

# Turfgrass Matters



June 1993, vol. 45, no. 4

Mid-Atlantic Golf Course Superintendents Newsletter

## Nash to Host Team Championship June 8

Steve Nash will host the MAAGCS June meeting and Two-Man Team Championship at International Town & CC in Falls Church.

The club, named because of its proximity to Dulles Airport, is a member-owned facility that opened in 1961. Approximately 440 of its 600 members are class A golfing members.

Originally designed by Fred Bolton and John Wilkinson, the course undertook a major project in 1991: 17 new greens, consolidation of two ponds into one, installation of a wooden bunker around number six, two new tees and two fairway bunkers. Architect Bill Love of Ault, Clark & Associates designed this new work. John Ponko Construction Company was the contractor. Work began in June, final sod was laid on October 6, and the course re-opened for play March 27, 1992.

The final green, number 15, was rebuilt by the ITCC maintenance staff in November 1992. Says Steve, "It was not rebuilt in 1991 because it was newly constructed in 1988, but after one year of play, it was obvious that there was a difference in putting texture and design style." Therefore, they decided to "gut" the old green, put in the same type greens mix, resod with the same sod as the others, and alter the sand bunkers to resemble more closely the newer ones on the course.

The new greens were sodded with 1020/1019 Bent. "They have many pluses and only one minus so far," says Steve. "They have

wonderful drainage which was greatly appreciated during 1992. This has meant less disease, increased cupping area, and better playability for the golfer. The only minus is trying to keep enough fertilizer on them to keep them



growing.

"My greatest task for the future is to keep *Poa annua* from invading. My program for 1993 will be Dimension pre-emerge in spring and multiple light rates of Prograss this fall and winter." Greens are mowed six days a week and receive 6-8 lbs. K per season; 6-8 lbs. N in granular form. Whenever greens are sprayed we include micro-nutrients, iron and/or liquid N. Greens are mowed six days a week at 3/16", and are rolled approximately once a month.

Tees are Ryegrass, Bent and Poa. They receive 4-5 lbs. N applied throughout the year and are mowed three days a week at 1/2". The ryegrass fairways are mowed three days a week at 9/16" and receive 2 lbs N in the fall.

A graduate of the Institute of Applied Agriculture, Steve has been superintendent at International T&CC since 1984; he became CGCS in 1985.

As we go to press, Steve and his wife Carla are heading to the hospital for the birth of their fourth child. His other children, Jessica—12, Timothy—8, and Lindsay—4 are looking forward to helping baby sit between their myriad activities: Girl Scouts, Cub Scouts, girls' softball, tee-ball, tennis, and junior golf. Dad Steve, is assistant coach for softball and tee-ball. With all this, do you wonder how Steve maintains a 17 handicap by playing two or three times a month?

Between coaching and chauffeuring, Steve does find a bit of time for his favorite hobby—fishing.

**Golf:** Two-man Team Championship. Cost: \$20 per team. No shotgun start, and tee times—from 11:00 to 1:00—are essential. Call ITCC pro shop: 703-968-7070. MAAGCS members only, *no guests, please*. Anyone wishing to play golf but not in the tournament may do so after all tournament players have teed off. **Dinner:** Cocktails will be at 6:00 p.m., dinner at 7:00. Dress is formal—coat and tie required. Reservations a must by June 4. Call 301-490-6202.

**Directions:** Take I-66 West toward Front Royal. Go approximately 8 miles (from I-495) to Rt. 50—Exit 57. Go west toward Dulles Airport/Winchester. The club is about 2 miles on the right.

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**JUNE SPEAKER**

Mrs. Stephanie Hau, a Hydrogeologist in her own firm, Chesapeake Environmental Management will be speaking to us at our June Chapter meeting. Topics of discussion will be: where does ground water come from; how we can utilize these resources, and how can golf course superintendents and the public perception of what we do improve. Stephanie will undoubtedly enlighten us on these necessary concerns.

**PRESIDENT'S MESSAGE**

The Superintendent/Pro tournament held at Westwood Country Club was a great event. Our host, Walter



Montross, had the golf course in superb condition and the bentgrass fairways exceeded expectations. There was not a bad lie on the entire golf course; even the hazards were manicured. My pro told me about the playability of the fairways but I speak of the hazards from firsthand knowledge. Thank you, Walter, for all your efforts in making this tournament so memorable. The culinary hospitality of Westwood by Mr. Miranda, General Manager, was excellent also. It was a first-class event and all the way and a great way to start off the awarding of President's cup commemorating all of the past presidents of the MAAGCS. I hope the trophy finds its way into many superintendents' clubs for years to come.

The long Range Planning Committee is tallying results from the surveys and will start working on recommendations for the future of the association later this year. They are working very hard and they rely on your input so if you have any complaints or suggestions, get the survey filled out and return it to the office ASAP. They cannot recommend changes for situations that they do not know about. It is the hope of the BOD that we can start to make the necessary changes for the association in 1994.

The next meeting is at International Golf and Country Club with Steve Nash as our host. Steve has newly constructed greens that were sodded with bentgrass

grown for him on a compatible mix. It will be interesting to come play on yet another golf course where the greens were changed to accommodate modern play and maintenance practices. Steve informs us that tee times are a must!!! The meeting is on June 8 so make sure all of your arrangements are made by June 4 so you won't be left out. I look forward to seeing you all there.

**Steve Potter, CGCS  
President, MAAGCS**

**GOLF NOTES**

Many, many thanks to Westwood CC and Walter Montross, CGCS, for hosting this year's Supt.-Pro tournament. There are many hours of hard work in preparing for this tournament and the result of it was certainly evident as the course was in perfect condition. We all get personal rewards from this profession and Walter should be very proud of a job well done. Thanks also to Walter's assistant Kirk Intermill and the rest of Westwood's maintenance staff. Glenn Brown, head pro, also should receive many thanks as he and his staff were a large help in organizing this tournament.

Thanks to Bernie Beavan for hole sitting #17 for the \$10,000 hole-in-one contest.

**1st Net**—Stephen Cohoon/Marty O'Rear (61) \$700; **2nd Net**—Mike Evans/Larry Ringer (62) \$550; **3rd net**—John Cain/Mark Weber (63) \$350; **4th net**—Paul Krout/Jeff Spague (63) \$350; **5th net**—Barry Graham/Tim Holbrook (64) \$300; **6th net**—Fred Heinlen/Bob Baldassari (64) \$200; **7th net**—David Rudinski/Mark Evenson (66) \$190; **8th net**—Steve Potter/Bob Fuhman (66) \$180; **9th net**—Jim McHenry/Bob Rementer (66) \$170; **10th net**—Ed Casper/Quinn Sullivan

*See Golf Notes on page 5*

# Pipe Fitting Choices for Golf Course Irrigation Systems

by Michael Harrington, President of The Harrington Corporation, Lynchburg, Virginia

**Introduction:** Pipe fittings are an integral part of golf course irrigation systems. Fittings provide the means of connecting sprinkler heads to the pipe mains delivering water and provide for changes of size and direction of the mains. Once installed, pipe fittings should not require maintenance or served for the life of the system. Unfortunately for many golf courses, pipe fitting failures and breakage are a major source of expense and irritation. With proper selection, breakage and repairs can be eliminated.

**History of Golf Course Irrigation Systems.** PVC pipe is the standard material for golf course irrigation systems. Prior to PVC pipe, systems were constructed of waterworks types of materials, cast iron and asbestos cement mains and cast iron fittings. These materials possessed good strength and good corrosion resistance, but were prohibitively expensive and only used in a small number of clubs throughout the nation. Galvanized pipe was used on smaller sized mains and laterals, but was also expensive and prone to long term corrosion problems. PVC pipe was developed after World War II. PVC pipe possesses a good balance of strength, corrosion resistance and acceptable price that has made irrigation systems affordable to the majority of golf courses in the USA. As technology has increased the capabilities of sprinkler heads, the physical demands on the pipe and fittings has increased. At the same time, systems continue to increase in size, capacity and complexity.

Pipe fittings for golf courses

have been "borrowed" from other industries because of the relatively small size of the golf market. Only in the last 15 years, as the market has grown, have manufacturers begun to focus design and manufacturing to address the specific needs of golf course irrigation systems.

**Requirements of Pipe Fittings.** Pipe fittings should be selected to withstand short-term pressure loads, long-term pressure loads, pressure surges, mechanical loads and potential corrosion present in a golf course irrigation system. Pipe fittings should be selected to function without failure for the life of the pipe. Well-designed and properly operated systems are capable of lasting 30 years or longer. Fittings should be selected to minimize total cost over the life of the system, and to eliminate future maintenance cost and aggravation to the superintendent.

The term cost is defined by Webster's dictionary as: "...the amount

of money, time, effort, etc. required to achieve an end..." and also defined as "...loss, sacri-

fice; detriment..." The pipe fitting selection should be made to reduce the combined aggregate cost of "money, time, effort...loss, sacrifice..." to the course over the long term.

**Golf Course Irrigation Systems Generate Unique operating loads.** Golf course irrigation systems possess unique properties, found in few other industries. The compact and finite size of the system, the large number of sprinklers, the large volumes of water and the intermittent operations of the system combine to create high velocities and large numbers and magnitudes of pressure surges of shock waves.

Sprinkler valves are designed to close in a reasonably short period of time to minimize drool and puddling. The faster a valve closes, the greater is the shock wave that is created. Ron Bliesner in *Designing, Operating and Main-*

See *Pipe Fitting*, page 4



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### Pipe Fitting, from page 3

taining Piping Systems Using PVC Fittings states that modern golf course systems with computer controllers may experience 40,000 to 100,000 cycles per year of magnitudes from 10 to 80 psi (1). In test performed at Cal Poly in Pomona California, pressure surges measuring 105 psi were recorded when an electric operated solenoid valve was closed. The system had a 150 psi static pressure and recorded a low pressure 16 psi during full flow open valve condition. The total range of pressure was 239 psi. (2) Pipe fittings selected for new or repair work must be selected to withstand pressure surges of these ranges and magnitudes present in a golf course.

Of all the forces that fittings are subjected to, pressure surges

are the most critical and damaging. Pipe fittings should be carefully selected to withstand the repetitive pressure surges that are so unique to golf course irrigation systems.

**Pipe Fitting Choices Available.** There are four types of fittings that directly connect with PVC pipe used on golf course irrigation systems. PVC solvent cement joint fittings, PVC gasketed joint fittings, epoxy coated steel fittings and ductile iron push on joint fittings.

PVC solvent cement joint schedule 40 and schedule 80 fittings were the first fittings to be used on PVC irrigation systems. They were readily available, inexpensive and widely used on commercial and residential irrigation systems and industrial applications. The use of glued fittings on sizes above 2" on golf

course systems has declined after gasketed fittings became available. Gasketed joints solved the problems of installation errors in gluing and solvent welded fittings' inability to allow for expansion and contraction. Additionally, schedule 40 fittings are unable to withstand numerous cyclical loadings that are present on many golf irrigation systems.

PVC gasketed joint fittings were developed in early 70s to provide means for expansion and contraction. These fittings have the same desirable features of corrosion resistance and low cost as the PVC pipe. The major limitation of PVC gasketed fittings is its inability to withstand numerous cyclical loadings present on many golf irrigation systems. PVC fittings, gasketed and glue type,

See *Pipe Fitting*, page 6

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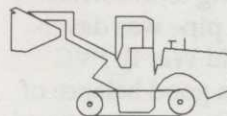


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**BOARD NOTES**

**Play or Pay!**

By unanimous decision the Board of Directors decided to enforce the policy of punishing RSVP no-shows. This has been precipitated by the large number of people who have called in reservations and then not attended the meeting. Just as it is important that we inform our host of our intentions to attend, it is equally important that we let them know when we must cancel. Previously, if you RSVP to attend and did not show, it was the responsibility of the Association to pay for your meal. It is not fair that the entire membership must pay for individuals' inability to honor their commitments. Therefore, if you RSVP in the future and do not cancel by the published deadline, then you will be billed for the meeting just as if you had attended. This policy also includes those on the permanent reservation list as well.

This policy will not affect most members as they act in a proper and professional manner. It will put responsibility on the violators to honor the commitments which they have made. The Board also recognizes that sometimes things happen which are out of our control, making it impossible to cancel prior to the deadline. In this case, it is advisable to cancel as soon as you can as a courtesy to the host. If you feel that you are being charged unfairly, you may dispute the charge in writing to the Board of Directors no later than thirty days from the date you are billed.

This policy is in no way an effort to single out any individual but it is for the benefit of the entire membership. Only by conducting our affairs in a professional manner, can we be viewed as professionals by those with whom we do business.

*Golf Notes from page 2*

(66) \$150; 1st gross—Robert Vonderheide/Glenn McKinney (69) \$250; Closest to pin, *superintendents*: #7—Sean Remington \$100; #17 Donn Dietrich \$100; *Pros*: #5—David Hansinger \$100; #15—Mark Helfrich \$100; Longest Drive, *superintendent*—Craig Rhoderich \$100; *professional*—Jon Ladd \$100

Total Prizes: \$4,040.

Thanks to our many sponsors: G.L. Cornell—beverage carts and beverages; Ault Clark—lunch; Tesco—gross prize; Finch Turf Equipment—hole-in-one insurance—Summit Hall,

long drive; Ace Tree—closest to pin; Davison Landscaping—closest to pin. Hole Sponsors: Miles Inc., Hoechst-Roussel (2), Performance Turf, Tesco, Ruppert Landscaping, Davison Landscaping, Harford Minerals, Tebco Irrigation, Summit Hall, Scott's Sleepy Hollow.

Don't forget about June's Two-man Team Championship at International Town & CC. Details are on page one. MAAGCS is grateful to sponsors for this tournament: Longest Drive—G.L. Cornell; Closest to pin—Summit Hall, Pro-Lawn, Loft's, Egypt Farms.

Bill Shirk, CGCS  
Golf Chairman, MAAGCS



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### *Pipe Fitting, from page 3*

are unable to withstand the cyclical loading due to a combination of internal flexing and the mechanical properties of PVC. The fittings wear out in the inside crotch of the fittings and split from the inside to the outside. This problem is most pronounced in full-size and 90-degree bends.

Epoxy-coated steel fittings are widely used in the agricultural irrigation market. Epoxy-coated steel fittings began being used widely in the golf market in the late 70s. Designers and contractors turned to epoxy-coated steel fittings after experiencing numerous failures of PVC fittings. In the last few years, a growing number of golf courses throughout the nation have experienced numerous failures from corrosion in

these fittings. Most golf irrigation consultants have discontinued using epoxy-coated steel fittings.

Ductile iron fittings have been used in the waterworks industry in the United States for centuries. In Versailles, France, a cast-iron water main 17 miles long was installed in 1664 and is still in use providing water to the fountains at Versailles. Cast and ductile iron possess excellent resistance to corrosion. Initial corrosion forms a layer of insoluble graphite that protects the fitting from further corrosion. Many new golf irrigation systems are now using push-on joint ductile iron fittings.

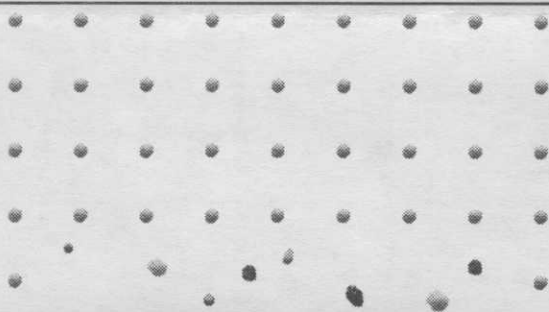
Please see attached *Chart of Characteristics of Pipe Fittings* for a list of features of each kind of fitting. Attached also is *Chart of Advantages and Disadvantages*.

**Summary:** The golf course

superintendent has several options when choosing pipe fittings for repair work or new installations. The superintendent should understand his system and choose pipe fittings that will provide service for the life of the system at the lowest cost.

#### References

1. R.D. Bliesner, "Designing, Operating and Maintaining Piping systems Using PVC Fittings," Keller-Pliesner Engineering, Logan Utah, (1987)
2. R. Kumar, E. Vis, J. Hung, "Electric Remote Control Valve Closing Time," Agricultural Engineering Department, Cal Poly Pomona, Pomona, California, (1987)
3. M.B. Harrington, "PVC Fittings Failures on Golf Course Irrigation Systems," Harrington Corporation, Lynchburg, Virginia, (1992)



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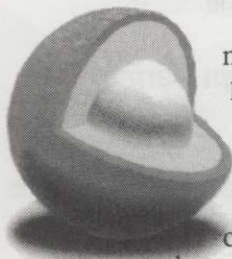
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Type of Fitting	Size Range	Material tensile strength KSI	Quick Burst (psi) Approx.	Resistance to Cyclical loading	Inherently Corrosion Resistant?	Type of joint	All weather Installation?	Provides underground expansion & contraction?	List Price 8" Tee	List Price 2-1.2" Tee
PVC Sch 40	1/2"-8"	7	900	Low	Yes	Solvent Cement	No	No	\$94 (1)	#7 (1)
PVC SDR 21	1-1/2-8"	7	900	Low	Yes	Gasketed	Yes	Yes	\$102	\$36
Epoxy-Coated Steel	2"-12"	49	1400	High	No	Gasketed	Yes	Yes	\$142	\$55
Ductile Iron PJ	2"-12"	65	3000+	High	Yes	Gasketed	Yes	Yes	\$200	\$42

<b>Advantages &amp; Disadvantages of Pipe Fittings for Golf Course Irrigation Systems</b>				
	PVC SCH 40	PVC Gasketed Joint	Epoxy-Coated Steel	Ductile Iron
Advantages	Corrosion Low Price	Corrosion resis-tent Flexible Low Price	High Strength Flexible Joint Many Confiturations	High strength Corrosion resistant Flexible Joint Many configurations
Disadvantages	Low strength Will not withstand repetitive cyclical pressure surges	Low Strength Will not withstand repetitive cyclical pressure surges	Corrosion problems Higher price	Higher price

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## COHOON'S CORNER

○ Our thoughts and prayers for a speedy recovery to one of the cornerstones of our association. Angelo Cammarota is home recovering from heart surgery. Get well soon Angie, we miss you at the meetings.

○ Congratulations to another Mid-Atlantic member who has completed the requirements to become a certified golf course superintendent. Mark Stoddard, CGCS, of Swan Point Country Club, Issue, Md.

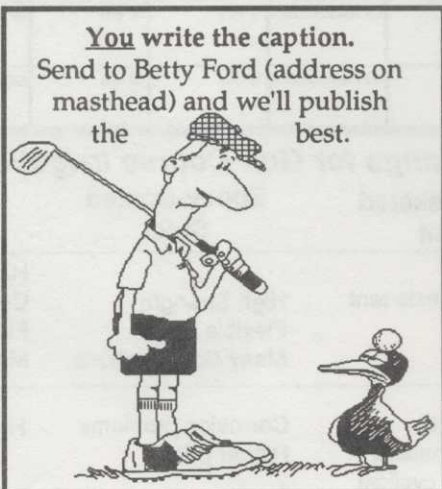
Way to go Mark!

○ Monsanto Agriculture Group, in conjunction with the GCSAA Scholarship & Research Committee, is offering a chemical applicator training video. Individual superintendents can purchase the video for \$29.95 with Monsanto donating \$10 of your purchase

price to the GCSAA S&R Fund. To get a copy, call 800-332-3111 and specify the golf version.

○ GCSAA Class "A" members, check your mail for the set of three posters developed by GCSAA to inform golfers

of commonly misunderstood aspects of course maintenance. Aeration, fertilizer and pesticide use, and golf car restrictions are explained to the golfer in laymen's terms and provide a special area for superintendents' comments or other information which can be updated at any time. Here's another tool for the superintendent's effort to improve communications with the membership.



## NEW MEMBERS

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