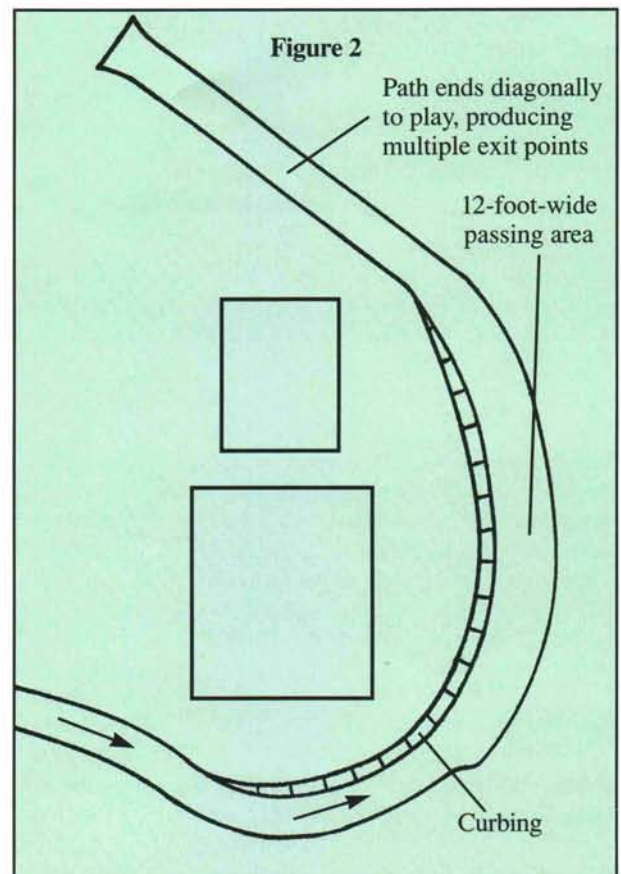
(Figure 1). Aside from logistical obstacles (hole design, topography, etc.), safety issues may be the biggest limiting factor with this type of installation. Cart paths should not be located in areas where golfers might be subject to shots from adjacent holes. *Golfer safety is of paramount importance in cart path design.*

In situations where wrap-around design is not possible, be sure that the area between the path and feature area is as wide and unobstructed as possible. Redesign of greenside bunkers and mounding may be necessary to widen the passageway. Removal or relocation of trees, shrubs, ornamental plantings, or even ball washers and trash receptacles also may improve traffic flow. As mentioned earlier, traffic control accessories should be designed to be effective and easily movable.

Nothing is more aesthetically disruptive than an exposed view of a cart path in an otherwise natural setting. Depending on the architectural design of the golf hole and its topography, it often is possible to hide cart paths from view. First, identify the intended line of play and the areas where golfers are most likely to congregate. Tees and landing zones are obvious choices, but there may be others. Next, consider how the existing topography might be used to obscure the cart path or make it less obvious. Utilization of mounding or curbing or performing regrading work all can be effective means of blocking the view of a path. However, mounding or use of curbing must not be so severe as to adversely affect traffic flow.

One of the easiest ways to hide paths is to pay close attention to the angle at which they are installed. Installation at an angle away from the primary view can make them practically invisible (see Figure 3). On relatively flat terrain, this may have little impact on the cost of installation and requires only careful planning. This method also is effective when paths cross areas in play or are routed up steep slopes. Routing the path across the slope and tilting it inward is an especially good ploy.

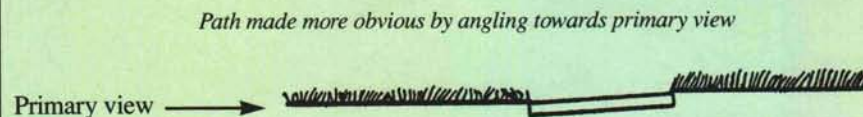
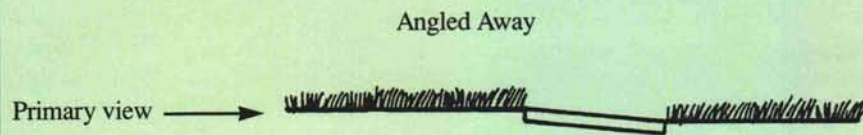
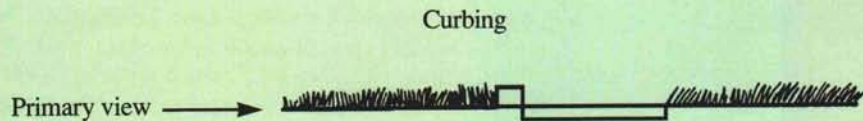
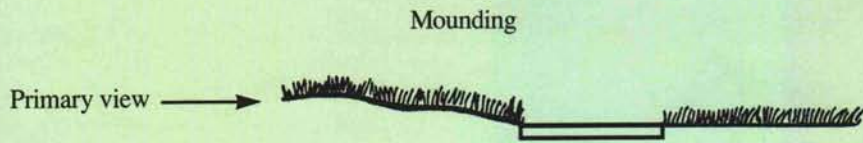
Winding cart paths tend to look more natural, but the turns should be properly



Wrap-around design reduces wear near this tee.

Figure 3

Hiding path through angle of installation or use of mounding and curbing



banked and gentle. Since golfers are not paying close attention to where they are driving, sharp bends are one of the first areas where golfers will have a difficult time keeping carts on the path. Locating a path in a dense grove of trees may do a good job of hiding it, but entry and exit areas should be free of trees.

Materials

Any number of different materials can be used to build cart paths, and they can be organized into the two basic categories — loose and stable. Concrete and asphalt are the most commonly used stable materials and

typically require much less long-term maintenance. Due to differing tastes, budgetary constraints, and potential effects on play, courses often use less stable materials such as gravel, rock or brick dust, decomposed granite, crushed shells, pine straw, woodchips, mulch, etc. Unfortunately, the less-stable materials are subject to a number of problems, most of which are related to unwanted movement. For instance, most are subject to erosion, which can be especially troublesome with paths located on slopes. Many tend to be dusty when dry, and muddy and prone to splashing when wet. Woodchips may stick to golf spikes, and the dustier materials may be tracked onto turf areas

by both foot and cart traffic. Carts and turf maintenance equipment may dislodge coarser materials (stones especially), which may present a hazard or cause costly damage to mowing equipment.

In addition, path definition problems tend to arise when less-stable materials are used. Installation of forms is suggested, and provisions should be made in the budget to permit the necessary maintenance, which may be substantial.

Curbing is essential around feature areas to prevent paths from growing wider. Golfers have a subconscious urge to pull carts off the paths by just a foot or so unless they are physically prevented from doing so. Regardless of the material utilized, the curbing should be installed with the soil and turf flush with the top of the curb. This makes trimming easier. Materials that can be used for curbing vary widely and include, but are not limited to, the following: steel, concrete or concrete fabricated products, asphalt, Belgian block, landscape timbers, and railroad ties. Just be sure to install curbing only in areas where the carts are not to be given options for exiting or entering the path. Provisions for disabled golfers also should be given full consideration.

Adequate width is an essential component of a successful cart path project, and a common failing is to install paths that are less than eight feet wide. Narrow paths are more difficult for golfers and maintenance equipment to negotiate, hence this recommendation. Installing paths less than eight feet wide leads to wear along the edges and more rapid deterioration of the path. Paths must be even wider in areas where carts congregate or pass one another and in areas heavily used by the maintenance staff. Widths in these areas should be 12 feet or more.

Drainage

Cart paths can have a significant effect on surface drainage. Installed above grade, paths can block surface drainage and cause water to collect in adjacent turf areas. Installed below grade, the paths may remain wet. They can be used in a positive way to intercept water and channel it to appropriate collection points. Drainage swales can be designed into cart paths. Keep in mind that there may be environmental factors to consider, the most important being the potential impact on course runoff into streams or other water bodies.

Conclusion

Cart path installation can be expensive and disruptive, and since most golfers find them distasteful, there is a strong tendency to do

the bare minimum. The shortest routings possible are often chosen, and widths are made as narrow as possible. This is a false economy. Cart path systems can be installed in phases to spread the cost over a period of time, but the urge to skimp on design and materials should be avoided at all costs. When considering a cart path project, it is imperative to start with a good plan and to make a firm commitment to quality. The common excuses of "it's the best we could do," "you should have seen it before," or "it's all we could afford" don't wash. Poorly planned and installed cart paths are a waste of money because they are no more attractive or useful than the bare, eroded soil they replace. Cart paths are a long-term investment, so take the time and effort to design and install them properly.

A Checklist for Developing a Cart Path System

- Have applicable safety guidelines been met?
- Have multiple entry/exit points been created for carts?
- Have multiple entry/exit points been created for golfers?
- Are the paths of adequate width?
- Has curbing been installed where appropriate?
- Has disabled golfer access been included in the design?
- Has surface drainage been considered?
- Has environmental consideration been given to storm water disposal?
- Have stable materials been chosen for paths subject to erosion?
- Will the new paths be clearly and cleanly defined?
- Have tree root interference problems been avoided in high-traffic areas?

Wear around cart paths in high-play areas results in poor playability.

