There are certain players baseball managers dream about. Such players hit for power *and* average. They run like the wind, field everything hit their way and have arms that make howitzers envious. They're called five-tool players, and they can make a manager's job easy.

Golf course architects dream, too. When they remodel golf courses, they dream of all the right tools at their disposal so they can star for course owners. But when making decisions about what they will bring, they face a conundrum: They need to fill their boxes with tools powerful enough to do a job without destroying the non-renovated turf on the course. That's not as easy as you think.

Ideally, owners would like to hire a "five-tool" architect, who has already mastered the art of remodeling so they don't have to make such careful calculations. But if they insist on doing the job themselves, experts say their toolbox must contain the following all-star lineup of equipment to do the job right.

Most of the people to whom we talked began and ended the conversation extolling the virtues of the mechanized bunker rake. In fact, it is so important that architects say it's almost impossible to grade a green properly without one. Most models look like small tractors that come with myriad attachments, including bulldozer blades, drag mats and renovation cultivators. Steve Burns, principal of Burns Golf Design in Amelia Island, Fla., says the rake is the perfect tool to do a final grading before seed is planted.

"I can't think of a tool more essential to doing an effective remodeling," Burns says. "This is one tool that we expect to be at all our sites."

Don't let its name fool you — the bunker rake has applications far beyond leveling sandy hazards. Tom Ristau, vice president of Pennick Armour Golf in Bryn Athyn, Pa., says his company uses the rake to smooth all areas of the course, particularly the final float (leveling) of the greens.

"Without a rake, you can't properly level the greens or the tees," Ristau says. "We've had people tell us that our tees are smooth as silk, and it's a result of using this tool."

Sometimes, you won't be able to drive your equipment up to the ground where you're working. That's why a loader with a swing-out arm to carry materials to and from the work site also tops the list of important tools. J.J. Hickey, project manager for Kansas City, Kan.-based Heartland Golf (which handles many construction projects for Craig Schreiner Golf Architects), says you need a loader to avoid destroying the detail work around bunker edges and green collars.

"Most renovations won't allow you to bring big pieces of equipment to the exact place where you're working," Hickey says. "You have to balance

*Continued on page 42*

## Only Human

As important as equipment is to remodeling jobs, the human element is equally vital, according to Bob Lohmann, president of Lohmann Design Group in Marengo, Ill.

"A tool is only as good as its operator," Lohmann says. "If you don't train the employees to do the job right, no amount of fancy equipment will help you do the job."

Lohmann says anyone involved in a remodeling project, including the superintendent, should find out everything they can about a course. He says they should collect the following items before altering a design element:

- old aerial photographs of the course;
- records of green committee meetings from past years;
- drawings of what currently exist so you can compare the two; and
- an environmental investigation (to avoid running afoul of government regulations or local environmental groups).

"You need to plan before you plan," Lohmann says. "Otherwise, the project could run into problems down the road."

As important as the designer is to the job, however, the choice of a crew can be equally important. Bill Kubly, president of Lincoln, Neb.-based Landscapes Unlimited, says the most important element to any remodeling job is the people assigned to crews. They are critical to keeping the client satisfied, he says.

"It takes a special person to head up an effective team, and you have to know your people well enough to understand who would fit a certain job and who wouldn't," he says. "You want to make sure you produce the best team possible for each individual situation. Each job takes on its own personality, and it's your job as the designer to assign the right people to fit whatever personality the job takes on."

**–Frank H. Andorka Jr.**

**"You want the course to look as if there had never been any renovation done."**
**–Bill Kubly**

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your earth-moving needs against the damage you're doing with those bigger pieces."

Avoiding such damage is what Bob Lohmann emphasizes most when he's working on a job. Lohmann, president of Lohmann Design Group in Marengo, Ill., says designers should never forget that remodeling projects should avoid creating extra maintenance headaches for the superintendent. To do that, architects and builders must think of the remodeling from the superintendent's point of view.

"You have to be sensitive to what the superintendent is doing, particularly with a remodel," Lohmann says. "You don't want to tear up a lot of turf just to get your remodeling done."

No matter what equipment a builder brings to a site, Lohmann insists it should have balloon tires rather than traditional treaded tires, which do extensive damage. Balloon tires distribute weight more evenly and put less pressure on the ground, he says. Lohmann adds that plywood is an often overlooked tool essential to remodeling.

"If you can't find a piece of equipment with balloon tires — and some pieces that you will need simply aren't equipped with them — plywood paths are your next best option," Lohmann says. "[Plywood paths] allow you to drive to the parts of the course you're renovating without killing other turf. Lohmann adds that plywood also gives an architect a method for clearing away excess dirt.

In addition to riding on balloon tires, equipment should also be powered by automatic transmissions whenever possible, Ristau says. Inexperienced operators working with a stick shift can destroy turf as easily as heavy construction equipment can, he says.

No matter how careful architects and construction crews are, however, there is the inevitable challenge of piecing together the old turf with the newly renovated areas. Bill Kubly,

*Continued on page 44*

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president of Lincoln, Neb.-based Landscapes Unlimited, says a sharp sod cutter is critical to avoid creating seams in an otherwise flawless course.

"You want the course to look as if there had never been any renovation done," Kubly says. "You're looking for perfect edges, and a good sod cutter will help you create them so everything fits together as if there had never been any work done."

Finally, when all the equipment has been returned to the maintenance facility and the renovation is over except for the cleanup, there's nothing more essential than an aerifier to control the

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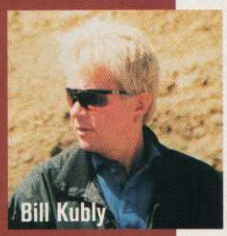
## Water Woes

When architects remodel a course, they discuss turf contours, green location and what grasses to use. But according to Pat Franklin, they often forget to discuss the irrigation system.

Franklin, superintendent at TPC at Deere Run in Moline, Ill., has overseen three course construction projects in his career, and he doesn't understand the inattention paid to irrigation systems.

"What always amazes me is how many construction companies forget to find out where the irrigation system is before they remodel," Franklin says. "It falls prey to the 'out of sight, out of mind' philosophy. That just doesn't make any sense."


Bill Kubly

Bill Kubly, president of Lincoln, Neb.-based Landscapes Unlimited, agrees. He believes irrigation is sometimes left out of the remodeling equation.

"It's silly to rebuild tees and greens without considering the effect that will have on the irrigation system," Kubly says. "But it happens all the time."

On the other hand, the issue always isn't inattention. Sometimes it's pricing, says Kubly, who has noticed a trend in irrigation toward high-tech gadgetry the last eight to 10 years. That has driven up prices, which leaves middle- and lower-budget courses out of the equation.

"Some of the newer systems have gotten too sophisticated for the small-budget courses," Kubly says. "[The irrigation companies] are pricing the average golf courses out of the picture, and they deserve adequate water systems as much as the high-end daily fee courses do."

Kubly isn't suggesting that development of radio-controlled systems isn't good for the industry, but he does urge the companies not to forget that the majority of courses can't spend $1 million on an irrigation system.

"Companies are going to have to go back to basics and design systems that are affordable to everyone," Kubly says. "They can't focus solely on the high-end courses because they will shrink their market if they do that, and that would be a bad move."

**– F.A.**

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*Money* because if you apply a "season-long" surfactant more than once a season, you're paying more than a season of Primer would cost.

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compaction problems that the bulldozers and construction equipment have left behind, Ristau says.

"You can be as careful as you want, but the ground will compact under the pressure of the equipment," Ristau says. "Those conditions are not conducive to growing healthy turf, so you're going to have to aerify the renovated areas."

If owners understand the importance of these five tools and provide an adequate budget for labor, they might be able to fulfill their dreams of renovating the course on their own. ■

## Finding a Happy Medium

According to architects and golf course builders, it's easy to find construction equipment for large jobs and small jobs. But it's difficult to find light construction equipment that adequately addresses the needs of medium-sized jobs.

"I'd like to see more equipment designed that would maximize my flexibility when I'm on site," says Tom Ristau, vice president of Pennick Armour Golf in Bryn Athyn, Pa. "There are times when my big pieces of equipment are too big, but a smaller piece of equipment is too small. There's not a lot of in-between equipment available."

Ristau says the one piece of equipment he'd like to see is a medium-sized bulldozer with a 40-horsepower engine and an automatic transmission. "This is one piece of equipment that seems to be missing from most jobs," he says.

Steve Burns, principal of Burns Golf Design in Amelia Island, Fla., says that more medium-sized equipment would prevent problems such as the one he saw on one job where the architect wanted a gently sloping rise to the green.

Burns says the developer was so concerned about tearing up the turf that he didn't bring the remodeling equipment close enough to the site. As a result, the slope was anything but gradual.

"You want a mound that tapers off without any sharp edges," Burns says. "This job had greens with these sharp angles. It looked awful, and it played worse."

The argument for medium-sized equipment goes beyond convenience for the architect, Ristau says. It lowers labor costs because it takes construction crews less time to do a job than it would with smaller equipment. It would also minimize turf damage, so there would be less cleanup work after a remodeling.

"There are times when you can't take a 25-ton truck on to a golf course, but if you take anything smaller, you'd be hauling all day," Ristau says. "There needs to be some innovations that will meet us somewhere in the middle. That will help the industry immensely."

**–F.A.**

Basamid®
Granular Soil Fumigant

# Golf Course Renovation Guide

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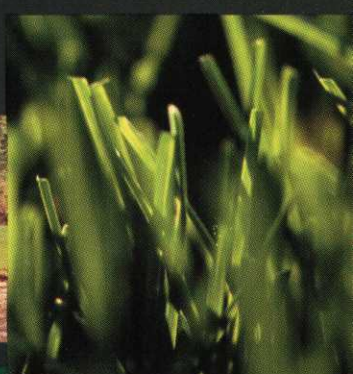

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If you have questions or want more information, contact BASF's local technical representatives at 800-545-9525 or on the Web at www.turffacts.com.

Basamid® Granular Soil Fumigant


This guide was written by Larry Aylward and Frank H. Andorka Jr. of *Golfdom* magazine. Graphic design was by Lisa Bodnar. Cover photo by Mike Klemme. The guide is presented as a service to the industry by BASF Corp. of Research Triangle Park, N.C., and Cleveland-based *Golfdom* magazine.



Golfdom

# Fumigation for Renovation

"It's like opening up a new sleeve of golf balls." That's how architect Craig Schreiner describes fumigation as a tool for golf course renovation. Schreiner means that fumigation leaves soil in virtually a "new" condition for reseeding greens, fairways and tees.

"Fumigation is a surgical way to clean up contaminated soil," says Schreiner, president of Kansas City, Kan.-based Craig Schreiner Golf Course Architects. "With fumigation, you get the most antiseptic way of preparing a site for seeding."

Schreiner points out that fumigation doesn't destroy the necessary microbials in soil that are vital in helping reseeded areas to grow into healthy turf. "Fumigation doesn't turn soil into a biological desert," he says. A renovated area that is properly fumigated and reseeded will grow into lush turfgrass.

There are several reasons to renovate golf courses using fumigation, but they differ according to region. Inevitably, superintendents and architects use fumigation to rid areas of disease, insects, weeds and unwanted turf varieties.

If country club members at a Midwestern golf course begin complaining about the inconsistent play of 50-year-old greens, it might be time for the superintendent to fumigate the greens and rid them of *poa annua* and other unwanted turf stands and weeds. If you're a Florida superintendent like Joe Boe, who tends the turf at Coral Oaks GC in Cape Coral, fumigation is an excellent way to control nematodes, which flourish in the sandy soils of courses in the deep south.

Schreiner stresses that golf courses are dynamic lands whose infrastructures are always changing. "A course changes in the time you start a round of golf and finish it," Schreiner explains. "Most people don't understand or appreciate that."

Over time, the action taking place on a golf course — from the thousands of players trekking on it to the fairway mowers and greens mowers bustling through it — eventually takes its toll. Also, it's difficult to keep different turfgrasses in their proper areas.

"Today, you have six to 12 different turf varieties on any given course," Schreiner says. "Trying to keep them separated is difficult. If you get this to point, you're managing several types of turfgrass, and it becomes a burden. So you want to start over with something that's more predictable and gives you more ease of control. There's no better way to wipe the blackboard clean than by fumigating."

Some superintendents only consider fumigation for greens, but it can also be used successfully on fairways and tees. Steve Godbehere, director of research for Hendrix and Dail, says many course renovation projects specify fumigation of the greens, but not of fairways, which can be damaged over time. Godbehere says fumigation of fairways comprises a small percentage of the total cost of renovation projects. ■

FUMIGATION 101

# What Is Basamid® and How Does It Work?

◀ **Basamid® is not a new product, but BASF has developed a new protocol for its use in turf renovation.**

So you've decided to fumigate areas on your golf course to rid it of disease, insects and weeds in preparation for reseeding. And as an environmentally aware superintendent, you don't want to use liquid or gas fumigants, such as methyl bromide, to sterilize the soil. Besides, they require expensive injection equipment to apply liquid or gas fumigants.

Basamid®, a granular soil fumigant, manufactured by BASF Corp., may be the answer to your fumigation needs. Basamid's common name is dazomet, and it's from the thiadiazine family. Dazomet is not a restricted-use product.

"That's the benefit it has over other products on the market," explains Willie Pennington, BASF's Basamid specialist. "When applying Basamid, you don't have to suit up in protective clothing — as you do with restrictive products. It stays inert until you activate it in the soil with water."

Basamid, which is a microgranule, is used to renovate fairways, greens and tees. It is simply applied using a drop spreader. The product comes in 50-pound bags. It's a convenient alternative to using 2-ton cylinders that are often used in fumigation.

"Basamid will give you a clean seed bed to plant turf, and it will provide you with enough starter fertilizer to get turf off to a healthy start," says Pennington, noting that the breakdown ingredients in Basamid are considered as plant nutrients.

Basamid is not a new product, but BASF has developed a new protocol for its use in turf renovation.

"Basamid has been used for 10 years, but few end users or superintendents were given a step-by-step program on how to use the product effectively," Pennington says, explaining that turf scientists at Michigan State University conducted studies in the early 1990s and discovered that Basamid could be successfully used for golf course renovation.

Ed Braunsky, CGCS at Geneva GC in Geneva, Ill., was the first superintendent to use the "new" Basamid on a large scale. Braunsky successfully treated 12 acres of his

**Proper irrigation is vital for all soil types, but differ according to varieties.**

course to prepare it for reseeding in August 1999.

"To look at what we accomplished with $24,000 when any other approach would have cost a minimum of twice that ... that's pretty amazing," Braunsky says.

Joe Boe, superintendent of Coral Oaks GC in Cape Coral, Fla., plans to use Basamid® in the spring to renovate tee boxes. Boe, who has used methyl bromide in the past, is aware that he's going to have to find an alternative fumigant, and he has heard good things about Basamid. "My friend used it on tee areas and had success with it," Boe says.

### Fairways and soils

Basamid applications vary according to soil type and turf variety. Fairways consisting of clay, silt or silty sand soils require different management than sandy loam, loamy sand and sandy soils.

Soil preparation work, including verticutting and aerification, should be completed before the Basamid application. Cores need to be removed. Turf surfaces with clay, silt or silty sand soils should be scratched with dethatching-type equipment before applying Basamid. Consult your local BASF rep or USGA agronomist for further instruction.

Basamid should be applied with a drop spreader at 4.5 pounds per thousand square feet (196 pounds per acre) to 5.25 per thousand square feet (229 pounds per acre) with a 50% overlapping pattern in the same direction. The rate may change depending on the pest to be controlled. It should only be applied to dry turf, not wet due to rainfall, irrigation or dew.

Proper irrigation applications are vital for all soils, but vary according to soil types. Clay, silt or silty sand soil fairways should be irrigated with 1/4 inch of water or less, but not to the point of runoff. Sandy loam, loamy sand and sandy soil fairways should be irrigated with 1/2 inch of water after application.

Irrigation practices for the two soil-type classes are different throughout the five days after application. The key requirement is to maintain good soil moisture. If heat and high winds persist, frequency of irrigation may have to be increased. Soil should be allowed to dry out on the sixth day to prepare it for seeding.

### Greens and tees

Basamid applications for renovating greens and tees differ according to cool-season and warm-season turfgrass. The soil for both types should be prepared to seedbed condition and tilled to a 6-inch depth. Also, the ambient temperature needs to be at least 50 degrees Fahrenheit or higher and the soil temperature should remain above 43 degrees during the fumigation duration.

It's vital to make sure that Basamid granules are mixed into soil. Basamid's active ingredient, dazomet, is triggered by moisture in soil. It's also important for soil to be moist throughout the seven-day treatment period to ensure the proper release of fumigant gases.

For cool-season turfgrass, there are two options. The No. 1 option, greens and tees should be mowed to 1/8 inch or less. They should then be aerified and the cores removed. Soil temperature should be checked at 4 inches. Basamid should be applied to soils with a temperature of at least 43 degrees and no higher than 85 degrees. An irrigation program similar to that of fairways with sandy loam, loamy sand and sandy soils should be followed.

The No. 2 option, for greens and tees with cool-season turfgrass, sod should be stripped from the area to be renovated, which should then be rototilled to relieve compaction and prepare adequate seedbed. Sand or other organics should be added to the area and mixed into the soil profile. After Basamid is applied, the area should be irrigated with a minimum of 1/2 inch of water. The irrigation program for sandy loam, loamy sand and sandy soils should then be followed.

For warm-season turfgrass and to convert existing greens and tees from common bermudagrass to new turfgrass, a nonselective herbicide should be applied to the area to control topical growth of common bermudagrass. About seven days after the herbicide application, the greens and tees should be irrigated with at least 1/4 inch of water.

The areas should then be tilled with deep shanks to break the soil hardpan and relieve compaction. Soil temperature should be checked at 4 inches. Basamid should be applied at 8 pounds per 1,000 square feet to a depth of 8 inches or more, preferably with the till knives. The soil should then be tilled down to 8 inches or more and another Basamid application should be made at 2 pounds per thousand square feet.

The area should then be irrigated with a minimum of 3/4 inch of water on the application day and a tarpaulin should be used to cover the area for a minimum of four days. When the tarpaulin is removed, the area should be allowed to dry for the next two or three days. ■

## PROPER PREPARATION

Basamid applications on fairways vary according to turf. Follow these instructions:

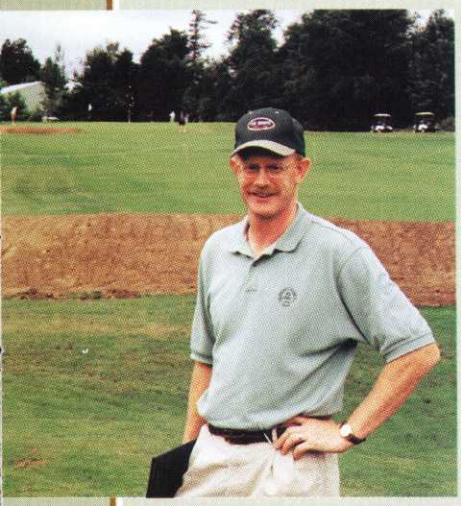
**Clay, silt and silty sand soils:**
Lightly irrigate two or more times at least two days prior to applying Basamid.

Should be scratched with dethatching-type equipment before applying Basamid.

**Sandy loam, loamy sand and sandy soils:**
Do not need to be irrigated prior to Basamid application unless they are too dry.

**Bentgrass:**
Mow to 1/8 inch or less prior to application.

**Bluegrass, fescue-type turf:**
Mow to 1/4 inch or less prior to Basamid application.



# Prep School

Ron Forse, of Forse Design in Hopwood, Pa., offers the following tips for fairway renovation:

**Kill thoroughly whatever grass you are replacing.**
Forse says you must overcome your instincts about keeping grass alive. Such sentiments serve no purpose in a fairway renovation.

"You have to kill everything in sight," Forse says. "What you're aiming to do is give yourself a fresh start."

Forse suggests one or two applications of a non-selective herbicide will usually do the job.

**Cut the sod and bury it.**
It's important to take off the first few inches of soil and bury it, Forse says. That will help the sterilizer kill whatever weed seeds are hiding in the top layer.

**Do any regrading before you sterilize the soil.**
Forse says any earth movement should be done before the sterilizer is applied. If you wait to move the earth until afterward, you'll create an uneven application which may not sterilize the soil completely.

**Rototill the soil to break up any impediments that might block the deep penetration of the fumigant.**
Soil fumigants, like fertilizers and other turf chemicals, need room to move within the soil to provide maximum effectiveness. Breaking up the soil and providing air spaces for the fumigants to move in will help the sterilization.

**Apply the soil sterilizer.**
Make sure you understand how to apply the sterilizer and what you need to do to keep it acting properly. In the case of Basamid®, for example, the sterilizer is water activated, so you need to make sure you get enough water on the ground to start it working. Also, make sure you allow the sterilizer enough time to do its work, Forse says. This can take anywhere from five to 14 days.

**Cultivate the soil once it has been sterilized.**
Forse recommends using a box blade to smooth out the soil after the sterilizer has done its work. That provides a proper resting place for the grass seed or sprigs. After that, Forse says, you're ready to seed or sprig your fairways with new grass.

Happy grow-in.

## Simple Method, Better Results

It's easy and safe to apply Basamid® on fairways. If you follow directions properly, you'll have better results.

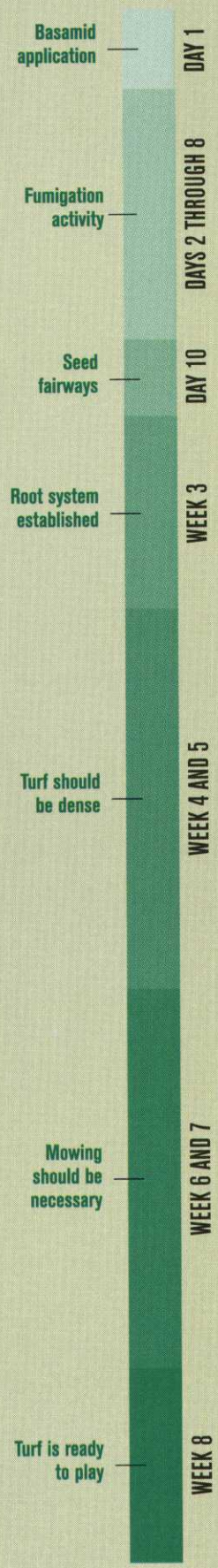
To start your renovation project right, it's important to properly prepare the area for renovation:

- Waste cans and other items should be removed from the area, and "course closed" signs should be posted. Superintendents can also outline the renovated area with paint if they wish.
- Fairways should be mowed, and grass clippings should be blown into the rough areas and cut with a rough mower.
- Low areas of fairways should be filled with fresh soil and rolled to the proper grade.
- Fairways should then be aerated and the cores removed.
- Sprinkler heads should be flagged.
- Signs should be posted warning that "Basamid granular soil fumigant will be applied."

The steps for proper Basamid application are also vital. Follow these directions:

- After preparation of the renovation area, Basamid should be applied according to label requirements.
- The area should then be watered within 15 minutes to activate the Basamid. Make sure that no one enters the treated area for 24 hours.
- The area should be watered for the next five days – three times a day and for 15 minutes each time. But make sure the area is only moistened and not saturated. This will create a water seal that will keep the Basamid in the root zone.
- The renovated area should be left undisturbed for at least seven days after application.
- Nine days after application, the fairways are ready to be seeded with a slit seeder. After seeding, fertilizer should be applied to the area immediately.

Thereafter, superintendents should maintain the renovated fairways using their customary practices.



# Cleaning House

Basamid® proves to be a cost-effective and safe way to prepare fairways for renovation

The 100-year-old fairways at Rockford CC in Rockford, Ill., showed their age. The original bentgrass fairways had become a hodge-podge of bentgrass, bluegrass and *poa annua* that the members found unacceptable. In addition, the mismatched grasses increased the susceptibility to disease and weed growth, leading the green committee to the following decision: The fairways had to be renovated.

Mitch Hamilton, assistant superintendent at the course, says former superintendent Dan Wyatt had tried to overseed for years with bentgrass in an attempt to crowd out the nuisance grasses — to no avail.

"Dan knew he was fighting a losing battle," Hamilton says. "He was excited when he finally got the go ahead to do a total renovation."

But Wyatt didn't want to reseed the fairways with the 50-50 mix of L-93 and Providence bentgrasses only to have the same *poa* and other weed problems rapidly re-emerge. The key was to find a cost-effective, safe soil fumigant that would eliminate enough of the weed seeds to prevent an immediate reinfestation.

## The problem

Hamilton says the effects of the brutal summer of 1999 proved to be the undoing of the fairways. The hot, dry summer killed large patches of the turf, leaving parts of the fairways unplayable. The lack of moisture also left the fairways susceptible to diseases. In the end, it was time to do something about them. "That summer clearly showed the members why the mix-and-match grasses we had on our fairways just weren't a long-term solution," Hamilton says.

To oversee the renovation, Wyatt hired Lohmann Golf Designs in Marengo, Ill., to create the master plan. Wyatt knew that he would first have to kill the grass menagerie and then sterilize the soil. The first step was easy: He sent Hamilton to each of the 18 fairways with an applicator filled with RoundUp®.

"That was the hardest part for me," Hamilton says. "I'd been taught all along that it was my job to keep the grass alive. Now I was killing it all."

The RoundUp stayed on the fairways for 10 to 14 days, Hamilton says. After Lohmann's crew rototilled the soil six to eight inches deep, it was time for the soil sterilization.

Popular products, such as methylbromide and Vapam®, had worked for other superintendents, but those products raised environmental concerns. Wyatt wanted something that would be safe to the workers and would minimize the course's downtime.

## The solution

Lohmann Golf Design told him about BASF's Basamid® soil fumigant. Basamid is a granular soil fumigant activated by water (see sidebar). Hamilton says it's easy to use because any crew member that knows how to operate a drop-spreader can apply it. Since he could do the job himself, the labor savings practically paid for the product itself.

"With some of the gases, you have to hire outsiders to

**The crew at Rockford CC in Rockford, Ill., started by killing off the hodge-podge mixture of grasses. Then they hauled away the top layer of soil (left). Then, they regraded the fairways (below) and applied the Basamid. Once they were sure the soil was sterile, the crew added topsoil and seeded the fairways (right).**

come in to put it down because you need a special license," Hamilton says. "The BASF product was so easy that we were done in almost no time."

Hamilton says that he, Wyatt and other crew members diligently watered the product into the soil for five to seven days before they reseeded. Then they waited for the grass to come in. Hamilton says the results have been excellent — gone are the fairways with three different types of grasses and numerous weeds.

"From what I've seen, the grass that has come up has been practically free of weeds," Hamilton says. "You don't have the patchwork look to the fairways anymore. What you have instead is strong stands of turf."

He also says he could tell the difference between the areas that were treated with Basamid from those that weren't.

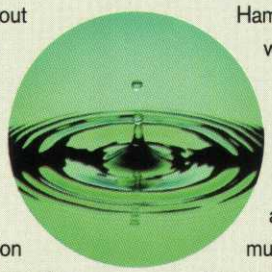
After the fairways were reseeded, the members decided that they wanted to widen them. This time, Hamilton didn't apply Basamid® to the soil.

"It's a startling visual difference between the widened sections and those we did originally," Hamilton says. "The amount of *poa annua* in the untreated sections is unbelievable compared to what we redid earlier. It's like night and day." ■

## Just Add Water

Mitch Hamilton, assistant superintendent at Rockford CC in Rockford, Ill. says superintendents can't underestimate the importance of water in activating Basamid®. In fact, without the addition of water, the product won't even work.

"It works when the water, product and soil are in contact with each other," Hamilton says. "If those three elements aren't working together, then you've wasted your money."



According to BASF, which manufactures the product, the first three days after the initial application are critical. Hamilton says superintendents should keep the soil damp without putting so much water on it that it puddles. If too much water is applied, it will wash the product away before it has a chance to work. He says you don't have to depend on an automatic irrigation system to do the job adequately.

"Even with the most sophisticated system, there will be environmental factors that you can't control with an irrigation system," Hamilton says. "Wind is the biggest factor. It can blow the water around so that it's not even hitting the proper area."

At Rockford CC, the crew syringed the fairways three times a day for five to 10 minutes each time (syringing timing may differ for other soil characteristics). They started at 5 a.m. with the first application and ended each day at 7 p.m with the third. That formula activated the Basamid so well that the newly seeded fairways have little weed activity in them.

"If you're not willing to put the effort into applying the water, then you should strongly consider another product," Hamilton says. "You have to make the commitment to doing this correctly."

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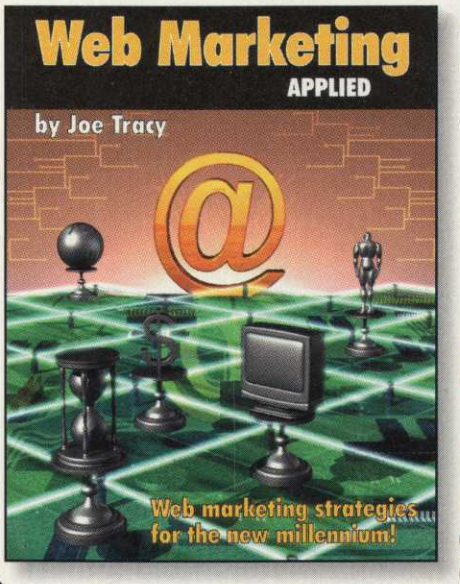


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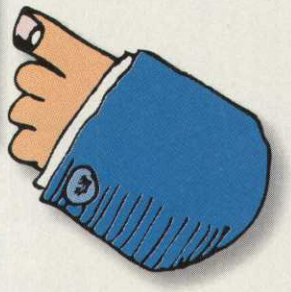

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# Cast a Long

## Newfangled balls and clubs will help golfers on the tee, but industry veterans say such equipment is hurting the integrity of the game

Perhaps the only benefit of the ongoing equipment dispute between Callaway Golf Co. and the United States Golf Association is the increased dialogue concerning the game's evolution. Callaway's new ERC II forged titanium driver, which the company is marketing as a club with extra clout, has been deemed illegal by USGA, which also was not happy about Arnold Palmer endorsing the driver for recreational play.

Needless to say, everyone from architects to superintendents is talking about the impact that equipment is having on the game. Since 1994, when an American Society of Golf Course Architect's study on the effect of the ball and clubs was released, the golf community has watched average driving distances increase at an alarming rate. Advances in the golf ball, and to a lesser extent in clubs, have changed the way golf courses are designed.

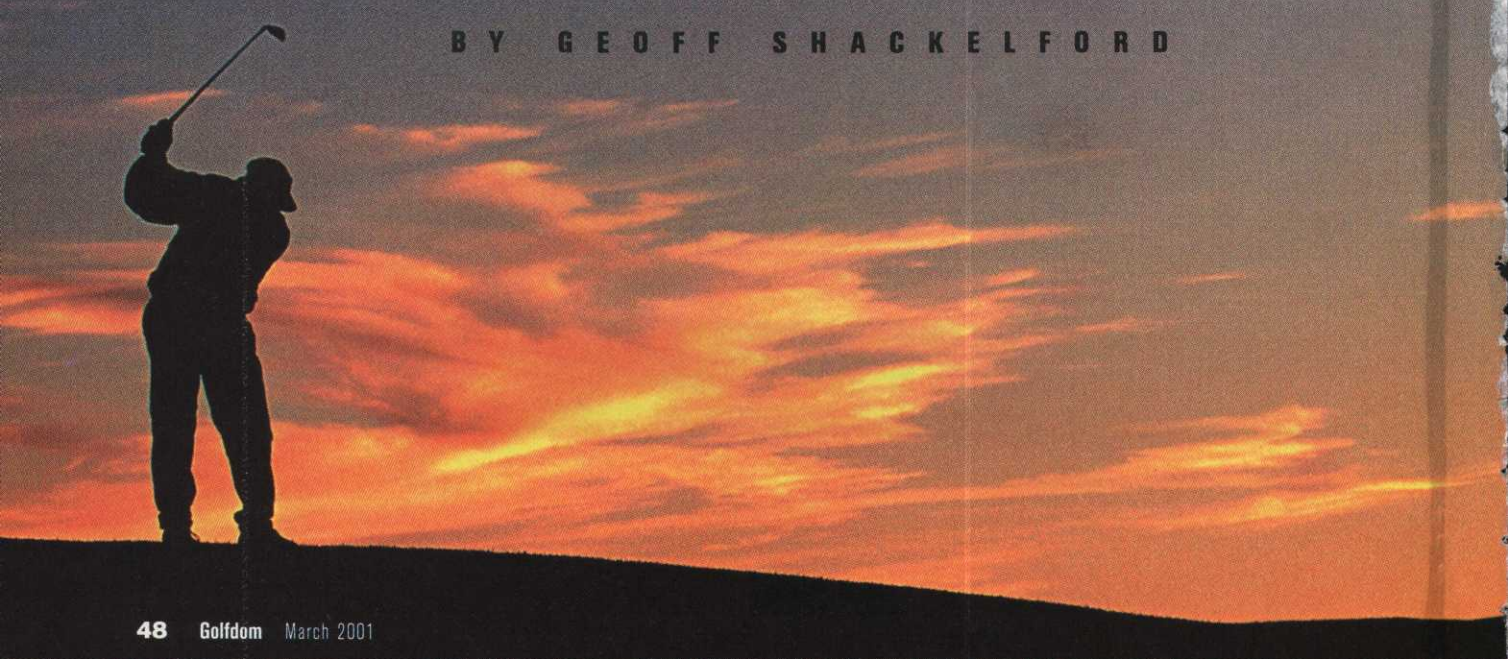
The rubber-band effect on golf courses has led to existing layouts being redesigned to adjust to this new game, while restoration projects are often evolving into renovations to address the way modern golf is played.

If Carlsbad, Calif.-based Callaway succeeds in weakening the USGA as golf's rules authority, it figures that golf design, course maintenance and the overall character of the game is sure to see a major transformation. But does this potential revolution benefit the industry or is it a pending disaster?

Other questions pertain to equipment's impact on the game: Should all courses be forced to change to deal with new equipment? Are many classic venues in danger of being outdated? Will course operators be at risk if a player is hit by a shot that flew off the face of an "illegal" driver?

*Golfdom* asked several industry leaders to

BY GEOFF SHACKELFORD



# Shadow

assess the impact these equipment changes are having on the game.

### Dye: Callaway hurting the game

Pete and Alice Dye are long-time scratch golfers who have devoted the last 40 years to creating courses that make golf more interesting for all players. Pete Dye's reputation as the ultimate menace to golfers is more a product of American Express commercials than actual fact. His eccentric style has brought a sense of humor and fun back to design, while Alice has educated the industry on how to better design forward tees. Since the Dyes love golf and architecture, the news of Callaway's new driver is hard for them to swallow.

"We understand [CEO Ely] Callaway's position as a businessmen, but he is on the verge of destroying the game," Alice says. "All sports have their rules, and in golf we play by these rules. Why one person should be allowed to break the rules is beyond anything I can understand. Manufacturers have no love for the game."

The Dyes have already shifted their design style in recent years to deal with increasing distances.

"We are already designing courses that are too long," Alice says. "They are so long that we have to build family tees, forward tees and senior tees — sometimes as many as six sets — to make a course manageable to play. Callaway keeps talking about fun for the recreational golfers, and here [the company] is pushing the game in another direction."

Strategic design has always been a key component of Dye courses, but in recent years Pete and Alice feel the average player is being unfairly punished for being shorter than low-handicap golfers. So the Dyes altered the way they place bunkers.

"Architecturally, we've had to reverse the age-old standard of rewarding length," Alice says. "We now make it so that the longest hitter has a hard shot over a bunker and the short hitter has an opening to the green. What's the point of making things easier for the person hitting a 9-iron into a green when his playing partner is a short hitter with a 3-iron to carry a bunker?"

### Increased irrigation, more target golf

Architect Jeff Brauer has seen dogleg turning points increase on average more than 100 feet in the last few years, while carry bunkers au-

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*Continued from page 49*

tomatically have shifted 10 yards. But he says, "When we move doglegs out, we must remember that only 2 percent of players probably gain distance on tee shots because of their swing speeds, so forward tees must stay where they are. This potentially creates a visual problem, as the hole may appear as all tee and little fairway."

Brauer also shares the USGA's concern that more length means longer missed shots, as well as creating safety problems and adding even more need for acreage.

"As average Joes hit balls further, they will also hit them further astray — 1 degree off line at 350 yards will require twice as much fairway width as 1 degree at 175 yards to contain the average tee shot," Brauer says. "This is at a time when there is pressure to irrigate less acreage for environmental reasons. The clear implication is that golf will become more target oriented and get further from its Scottish bump-and-run origins."

### Wayward tee shots

Westhampton CC superintendent Mike Rewinski makes the argument that courses could be held liable by players who are struck by shots coming from illegal drivers.

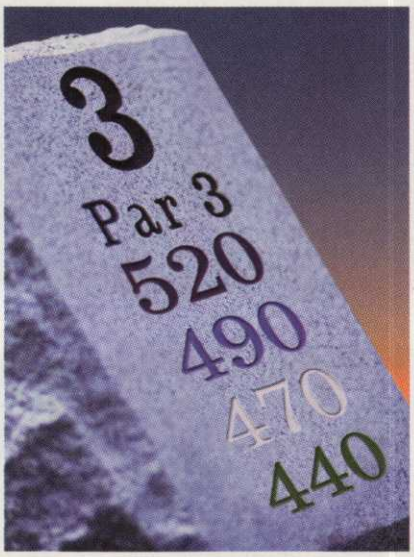
"On my course, I am worried about parallel fairways that will come under fire from wayward tee shots," says Rewinski, whose course is located in West Hampton Beach, N.Y. "If a course with known safety problems allows the use of nonconforming equipment, and a player is injured by a crossover shot, will the course be liable for damages? Can banning nonconforming equipment be considered a reasonable precaution, the standard typically applied in negligence lawsuits?"

As a long-time superintendent and classic course fan, Rewinski also shares the view of many architects that Callaway's ERC II driver is the least of golf's concerns. Like the ASGCA stated in Tom Marzolf's 1994 study, the advances in the golf ball pose a greater threat to the game than any other equipment changes.

"Nonconforming golf balls represent a greater threat," Rewinski says. "Once golfers decide to abandon limits on technology, who knows where the game will go? As a substantial increase in distance ripples through the ranks of golfers, from high handicappers to low handicappers, you will see short par 4s become long par 3s with a delay on tees as golfers wait for the greens to clear."

### Is staggering bunkers enough?

Architect Brian Silva has seen his share of classic courses and dealt with golfers of all

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levels. With his interest in strategic design and restoration, he has been watching the distance controversy closely.

"Just making courses longer would be a lousy alternative because it would make people overlook what the real solution should be — slowing down the ball," Silva says. "We design most of our courses for 99 percent of players, as everyone else does. But that response is too simple."

So Silva has gone back to the style of strategy-oriented architects from the past. His designs break up the center lines and introduce decision-making elements that may even cause some players to keep their drivers in their bags.

"The random bunkering patterns that have been the staple of our work for the past four or five years are a more sensible way to go than merely pushing flanking slice or hook bunkers 15 yards further down the fairway," Silva says. "We have done this so our courses take on more natural and traditional appearances. A nice by-product is that there are bunkers that come into play for [long hitters.]"

Are more interesting bunker placement schemes enough to offset increases in distance? More importantly, is it possible that the current rules of golf will disappear because of new equipment?

"There are two alternatives," Silva says. "Either roll back distance and slow down the ball or see the game as we know it be ruined."

Rewinski struggles with the conflicting views of golfers. Many want equipment that makes their lives easier, yet they flock to courses with high slope ratings, championship-like yardage and tough layouts.

"The equipment manufacturers, like Callaway, say that the game is too difficult and that better equipment will make the game easier and therefore more fun," Rewinski says. "On the other hand, you have architects and developers who are designing and building more challenging golf courses that are 7,000 yards with lots of water hazards and knee-deep fescue rough."

### What does the future hold?

Who will step in to find a middle ground in this chaos that threatens the industry's future? Previously, this would be a role for a certain organization in Far Hills, N.J. But since it is wedged in the middle of a fight against Callaway and perhaps other companies down the road, golf has no governing body to take charge.

"It looks like we're making the game easier and the courses harder so that equipment manufacturers and the golf course construction industry can both make handsome profits," Rewinski says. "But is the struggle between these opposites really good for the game?" ■

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