A well designed road enhances the appearance of the clubhouse area.

Cart Paths and Car Roads Can Be Turf Savers

by **JAMES B. MONCRIEF,** Director, Southern Region USGA Green Section, Athens, Georgia

In the beginning there was grass. Golfers then created foot paths and these later evolved into cart paths. Today they have become paved roads!

The golf car has substantially altered turf maintenance practices over the past 20 years and it has also created a new revenue source for club operation. More people are playing golf and more players are using golf cars. Clubs starting with 15 or more cars did not have a turf wear problem until they added another five or more to their fleet. Then the thinning and loss of turf appeared and it became necessary to control the movement of carts in order to preserve the grass.

The use of privately owned golf cars is a

dilemma for many club officials. The owner-member feels he is justified in using his car on his golf course. In most cases however, the fee charged for the use of the privately owned car on the course is minimal and contributes little if anything to the increased maintenance cost it creates. Fewer and fewer clubs permit private golf car use today.

The golf car has created several problems but turfgrass wear is the primary one. A two-year research project at Ohio State University during the mid-1960s studied wear on turf from various size tires. Results of this research show that a nine- to 12-inch tire caused less compaction than a smaller tire and was less expensive than the wider, 15- to 18-inch tires. The study also pointed out that compaction caused by golf cars directly restricted water movement into the soil. Increased aerification becomes necessary to relieve compaction where heavy cart traffic is found.

In the January, 1967, issue of the *Green Section Record,* James L. Holmes listed products used in building roads and cart paths. These varied from wood bark and wood by-products to gravel, shells, asphalt and even reinforced concrete. Asphalt is used more than any other product and has been quite satisfactory. Upkeep is easy and proper sealing of the surface is the key to the life of the asphalt.

So far, car paths (or roads if you prefer) are built only on courses not able to maintain enough turf to prevent thin or bare areas. The income that may be realized from continuous use of cars should be a very important factor in future building of roads. If adverse weather restricts use of cars, income for that period is reduced. With proper construction and location of roads, continuous use of golf cars is assured.

One drastic change in the building of roads in recent years has been that of road width. Early roads were only wide enough for golf cars, but it is now common for them to be eight feet or more in width. Indeed, in many cases the roads are used for the movement of maintenance equipment or delivery trucks throughout the golf course. Many asphalt machines can be set for eight feet and paving jobs can be completed faster if the road width

Roads should be constructed to divert water, not collect it.

Crossing public roads is hazardous and may require tags.

is the same as that of the machine.

Developing roads from the first tee through the 18th green also seems to be on the increase, especially in areas where wet conditions prevail. I know of one course that had a limited road system at first, and then constructed a continuous system through all 18 holes. Golf cars were restricted to the roadways and not permitted on rough or fairway areas. A temporary decrease in income was experienced, but as soon as the policy was accepted, play actually increased. Overall, however, the most acceptable use of roads has been during adverse weather and the free use of the golf course during favorable weather.

It is difficult to say where a golf car road should end, but it should begin where traffic converges and wear is evident. A road can always be extended, especially if turf is worn out for a distance beyond the end of the road. Directing traffic at the end of roads can be done with Y's, curves, ropes, moveable barriers or signs. Using a gentle curve (away from the intended flow of traffic) is very effective because it spreads the wear over the extended arc of the curve. Rather than exit at the end of the road, the driver will tend to follow the road until he becomes aware that it is leading him away from his intended path.

Curbs are also effective traffic controllers, especially near tees. A golfer will often pull off the road and park on the turf adjacent to the teeing ground. We are all creatures of habit and and, even in a golf car, tend to obey state and federal highway laws. Unconsciously, the golfer pulls off the asphalt on the right side of the road and onto the turf. A low curb will remind him to stay on the road and save the grass.

When building roads, make sure they drain properly so that water will not collect in low areas. Plan drainage so that water will not drain where traffic will exit the road nor where drainage will cause erosion at the end of the road. On the other hand, golf car roads may

also be used as surface drainageways under certain circumstances. But again, handling the water at the end of the path must receive careful study.Roads generally should be flush with the turf so that mowing may be accomplished easily and maintenance equipment can move across freely, or along the edge of the road.

It is advisable to keep gravel, crushed rock and similar material off the turf and on the golf car road. Rotary mowers will sling a rock for some distance with considerable force. If a reel-type mower is used, there will be bending or nicking of blades which effect the operation of the machine and appearance of the turf. These surfacing materials can be kept in place better if soil is excavated prior to the construction of the roadway.

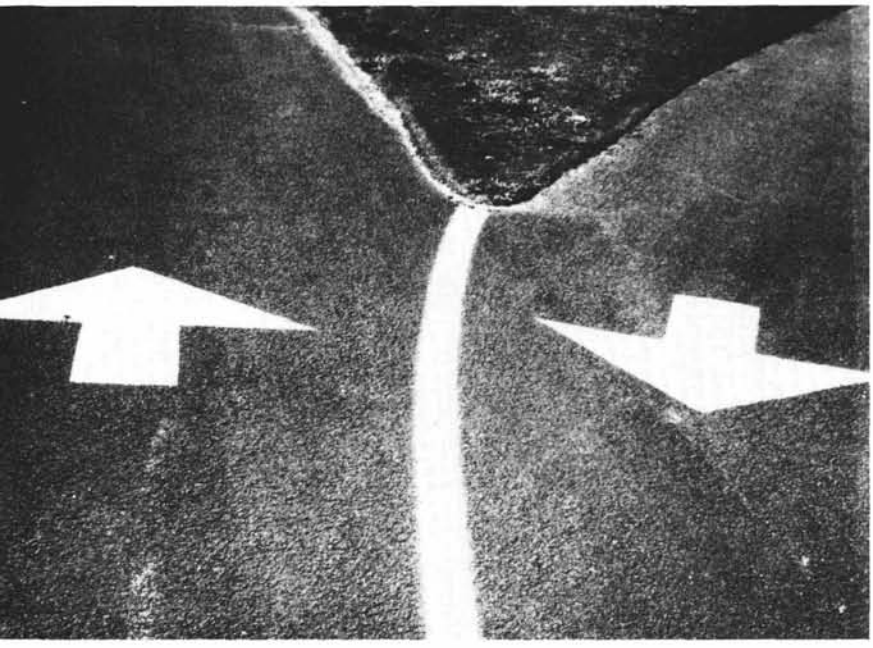
Cypress bark has become quite popular in Florida, and other wood products are frequently used for road surfacing. However, heavy rains cause a problem with these materials and the bark has to be put back in place after each rain. At the end of the roads, bark has a tendency to move onto the turf area and has to be replaced. During dry periods there is frequently a dust problem with this material, although nearby irrigation outlets—if available—will minimize the problem.

Those soils having a high percentage of clay or silt particles compact readily and particularly when wet and under heavy traffic. This condition often calls for an immediate and important decision. Should the signs go up "no carts today," "carts in rough only," "carts on roads only," or "free use of golf carts"?

Situations of this sort are delicate matters under certain circumstances. Across the South where we do not have deep freezes or heaving soil, the best way to counteract compaction is with aerification equipment. Hybrid bermudagrasses withstand more wear, but they suffer if compaction is not relieved occasionally.

Courses built on hilly terrain do not always have free choice as to whether or not golf car roads should be constructed. Spinning wheels going up a sharp grade will cause loss of turf which results in erosion and bare areas unsightly on the golf course. We hear many comments that, "We will not have golf car roads on our golf course." However, if a thorough study is made of location, and if the work is carefully and properly done, roads are

Obeying the law? Pull to the right!



Simple, neat indicators are often most effective.

not too unsightly after they have been in place for several months. They definitely keep cars rolling 12 months of the year and more income for the club is realized.

Costs of construction vary from community to community and no estimates can be given here. Local paving companies will give estimates as to thickness of foundation and installation costs. Width of the road is another factor.

We can summarize by saying that if golf courses are used 12 months of the year and if the turf manager has difficulty in growing good turf because of heavy traffic, roads are essential. Start construction in those areas where there is no doubt about proper road location. Where there is a doubt, study the situation to the fullest, for once a road is developed it is quite difficult to move. The type of material used may depend on the source and aesthetic appearance you want in the scheme of the golf course and around the clubhouse. Roads can be turf savers.