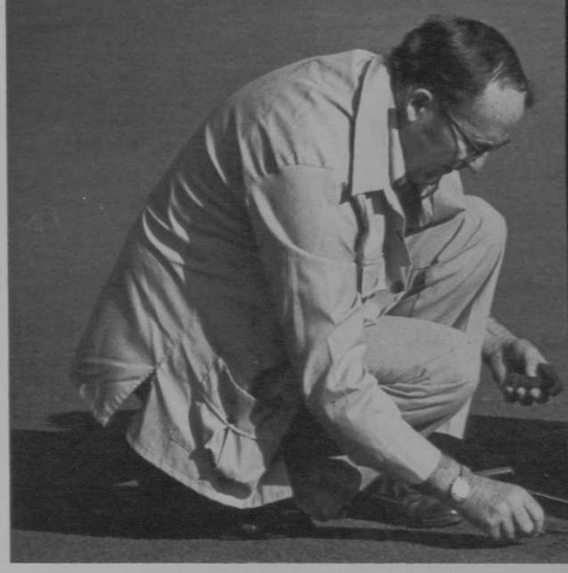


Richard Malpass (right), superintendent at Riverside Country Club in Portland, said courses in his area were hit worst by a severe ice storm that swept through Oregon last winter. Photos above show birch and evergreen trees on the Riverside course damaged by the storm.

slope of the Rockies in Colorado.

Golfers in the Pacific Northwest have grown accustomed to enjoying "two good weeks in February." Almost annually those two good weeks provide dry, balmy weather and a greening of the countryside in a sort of preview of spring. Several more weeks of more wintry weather may follow, but those two good weeks of February are almost guaranteed.

Instead, February this year was one of the wettest on record and the two good weeks were delayed until March. As usual, they brought out golfers in droves, probably enough to rescue the first quarter of the year as a "normal" period of golfing activity in the Northwest.

Maintenance problems

For golf course superintendents the preview of spring was particularly welcome. Many were still trying to heal the wounds of winter, including desiccation of greens, widespread debris from tree limbs shattered by icing, and myriad problems with irrigation systems which had been installed in a manner to reflect milder conditions.

Dick Malpass, past president of the Golf Course Superintendents Association of America, reported severe damage at his Riverside Country Club course in Portland.

"The coldest November on record, second coldest December, and coldest January since 1891, along with a severe ice storm, were really tough on turf in the Northwest," he said.

"The Portland area was particularly hard hit as the ice storm cut power to over 100,000 homes and businesses. Freezing winds blowing down the Columbia River Gorge caused severe desiccation of many golf courses."

Malpass said courses situated near the river, such as his and Columbia-Edgewater Country Club, were the worst hit. Cleanup work caused by downed limbs and trees was an 8-week spring project causing up to $50,000 in expense at each course. The most punishing damage occurred among specimen trees such as flowering plum and weeping willow. Birch, poplar, pines, and cottonwood trees also sustained heavy damage.

Winter is a more familiar visitor in the Spokane area, but a 90-day snow cover was not. Fortunately, golf courses survived remarkably well, according to Erv Korff, golf manager for the City of Spokane.

"We came out of winter in excellent condition," Korff marveled, "and opened two of our three courses on permanent greens the second week in March. Golf play for the month is well up from 1978."

Snow cover lasted for 60 days or more in the Treasure Valley of Idaho, leaving Boise area golfers chomping at the bit. And when a fast melt occurred in early March, golf courses sustained some flooding.

"But that was a sort of 'nice problem' for a change," said Jerry Breaux, pro-superintendent at Eagle Hills Golf Course near Boise. "We still remember the recent drought conditions."

Eagle Hills green fees went up to $6.75 on weekends for 1979, the highest in the area, but that had been no deterrent to golfers in the early season. Longer than usual inactivity had left them with a ravenous appetite for golf.

Snow was also heavier at higher elevations of the intermountain region through Montana, Eastern Idaho, and Wyoming, where golf courses were still digging out later in the spring. Early indications, however, were that most had wintered well.

If there is a single common concern in golf course development and maintenance in the entire Northwest area, it is water. But water problems are far from uniform. In that densely populated and heavily golfed region west of the Cascade Mountains of Washington and Oregon and between the Sierra Nevadas and the Pacific Coast in Northern California, water is generally abundant. Drainage is the problem here, both for developers of new courses and operators of existing facilities. Much of the golf course construction activity in the Pacific Northwest in recent years has involved the remodeling of older courses, often with drainage improvement as the focus. Conversion to more predictable automatic irrigation systems has also been popular.

East of the Rain Belt and in the teeming Bay Area of California, western golf is seriously concerned with water availability. Drought conditions of 1976-77 pointed up the problem in Northern California when even such storied links as Pebble Beach on the Monterey Peninsula went ominously brown. Today all golf operators in the region are concerned not only with availability of water but also with its spiralling costs.

Howard Capps, owner of Chimney Rock Golf Club, an 18-hole daily fee course in the scenic wine country near Napa, Calif., recently moved to solve his water problems. He contracted with the small nearby community of Yountville for use of treated effluent. The agrement solved both the city's dispersal problem and Capps' water shortage. Both were following a pattern set several years ago in areas where recycled wastewater use for irrigation is necessary.

It doesn't take a drought in the intermountain west to remind golf operators of the importance of water. Water conservancy has been a way of life in this region for years and wastewater has become an increasingly important source of golf course irrigation.

Water is only one of the resource management problems faced by Northwest superintendents and managers today. Management of human and energy resources have become equally critical, according to Dick Malpass.

"We have a continuing labor problem," he said, "as our help is siphoned off into other industries."

Union labor is still relatively

scarce through the Northwest, although it has become the rule in many Northern California locations. Restrictions imposed by union contracts, where they exist, have contributed to expanding maintenance budgets and, in some cases, less intense maintenance practices.

A recent survey of maintenance costs in Oregon and Washington showed budgets at 18-hole courses ranging from $96,000 to well over $200,000. Many daily fee courses, however, still manage to keep turf mowed and growing with budgets as tight as $40,000.

Superintendents' salaries ranged upward to $30,000 annually at first rate private clubs, but here again daily fee owners were finding turf management help available for as little as $13,000. Many, of course, serve as their own "superintendents" and hire foremen to direct their crews, often only part-timers. The average for superintendents who responded to the NGF survey was $20,600 and the median about the same.

Year-around help in addition to the superintendent varied from one to 12 persons on courses of 18 holes or more in the region. The average reported was 4.6 fulltime employees, including assistant superintendents, mechanics, foremen and laborers. All reported additional seasonal help.

Malpass said superintendents' concern with energy resources is double-edged. Not only would fuel restrictions diminish intensity of maintenance, but it would also threaten golf play and normal revenue. Because distances between golf courses in the Northwest are generally greater than in more populated areas of America, golf could be one of the first sacrifices of Northwesterners forced to conserve fuel.

On the other hand, Malpass said, when and if Americans are forced to seek recreation closer to home, golf could become even more popular.

"That's more reason why golf courses should get their fair share for maintenance and operation in a fuel shortage," he suggested.

Superintendents of the region are also more concerned than ever over a growing list of EPA-restricted materials with which they have fought turfgrass pests for years. This and increasing qualifications being imposed for licensing of pesticide applicators add to administrative problems for superintendents.

Fortunately, *Poa annua* control and usually light infestations of *Fusarium nivale* (pink snow mold) are the only major turfgrass problems to be dealt with under normal conditions. Much of the research and experimentation

"Organize a Junior Golf Program. It's a great place for kids to play a round."

Youngsters have never faced as many temptations and frustrations as they do today. And that's why I think it's particularly valuable for boys and girls to get involved in a sport like golf. It not only gives them a chance for self-expression, but it's a great teacher of self-reliance and self-discipline.

The problem is, most kids don't have an organized Junior Golf program to encourage them and help them learn the game. And that's why the National Golf Foundation is so important.

They've been promoting Junior Golf since 1936. And they'd like nothing better than to help you start a Junior Golf program at your golf club, in your schools, or in your town. I started in a Junior Golf program myself. And believe me, there isn't a better place for a kid to grow up than a golf course.

NATIONAL GOLF FOUNDATION

Jack Nicklaus

Please send me information on these National Golf Foundation activities:

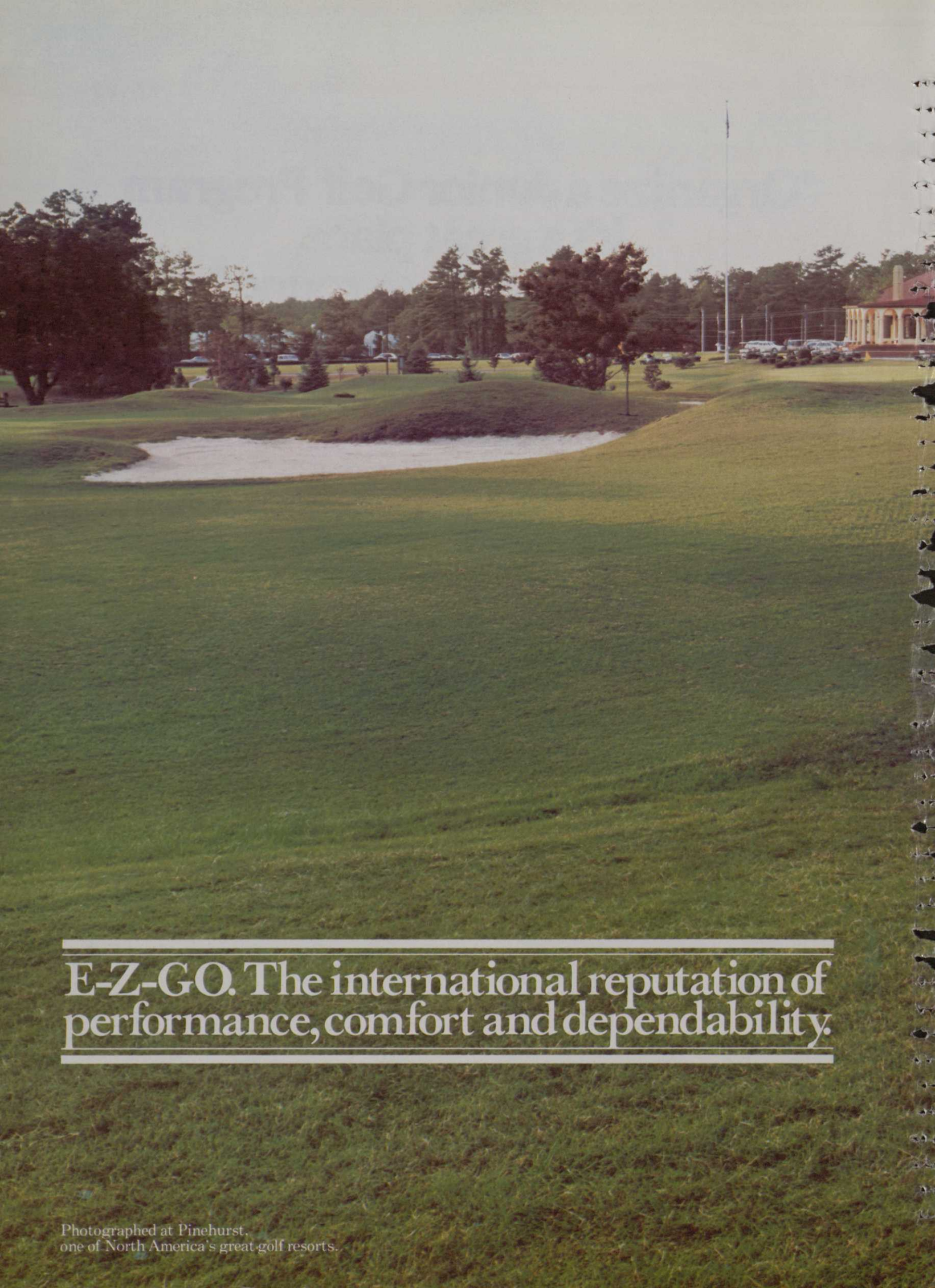
- ☐ Junior Golf programs
- ☐ Golf instruction aids
- ☐ Associate club membership program
- ☐ Check if you actively teach golf

Name _____

Address _____

City _____ State _____ Zip _____

National Golf Foundation, 200 Castlewood Drive, North Palm Beach, FL 33408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carried on by agronomist Dr. Roy Goss and plant pathologist C.J. Gould at the Western Washington Research and Extension Center in Puyallup are devoted to the control of these. In general, turf managers of the area are almost equally divided between those resigned to living with *Poa* and those still battling it.

The normal fertilization programs in the Northwest consist of a light application in early spring, a heavier application in April or May and another in September or October to carry turf through winter. Greens and tees are accorded frequent light applications by most superintendents along the Pacific Coast, reflecting year-around playing conditions. Aerification is considered mandatory by most in early spring with top-dressing programs to set greens up for heavy summer play.

Many superintendents in the region have adopted variations of the Madison program of frequent light sanding of greens, sometimes with fertilization and fungicidal applications included.

Summary

The Pacific coastal region is noted for its lush, green courses, often carved from heavy stands of evergreens and spread over rolling hills drained by swift-moving streams and dotted with natural ponds. Until relatively recently, golf course architects eschewed the addition of unnatural hazards, such as sand bunkers in profusion, on Northwest courses. That sort of sophistication has been introduced, however, in the past two decades and today Northwest golfers are as apt to find themselves in a soggy sand trap as under a Douglas fir.

Through the mountain regions, where bluegrass fairways prop the ball into inviting lies and Penncross greens flourish without heavy *Poa annual* competition, golf is enjoyed in perhaps its most spectacular environment. Green mountains or red rock formations silhouetted against brilliant blue skies provide the backdrop for golf shots which just naturally fly further in the brisk, thin air.

Golf was only a rumor in this nation when Horace Greeley issued his famous advice to young men. He could hardly have dreamed that this remarkable pastime would add immeasurable flavor to life in his beloved West. But, beyond doubt, it has and it continues to be one of the attractions in the continued westward shift of the American population. □

Phone in your order for irrigation control

by David C. Harmon

Listen up! Those of you with automatic irrigation systems can now control the on/off switch of your master control units remotely by the simple use of a touch-tone telephone.

In 1973 the Golden Horseshoe Golf Course installed a BINAR automatic electric irrigation system for the purpose of saving water, electricity, and manpower. The system has done all that has been asked of it with the exception of turning itself off during rain and/or electrical storms. Having an electric irrigation system operating during an electrical storm can cause extensive damage to certain key electrical components. Many storms of this type seem to occur with little advance warning, usually after you and your employees have gone home for the day. Since I am the person responsible for the operation of our system, I began to search for a way to overcome this one major drawback.

My first desire was to have the ability to shut the system down if it were operating during a simple rain storm. After being told that a rain omit switch would do the job for me, I contacted my local irrigation supply house for specific information. They told me that a Rain-Stat by Weathermatic was available for approximately $40 and would accomplish my specific requirements. This switch, in conjunction with a relay, is wired to the incoming a.c. electric supply. I have the rain omit switch set so that after .25 inch of rain, the relay interrupts the a.c. power to the BINAR master control units. This relay and switch combination keeps the system off until the rain evaporates from the rain omit switch or is manually dumped.

The rain omit switch has worked fine, but I found that in many cases lightning precedes the advancing rain, and lightning is what causes the real damage to an electric irrigation system in operation. After talking to several people about this problem and having to leave a warm bed at 2:00 in the morning several times to shut down the irrigation system, I was told to call my local phone company. I discussed my problem with a phone company engineer and was told that with the help of a touch-tone telephone, several relays, amplifiers, and other miscellaneous phone equipment, I could control the on/off switch to the BINAR control units.

I now have the capability of turning the irrigation system on or off by telephone without ever having to go to the office. Amen!

How it works

The phone company has designed the system so that when I call the number of the phone which is located in my office where the BINAR master control units are located, I hear one tone that tells me that the system is on and another tone that tells me if it is off.

If the system is on and I wish to turn it off, I press one preselected number on the touch-tone phone. If the system is off and I wish to turn it on, I press a different preselected number on the phone. The system thus reacts to your very wishes from wherever you might be, as long as you are using a touch-tone phone. It seems so simple, but the phone company says this is their first request and first installation of its kind on a golf course.

There was no charge for the installation of the phone equipment, but there is a $30 monthly charge for rental of the equipment. This is very reasonable compared to the replacement costs of ten BINAR decoders or a half-dozen electric solenoids which could be damaged during a severe thunderstorm.

With automatic irrigation systems now costing between $150,000 and $250,000, any protection for your equipment would certainly make sense. The mentioned phone equipment will work with any brand of irrigation control units or pumps. For information on obtaining the phone system, contact your local phone company or feel free to write to me c/o Golden Horseshoe GC, 404 S. England St., Williamsburg, VA 23185. □

Dave Harmon is superintendent at the Golden Horseshoe Golf Course in Williamsburg, Va. He has been a member of the GOLF BUSINESS Advisory Board since its inception in 1976 and has been active in the Golf Course Superintendents Association of America and the Old Dominion GCSA for many years.

Take the guesswork out of turf managing

by William E. Lyons

Being a turf manager, golf course superintendent, greenkeeper, golf course owner, teacher, or student, we are all in a guessing game much like a golfer who has to guess which club to use to score well.

True, it is an educated guess, one which becomes more accurate with experience — it's never a driver out of a bunker or a wedge off the tee on a par 5 — but other than those easy decisions, there are many tough ones to be made.

The golfer has a scorecard to record his performance on each hole, and the businessman has records by which to measure his accomplishments, but up to now the turf manager had nothing to "mark his score" for each day's program.

With the help of many of our leading turf specialists, we have developed a daily turf manager's scorecard, called a Daily Weather & Turf Report. It goes with the Lyons Turf Test Kit. Used properly, these reports and tools can take the guesswork out of turf management; they can help make quick on-the-spot judgements that can save time and turf and even help reduce costs.

How to use them

The turf manager seldom hears his wife say, "Breakfast is ready!" He is too busy listening to the all-important weather forecast on his NOAA weather monitor, radio, or television. He knows very well that the day's work and planning must be built around weather.

Arriving on the job well ahead of the crew, begin using the most difficult instrument of them all — the pencil — on the Daily Weather & Turf Report. First, check off the five phases of weather which will govern the day's operation. Next, the three phases of the previous day's weather: high and low temperatures, rain fall, high and low humidity — it just might be pythium weather.

Go right on down the list. Was there a lot of dew (guttated water) this morning? Should it be washed down (recycled) before mowing? The nitrate color test is simple to use, and it will give the answer.

Are the greens too wet to take fertilizer (liquid) today? A moisture meter will show the percent of saturation from 1 inch to 8 inches. At 25 percent, water will be needed; at 40 percent, turf has to be watched closely — sun and wind may dry it quickly and cause wilt.

Grass roots lose some of their ability to function as soil temperatures rise. At 70°F., don't rely on roots to transport food to the leaves. Apply a very small abount of 45 percent urea which will be taken into the leaves. This should not be washed down, and the rate should be not more than 1 pound N per 5,000 square feet — approximately 2 pounds of 45 percent urea. Since temperature is important, a good thermometer is in the Test Kit.

Non-daily data

For the past 35 years we have relied on clipping tests to determine the needs of the turf for N-P-K. To make the tests, an N-P-K test is in the test kit. This is a very valuable guide. If we are lacking in N, we apply some. But how much is "some"?

A basic rule is 1 pound of N per 1,000 square feet when the soil temperature is between 50° and 60°F. Use ¾ pound as temperature rises above 60°, and only ½ pound when above 70°, using soluble quick-acting sources of N.

We never apply nitrogen alone. Using water-soluble fertilizer, we apply a 1-½-1 ratio of N-P-K. The potash (K) makes the turf tougher; it will take more wear and seems to give better disease control. Nitrogen in the ammonium form can leach the potash from the root zone, so carry some to the turf when fertilizing.

Before the days of science in turf management, greenskeepers like the late Jack Way, of Canterbury Country Club in Cleveland, did not have a tool box of good scientific instruments, but he always had two "tools" with him. His hand was one, and it was used to test surface temperatures. The second was a big pocket-knife with an illegal blade, like the one carred by The Greensmaker, James L. Holmes of Bryan, Tex., to get the feel of the temperature and moisture in the root zone. Jack and Jim would stick their big blades into the turf and could tell if a dry zone was developing. Obviously, that takes years of experience.

Today we can rely on instruments to tell us when the turf needs help. An example: Is the light green color due to nitrogen? Or is it chlorosis (lack of iron)? The latter is often the case with a high soil pH, and this might be caused by the water supply.

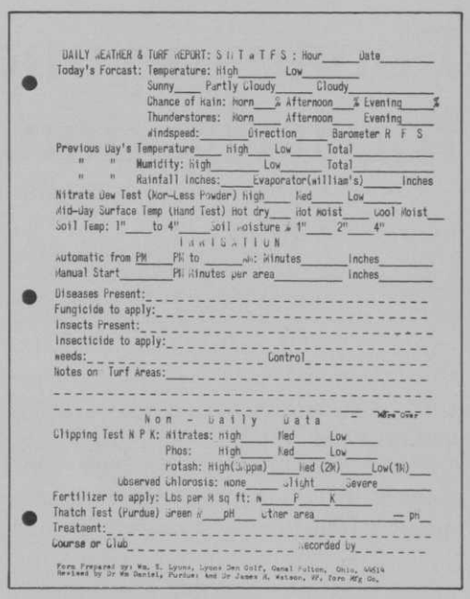
From the late George Hoffer we learned that when in turf trouble you should ask the turf. Out of this reality, a thatch test kit was developed. It is included in the Turf Test Kit.

What can you expect from the instruments in the tool box? The first tool is the Daily Weather & Turf Report. It will assist in planning your day's work with less chance of error, and it will give you a record of successes and failures. We learn from experience.

If you are challenged by your employer, your daily records will show why, how, and when each job was performed. This may prove to be a major part in holding jobs in these days of tough competition.

Properly used, the Turf Test Kit can aid in producing superior turf. That is the job we are being paid to do.

please turn to page 20


DAILY WEATHER & TURF REPORT: S M T W T F S : Hour_____ Date_____
Today's Forcast: Temperature: High_____ Low_____
Sunny____ Partly Cloudy_____ Cloudy_____
Chance of Rain: Morn____% Afternoon____% Evening____%
Thunderstorms: Morn____ Afternoon____ Evening____
Windspeed:_____Direction_____ Barometer R F S
Previous Day's Temperature____ High____ Low_____ Total_____
" " Humidity: High_____ Low_____ Total_____
" " Rainfall Inches:_____Evaporator(William's)_____Inches
Nitrate Dew Test (Kor-Less Powder) High____ Med____ Low_____
Mid-Day Surface Temp (Hand Test) Hot dry___ Hot Moist___ Cool Moist__
Soil Temp: 1"____to 4"_____Soil Moisture @ 1"____ 2"____4"_____
I R R I G A T I O N
Automatic from PM____PM to _____AM: Minutes_____Inches_____
Manual Start_____PM Minutes per area_____ Inches_____
Diseases Present:_____
Fungicide to apply:_____
Insects Present:_____
Insecticide to apply:_____
Weeds:_____ Control_____
Notes on Turf Areas:_____
Non - Daily Data
Clipping Test N P K: Nitrates: High____ Med____ Low____
Phos: High____ Med____ Low____
Potash: High(Sippa)____Med (2M)____Low(1M)___
Observed Chlorosis: None____ Slight____Severe_____
Fertilizer to apply: Lbs per M sq ft: N____P____K____
Thatch Test (Purdue) Green #____pH____ Other area_____ — pH__
Treatment:_____
Course or Club_____ Recorded by_____
Form Prepared by: Wm. E. Lyons, Lyons Den Golf, Canal Fulton, Ohio, 44614
Reviewed by Dr Wm Daniels, Purdue; And Dr James M. Watson, MF, Toro Mfg Co.

"Old Bill" Lyons has been caring for golf course turf for more than 30 years. Besides being president of Lyons Den Golf Inc. of Canal Fulton, Ohio, Bill is past president of the National Association of Public Golf Courses, a director of the Musser International Turfgrass Foundation, and a member of the GOLF BUSINESS Advisory Board. He was a founder of the Midwest Regional Turfgrass Foundation and the originator of Nimisila bentgrass.

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In conjunction with our Buy Direct Plan, we offer a guaranteed trade-in program which takes much of the uncertainty out of your cost and profit projections. Last, and still most important, the combination of unmatched energy, efficiency and durability makes it possible for each DAVIS 500/LIGHT car to save you up to $1200 over a four year period. Multiply that by the number of cars in your fleet and you come up with an awful lot of reasons to check out Davis before you buy.

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Circle 112 on free information card

Bill Lyons has put together a limited number of the Lyons Turf Test Kits mentioned in the preceding article. Each tool box includes a year's supply of Daily Weather & Turf Reports in a three-ring binder, plus all the tools needed for moisture and temperature sensing and for chemical testing of dew, clippings, and thatch. It even includes a weather radio. For further information contact Bill directly at Lyons Den Golf Inc., Canal Fulton, OH 44614 (phone 216/854-9910).

Inventive: another word for superintendent?

Golf course superintendents must be about the most inventive people on earth. Just about every one we've ever met has some piece of equipment, some procedure, some special thing that he has created to fill a need in his operation — just like Dave Harmon's touch-tone remote irrigation shutoff or Bill Lyons' Turf Test Kit.

If you have invented or improvised something that other superintendents might be able to copy for use on their golf courses, we'd like to know about it so we can tell them about it. Just send us a brief write-up about your invention — a description of what it is, what it does, and why you invented it — along with a photo or two. We'll publish the best ones in future issues of GOLF BUSINESS, and we'll pay $25 to the inventors of non-commercial inventions selected for publication. Write to Editor, GOLF BUSINESS, 9800 Detroit Ave., Cleveland, OH 44102.