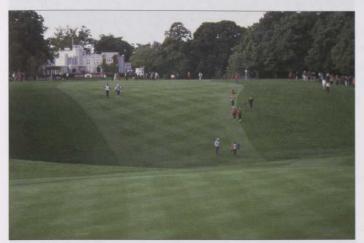


By David Garland, Director of Tour Operations, PGA European Tour



▲ Wentworth's 1st

commented in the past that the collars have been cut only in one direction and that this then may favour a player who draws or slices the ball!)

The collar width guideline is 1.2m (1.3 yds) and that this should be maintained at this width around the entire outline of the green.

In the weeks prior to the tournament, and even during the practice rounds, the championship **TEES**, especially Par 3 tees, should be rested.

Tees should be level, firm and maintained at a height of 6-8mm. It is very easy for championship tees to become soft through lack of play and lack of aeration. This must be monitored.

In the event of strong winds, or purely to give variety, the Tournament Director may request that a couple of teeing grounds on a particular hole are prepared ready for play.

Tees should be cut in a diamond pattern as a tee cut directly towards a fairway can be misleading to the players, especially if the teeing ground is set at an angle to the line of play.

FAIRWAYS should be between 22-32 metres in width depending on the difficulty of the hole. If a course is being used for the first time, the Tournament Director may narrow or reshape the fairways in line with the distances the professionals hit the ball.

The fairways should be cut at a height of 8-12mm. Fluffiness in fairway turf is undesirable and the tendency should be towards firm, tight turf. Mowing heights for tournament play should be established one to two weeks in advance, as last minute reductions in mowing heights create excessive loose grass cuttings on the fairways and could cause 'yellowing' and scalping.

But wherever possible boxes or grass collectors should be used. Small hollows should be hand-cut if fairway mowers cannot produce a uniform surface and all loose grass should be removed. Small hollows should be levelled, if possible, prior to the tournament.

Wherever possible, all fairways should be cut in the morning prior to play, boxing the clippings off. Where it is not possible to obtain boxes, it may be necessary to cut some or all fairways after play and in this instance we would require fairways to be swept before play (normally by dragging a hosepipe) to remove dew.

Ideally all fairways should be cut in a diamond pattern, with regular reverse cutting to prevent nap.



▲ A well prepared practice area

The long stripe cutting pattern or half light and half dark pattern favoured by links courses are acceptable, though players do feel their ball gets a better forward bounce when the grass has been cut with the direction of play.

Whatever mowing pattern is chosen, reverse cutting is vital to stop nap, as on thatchy, soft fairways nap does affect the striking of the ball.

The Tour does and will implement the preferred lies rule if it feels it is necessary. In the majority of cases, it is only introduced if the ball is 'picking up' mud, as the flight of the ball is adversely affected when struck.

A complete programme of divoting should be carried out at least four weeks prior to the tournament.

Around the fairways there should be a strip of semi-rough 3-4 metres wide, which should be cut at a height between 25-35mm. All semi-rough should be cut in the same direction.

The height of **ROUGH** will vary depending upon whether or not it is maintained, and the type of grass. Normally maintained rough is 100mm (4").

If any new sand is required for the **BUNKERS**, it should be applied at least two months in advance of the tournament so it can become well settled.

We prefer that bunkers are maintained by hand and are raked in the direction of play.

Two areas that are vital to the success of a tournament but are sometimes overlooked are:

The **PRACTICE AREA**. This is where the modern professional spends hours and hours. Therefore the teeing area should be prepared in the same way as those areas on the course and is required to be a minimum of 10m deep to accommodate seven days of practice.

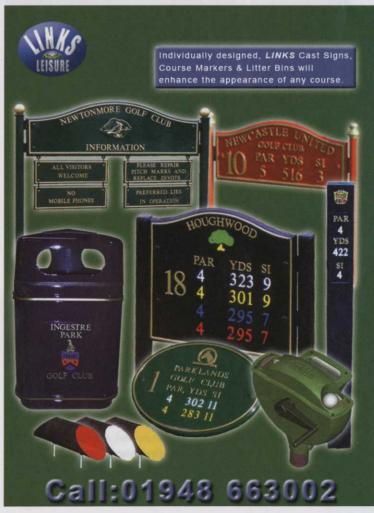
RAIN PREPARATION. Many believe the Tour follows the sun but I can assure you the Tour ends droughts when it arrives in town! The course must be prepared for the worst.

In concluding, I must stress our aim is to have the best quality playing surfaces possible week in week out, venue to venue, and this can be achieved only by working very closely and in tandem with all the host venues' staff.

A well-presented course in first-class condition benefits all parties involved in the Tournament.









Where Do You Think You're Going?

Scott MacCallum talks to signage companies about the good, the bad and the ugly.

How many of us have teed it up on a course we've never played before, got out to the edge of a green having three putted yet again only to find ourselves lost, unsure of where the next tee is? Or worse still, taken it a bit further, and played the wrong hole?

As grown adults we do feel a little bit silly. Surely it can't be so complicated? We know that the 2nd tee is fairly near the 1st green and the 3rd near the 2nd so on all the way round to the 18th, and hopefully the 19th but so many of us find ourselves aimlessly searching around for the next tee that something must be wrong.

Surely it can't be beyond the wit of man to come up with a solution.

Well there is one. It's called the "sign" That's "S", "I", "G", "N" and although they are catching on there are still many clubs which could make much more use of them to help golfers around their courses.

How simple it would be for clubs to provide a sign at all holes where the next tee is not obvious just as a consideration for those visitors and guests who are playing the course for the first time.

Additionally, and perhaps even more importantly, signs warning golfers of possible danger – "Caution. Possible stray balls from opposite fairway" or "Don't play until adjacent green is clear".

Rebecca McGuire, of Eagle Promotions, also highlighted the benefit of temporary signs, like 'Spraying in Progress' to warn golfers that a course maintenance practice is being carried out, which brings to mind the age old warning, 'Golfers should refrain from licking their balls'.

These signs do help if legal actions is pending following an accident as it does demonstrate that the club has made a point of making golfers aware of potential dangers.

However, Chris White, General Manager, of Ken White Signs, doesn't believe legal action should be the catalyst for creating an awareness that there needs to be quality signage around the course.



"Nevertheless, with the current culture, I guess it does have an influence," he admitted.

He also felt that legal actions may have been prevented by the presence of clear signage, but obviously there won't be any evidence of such.

"Prevention is better than cure."

The problem with signage is that if a club gets it wrong, it's not exactly a mistake which can be hidden away. And golf clubs do make mistakes.

David Fairclough, of Signs & Designs Ltd, felt that too many clubs go for the cheaper option,

which almost invariably turns out to be a false economy.

Rebecca is of the same opinion citing cheap materials which don't stand up to the elements. She could point to one golf club which has changed its tee signs three times in 12 years.

When posed the question about golf club errors, Chris felt the biggest mistake was too much one-off purchasing leading to a mish mash of style and colour.

"I can't emphasis enough the need to forward plan when purchasing signage. It doesn't affect current budgets to look ahead and a good reliable supplier will offer advice."

But signage has moved on in so many ways a golf club has many decisions to make.

Granite is becoming more popular, lasts indefinitely and is easy maintenance, while special requests can also be handled.

Eagle Promotions have recently supplied signage for Disneyland Paris who required a number of unusually shaped signs, portraying various images.

First impressions count and with an array of well thought out and attractive signs a golf club can display its attention to detail and provide golfers with the information and support they need when out on the course.

For further signage companies see page 48.









Fancy Working Here?

Golf is fortunate to have secured some of the most beautiful plots of land in the world for playing the game and golfers know that if their driving or putting happen to be a little off there can often be some stunning views to take their mind off a mounting score.

But these courses also offer places of work to greenkeeping staff which must make the Monday morning blues much easier to deal with.

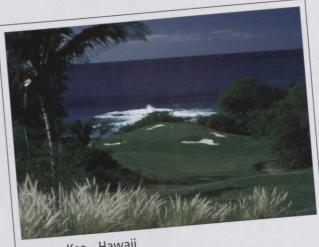
Feast your eyes over these majestic golf courses, photographed by world renowned golf course photographer, Brian Morgan. If a job were ever to come up, you never know you might be packing your case and joining some of the luckiest greenkeeping squads around.

Brian Morgan Golf Photography sell prints, so if anyone wishes to purchase one of the fabulous pictures contained in one of the most extensive libraries of golf photography in the world you can log on to the website www.brianmorgan.com or telephone 0141 221 6236.









Mouna Kea - Hawaii





Landmarks in Greenkeeping

Jim Arthur files through his memory banks and identifies the landmarks he has witnessed in the greenkeeping industry

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At regular intervals, and I have succumbed myself, greenkeeping writers are tempted by offers to write on the milestones of greenkeeping history. There are enormous pitfalls in the path of those who blithely fall into the trap.

The first point that must be accepted is that very little of these epoch-making greenkeeping revolutions were specifically invented for the purpose of the better management of recreational turf.

The second is that these developments had often been in existence, though neglected, for years before being adopted. Thirdly until there was a demand, there was no market. Fourthly such revolutions were often adopted very slowly and by no means universally, not only because there was no universal need but because of inborn reluctance to change — when often the change meant poorer results until the methods or machines were refined to deal with their side effects on fine turf.

A classic example is that of the use of tile drains on golf courses. It has been said that until the introduction of powered trenching tools in the early 1900s the use of tile drains was not widespread. What nonsense!

Many, many thousands of acres of heavy clay land were drained in the post Napoleonic war period to enable home food production to be stepped up to meet the needs of an expanding population nearly two centuries ago.

The first cylindrical tile drain making machine was invented (by Switzer) in the UK in 1787, but demand was poor because then food production was just about adequate — despite the knock on effects of the industrial revolution and a mass migration from the land to factories in towns.

Then came the agricultural demand first met by hand made tiles (see Chapter 13 Practical Greenkeeping for full details) and then in response to the huge demand in 1845 by Scraggs machine.

Some of this very old drainage is still working, because it was laid very deep (one metre at least) laboriously by hand. There was no demand from golf because in 1857 there were only 17 golf courses — all of them naturally free draining Scottish sandy links. Even in 1888 there were only 138 in the U.K. — virtually all on heath or links.

However in the 1890s there was a vast explosion in golf to cope with the new demand from the big cities. Courses were constructed on often "unsuitable" heavy land where intensive drainage — and earthworm control — were essential to achieve tolerable playing conditions, even during the few summer months to which inland golf was restricted a century ago.

Remember Ber-'nard Darwin's comment in the 1930s that "golf was a game played by a few gentlemen and most Scotsmen" and that "no gentleman played golf before the first of May". His words — not mine!

Tile drainage of golf courses took off because the need was there and remained dominant until plastic drains took over in the 1950s, (much more easily handled).

We have to accept that golf has never generated a big enough market to make specific research let alone production economically worthwhile. The only exception has perhaps been the mower.

Edwin Budding's mower developed in 1832 from a reel type shearing machine designed to remove 'nap' from woolen woven tweeds was not widely adopted save by wealthy estate owners trying to mechanise the presentation of their expensively maintained 'lawns' surrounding their mansions, until the early 1900s.

This was largely because the finish left by these huge, heavy, clumsy early machines was far inferior to that provided by skilled greenkeepers with scythes.



▲ The Ransomes' Auto Certes - natural progression

Even I can remember such men scything wild white clover out of golf greens! It is worth remembring that the first hand Certes mower by Ransomes, specifically designed for use on golf greens was not introduced until 1924 and the first powered Auto-certes not until 1950! This was not because there was any criticism of design or finish — just that there was no money in golf.

Where there was money – in the States – and therefore a market, there followed great strides in the development of, for example, triplex mowers and trailed, then mounted, gang mowers for fairways.

Another 'agricultural' development slowly adopted by golf was the small tractor, with a power take off, which revolutionised small scale farming (because of manoeuvrability as well as low cost). Until Harry Ferguson's invention tractors were used as horses, trailing machinery.

As he told me himself, he modestly disclaimed the credit that was his due because he said that he was merely the first to realise the basic difference between a horse and a tractor, which was that "you can't bolt anything to a horse's backside!" Now mounted equipment is standard, but it all started with that inventive Ulsterman.

Another development from another (agricultural) market which was enthusiastically adopted (for a change) by golf was that of selective weedkillers. These derived from war-time work in producing defoliating sprays to attack and destroy the enemies' field crops.

Our first selective in 1946 was powder MCPA (on a lime base!!) and then a year later liquid 2:4D. What a joy advisory work was in those early post war days, explaining the miraculous eradication of the prevalent weeds of



▲ Hand operated Turfman aerator, circa early 1930s

Landmarks in Greenkeeping

those days – starweed and daisies. The sceptical approach was soon replaced by joy.

Apart from a few pioneers – largely greenkeepers not research bodies – working e.g. on the application of such things as sodium chlorate (with very small safety margins), weed control was almost entirely by hand weeding.

I can still remember the sight of a line of a score or more of potato pickers in the East of Scotland advancing across a links green, 'howking out' starweed – and the resultant damage. Wise advisers did not exchange badinage with such redoubtable characters!

We now have virtually an effective selective weedkiller for every weed but despite the investigating work carried out by firms and STRI it was not research for which we have always had to rely on agriculture.

This applies today with pesticides where products are being withdrawn rather than being banned, simply because the market is too small to justifty the huge costs of EC registration and regulations.

There were a few areas where invaluable introductions were aimed at and funded by the sports turf market. One of these was the mechanisation of aeration produced in the middle of the worst economic depression of the last century by a small firm, Sisis, run with foresight and engineering skill by Wm. Hargreaves in the 1930s.

Prior to the Turfman (1934) aeration was by hand forking. Admittedly the motorised version the Auto turfman was not marketed until 1964.

Naturally, developments in aeration machinery were being made in America, but as so often happens conditions there are not relevant to our different climatic and soil conditions.

All their machines were too shallow penetrating. They were admittedly sophisticated. I asked Sisis engineers to develop a machine costing under £500(!) capable of penetrating 6" deep and of aerating a golf green in an hour.

This resulted in the Autocrat in 1971, which held sway until replaced by the de Ridders' Vertidrain (again my introduction) in 1980 - which could penetrate 15" and



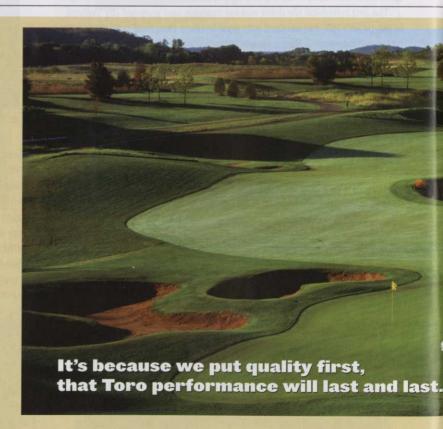
Greensmaster 3250-D

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I have left the most important milestone until last, partly because it is the essence of sound management of fine turf and partly because it has undisputed worldwide application for the management of bents and fescues through all the temperate zones of the world.

This of course was the precept of Dr Murray, published in 1913, based on his work over the ten years earlier in the winter rainfall areas of South Africa, on turf dominated by bents (Agrostis).

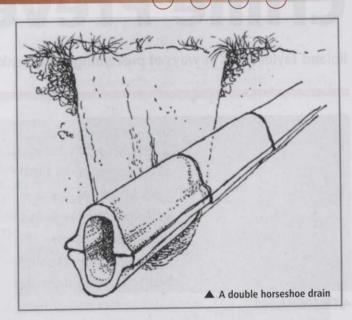
His work has lasted unchallenged and proven over the century by countless research projects, here and in the States. In his own words his system has "the object of providing an adequate supply of nitrogen in an acid medium, with a very limited amount of phosphates and potash, the only source of the latter being such as is contained in the usual compost. The real object of the compost is not so much the provision of plant food as to supply humus". How perspicacious?

This work, started at the beginning of the last century, is the basis of all traditional austere greenkeeing designed to favour bents and fescues. Where his rules are ignored or reversed, Poa annua invades and dominates at once.

I know of few good greenkeepers who will openly assert that their ideal grass is this highly successful weed. Many erroneously say it is unavoidable.

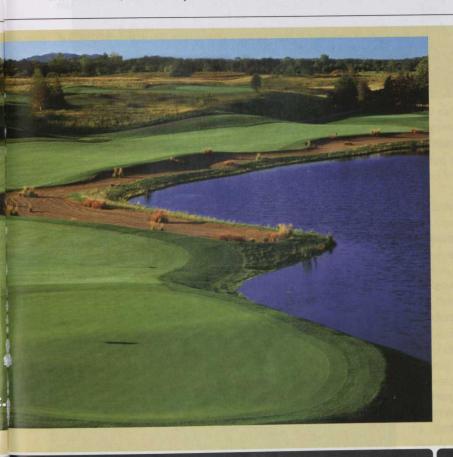
There are hundreds if not thousand of examples proving the reverse. Dr Murray was certainly a man before his time and perhaps (certainly in my view) the most important milestone in the history of golf greenkeeping.

This in no way denigrates the sterling work of many links greenkeepers, even before him, who leamt by observation and from their ancestors, that



the best way to look after their greens was to use soot (a nitrogenous fertiliser) and local sandy soil (with rotted seaweed) and deep spiking. Nothing new in greenkeeping - except in the minds of eccentrics and salesmen.

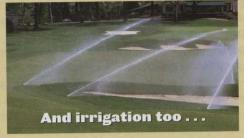
Jim Arthur will be happy to personally sign a copy of the Second Edition of Practical Greenkeeping and send to anyone postage free who contacts him. (Book price £29.95). Tel: 01395 442966.





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Crime Prevention

Roland Taylor looks at ways of preventing the greenkeeper's worst nightmare



▲ Close up of Ramlok

immaculate for the first tee off. The greenkeeper arrives at the machinery storage buildings and is immediately aware there is something wrong.

It is tournament day and an early start is necessary if the course is to be

He swings open the doors to find the building empty and a large section of the back wall gone. This fictional situation would be any greenkeeper's worst nightmare, but it could happen to anyone, at anytime.

With the considerable investment that now has to be made in course equipment tight security needs to be high on the list of priorities.

The loss of any machinery is very stressful and considerable costs are incurred. Replacements have to be found at short notice.

Valuable time is taken up, dealing with the police and the insurance company and if a prosecution is made then days will be lost giving evidence at court. Insurance payment delays can occur, putting further strain on resources. A hefty increase in premiums is likely to follow and in some cases there is the possibility that the company will no longer insure the equipment. All this results in considerable inconvenience and hassle.

There is not a 100% solution for stopping thieves, but plenty of deterrents are available and a combination of these plus vigilance may be enough to make them have second thoughts.

Generally, courses cover large areas of open countryside and often the machinery stores and workshops are located in remote places, far away from the main buildings. This makes them highly vulnerable, so protection is essential.

There are three types of thieves, the professional, small scale and opportunist.

THE PROFESSIONAL

The chance of being hit by professionals is relatively smaller compared to the other two, but this fact should not be ignored as many of the security systems cover all aspects of robbery.

Larger equipment is usually targeted and is likely to be stolen to order, possibly for abroad. Considerable planning is needed for his type of robbery and will involve a number of people, who have made themselves thoroughly familiar with the course and buildings. Because of the machinery's size having suitable transport has to be part of the plan.

SMALL SCALE

These are less likely to be planned. A weakness in the security system is spotted and advantage taken of this flaw. The thieves are more likely to make a quick entry and grab whatever is available. They may well have been reconnoitring a target for a while.

OPPORTUNIST

They take any opportunity that presents itself and this is the most common form of theft. The haul is mainly small items, although cars, vans or tractors are often taken in this manner, because they have been left unlocked with the key in the ignition.

There are numerous ways of protecting against theft, but all situations are different, so it is necessary to determining what is best in each individual case.

BUILDINGS

No thieves like hanging about for too long, trying to get inside, so the objective is to make it as difficult and time consuming as possible to gain entry.

Whatever type of building is used must be of sound construction. It is pointless to bar the windows and doors if the walls can easily be breached. Thieves will not hesitate to ram a wall. Windows should be heavily barred inside and the door hinges impossible to get at from the outside.

There are plenty of purpose built units on the market for storing equipment and it is worthwhile contacting one of these specialist companies who can advise on the most appropriate to specific requirements.

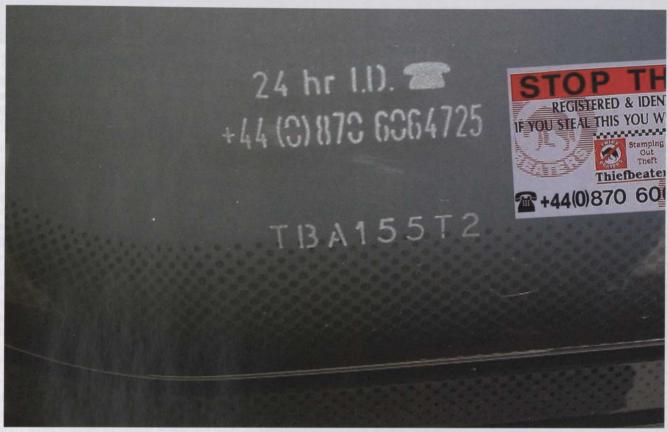
There are steel units, which are said to be extremely secure and with the host of interior options that are available they can be tailor made.

For existing building these companies also offer cabinets or cages constructed from heavy-duty steel for interior storage of smaller equipment. While this type of unit is ideal for secure storage what happens when the smaller machinery or tools are out on a course? No one is infallible and there are going to be occasions when equipment is left exposed in the back of a trailer or truck — a temptation for the opportunist thief.



▲ Trailer drawbar warning

FREE digital camera



▲ Thiefbeaters warning

An all-steel truck or transport box will overcome this problem as long as it is left locked. In addition to the security these units are weatherproof, so the tools and your sandwiches will not get wet.

LOCATION

If there are plans for a new machinery store then it needs locating as near to the clubhouse or hotel complex as possible. Wherever the store is sited the area around should be free of trees and shrubs as these provide ideal cover for thieves to go about their activities unnoticed. In addition heavy-duty, perimeter fencing, topped with razor wire will make potential intruders think twice about gaining entry.

Security posts are another form of protection. These are anti-ram and theft resistant, so they can be used to form a major obstacle in front of doors or across gateways. Signage should be displayed in prominent positions, warning the public to keep out of certain areas and informing prospective intruders that a high level of security is in place.

ALARM SYSTEMS

These come in all shapes and sizes. The wire free ones send radio signals to a central control panel that activates either an audible alarm, flashing lights or fills the building with dense smoke. There are also acoustic systems, which emit a high-pitched signal that disorientates any intruder within the vicinity.

Exterior lighting is another deterrent and these can be fitted with infrared sensors that automatically detect when someone is about and switch on the lights.

If the buildings are miles from the nearest habitation, some of these systems may not provide much protection as no one is going to see or hear them.

MACHINERY

All ignition keys should be removed and securely locked away when the machinery is not in use. To immobilise equipment there are a number of devices on the market. For a tractor fitted with backhoe and front loader leg locks — fitted to the stabiliser leg with the machine's rear wheel lifted off the ground, are ideal, as they make it virtually impossible to move the unit. There are also ram locks that are fitted to a full extending hydraulic steering ram.

Towing eye locks enable a number of units to be chained together. Wheel clamps, wall and ground locks are also useful for securing equipment. Whatever type of system is used it is important to fit recommended security chain and padlocks.

One of the biggest problems for thieves is the disposal of their ill-gotten gains and the ability to identify stolen property is a deterrent because they then become far less saleable. If the property is recovered it is necessary to identify who owns what?

This is an area that has been addressed by some highly specialist companies and the latest development is a system that involves applying a unique designated number to 50 random locations on a piece of equipment as well as electronic tags and microdots.

All the sites are recorded together with photographs of the machine and the information is then stored on a central database. If a stolen

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