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**Terry Buchen**, CGCS, MG, is president of Golf Agronomy International. He's a 41-year, life member of the GCSAA. He can be reached at 757-561-7777 or [terrybuchen@earthlink.net](mailto:terrybuchen@earthlink.net).

## Travels With Terry

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He shares 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.

## PORTABLE SPRINKLER

**B**rad Twidwell has the distinction of being the general manager and superintendent at the Cape Girardeau (Mo.) Country Club. He designed and his staff built this unique portable sprinkler that has been used during recent drought conditions. An old 1989 Toro GM 3000 triplex greens mower frame was recycled and used as the base, where a 1970's vintage Toro model 405 full-circle brass sprinkler head was attached to the frame where the steel reducer portion was welded to it. A 1-inch galvanized coupling is connected to the sprinkler head and to a 1-inch-diameter 90-degree elbow that has a male slip connection where the 1-inch-diameter hose is attached with hose clamps. Each 1-inch-diameter hose is 100 feet long that is attached to a quick coupler valve. It will not tip over and it covers approximately a 100-foot-diameter circle. It took about 45 minutes to assemble mostly from used parts and spray paint cans already in stock and extra irrigation parts cost about \$20.



## THE BAZOOKA

**R**ob Foster, director of golf and park maintenance, at the Lake Bluff (Ill.) Park District, likes to be prepared well in advance for the annual blowing-out of the irrigation system at the Lake Bluff Golf Club. "The Bazooka" is an adapter for hooking-up two air compressors simultaneously to the pump station's 12-inch-diameter discharge pipe that is "ready to go" every fall. It was designed and built by Foster and his staff. "The Bazooka" is made mostly of 2-inch-diameter galvanized pipes, with multiple shut-off valves, hook-ups for a 2-inch and two 3/4-inch diameter hoses from the 210 and 375 CFM air compressors, respectively, set at about 550 total CFM, where the regulator is set at 55 PSI. The irrigation system is blown-out two complete times and it takes about 1½ days to do a really good job. It took about two hours to assemble the parts that cost about \$500 and it is stored in the pump house.



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Water quality is one of the most misunderstood parts of any golf course management program.

dividing the ppm values by the milliequivalent weights of each ion. The weights of key elements are Ca = 20 mg/meq, Mg = 12 mg/meq and Sodium (Na) = 23 mg/meq. For example, analysis shows 62 ppm Ca.  $62/20 = 3.1$  meq/l for calcium.

RSC is a key indicator as to whether Sodium (Na+) may build up or not. Sodium is the weakest held ion in the soil system so if beneficial ions are in abundance, sodium will not build up. This is dependent on the ability of the soil solution to drain adequately. If drainage is absent, then the presence of any salt will build up over time. If after completing the RSC calculation, or from reading a water test, if RSC is a negative value, then Sodium is likely not going to build up as it

indicates that there are more beneficial Calcium and Magnesium ions than sodium ions. If a positive value is present, then sodium buildup is possible.

The tolerance levels for RSC are:

- **0 – 1.25 meq/l:** low Na hazard with some Ca and Mg removal
- **1.25 – 2.5 meq/l:** moderate Na hazard with appreciable Ca and Mg removal
- **> 2.5 meq/l:** unsuitable irrigation source, sodium will accumulate

**SODIUM ABSORPTION RATIO (SAR).** SAR is a measurement of sodium against calcium and magnesium. Its calculation is:  $SAR = Na / ((Ca + Mg)/2)^{1/2}$  in meq/l. SAR alone, as many of the variables on a water test, will

not tell us all we need to know about water quality. For instance, we may have a low SAR (< 6.0) but an appreciable EC (> 0.5) but have an acceptable water source since the salts causing the EC do not include much sodium compared to other beneficial salts. As SAR rises above 6.0, even with a low EC (low salt content), we have a problem developing in relation to sodium. As SAR rises above 9.0, we have a sodium problem for sure and this must be addressed by adding free calcium, magnesium, potassium or other beneficial salts to offset the more weakly held Na+ ions.

**pH.** pH is a logarithmic measurement of free hydrogen (H+) ions. The more hydrogen ions, the more acidic the water is. The absence of hydrogen ions and the abundance of hydroxide ions (OH-) raise pH and causes alkaline conditions. In most cases, when a water test report shows a high pH, it is an indicator that we may have precipitation problems with calcium and magnesium. Acidifying the water source will lead to improved conditions. But only after reviewing all of the key water test values as indicated in this article can we determine exactly what the problem is and how to address it. Ideally, if we have a pH of 6.0 to 6.9, we have a healthy water source, but again, knowing other values from the water test will tell us if we have sodium or some other metal present that may not be impacting pH but will certainly impact turf health. Topical soluble applications of key elemental products on the turf can offset the negative effects of a not so healthy water source, but before you waste your money, understand what your water test is truly telling you.

The most significant problem we typically see in water quality includes the relationship of 'bad' salt ions to good ones. Remember that having a salt problem does not necessarily mean having a sodium problem. And if we have sodium present in the water, we can address it with adding key beneficial elements. In all cases, having the ability to move water through the soil profile by implementing drainage and fundamental cultural practices is always a best management practice to follow. **GCI**

Carmen Magro, CGCS, MBA, is chief agronomist and owner of Agronomy Management Solutions and a frequent GCI contributor.

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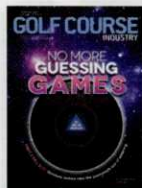
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**Pat Jones** is editorial director and publisher of Golf Course Industry. He can be reached at [pjones@gie.net](mailto:pjones@gie.net) or 216-236-5854.

## YOU GOTTA BELIEVE

**M**y oldest son is now a college sophomore. He's like most college kids: partly focused on classes, mostly enjoying life on campus. And, like most, he really doesn't have a specific career in mind yet. He's trying different classes and seeing what appeals to him and hoping to find that one thing he's really passionate about. As long as he doesn't plan to hang around in college for seven years, I'm totally cool with him being a bit directionless. How many 20-year-olds legitimately know what they want to do with their life?

Last summer, the nice folks at the Cleveland Metroparks Golf Division were desperate enough for extra labor that they hired him to work at their cluster of courses on the west side of town. He actually took to it like a pig to slop. They had him mowing greens on a triplex a week after he started (which I told him would have been highly unlikely up the street at one of the local private clubs). He loved the outdoors aspect of it and seemed to really enjoy the responsibility and solitude of setting up the little executive course they operate all by himself. Hmm... maybe this is his passion.

I tried to ignore the fact that he might be heading into a career in his dad's business but when I finally asked him how it was going, he sent a chill down my spine: "I really like it Dad. It's so beautiful being out there by myself and watching the sun rise and seeing the deer out on the course. It's very cool."

(I gulped hard when he said that because I've heard those same words a hundred times from superintendents when I asked them how they got hooked on this crazy business.)

I tried to be casual but I was already

scheming and thinking if I could pull some strings and get him into OSU's turf program down the road from us. "Do you think you'd want to do this as a career?"

Maybe, he said. (I gulped again.)

It turned out that by the end of summer he had concluded he didn't much like waking up at 4:30 a.m. in exchange for \$8.55 an hour. Could his passion be re-ignited this spring and he'll give it another try? Who knows?

But the whole episode got me thinking about what advice I'd give him – or any young person flirting with the idea of pursuing a career as a superintendent. Here's what I think I'd say:

**“Do I love this so much that I’m willing to live this lifestyle forever?”**

You are about to undertake a journey that is difficult, risky and ultimately won't make you rich. It is not an easy path. The days of getting a turf degree from a state school, landing an assistant position and quickly advancing are over. Plan to spend 10 years making \$35,000 or so and putting in 60 hours a week before you get your first "career" position.

Once you do, you'll be doing battle every day with a fickle bitch called Mother Nature. You will live and die based on what the Weather Channel says. Your employers will likely not really understand what you do or why you spend so much of their money doing it. Your GM might be your best friend or your worst enemy. Your work will constantly be compared to the Disneyland conditions people see on TV. You will largely be behind the

scenes and get scant recognition for what you do.

It is sort of a society of mad monks who live and breathe turf and golf operations. When you join the monastery, you agree to forego some earthly pleasures like sleep, a "normal" family life and casual conversations that don't involve words like "weevil" or "foliar uptake" or "pythium." Your wife/significant other and/or dog better buy into this whole thing, too!

There will be lots of stress. And, just when you think you've made it, your boss might decide you've done your job so well they don't need a superintendent as good as you and you could get screwed. At that point, your prospects for re-employment at the same level suck pretty bad and you may have a tough time continuing on as a super.

But...and it's a huge, enormous, massive "but"...if you are truly PASSIONATE about protecting, preserving and enhancing these wonderful playing fields and you wake up every day excited about the prospect of making your course a little better, you should absolutely do it. It's a lifestyle that has many rewards: a sense of accomplishment every day, beauty all around you, a feeling that you're giving enjoyment to others and an amazing spirit of camaraderie with thousands of other superintendents around the world who feel just like you do.

So, my advice to my son – or any young person thinking about jumping on this wild merry-go-round of a business – would be to look deep inside yourself and ask, "Do I love this so much that I'm willing to live this lifestyle forever?" Unless you absolutely believe that, don't do it.

But if you do believe – down to the very core of your soul – welcome to the best profession in the world. **GCI**





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