



THE NEWSLETTER

January 2006

of the **Golf Course Superintendents Association of New England, Inc.**

Sponsors and administrators of the Troll-Dickinson Scholarship Fund – Awarded yearly to deserving Turf Management Students.

Dick French enjoyed the serenity of early morning on the course – and settled into a 42-year career

By Gary Trask

It's the mornings that Dick French will miss the most.

From the time he started in the golf course superintendent business 42 years ago right up until his retirement in

MONTHLY FEATURE

December, French always treasured driving into the tranquil atmosphere of a course at the break of day and witnessing the end result of his crew's handiwork from the previous day.

"There's just something about that time of day that kind of grabs me," says French, who spent the last seven years of his career at Bear Hill Golf Club in Stoneham, Mass. "Hearing the sprinklers going, seeing the morning dew, the green grass, the bunkers all raked and clean. Those are the things that gave me a lot of pleasure over the years because you can see that all your hard work was worth every second. It's a great feeling."

It's also a feeling that the 60-year-old has been yearning for ever since he took a job as a laborer at Nashawtuc Country Club in 1962.

"I always liked the idea of working with my hands and working outside," French explains. "My grandfather had a greenhouse, and as I was growing up I liked working with him. I don't know why, but I just loved that kind of work."

French, a Tewksbury native who graduated from Essex Aggie-Technical High School and Stockbridge School of Agriculture, worked three summers on

the crew at Nashawtuc and then spent two years at Vesper Country Club. In 1966 he got his first job as a head superintendent at Merrimack Valley in Methuen at the ripe age of 21.

"I was lucky to get a head job because I was so young," he says. "There were times during my first few years that I had my doubts about whether or not I was going to make it in this business. I feared Mother Nature because you're always at her mercy in this business."

After two years at Merrimack Valley, French moved on to Fort Devens Golf Club for six years. He then made a move to a place where he would spend the next 21 years of his career: Long Meadow Golf Club.

"It was a great fit for me," he explains about his extended stay at the Lowell-based course. "It was a 10-minute ride from my home and I really liked the people I worked with. I had some great years there."

During French's tenure at Bear Hill he has persevered through some events much more serious than a clash with Mother Nature. His wife of 31 years, Carol, passed away in 2000. He survived a battle with lymphoma cancer in 2001 and last November underwent a quadruple bypass. Through it all he's had the serenity of the golf course at the crack of dawn to give him serenity when it was most needed.

"I'm proud of the fact that I made it through 42 years," says French, who has relocated to San Diego with his new wife, Sarah. "It's not an easy business. You've got to satisfy an enormous

amount of people who don't care how tough the conditions are. This isn't a job where you can have a lot of excuses."

Despite his retirement, French still plans on continuing that morning drive he has enjoyed so much. He hopes to land a part-time job somewhere on a golf course in San Diego.

"I love it too much to step away totally," he says with a laugh. "I'll stay involved, except this time Mother Nature will be a lot easier to deal with. A lot easier." ■

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**Dick French,
recently retired
superintendent
at Bear Hill G.C.**



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Red Tail Golf Club recognized for 'sustainable reuse' of military base

By Nancy Richardson

All members of Audubon International's Silver Signature Program meet the same criteria for environmentally

AUDUBON NEWS

sensitive design and construction and follow the same guidelines to

become certified. Yet each site is unique with an interesting history, notable natural elements, and a distinct contribution to make to its natural region. The recently certified Red Tail G.C. (Drew Cummins, superintendent) demonstrates the many benefits of this design for environment approach.

Fort Devens Military Reservation in Devens, Mass., served as the largest active duty military installation in New England for nearly a century, from 1917 to 1995. Since 1996, the 9280-acre facility has been in the hands of the Commonwealth of Massachusetts, which created the Devens Reuse Plan, a massive undertaking involving the clean up of more than 300 Superfund sites on the property, protection of significant natural areas, and plans for economic re-development. A major goal of the Reuse Plan is sustainable development, and today the property supports a variety of uses. A planned residential community and industrial park are nestled amidst 2100 acres of protected woods, wetlands, and recreational areas along the Nashua River, while 4880 acres of largely undeveloped land are still used for military training.

Audubon International contributed its expertise in sustainable golf course development to the 194-acre Red Tail G.C. at Devens, which became New England's first certified Audubon Signature Sanctuary in 2004. The course takes its name from the many red-tailed hawks that soar over the rolling wooded hills and numerous streams and ponds that lend natural beauty to the course. The terrain varies from classic New England landscapes of maples, birches, oaks, and pines to tall grasses and sands reminiscent of coastal courses.

The golf course was largely laid out on lands formerly used for ammunition supplies, thereby disturbing little of the

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previously undeveloped deciduous woodlands that make up over 80 percent of the parcel. Several concrete ammunition storage bunkers were even incorporated into the design, as grassed mounds that serve as backdrops to several sand bunkers. A former security tower remains on hole 18 and provides the public with a fine overlook.

Virtually all low lying wetland areas and surface waters were avoided in the layout of the course, with holes generally following the ridge lines and upland areas. Much of the golf course lies over a high-yield aquifer and just off the property is the Patten well, operated by the Devens Water Authority. Both the proximity to the well and the course's sandy soils heightened Red Tail's commitment to an integrated pest management regime and required water quality monitoring protocols outlined in the Natural Resource Management Plan, written by Audubon International for the golf course. The course was singled out by *Golf Digest* on its Top 10 New Courses list and by *GolfBoston* magazine as the number one new course in Massachusetts. 🏌️

Audubon International Press Release

CALENDAR . . .

- Feb. 6-11 **Golf Industry Show**
Atlanta, Ga.
- March 1 **GCSANE Monthly Meeting**
Framingham Country Club
Framingham, Mass.
Host: Patrick Daly, CGCS
- March 6-9 **9th Annual New England Regional Turfgrass Conference & Show**
Rhode Island Convention Center
Providence, R.I.

It's a frenzy of hat-tipping and heartfelt 'thank yous' as President Hermanson concludes his two-year term

I'd like to begin my last President's Message with a "thank you" and then an apology. I'd like to thank Joe Rybka,



CGCS, for doing a wonderful job hosting his last GCSANE meeting at Thorny Lea Golf Club in December. I'd then like to apologize to my good friend Dick French, who is retiring as the

superintendent at Bear Hill Golf Club following a storied 42-year career in this business. I would have mentioned your pending retirement sooner, but I just found out about it. Good luck, Dick!

A tip of the hat and a heartfelt "thank you" goes to the three GCSANE members who are leaving the board of directors. Dave Comee; Arthur Silva, CGCS; and Jim Fitzroy, CGCS; will be missed. I would also like to thank the returning board members: Pat Kriksceonaitis; Russ Heller, CGCS; Ron Dobosz; Pat Daly, CGCS; Jason Adams;

Remember that the GCSANE is your association, and it is only as good as you make it.

Jim Small, CGCS; Dave Stowe, CGCS; and Mike Stachowicz for putting up with me these last two years.

A special thanks goes to executive secretary Sharon Brownell and Newsletter business manager Julie Heston. Without their guidance and wisdom, I could never have done this job.

I wish the best of luck to incoming president Pat Kriksceonaitis, who I'm sure will do a tremendous job guiding our association for the next two years. That is of course, if he can survive rooming with me in Atlanta.

I would also like to thank the following past presidents with whom I have served on the board these past 13 years. Thanks to Steve Chiavaroli; Chip Brearley; Bob DiRico, CGCS; Kevin Osgood; Bob Ruzsala; and last but not least Jim Fitzroy, CGCS. To all of them

and especially to Jim, I drew upon your wisdom and experience every day.

I look forward to serving the next two years as immediate past president and working hard to help Jim Fitzroy to his quest to eventually become President of GCSAA.

To Tom Landry of the MGA and Bob Donovan of the Francis Ouimet Scholarship Fund, I would like to thank both organizations for allowing the GCSANE president to be a member of their board of directors. It was a pleasure working with all our allied associations including the WGAM, the Golf Course Owners Association, the Club Managers Association, and the New England PGA. I look forward to working with the new members of our board of directors, and I encourage everyone to get involved in one way, shape, or form. Remember that the GCSANE is your association and it is only as good as you make it.

In closing, I would especially like to thank my wife, Susan, and my sons, Matthew and Scott, for putting up with a hectic schedule which kept me away from home more often than I would have liked. I would also like to thank the Gardner Golf Commission for allowing me to spend the time away from the course necessary to do this job properly.

**Best wishes
and thanks to everyone,
Michael J. Hermanson
President, GCSANE**

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PRESIDENT'S REPORT

More on L-93 from the GCSANE Forum

From time to time *The Newsletter* reprints selected postings from GCSANE's web site forum in order to reach a wider audience.

GCSANE FORUM

Topic: Piping in on L-93

Scott Reynolds

(Posted 12/09/2005)

Mike, I like the topic and the way it was handled in the November Newsletter. I feel there is a lot more information on L93 that could be shared with supers that now have that as their primary bent

(I like S. German too!). I felt superintendents could post their success/failure here to help us all to better manage L93 this spring. A few things I have found with L93 is: cut down every tree within 100 feet of the green, topdress light and a lot, and spoon feed the greens except for spring when you need anything you have in your shed to wake them up before June.

Responses:

• Thanks, Scott, I appreciate your feedback. . . believe me, it gave me a

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This year's New England Regional Turf Conference offers a packed schedule of educational sessions

By Gary Sykes
Executive Director, NERTF

The New England Regional Turfgrass Foundation announces more details about this year's Conference & Show in Providence, R.I., March 6-9, 2006.

There will be five pre-conference seminars on Monday, March 6, 2006:

(1) Advanced Weed Management (GCSAA Full-day Seminar; .7 EPs), 8 a.m. - 5 p.m., Dr. Bert McCarty, Clemson University, & Dr. Fred Yelverton, North Carolina State University.

(2) Taking Control of Green Speed (GCSAA Half-day Seminar; .35 EPs), 8 a.m. - 12 noon, Dr. Thomas Nikolai, Michigan State University.

(3) PowerPoint 2003 Seminars (1/2 Day Seminars; .35 GCSAA EPs), 8 a.m. - 12 noon & 1 p.m. - 5 p.m., New Horizons Computing Training Centers.

(4) Hazardous Duty . . . Basic Bunker Maintenance (GCSAA Half-day Seminar; .35 EPs), Robert Randquist, CGCS, Boca Rio Golf Club.

(5) Calibrate Your Business Management Skills (GCSAA Half-day Seminar; .35 EPs), Mike Muetzel, Mx Marketing, Management Solutions.

On Tuesday, March 7, 2006 the New England Regional Turfgrass Conference will host "A Day with the USGA." The object of this day is not only to inform golf course management personnel, but also to spark the interests of club officials, club managers, greens committee members, and pros. Session topics have been scheduled by the USGA Regional Affairs Office, USGA Green Section Regional Office, and in cooperation with the New England Golf Association. We hope you will take advantage of this opportunity to bring representatives from your club. After the USGA sessions will be a keynote presentation by former Oakland A's, Boston Red Sox, and Baseball Hall of Fame member Dennis Eckersley. A sports turf seminar will also be offered from 1 p.m. - 3:30 p.m. entitled, *Drainage Problem Diagnostics for Sports Fields*. The trade show will

officially open for business, along with a floor reception, from 4:30 - 7:30 p.m. Come and enjoy good food, good conversation, and good experiences on the show floor. You may even bump into Dennis Eck!

Wednesday will kick off with a breakfast reception for UMass alumni and friends in a new and easier to find Exhibit Hall D. Wednesday's education program is strong and wide ranging, with three education tracks: Golf, Sports/Grounds, and Equipment Technicians going concurrently from 9-11 a.m. and again from 2-4 p.m. The trade show will be open from 10 a.m. -

5 p.m. The show's newest successful addition (Live Auction) will be held again on the exhibit floor from 4-5 p.m. Speakers will include Dr. Fred Baxendale, Dr. Peter Dernoeden, and Dr. Mitkowski, as well as others. Following the trade show closing, the foundation and sponsors in the Westin Hotel Ballroom from 5-7 p.m. will host a "No Stress Here" Conference Reception. This wraps up a busy and exciting day!

Thursday's program begins with education sessions for Golf & Lawn Care and Landscape Management starting at 9-11 a.m. The trade show will open its doors from 9 a.m. - 1 p.m. The Mass. Association of Lawn Care Professionals will also host a seminar from 1-3 p.m. entitled *Working and Communicating Effectively with the Environmental Community*. Jeff Carlson, CGCS, and superintendent of The Vineyard Club in Edgartown, Mass., will present this seminar.

You can register for these seminars, or for the conference and show, by calling (401) 841-5490, or we can send you more information. One last reminder to all retired members: If your name is listed in any of the local chapters of GCSAA, MALCP, or NESTMA membership directories as a retired, life, or honorary member, then you are invited to attend the turfgrass conference and show free of charge for one or all three days! We hope everyone in the turf industry in the New England area past and present has an opportunity to be a part of the 9th Annual New England Regional Turfgrass Conference & Show, March 6-9, 2006! You gotta be there! 🍷

One last reminder to all retired members: If your name is listed in any of the local chapters of GCSAA, MALCP, or NESTMA membership directories as a retired, life, or honorary member, then you are invited to attend the turfgrass conference and show free of charge for one or all three days!



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At The Country Club, superintendent Bill Spence takes on all the questions in his club newsletter

Editor's Note: We all have to sit down every month to write articles for our club newsletters. We are looking to provide examples of club newsletter articles for our members. Our fifth article in this series is by Bill Spence, superintendent at The Country Club.

**By Bill Spence,
Superintendent,
The Country Club**

The following newsletter format has received a positive reaction from the membership in the past years. Hopefully, it will continue as a useful communication tool.

While we do not like to pass along sad news in our newsletters, we do want you to be aware that Emma, our border collie, and an important member of TCC Grounds Department for the past 13 years, passed away in early October. Emma did a terrific job of enthusiastically and humanely protecting our grounds from the nuisance of resident geese. She also became a member of the TCC family and will be sorely missed.

The greens seem to be smoother and faster in the early spring and fall. What gives?

The Grounds Department would like to take the credit, but in reality, Mother Nature is almost always at the bottom of this situation. The vertical growth of the grass slows when light and temperature are reduced in the early spring and late fall, making even minimal mowing very effective in trimming and evening-out the putting surface. Thus, we experience faster and smoother putting on our small greens early and late in the season.

Does the staff continue to mow until the grass turns brown in the fall?

No. In fact, the fall is a very important time for the turfgrass to develop reserves for the winter. The more leaf tissue present in the grass plant, the better-prepared the turf is for the

marathon period of dormancy and adverse conditions between mid-December and early April. For the past several years, the TCC protocol is to cease mowing in mid-October to allow plenty of time for the turf to be as healthy as possible going into the winter and hopefully in the spring.

What is happening with hole number two?

The board, the golf and grounds committees, along with consulting architects Ben Crenshaw and Bill Coore, have been studying this situation very carefully for two years. As most are aware, the club is always diligent in dealing with safety both on the property and off and is concerned with the possibility of errant shots finding their way into the property of abutters. To help this situation, the club has been in close contact with the neighbors about potential remedial action including a shifting of the fairway and orientation of the tee to the right.

In addition, as part of an ongoing study of tree encroachment around the property, number two has been cited as critical due to the significant impact of the pine trees to the rear of the green and the negative impact of their canopy and roots on the putting surface. The Golf Committee, Grounds Committee have approved, and Messrs. Coore and Crenshaw support the removal of the three pines behind the green and the introduction of chocolate drops in their place. In addition, the removal of the road in front of the current seventh tee location and modification of the tee to provide additional tee locations a greater distance from the second green has been approved by the committees and approved by the architects to give us greater flexibility in the positioning of players relative to two green.

In summary, the trees, chocolate drops, and seventh tee modifications will be undertaken this fall and should be in place next spring. Any additional modifications to the second hole with the exception of the planting of a copper beech in the left rough beyond the fairway bunkers, will be delayed pending further study.

Are there any other major projects scheduled for this year or next?

The Grounds Department will continue an ongoing program of bunker sand replenishment along with any necessary repairs. The program will start on the primrose seventh bunkers in early October and begin on the main course after British Golf Day. The staff hopes to address sand and bunker problems on holes one, 11, 13, and 14. While our goal is to complete bunker work on all of these holes by the spring, the schedule is weather dependent.

You may have noticed a "street plate" on the cart path adjacent to the forward tee on hole number 13. This is currently covering a collapsed pipe that will be repaired in October or early November. The project will require the excavation of the roadway and replacement on the drainage pipe. Hopefully, vehicular restriction will be minimal and short-lived.

The club's master plan completed with the assistance of landscape architect Tom Wirth, is being implemented as funds are made available. In 2005, the Grounds Department supervised an invasive plant eradication program to reduce the amount of poison ivy and Japanese knotweed on the property. In addition, numerous seedling trees were planted in the spring and early fall which will be used in the future for tree replacement or boundary plantings as needed.

It was a dry summer. Do we still have water supply problems?

The available supply of water has been more than adequate in dry periods since the dredging and sealing of the irrigation pond on primrose nine in the fall of 2001. The irrigation pond project, along with the re-design of the supply system from our wells, (which now deposits water directly into the main irrigation pond) has allowed for normal irrigation to take place throughout dry periods in the summer without threatening our water reserves. What used to be a three million gallon annual deficit during dry weather has been eliminated. ■

Understanding PVC pipe: A primer on materials, design, installation, maintenance, and systems

Bob Healey, ASIC, CID

PVC piping systems have been used successfully since the 1940s. The use of PVC pipe has grown steadily, and it is estimated that over 80,000 miles of PVC pipe is installed yearly in the U.S. Such usage, you would think, ensures that the designer, installer and end-user are properly designing, installing, and maintaining the PVC pipe. However, the amount of pipe failure that occurs each year in irrigation systems indicates that this is not always true.

Let's digress briefly and review some of the basic design, installation, and maintenance features we need to be sure are understood and followed in designing, installing, and maintaining PVC piping systems.

Materials used for the manufacture of thermoplastic pipe are coded by letters representing the kind of material, plus four digits. The first two digits represent the type and grade of material; the last two digits represent the hydrostatic design stress (in units of 100 psi).

Example:

PVC 1220

PVC = Poly Vinyl Chloride

1 = Type 1

2 = Grade 2

20 = 2000 psi (hydrostatic design stress)

Each kind, type and grade of plastic pipes is assigned a standard hydrostatic design stress (HSD) based on test procedures developed by the PPI (Plastic Pipe Institute, New York, N.Y.). These standards are published and usually

Materials used for the manufacture of thermoplastic pipe are coded by letters representing the kind of material, plus four digits.

listed in pipe literature for reference. The hydrostatic design stress (HSD) is listed in pounds per square inch and is defined as "the estimated maximum tensile stress in the wall of the pipe, due to hydrostatic water pressure, that can be applied continuously with a high degree of certainty the failure of pipe will not occur."

MATERIALS PRIMER

Different from the HSD is the pressure rating (PR) of the pipe. Pressure ratings of plastic pipe are determined by a formula which considers the HSD of the piping material, size of the pipe, and wall thickness. The formula (for PVC pipe):

$$2S / P = (D_o / t) + 1$$

Where:

S = HSD, in psi

P = PR, in psi

D_o = avg. outside diameter, in inches

t = min. wall thickness, in inches

Thus if two pipes had the same diameter and the same wall thickness, but one was made of plastic material with a HSD of 2000 psi and the other a HSD of 1,000 psi, the second would have a PR of one-half the first. Remember, PRs are for non-threaded pipe only; when plastic pipe is threaded it reduces the PR by approximately 50%.

Noticeably, unlike other pipe the PR of plastic pipe is not the safe working pressure that the pipe can be subjected to over a long time. The designer, installer, and maintainer of plastic piping systems must make appropriate allowances when selecting plastic pipe.

Due to the disparities of pressure ratings for schedule wall plastic pipe, PPI and the industry developed SDR-PR (Standard Dimension Ratio - Pressure Rated) for plastic pipe. These standards have been used since the early 1960s.

Each series of wall thickness is based on a "Standard Dimension Ratio" SDR which is the ratio of pipe diameter to wall thickness. Several SDR values have been established for PVC pipe. Tables are available by the manufacturers that show the relationship of SDR to pressure rating for various types and grades of PVC.

Standards used for plastic pipe are very important because of all the many kinds, types, and grades. Plastic pipe standards developed by ASTM are now generally being used. These "standards" require plastic pipe to be marked at five-foot intervals. A typical marking for SDR-PR pipe would look like this:

3" PVC 1120 SDR17 250 psi D2241
ABC pipe company NSF

The marking tells you the size, type of plastic material, SDR code, pressure rating, ASTM designation (D2241 is for PVC SDR-PR plastic pipe), manufacturer, and mark of the laboratory evaluating the pipe.

To better understand the performance of PVC pipe and fittings, it is helpful to examine the types of failure that can occur, why they occur, and how to prevent these failures.

The types of failures fall into four main categories: **(1) Burst failure**, **(2) Long term pressure failure**, **(3) Fatigue**, and **(4) Mechanical failure** due to external forces. Each failure will be discussed separately, but remember failure may be caused by a combination of situations.

(1) Burst failure in PVC pipe and fittings is usually rather dramatic. This type of failure begins at a point of stress concentration or weakness and may continue by splitting through fittings and pipe for some distance. Sometimes these failures will completely shatter a fitting and the adjacent pipe.

Witnessing the results of a dramatic burst, where a three-inch tee had burst and the failure then ran through the three-inch pipe in a herringbone pattern for well over 250 feet, is memorable. Remarkably, although the pipe failed over this distance, several three-inch tees during this run escaped without any noticeable damage. The burst shattering the pipe did not appear to harm the fittings.

Burst failures usually occur during hydraulic conditions that create large pressure variations in the system. These include rapid valve closure, pumps starting or stopping, rapidly escaping

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The types of failures fall into four main categories: (1) Burst failure, (2) Long term pressure failure, (3) Fatigue, and (4) Mechanical failure due to external forces.

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entrapped air, or an air pocket shifting within the pipeline. Burst failures sometime occur in a pipe or fitting that was damaged in installation, or repair, or one that is subject to external loads. These cases can result in failure at pressures well below the expected burst limit of the pipe or fitting.

In the above mentioned case, a broken sprinkler at a low point on the lateral had allowed water and air to re-enter the pipe after fall winterization. When the system was re-activated in the spring the operators heard a loud "bang" and felt the ground vibrate and "water was everywhere."

Methods to help prevent burst failures include, check valves to prevent low head drainage, air/vacuum relief valves, water hammer arrestors and proper design techniques to control water hammer.

(2) Long-term pressure failure occurs when a system operates at a pressure continually that will eventually cause failure. These types of failures can occur within months or after many years. This type of failure usually appears as a small crack or split in the pipe or fitting along an area of stress concentration or minimum wall thickness. Some yielding of material is evident.

These failures occur when a system is subjected to relatively high operating pressures and significant continual changes in water velocities. Often these types of failures begin as a pinhole, and due to lack of detection, develop over time into a large leak. Pinhole leaks will often agitate surrounding soils, causing the outside of the fitting or pipe to erode and quickening the failure rate.

Methods to help prevent premature failure include proper installation

techniques, proper sizing of the pipe, keeping the system pressure as low as possible, gradual build-up/shut-down of flow, and proper irrigation scheduling to minimize the cycles.

(3) Fatigue failures occur generally in systems that are subject to frequent changes in the pressure and flow. Today's golf courses, with computer controllers, are prime candidates for this type of failure.

Golf course systems today may experience between 40,000 and 80,000 cycles per year with pressure changes between 10 and 80 psi per cycle. It is not uncommon to see these failures on golf courses after three to seven years of operation.

This type of failure in fittings appears to be the most critical in golf course systems. Serious consequences will result if this fact is not addressed in the design stage. The use of ductile iron fittings can eliminate the weak area in these systems.

Gradual build-up and shut-down of flow, maintaining consistent flow with proper programming, and use of variable-frequency drive (VFD) motors, greatly helps extend the life of piping.

With the advent of the new computer-controlled systems, the designer must carefully consider all the available operation options the irrigation manager will have, and base design on all the possible run sequences.

(4) Mechanical failure covers a wide range of features unrelated to the hydraulics, but will lead to failure. The most common is the splitting of female threads, largely due to over-tightening. A second type of mechanical failure is due to improper or inadequate thrust blocking. This allows excessive pressure to be placed on the fitting as the line pressure tries to displace it while the fitting is restrained by the pipe to which it is attached. A third failure is due to improper solvent welding or poor fitting connections. Another type of failure can occur due to temperature expansion. If proper allowances are not made by providing expansion loops, offsets, or slip joints, severe stress can occur. A fifth type of failure is due to improper winterization techniques. Often times the compressed air is allowed to run at high pressure and velocities, resulting in extreme temperatures due to friction, weakening pipe and leading to subsequent failure.

Installation considerations that need to be considered are handling, storage, trenching, laying pipe, backfilling, pipe pulling, thrust blocking, and solvent welding.

Handling of PVC pipe, due to its light weight is often rough. Any pipe that is dropped or banged can develop undetected cracks or fractures that will lead to future problems. Any part of a pipe that is dented, scratched, grooved, or damaged in any way must be cut out and removed prior to installation. Special care needs to be taken in cold weather, since the PVC can become very brittle.

Storage of PVC pipe requires that when stored for extended periods of time, the pipe be shielded from direct sunlight. However, good air circulation must be allowed to prevent over heating.

Trenching should be continuous, relatively smooth, and free of rocks or debris. When encountering ledge, hard pan, or boney soil, a layer of sand should be placed in the trench that allows the pipe to lie on the clean bed. Minor scratches in pipe due to soil conditions will lead to future problems, and care at this stage of the installation will save future repairs. Wedging or blocking of pipe should not be permitted.

Laying PVC pipe requires special techniques. Plastic pipe is subject to considerable expansion and contraction with temperature changes. PVC pipe needs to be "snaked" from side to side in the trench. Often installers, to cut labor/time costs, trench only wide enough to "fit" the pipe into the trench, not trenching wide enough to properly "snake" the PVC pipe. Also, in hot weather backfilling should be done

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Installation considerations that need to be considered are handling, storage, trenching, laying pipe, backfilling, pipe pulling, thrust blocking, and solvent welding.

As 'South German bent' heads for 'extinction' here's the story of its many years on our greens

By Bob Labbanace

I've been writing about turfgrass for nearly 20 years now, and it's amazing how things have changed in that short period of time. One term that I used to hear with regularity – and that has now practically disappeared from the lexicon – is South German bentgrass. As recently as the 1980s greenkeepers still talked about "converting from the South German bents," or that the greens "used to be South German bent," or that "the course was originally planted in South German bent." I don't know how widespread the turf was outside the northeastern United States, but here it was pervasive.

As greens featuring South German bent become extinct, I wanted to educate myself on exactly what comprised these surfaces. Perhaps some of this will be new information to a few of you, or maybe I was the only one who flung the term around without knowing its origin. With little information in modern turfgrass texts, I found many answers in the 1925-1926 Fraser's International Golf Yearbook containing an article by A.N. Peckham of Kingston, R.I.

This mixture of ancient turfgrass seeds actually originated in Europe, though not exclusively in Germany. Seed was harvested commercially in Holland, Belgium, and England as well, and then exported to the United States, New Zealand, and parts of South America. At the start of the 20th century, South German bent was just about the only seeded bentgrass available, and many of the individual bents that followed it were selected and developed from this mixture.

There were three varieties that would flourish in the Northeast: Colonial bent comprised nearly 75 percent of the mix, velvet bent (or dog brown bent) accounted for 15 percent, and creeping bent (*Agrostis stolonifera*) was the remainder. They were adapted to a variety of soils, resistant to cold, tolerant of hot weather, and produced good turf in just one season.

The grasses complemented each other in a way that protected greenkeepers from losing their entire putting surface to one catastrophe. They also gave greens a multicolored and textural surface that not only looked great, but provided points of reference for putting. (As in, "Aim it toward that purple patch left of the hole, and it'll break toward that light green area before the cup.") Colonial was the anchor of the mixture, a grass that was native to Europe but became known as browntop, New Zealand, Northwest, Prince Edward Island, and Rhode Island bentgrasses in new environments. Although known for the locale in which they proliferated, these grasses demonstrated few botanical differences from each other. The turf had poor tolerance for wear, heat, and excessive water, but it established quickly and could be mowed lower than any other variety, important characteristics in the early years of American golf.

The velvet was never as wear-resistant as colonial, nor did it establish as quickly, or grow or spread as rapidly. However, it provided a gorgeous color and an excellent putting surface once established, and naturally resisted disease better than the others.

South German also included approximately two percent *Agrostis stolonifera*

or creeping bentgrass, and as turfgrass research developed at universities and extension services, this was the grass scientists felt could revolutionize golf. Peckham wrote, "True creeping bent is a turfgrass that spreads by jointed creeping stems or stolons, as they are called. These runners or stolons have the ability to take root at the joints or nodes and these form a new plant. This method of propagating itself gives creeping bent a wonderful advantage in turf forming qualities, as any divots or other injuries to the turf are quickly healed by the creeping runners."

Right from the start, scientists and turf care professionals realized that creeping bent was the turf of the future, and years of university research and field trials would eventually result in the introduction of Penncross, the most widely planted turfgrass in history. Commercially available by 1954, Penncross initiated the era of monostands, and spelled the end of South German bents.

In recent years, Penncross has been replaced by the new generation of boutique bents that provide uniform surfaces that look like concrete painted light green – and have just about as much character. Today, a few turf managers have seen the wisdom of planting several bentgrass varieties on their greens, mimicking the lovely patchwork of the early South German greens. Those are the greens I'm attracted to, especially late on an autumn afternoon when the subtle color hues are evident. They almost look like the old South German greens I remember putting on when I was a kid. No matter how much things change, in some ways they stay exactly the same. ■

At the start of the 20th century, South German bent was just about the only seeded bentgrass available, and many of the individual bents that followed it were selected and developed from this mixture.

Reprinted with permission from Turf magazine, November 2005.

Bob Labbanace is Golf Editor and a longtime contributor for *Turf*. He resides in Montpelier, Vt. He is always looking for good turf articles in the northeast and welcomes member calls or e-mails: (802) 223-7372; blabbanace@aol.com.

Understanding PVC: Material, design, installation, & maintenance

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during the cool parts of the day. If not possible, the pipe should be cooled down with water prior to backfilling. As a general guide, PVC pipe will expand or contract about 3/8 inches for every 100 feet for each 10-degree temperature change. As an example, pipe installed at 85 degrees in the summer cools to 35 degrees in the winter months. A run of over 2,000 feet of pipe would expand and contract 35 inches. This change must be considered and allowed for, or severe damage to pipe or fittings will occur.

Backfilling should not allow any rocky soil to come in contact with the pipe. Often sand is used to cover the pipe to a depth of 2-to-4 inches to protect the pipe from native soils.

Pipe pulling should be allowed only in those soils that will not score, scrape, or groove the pipe. When pulling pipe over long runs, special consideration must be given to the expansion and contraction conditions by the designer and installer.

Thrust blocks are required because water, under pressure, exerts thrust forces in piping systems at changes of pipe size, direction, dead ends, valves, and other points. Charts are available

to help the installer and maintainer determine the proper size of thrust block to use, based on soil profile and pipe size.

Certain practices should be followed when installing thrust blocks. The thrust block must: (1) be placed against undisturbed and fully compacted soil; (2) contact the fitting over a large area so not to create a stress point; and (3) have enough area on the soil side to restrain the thrust block without exceeding the bearing load of the soil.

Solvent weld joints require care. Manufacturer's recommendations need to be followed. Typical problems caused by improper use of solvent weld are: (1) poor priming, failure to provide proper glaze leading to breaking and softening; (2) improper application of cement, not providing uniform coverage, dry spots or puddles; (3) cement becomes to dry prior to use and thus results in poor bonding; (4) improper insertion of fitting into socket area reducing area of solvent weld and resulting in weakened fitting; (5) in hot or cold weather, special solvent welds need to be used that are designed for these hot or cold extremes. When done properly a solvent weld fitting is as strong as or stronger than the pipe, but when not done properly a weak link in the system is created.

PVC piping systems, when properly designed, installed and maintained, will give years of service. However, if poorly

designed, installed, maintained, or operated, significant problems will arise, if not now, then in the future. The small extra cost to insure a proper design, installation, and maintenance of your system is well worth the cost compared to a system failure. ■

References:

- Plastic Pipe Institute, 250 Park Ave., New York, N.Y.
- R. D. Bliesner. *Designing, Operating, and Maintaining Piping Systems Using PVC Fittings*; Keller-Bliesner Engineering, Logan, Utah.

PVC piping systems, when properly designed, installed and maintained, will give years of service. However, if poorly designed, installed, maintained, or operated, significant problems will arise, if not now, then in the future.

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GCSANE Forum: Additional comment on L-93 bentgrass

continued from page 3

certain amount of stress as I put it all together. Like you, I found that you cannot take down enough trees, aerate, or topdress enough! I felt I could get the L93 going earlier in the spring by using high rates of iron (turned them purple one year!). I never had any success with ammonium nitrate (a page from the velvet playbook), but that could just be me. In the end, I am very happy to be caring for old push up greens with a mix of bents and poas. I find it much easier

to get speeds now with less effort and they look prettier. (Michael Stachowicz)

• Excellent article on L 93. Most lead articles are interesting but this one stood out. Good job to all involved. (Dave Comee)

• Stach, Great article, I would love to read more responses from the guys who have L93. (Ron Dobosz)

• I feel one of the best things I did for my L93 in 2005 was to start early with liquid applications of potassium nitrate and calcium nitrate and stayed with .1# to .25# N on at least a bi-weekly basis. They were slow to get going in the spring but the nitrate seemed to kick them in quicker than anything else I've tried. We'll see if it works again in 2006. (Drew Cummins) ■

DIVOT DRIFT . . . announcements . . . educational seminars . . . job opportunities . . . tournament results . . . and miscellaneous items of interest to the membership.

ANNOUNCEMENTS

Congratulations go to John Coffey, who was recognized in a recent ceremony at Wollaston G.C. for his 42 years of service.

GCSANE is represented by two dogs in the Superintendent's Best Friend Calendar. Mark Gagne's dog, Chancer, was selected and Karl Heintzelman's dog, Luke, is also in the calendar. Both are now candidates for the dog of the year contest, which will be voted on in Atlanta. The winner will receive \$2,000 for their local association (a donation to S&B or similar) and \$500 to the dog.

Please visit the Nor'easter Hospitality Room at the Hyatt Regency Atlanta. Room location: Centennial 2, Ballroom Level. Time: Thursday, February 9, 2006, 6-10 p.m.

Congratulations to Patrick J. Daly, CGCS, golf course superintendent at Framingham C.C., who has completed the renewal process for maintaining his status as a Certified Golf Course Superintendent (CGCS) with the GCSAA.

GCSANE NEWS

Request for Club Newsletter Articles:

We all have to sit down every month to write articles for our club's newsletter, and it gets harder and harder to get inventive. If anyone is interested in e-mailing copies of their best articles for printing in GCSANE's *Newsletter*, please send to Michael Stachowicz, Editor, at mstach@dedhamclub.org, or Julie Heston, Business Manager, at jheston@verizon.net. This will be helpful to other superintendents as they search for ideas for their own club newsletters.

INFORMATION

If you are a superintendent of an 18-hole golf course, and you are interested in participating in the Caranci Budget Survey, please contact Julie Heston (401) 934-7660.

If anyone is interested in receiving a free subscription to the new *Superintendent* magazine, visit www.mrpllc.com. *Superintendent* is published monthly and is available at no charge to qualified subscribers.

Equipment Wanted. I'm in the market for used carts or utility carts that are getting rusty out back, or no one will take in trade. I'll come and look. Will pay cash or check or whatever? Currently out of work with time to kill and enjoy bringing these carts back from the dead. Thanks - Chris Tufts. Contact me at 774-238-0194; e-mail: ctufts@aol.com.

EDUCATION

Lebanon Turf is still conducting web seminars and will donate \$25 to your local GCSA chapter for every superintendent and/or assistant who attends. They will also earn 0.15 EPs from GCSAA. Seats are limited, so sign up as soon as possible at www.LebanonTurf.com. A web seminar on potash and its role in turfgrass physiology will be presented by Dr. Karl Danneberger (Ohio State) and Dr. Byron Vaughan (Harris Laboratories) January 31, 10 a.m. Eastern; and February 2, 2 p.m. Eastern. Other dates will be offered based on demand. A future web seminar on foliar nutrition featuring Dr. Beth Guertal (Auburn University) and Dr. David Gardner (Ohio State) will be offered soon. Find out what we know and what we don't know about this extremely interesting topic. Watch for a schedule on our web site or contact Cynthia Andrews by e-mail at candrews@lebanonturf.com for information.

EQUIPMENT FOR SALE

1997 TyCrop MH-400. Excellent condition, with cross conveyor, electric brakes, and weight kit. Asking \$10,000 or will consider trade for DMI Speed roller, Toro Hydroject, or a sweeper/vac. Contact: Mark Gagne, Walpole C.C., mgagne@walpolecc.com or (508) 668-3859.

2002 Toro Groundsmaster 3500D Sidewinder in excellent shape, 1121 hours. Asking \$12,000 firm. 2000 Cushman TD-1500 Topdresser for Cushman mount in mint condition, not used. \$1500. 1988 Toro/Hahn MultiPro Fertilizer Spreader, runs, OK shape, \$300 OBO. 1985 Toro Greensmaster, 3137 hours, \$750 OBO. 1977 Toro Greensmaster, runs, OK, \$250 OBO. Contact Denzil Rice, Bear Hill G.C., at (781) 245-2114.

Manchester Country Club equipment for sale. 1999 Smithco Sweep Star 60, 18.8 hp Kubota diesel, hydraulic lift & dump, 665 hours, excellent condition, \$6000. 1997 Verti-Seeder, tractor mount, PTO 0-540 rpm, working width 48", slice & seed at same time, no mess, excellent condition, \$2500. 1989 Toro Sand Pro 14, 14 hp Kohler engine, new design Toro rake kit, spring rake kit also available, good condition, \$1300. 1992 Club Car Carryall II, 8 hp Kawasaki engine, good condition, \$1800. 1995 Toro Reel Master 5300D, 32 hp Mitsubishi diesel engine, 4-wheel drive, 8 blade cutting units, all reconditioned, excellent condition, \$5000. 1999 Toro Reel Master 3100D Sidewinder, 21.5 hp Kubota diesel engine, 3-wheel drive,

72" Cut, 5 blade cutting units, all reconditioned, excellent condition, \$4000. 2001 Toro Greens Aerator, 16 hp Briggs & Stratton Vanguard, 27" coring width, 3.5" coring depth, excellent condition, low hours, \$4500-5000. 1989 Toro Greens Aerator, 16 hp Kohler engine, 27" coring width, 3.5" coring depth, excellent condition, \$2500-3000. Contact Gary McNicholas at (603) 669-6360.

POSITION OPENING

Sales Representative, Tom Irwin Co., 13 A Street, Burlington, Mass. Contact: Harvard Golf Partners, Bob Piantedosi, P. O. Box 455, Harvard, MA 01451; phone/fax: (978) 369-5904; e-mail: bphvd@juno.com. Educational requirements include A.S./B.S. in turf management or related field. Candidate must have three-to-five years of experience in green industry sales and/or turf management. Knowledge of plant protection products and plant nutrition is highly desirable. Candidate must be a team player, self-motivated, and committed to customer satisfaction. The ability to be a consultative resource to customer base is critical. Salary is very competitive and commensurate with experience. Benefits include health, 401k, vehicle, laptop, expense account, and vacation. The Tom Irwin Co. is a leading supplier of plant protection products and fertilizers for the golf and green industry. Our client is seeking a sales representative for the Connecticut market area. Experience in the golf and green industry is required. Note: All inquiries are strictly confidential and are to be sent to Harvard Golf Partners as listed above.

General Manager, Scottish Meadow G.C., Warren, Mass. Tired of course maintenance? Looking for a new challenge? Scottish Meadow is a new 9-hole public course 15 minutes from the intersection of the Mass. Pike and I-84. It seeks an energetic individual to oversee the operation and growth of the course and clubhouse facility. Education required depends on experience. We prefer individuals to have a Mass. Pesticide Applicator's license. Duties include hiring and oversight of maintenance, pro-shop, & restaurant staff; purchase of materials & services; budgeting & operations oversight; development of public relations & advertising strategies; employee customer service & safety training, and other management requirements as required. Individuals will work with board of directors of privately-owned club. Salary and incentives are to be determined. Benefits include paid health insurance and winters off. Deadline is Feb. 22, 2006. Send resume to Scottish Meadow G.C., P.O. Box 1507, Warren, MA 01083.

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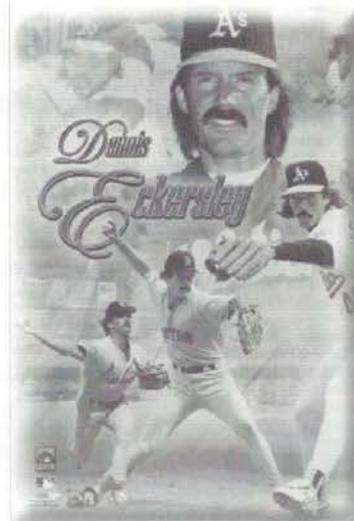
Educational Session Hours:

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Dennis Eckersley

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