nance was in its infancy when Kreie first started, it's matured, gradually, to become partially self-sufficient. The rest of the course is growing, too; another nine holes should be complete this fall, along with a new effluent water system.

When Kreie first started in 1981, he was the only person on the crew. Today, he has six employees and a large parks system, but he still doesn't have an assistant to help him grind reels. Several of his crewmen have taken on the job, and when a handful of Foley representatives stopped by earlier this year to give the Bentwood staff a grinding clinic, they were impressed.

"Foley verified we've been doing things correctly," Kreie says. "I was glad to know my guys picked it up pretty well."

New skills acquired in the clinic were how to get the right kind of relief and how to square up the blades on the grinding unit. Kreie no longer has time to do his own grinding – he worked on the Modern for five years before he passed the

torch – but he says when something comes up, he tries to fix it.

"I go out and poke around – probably make things worse," he says, laughing. "Since the new reel grinder, I have to hit the books to get in there and figure it all out. At the golf course, there's something broken every day, but I want my reels working well."

Because he values work quality, Kreie says his crew never rushes a grinding job.

"We can get a whole set of reels done in a day, but the tendency is to do more than one thing at a time," he says. "We never have done that."

Bentwood doesn't own a bedknife grinder, and Kreie says he'll probably never buy one, despite the upgrade to an 18-hole budget of about \$300,000, which includes \$50,000 for capital expenditures. He prefers to use the Foley 388 to touch them up. It also keeps him from the necessity of frequent bedknife purchases.

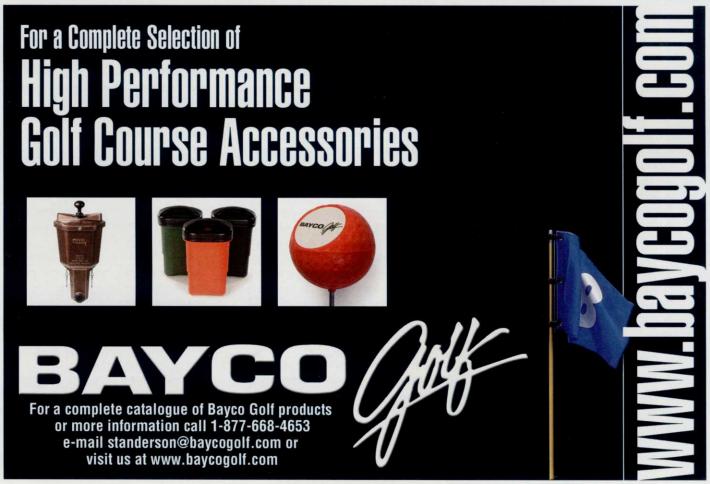
"We don't keep throwing away a bunch of bed-

knives," he says. "I haven't ever seen a bedknife grinder, and I just can't imagine why they cost so much. We can jig up the old relief grinder and touch them up pretty quickly."

Starting with the upgrades to his first grinder, Kreie has relied exclusively on Foley for grinding, and he plans to continue this in the future.

"Foley's got name recognition, but I had no preconceived notions," he says. "The other companies teach that relief's unnecessary on the reels, but I think it's important. Plus, Foley fits our budget."

As Bentwood matures, Kreie and his crewmen have their work cut out for them. He predicts they'll be doubling the hours on their mowing units, so he's arranged a second set of reels to keep the new tempo at the golf course. Meanwhile, Kreie maintains a steady pace. He doesn't always have time to keep his nose in everything, he says, but time, and progress, move on. **GCI**





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VIEWS FROM DOWN UNDER

n July, I attended the 24th Australian
Turfgrass Conference and Show. I visited
the golf courses and spoke with the
superintendents who will host Australia's
major championships: John Odell, superintendent of Royal Sydney Golf Club; Gary
Dempsey, superintendent of The New
South Wales Golf Club; and Jim Porter, superintendent of Royal Melbourne Golf Club.

This year, the Open Championship of Australia will be played at the 27-hole Royal Sydney. Odell emphasizes the golf course should be played and remembered for the right reasons – honoring the membership and the club's history. This means:

- Odell works closely with Australian Golf Union officials during visits to review any golf course changes and set-up requests.
- During daily golf course setup, Odell will change hole locations himself to prevent any location mishaps.
- Odell coordinates all off-course issues to reduce operational confusion and nongolfer impact on the golf course.
- To ensure there's minimal damage to the golf course and turf equipment, he takes construction photos and uses metal detectors to locate any damaging material during the cleanup process.

Because the championship will be contested in early summer, Odell deals with the following agronomic concerns:

- There's no overseeding, so all cultural processes to reduce organic matter buildup and produce a tight surface and firm-andfast playing conditions are implemented as the Couch grass is about to break dormancy. Scarifying processes remove an excessive amount of chaff that can't be deposited on property because of city permitting and disposal concerns. It must be placed into containers and hauled away.
- Odell uses only his staff of 40 for the advance preparation, as well as for maintenance during championship week. He believes his staff did the prework and should be praised and recognized during the week as the people who accomplished the task.

• Rain is the biggest worry. Royal Sydney is located near the harbor and only 4 feet above sea level. The golf course serves as a drainage passageway for upstream communities, so drainage installation during past years has been a priority. Fortunately, the golf course soil profile is rapidly draining dune sand. But, the inconvenience of repairing and pumping bunkers is challenging.

Dempsey is preparing to host his first Open Championship – the 2009 Australian Open Championship. Requirements for hosting a championship change when a golf course is located in a national park. Operational setup issues regarding facility location, brush removal for structures and tree removal for new features must be presented to appropriate government agencies well in advance.

Before any setup begins, Dempsey has to allow a minimum of eight weeks for the smallest permit to be granted. Also, all species that might be removed or trimmed must be identified clearly, the amount to be removed specified and revegetation considered after the event has ended.

The biggest project for Dempsey and his staff is bunker renovation. The standard bunkering will be changed to a riveted-style seen in the British Isles. This includes:

- Acquiring the necessary permits to do earthwork within the national park.
- Removing the steep-sloped faces and installing the traditional stacked sod walls.
- Reshaping the floors of the bunkers so there are no buried lies in the faces or floors.
- Factoring in wind velocity that will shift sand or blow it out of the bunker.
- Establishing a raking philosophy to match the new design.

Putting surfaces will be a challenge to Dempsey and competitors, considering:

- Strong winds will require the AGU to determine a proper green speed and maintain it during the week.
- Extra time is needed to choose hole locations to avoid the possibility of a player's ball from blowing off the putting surface.

- Aerification will require proper timing to allow the $^5/_8$ -inch holes to heal well in advance of the event.
- The usual stress-related impacts, such as anthracnose and nematodes, are a concern because of increased championship maintenance.
- The collars are cool-season turf and will be susceptible to wear from player and trolley traffic.

The Couch grass, which will be dormant going into championship season, is Dempsey's No. 1 concern for golf course preparation and setup because it's a challenging stand of primary rough grass. Sandy soils and little water available for the roughs will limit its density. There will be an increase in fertility and irrigation heading into the championship week to produce the density needed.

When preparing for the 2011 President's Cup at Royal Melbourne, Porter manages 36 holes, each course with a different maintenance challenge. Porter's goal is to return the golf course to proper shape for the membership after the event. Water use is his biggest challenge. As water usage and drought pattern developed, such as during the 2006-07 season when turf went into drought-stressed dormancy and didn't recover, Porter recognized the need to supply Royal Melbourne with a proper water supply for its future. This lead to:

- Years of examining numerous options, undertaking feasibility studies and creating a solution for the water supply.
- The decision to construct a new multiacre storage lake on the property next to
 the maintenance facility that will be linked
 to a one-mile-long stormwater pipe linked
 to a stormwater diversion structure.
- A dam built to block and store onethird of the water supply that Royal Melbourne never had before.
- Added water along with the increase of wetting agents and more organic, long-lasting fertilizers that won't require watering in have aided the turf management plan.
- Inclusion of an acid injection system and increase of calcium-based fertilizers to move sodium through the soils. GCI

Terry Buchen, CGCS, MG, is president of Golf Agronomy International. He's a 38-year, life member of the GCSAA. He can be reached at terrybuchen@earthlink.net.



Portable reel grinder

Bruce Leonard, equipment manager at The Silverleaf Club in Scottsdale, Ariz., has a Foley 670 bedknife grinder, a Foley 650 Accu-Master reel grinder and an Express Dual reel grinder that are each operated about eight hours a day, six days a week. All three grinders are about seven years old.

Because the mechanic's shop is too crowded to operate all three grinders at once, the Express Dual has casters so the staff can move it easily outside the shop's garage door underneath a covered breezeway to operate it and then return it inside the shop each night.

Leonard acquired the caster setup from a local distributor. The two caster wheels, which are 6 inches in diameter, on the right side of the grinder are stationary. They're attached to a ³/₈-inch-diameter axle that's connected to a 2-inch-by-1-inch-

by-0.120-inch steel rear bracket, which is attached to 3-inch-by-6-inch-by-0.250-inch flat steel brackets that are attached to the bottom of the grinder. The front bracket on the left side of the grinder also has two 6-inch-diameter caster wheels attached to a $^3/_8$ -inch-diameter axle that are mounted on a front bracket.

The wheel assembly has two slots that a 57-inch, removable T-shaped handle fits into. The handle slides into a vertical slot and then can be moved to a horizontal position and locked in place. This movement lifts the grinder off the ground. The handle is then relocated to the other slot so a person can pull the grinder and steer it at the same time while transporting it.

The materials can cost as much as \$150, and the labor needed for assembly can take as long as three hours.





Travels With **Terry**

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He will share helpful ideas relating to maintenance equipment from the golf course superintendents he visits — as well as a few ideas of his own — with timely photos and captions that explore the changing world of golf course management.

Aerifier trailers

he staff at The Silverleaf Club in Scottsdale, Ariz., travels 1.7 miles to the first tee and more than two miles to the farthest green from their turf care center. Superintendent Kent Coburn and equipment manager Bruce Leonard built three trailers to transport two John Deere Aercore 800s and a Toro greens aerifier. The trailers save valuable time and prevent wear and tear on the machines.

Coburn and Leonard constructed the trailers by welding together 2-inch-by-2-inch-by-0.120-inch square tubing. The total length of the trailers, including the hitches, is 123 inches. The trailer width is 68 inches. The tongue is 48 inches wide and 42 inches long. The trailers themselves are 81 inches long.

The railing, which is 18 inches high, was made out of 1-inch-by-1-inch-by-0.120-inch square tubing.

The ramps, which are 10 inches wide and 36 inches long, were constructed using 1-inch-by-1-inch-by-0.120-inch square tubing, 1-inch mesh and $^{1}/_{2}$ -inch

flat expanded metal welded together. The ramps on the trailers have two different mountings for the John Deere and Toro aerifiers because the axle widths are different – 48 inches and 50 inches, respectively. The axles fit inside the 2-inch-by-2-inch-by-0.250-inch square tubing. The golf cart turf tires and rims are standard, 4-lug, 18-inch-by-8.50-inch-by-8-inch stock items. The hitch pin measures $^{3}/_{4}$ inch by 6 inches, and the clip is $^{1}/_{4}$ inch.

Materials used to construct the trailers include:

- expanded metal.....\$50

The first trailer took about 40 hours to make, and the second and third trailers took about 20 hours each to make. **GCI**





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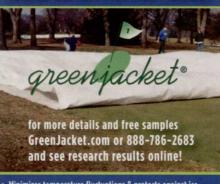
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WAYBACK WHEN ..

t the risk of being accused of being fixated on things that happened 20 years ago, I'd like to take you on a magical mystery tour into our industry's past.

For all of you of a certain age who grew up watching Rocky and Bullwinkle on TV, please pretend you're Sherman, and I'll be Mr. Peabody. (Editor's note to young readers: Google "Mr. Peabody" before reading this column, and we'll be on the same page.)

Now, let's fire up the WABAC (pronounced "wayback") machine and return to the interesting times of the late 1980s. Golf is a punching bag for environmentalists in the U.S. and around the globe. Senators Harry Reid and Joe Lieberman are holding congressional hearings about our "large-scale misuse" of pesticides. We're being accused of killing a nice young Navy lieutenant at a golf club in Maryland by overapplying a "dangerous" fungicide. Articles are appearing regularly in publications about how we're destroying wetlands and decimating populations of cute, fuzzy little animals and adorable waterfowl. A lunatic from Japan is gaining worldwide fame and massive media exposure for starting the "global antigolf movement" to combat the reprehensible notion that people should be able to enjoy hitting a little white ball around a well-maintained open green space.

That all seems crazy now, but frankly, we were an easy target. We had painted a big bull's-eye on ourselves because of our cultural status. We were an elitist pastime that quietly excluded minorities and seemed to most Americans to be a gigantic gated community they didn't have a password to access. Our business was largely designed for wealthy, white males. Of the 11,000 or so golf facilities of the day, almost half were private and completely inaccessible to the average Joe who just wanted to smack some balls around and drink a couple of beers. Those customers often were relegated to crappy municipal courses where you showed up before dawn on Saturday morning and waited an eternity to squeeze in a

six-hour round.

In the late 1980s, the golf business was shocked – shocked, I tell you – to find that environmental advocates would criticize us for our use of what they claimed were toxic, synthetic pesticides for purely "aesthetic" reasons. "How dare they!" we harrumphed collectively. "What could possibly be wrong with products made with completely natural ingredients like cadmium, mercury and arsenic?" Ummm ... oops.

Fortunately, despite the indignation of club officials and the half-assed lobbying efforts of those of us who were getting paid to defend the industry, most superintendents were already happily moving toward less-toxic products. The chemical manufacturers responded quickly by introducing compounds that achieved the same goals with far less persistence and mobility. By the mid-90s, most of the bad stuff was largely gone, and most courses demonstrated great conditions could be achieved with little if any harm to the environment.

Yet, the cloud of suspicion created by that brouhaha 20 years ago continued to haunt us.

Yet, the cloud of suspicion created by that brouhaha 20 years ago continued to haunt us. The stain of pesticides always seemed to mark us whenever a new construction project was proposed in a sensitive area or whenever a neighboring homeowner's beloved pet poodle developed a mild case of diarrhea.

People – not just rabid activists – continued to ask: Are the pesticides you use to make these courses so nice really safe for those of us who play or live along the

OK, Sherman, let's climb into the

WABAC machine again and return to the summer of 2008. The moment we come back to the present, I hear the gentle ding of an e-mail arriving in my laptop's inbox. Yet another *%@#\$! press release. This one's from some flack at the University of Massachusetts at Amherst. Probably another useless piece of "news" about how they've promoted a graduate assistant to a junior assistant professor.

I opened the attachment anyway, and for about the millionth time in my 46 years of life, I found I was completely wrong again. This bit of news, which virtually no one – not the GCSAA, not RISE, not the chemical companies – paid any attention to, is an earth-shaking item for those of us who've been in that WABAC machine and who know how challenging it's been for our industry to defend the use of pesticides on golf courses. Here's how the news release began: "Residues of two insecticides widely used on golf courses do not pose a health risk, new research says.

"Sevin SL (using the active ingredient carbaryl) and Dursban Pro (chlorpyrifos), when applied at the maximum U.S.-approved label rate and followed with irrigation, are of little concern to golfers, according to findings published in the Journal of Agricultural and Food Chemistry.

"After extensive monitoring, estimated exposures to golfers following full applications of two turfgrass insecticides that are used throughout the northeastern United States were 19 to 68 times lower than levels set by the U.S. Environmental Protection Agency designed to protect human health," said toxicology expert John Clark.

So, according to an article in a major nonturf scientific journal by a serious independent expert who has no skin in the golf pesticides game, the threat presented by even old chemistry such as Sevin and Dursban is at least 20 times below what the EPA considers to be the minimum threshold for a health problem.

Case closed, Sherman. GCI

(For details and to share with golfers and colleagues, visit http://www.umass.edu/news-office/newsreleases/articles/77053.php)



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