



It is not just a matter of how good your irrigation system is. Hand watering critical areas sometimes will be necessary, especially with putting green maintenance.

The Ten Pitfalls of Golf Course Maintenance

by **ROBERT A. BRAME**
Agronomist, Mid-Atlantic Region,
USGA Green Section

WOULDND'T YOU be interested in knowing the most common golf course maintenance problems identified by agronomists who visit nearly 1700 different golf courses each year and whose combined experience in professional turfgrass maintenance exceeds 150 years? If so, read on! A December, 1990, survey

of the USGA Green Section staff revealed "The Ten Pitfalls of Golf Course Maintenance."

A pitfall, by definition, is "a hidden or not easily recognized danger or difficulty." Exposing the top ten hidden dangers in golf course maintenance and recognizing them for what they are should help us avoid

these traps or point us toward strategies for improvement.

1. Communication and Public Relations

The number-one rated pitfall in golf course maintenance isn't even agronomic in nature! As a matter of fact, good communication is



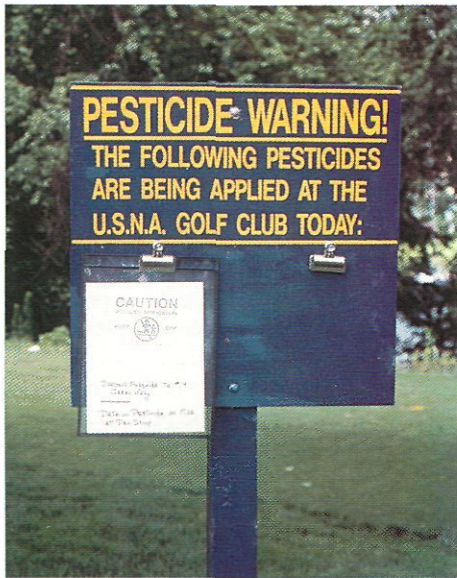
(Above) Attempts to communicate don't always work the way we would like! Good communications are a critically important area in every aspect of golf course maintenance.

(Right) Competent, well-trained employees are a must. An understanding of the expected maintenance standards and how to properly accomplish the job must come from the superintendent.



a critically important area in every industry and in life in general. While this has always been true, the importance of good communication and public relations in golf course maintenance has grown with each passing year. Environmental concerns, demands for better playing conditions, concern about expenditures, and employee relations, just to name a few, are all issues that emphasize the importance of communication and public relations.

More golf course superintendents lose their jobs for falling short in this area than any other. Conversely, a variety of agronomic problems can be present and if players and officials are kept well informed, jobs



Signs are a good method of communicating about the use of pesticides to those playing the golf course.

usually remain secure. Everyone wants to know what is going on. We all like to be informed. If positive and informative communication does not come from course officials, owners and/or golf course superintendents, then players and/or local residents will decide how to view particular situations on their own. This can easily result in an inaccurate interpretation and a poor understanding of the situation.

To maintain a successful operation, positive communication must be present on a variety of fronts, and the golf course superintendent is not the only one responsible for establishing and maintaining good lines of communication. Course officials or owners also must take an active role in communicating with the superintendent, players, community, news media, peers, and other staff members. Sometimes taken for granted is the need for course officials to communicate their desires about course conditioning to the superintendent. Without a clear job

description, incorrect assumptions can be made.

In addition, good communication with spouse and family members is of supreme importance. Problems on the home front *always* overflow into the workplace and vice versa.

Effective, positive communication can be accomplished in many different ways. Letters, memos, reports, and newsletters all have their place. The use of signs and information boards also can be advantageous. Verbal presentations at meetings and conferences, as well as informal question-and-answer sessions on the golf course, are part of the package. The clothes you wear and the manner in which you handle yourself either contribute to or detract from the spoken word. The staff you hire and their ability to do the job communicate a clear message without a word being spoken.

Is a soil probe used when explaining the importance of proper timing of pre-emergence herbicide applications? Is a camera being used to provide visual documentation? The means of effective and positive communication are limited only by individual creativity.

Communication and public relations are vitally important to the ongoing maintenance of any golf course. Volumes have been written on the importance of communication, yet it is amazing how often we forget this fundamental truth. Communication is something we all do whether we are consciously thinking about it or not. The key is to make sure we communicate in a positive and informative manner. Evaluate your operation and develop a strategy for improving your communication and public relations efforts.

2. Overwatering

No doubt about it, when a putting green is overwatered, a sculled 7-iron shot will hold better. But sculling a shot that still holds the green is a good indication of poor playing conditions. Thus, there are few benefits from overwatering, but there are quite a few problems which inevitably occur.

An over-wet rootzone prevents the grass from producing deep, healthy roots and makes the soil more prone to compaction effects. Shallow, weak roots cause the grass to be more prone to stress, and when tough summer weather conditions set in, the grass plants simply do not have the reserves needed to maintain strong and healthy growth. Weakening continues and is intensified by traffic, disease and/or a poor growing environment (shade and/or poor air circulation). At the very least, overwatering usually results in greater fungicide use to counteract heavy disease pressure. Further, mowing, topdressing, aerification, and main-

tenance in general are more difficult with overwatered turf. The interaction of all these negatives (weakened and thinned turf, disease, reduced maintenance efficiency, and increased costs) creates poor and inconsistent playing conditions. Overwatering must be avoided.

Good water management involves both irrigation and drainage. Therefore, when considering this second pitfall in golf course maintenance, both systems must be evaluated. Irrigation programs must be compatible with existing drainage. In many instances the first step in moving away from overwatered turf is to improve a poorly drained rootzone. The installation of drainage lines may be needed. Positive surface drainage (no bird baths) is also very important. Deep aeration has proven very helpful in some situations, but severe drainage problems may necessitate reconstruction. There is no substitute for good drainage.

A good irrigation system and its proper use can help prevent overwatering. But whereas a well-designed system is a valuable tool, overwatering sometimes can be more severe on courses with automatic systems. Some owners, course officials, or superintendents say, in effect, "We've got this expensive system, so we'd better use it!" A computer is a wonderful tool, but it does not replace the use of a soil probe in determining soil moisture and sprinkler programming. When programming is performed, aim toward the dry side, and be prepared to hand water the dry areas. More water can always be added, but when too much has been applied, it is difficult to reverse the effects. Overwatering resulting from poor drainage and poor irrigation practices, will likely maintain a spot in the top ten for many years to come.

3. Fast Green Speeds

Actually, fast green speeds are not the problem. The problem is what you have to do to the turf to *keep* fast greens. Lowering cutting heights and holding back on nutrients are often part of the strategy in obtaining fast putting green speeds. But just remember, a golf ball will roll even faster on compacted, bare soil! This end of the continuum is not acceptable, so a balance between healthy grass and reasonable putting speeds is needed.

Excessively close mowing establishes a growing environment that encourages and enhances the growth and spread of *Poa annua* (especially in the regions of the country where cool-season grasses are grown). This grass is expert at establishing itself in areas where bentgrass has become thin and weak due to excessive mowing. When *Poa annua* is present in moderate to high percentages, maintaining a healthy and

consistent playing surface becomes even more difficult and expensive. Bentgrass is more economical and dependable when maintained at a reasonable mowing height of at least $\frac{1}{2}$ inch.

Low fertility levels reduce the recuperative ability of the turf, leading to increased disease and traffic-related problems. Therefore, a maintenance program must focus on doing what is best for the grass plant to maintain a consistent and healthy putting surface. Fertilize to achieve good density (both leaf and root density). Avoid getting hung up on numbers (pounds of nitrogen per 1,000 square feet); grow a strong, healthy turf and allow the numbers to fall where they may.

Light and frequent grooming and top-dressing can complement a sound fertility program and a reasonable mowing height in creating a good product. This combination will allow for reasonable putting green speeds, somewhere between 7.5 and 9.0 feet as measured with the Stimpmeter, depending upon weather conditions. Double mowing offers a safe option to increase putting green speeds for special events without over-stressing the grass plant. Additional mowings can add 3 to 4 inches to the speed. This strategy should be started several days before the event.

Rolling is another option for increasing green speeds that may be worth considering, depending upon the equipment used and the soil texture of the green. The increase in speed from rolling can be significant (12 to 18 inches), although it usually does not last more than a day or two.

Consistently ultra-fast green speeds are unrealistic, expensive, and bad for the grass. The Stimpmeter was developed as a tool to help golf course superintendents check putting green consistency and speed from hole-to-hole on a given golf course. It was never intended to be used as a yardstick to measure how close to the brink of disaster you can go. Grow a strong, healthy grass plant first, and then do what you can to safely enhance speed and consistently. SPEED KILLS, so avoid getting trapped in the fast lane.

4. Use of Pesticides

This pitfall specifically refers to the over-use or unnecessary use of pesticides. The increasing demand for perfection in golf course playing conditions has caused many to employ preventative spray programs; that is, spraying a pesticide before symptoms or signs of pest activity are actually observed.

The merits of a good preventative spray program are fairly obvious. Stopping a problem before it occurs can make a lot of sense. In some cases, preventative spray

programs have proven to be both efficient and economical. However, when a potential problem is treated before it occurs, it is never clear that the problem would have occurred at all. Pests rarely attack all 18 greens, tees, or fairways with the same intensity. Every golf course has indicator areas, or "hot spots," where certain pests are more likely to cause damage. Why not treat these "hot spots" preventatively and watch the rest of the golf course for indications of trouble? It is true that such an approach can be more risky and may increase labor costs initially, but in the long run, both labor and pesticide usage may decrease.

The growing popularity of the game of golf has left many courses packed with players. This has made it more difficult to perform routine maintenance work, especially when it comes to making chemical applications. Some are limited to spraying on Monday mornings, while others have decided to spray at night. When a golf course superintendent knows spraying can be done only on Monday, or on a rigidly set time frame, a preventative approach to pesticide applications becomes a necessity. A greater degree of flexibility in application times would allow for greater flexibility with respect to pesticide usage. In most cases, more leeway must come from owners or course officials and may involve restricting play at certain times to comply with product labels.

It is essential to know exactly what pest you are going after. When the proverbial "kitchen sink" is thrown at a particular problem, often through preventative spraying, it may be impossible to determine just what the pest was and what provided the best control. Careful diagnosis of the actual pest must occur before a good control strategy can be developed. The areas already discussed (water management, mowing heights, and fertility levels) are directly tied to the need for a pesticide and the amount that may be needed. As an example, raising the mowing height can greatly reduce the potential for summer patch disease on putting greens and should reduce, if not eliminate, the need for a fungicide for control of this disease.

5. Continuity of Course Officials/ Green Chairperson

It is very difficult to communicate efficiently and develop a solid working relationship with your boss if you have a new one every year. Unfortunately, this is the scenario that occurs at some courses, where a new Green Committee chairperson is elected or appointed each year. To further complicate the problem, short-term Green Committee members often want to "leave their mark."

This results in poor communication with the golf course superintendent and two completely different agendas for the maintenance and improvement of the course.

Lack of continuity in course officials and Green Committee chairpersons sometimes results in a quicker turnover of golf course superintendents. The superintendent's career is set back and so is the overall golf course maintenance program. The approaches taken to achieve good continuity are as unique and individual as each golf course operation. A longer term of office, overlapping officials, and a better understanding by all parties as to what is expected (written contract) should help enhance continuity. Avoid the tendency to play down the importance of continuity; it affects the entire maintenance operation.

6. Pesticide Storage and/or Maintenance Buildings

It is shocking how inadequate many golf course maintenance facilities are! Pesticides, equipment, and supplies worth hundreds of thousands of dollars often are stored and maintained in what could more accurately be called a barn. In some cases, no provisions have been made for employee restrooms or emergency wash stations.

The maintenance area is usually out of sight for those playing the golf course, and in too many instances it is out of mind as well. Course officials must understand that a modern, well-organized golf course maintenance facility is vitally important in operating a safe and efficient program. At many courses this would necessitate some degree of remodeling and modernizing of the existing facility. At other courses, the existing facility should be leveled and replaced with a new building.

7. Tree Management

Good tree management involves the wise planting of new trees and the trimming, root pruning, and selective removal of existing trees. Unfortunately, trees have become sacred at some golf courses, making it very difficult for the golf course superintendent to perform needed tree management work. This is unfortunate, because there are times when tree work needs to be done in the best interest of the grass plant.

Grass needs direct sunlight to grow, and air movement is important to reduce disease and traffic-related damage. Trees which are too close to important turf areas place the turf under a great deal of unnecessary stress. There is no doubt that a good tree management program is an integral part of maintaining top-quality turf on many courses today.

8. Amount of Play

This pitfall points to a variety of problems that can occur when too much play is allowed on a golf course. At many golf courses, maintenance work is not being done correctly or on a timely basis because of the high volume of golfers. As noted earlier, there are times when essential maintenance activities must come before the playing of the game. Aeration, top-dressing, and spray applications are a few examples of maintenance practices that are done much more safely and efficiently without player interference.

Perhaps the course should be closed for a half or even a full day each week. Winter play may need to be restricted. Some courses are establishing a yearly cap on the amount of play they will allow, and then working backwards to determine a daily limit. Maintenance work protects and preserves a golf course, and provisions for its proper scheduling must be made.

9. Labor: Not Enough and/or Under Qualified

Generally speaking, 60 to 75 percent of a golf course maintenance operating budget consists of salaries and wages. This represents a very important part of the superintendent's management responsibilities. Budgetary levels which are not consistent with expectations are felt most in this area. A mutual understanding of expected maintenance standards must be decided for a proper budget to be determined. Trying to achieve the work of 30 people with a budget that allows for only 15 sets the stage for a collision. Linked closely with adequate numbers is the need for experienced, well-compensated, and trained employees. Every employee is in a position to make the superintendent look like a clown or a genius. Competent, well-trained employees are a tremendous asset. Shortcuts in this area will affect all other aspects of the operation.

10. Equipment: Not Enough and/or Poor Quality

This tenth pitfall is very similar to the ninth. It does not matter how skilled the golf course superintendent is; without good tools, the work will not get done properly, and it may cost more to do. Here again, budget levels and maintenance expectations must be in balance.

Conclusion

Discussion of each pitfall could be an article unto itself. However, our intent was



Too much water will cause problems in every aspect of turf management, as well as golf course playability. Proper water management involves both irrigation and drainage.

As play continues to increase on most golf courses, controlling golf cart damage becomes more and more difficult.



to identify areas in which improvements can be made to golf course maintenance operations anywhere in the country. As with most aspects of golf course maintenance, these ten pitfalls are interrelated and, as such, success or failure in one area will ripple through the entire program. Every maintenance operation has its strengths and weak-

nesses, and it is hoped that this listing of pitfalls will help you identify yours. Amplify your strengths and develop an appropriate strategy for improving on your weaknesses. The alternative is to continue hitting your head on the same rock. "Failure to study and learn from the past leaves us doomed to repeat it!"