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**Rhys Butler, Links Manager,
Royal St David’s Golf Club**

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19-22 JANUARY 2014



Here are the ten BIGGA members who will be flying to Florida in February for the Golf Industry Show courtesy of Bernhard.

They will be the 13th delegation but there's nothing unlucky about the trip of a lifetime that awaits them. They all completed the application form and went through a rigorous interview process before being selected.

In 2014 the GIS is being held at the Orange County Convention Centre which the delegates will attend, taking advantage of the many educational opportunities as well as exploring the show. They will also be shown around golf courses in the area and meet some of the superintendents.

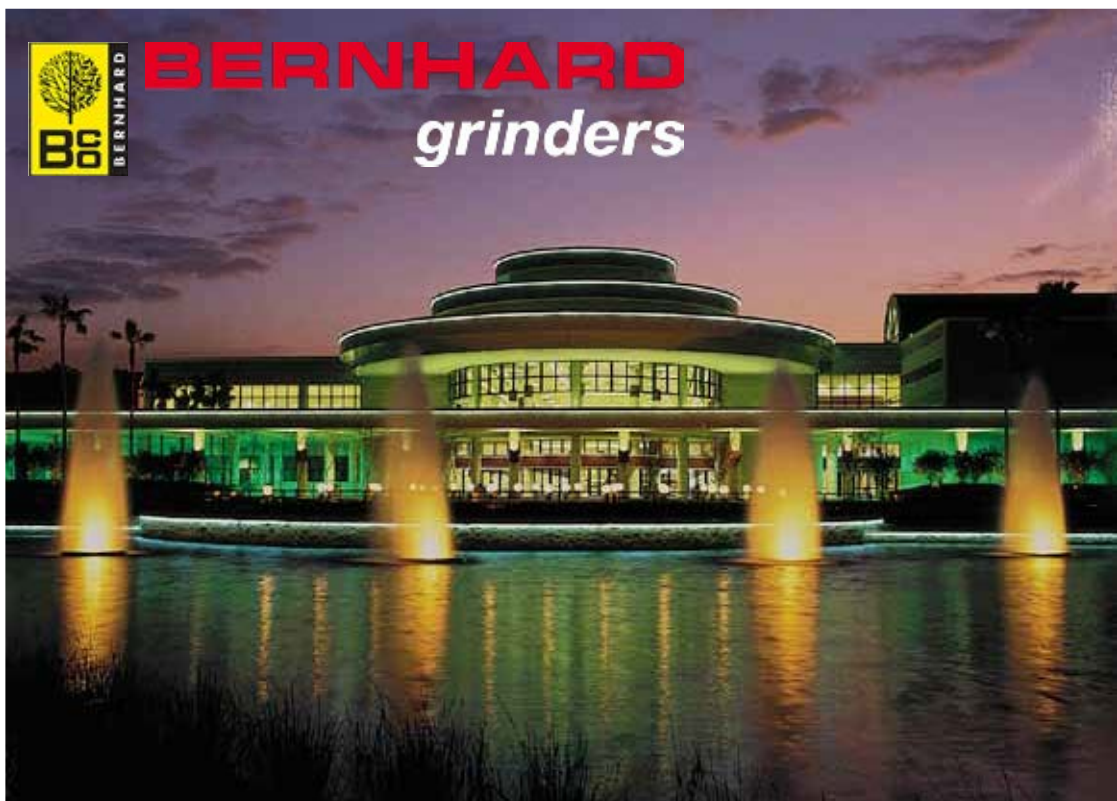
Dave Collins from Lickey Hills is one of the delegates and said: "I'm very excited, I hope it will give me the chance to pass on to my team the great things BIGGA do and what you can achieve in your career. I'm also very active on Twitter (@greenkeeperdave), through this I've spoken to many American greenkeepers and am hoping to meet some of them in person in February."

Fellow delegate Steve Hemsley from Bolton Old Links added: "I'm looking forward to seeing how other courses deal with problems in a totally different environment to the UK. But it's all about the overall experience, I'm keen to take advantage of the course visits, education, networking...all of it".

February in Florida



BERNHARD
grinders



Tom Brearley
Assistant Greenkeeper
Sunningdale Golf Club

Tom has a BSc (Hons) degree in Golf Club Management and was employed at High Bullen Golf & Country Club and Meyrick Park Golf Club prior to his move to Sunningdale. He was also a member of this year's Open Support Team and is particularly looking forward to meeting American greenkeepers in February.



Paul Armour
Head Greenkeeper
Lochgelly Golf Club

Paul began his career as an apprentice greenkeeper with Fife Council and has gone on to work at Ratho Park Golf Club, Aberdour Golf Club and Leven Links. He has attended many seminars organised by the Scottish Region's Central Section and was part of the Open Support Team at Muirfield earlier this year.



Jaey Goodchild
Course Manager
Bowood Golf & Country Club

Brisbane-born Jaey was a Deputy Course Manager at Chobham Golf Club and The Richmond Golf Club before becoming Course Manager at Bowood Golf & Country Club in 2011. He is a member of BIGGA's South West Committee.



Dave Collins
Head Greenkeeper
Lickey Hills Golf Club

Dave began his career at Handsworth Golf Club before changing track to work for Rover. However, he returned to the industry as Head Greenkeeper at Witney Manor Golf Course before joining Lickey Hills. He also works on the pitch at Aston Villa on matchdays.



Gavin Neill
Deputy Course Manager
St Andrews

Gavin worked at Tain Golf Club before joining the Ohio State University Programme and continuing his education at several American clubs. He then joined St Andrews, working on the New Course then the Old Course. He is currently Deputy Course Manager of the New and Jubilee Courses.



John Entwistle
Head Greenkeeper
Roehampton Club

John worked at the Double Eagle Club in Ohio as part of Ohio State University Programme before taking a BSc (Hons) in Biotechnology and Turfgrass Science at Myerscough College. He joined Roehampton in 2006 and has worked his way up to Head Greenkeeper.



Steve Hemsley
Head Greenkeeper
Bolton Old Links Golf Club

Steve spent a year working at The London Golf Club before spending five years at St Andrews. He then had spells at Northwood Golf Club and Reddish Vale Golf Club before becoming Head Greenkeeper at Bolton Old Links. He has worked at several large tournaments and has been on the BIGGA Open Support Team three times.



Andrew Laing
Course Manager
Gaudet Luce Golf Club

Andrew became Head Greenkeeper at Gaudet Luce and Little Lakes in Worcestershire aged just 21. Following the merger of the two he became Course Manager at Gaudet Luce managing both the golf course and the rest of the outdoor land on the site.



Paul Mills
Course Manager
Penn Golf Club

Paul trained at Bloxwich Golf Club gaining his Level Three before moving to Stratford upon Avon Golf Club as First Assistant. He then secured his current position of Course Manager at Penn Golf Club in Staffordshire. The Club's environmental stewardship has been recognised in previous STRI awards.



Geoff Fenn
Course Manager
Bedford & County Golf Club

Geoff has spent all of his greenkeeping career at Bedford and has now been Course Manager for 12 years. He has a Foundation Degree in Sportsturf and is currently studying a BSc (Hons) in Sportsturf Science, both through Myerscough College. He recently joined other R&A Scholars on an educational trip to Askernish which you can read about on page 33.



Think ahead for best tractor choice



James de Haviland examines your options when choosing a new tractor – a hugely important long-term decision for the future of your course

When it comes to buying a new tractor it may be tempting to simply consider a model that essentially does what the outgoing machine did. A bit more power, greater linkage lift, better hydraulic flow and larger wheels and tyres perhaps but still a similar class of machine. But should you think a bit harder?

Tractors tend to have longer renewal cycles than some other items of kit, to the point where a 15 to 20 year old tractor is far from uncommon on even the most well equipped courses. Make the wrong choice now and you may well have to live with the consequences for many years, which in turn leads to conservative buying.

Mechanical transmission basics

A constant mesh mechanical

transmission remains the simplest gearbox offering. You know the score; a clutch needs to be depressed to change gears and swapping between working ranges, the tractor typically needing to be brought to a stop before swapping gears. A synchromesh mechanical transmission will ease gear changing on the move but many transmissions of this type will retain a constant mesh range change.

A simple forward-reverse shuttle makes it easier to change the direction of travel but with the operator using the clutch and needing to stop the tractor before changing direction. A synchro shuttle still requires the operator to use the clutch but a change in direction can be selected before the tractor actually stops. A power shuttle essentially allows the operator to swap between forward and reverse without stopping but how abruptly the direction change is made will

be down to the selected gear ratio and the speed of travel when the shuttle is used. More sophisticated shuttles will smoothly 'modulate' the direction change.

A mechanical splitter will allow the speed of the selected ratio to be reduced or increased. If an operator uses the splitter in third gear, for example, the split ratio will be between second gear and third gear. The splitter function is activated without using the clutch. On modern transmissions this is typically achieved via an electro-hydraulically engaged clutch pack with a button selector on the gear lever, sometimes described as a 'Hi-Lo' transmission.

A semi-powershift mechanical transmission provides a clutch-free 'push button' electro-hydraulic shift within a given range. Massey Ferguson's Dyna QPS 12x12 transmission is a good example of a semi-powershift as it allows gear changes

TOP: Where Kubota's HST Plus hydrostatic cruise control differs from conventional hydrostatic drive is its ability to monitor and fix the forward speed. You do not have to restrict your buying choice to a mechanical transmission for fixed forward speed work.

BELOW: Tractors with Dyna QPS mechanical transmissions are ideally suited to fixed speed applications but thanks to having a shuttle are equally at home with tasks such as loader work. When buying a tractor it pays to know how various transmissions operate and how they differ.

to be made on the move without the operator pressing the clutch pedal; the operator simply presses a + or - button on the top of the gear stick to change between the four gears in each of the transmission's three ranges. It's available on MF1500 series tractors of a nominal 47 to 59hp.

Hydrostatic transmission basics

OK, we all know about this but it's still worth doing a simple outline. Hydrostatic or 'hydro' transmissions have become the default choice for tractors that will undertake mowing and also for general duties to include front loader work. Although there are subtle differences in how they work, all hydrostatic drives employ an engine driven pump to drive a motor that, on tractors, will typically divert power to the wheels via a mechanical gearbox. The latter may offer two or more 'ranges' so increasing the transmission flexibility; low range could, for example, could offer a working speed range from 0 to 5kph, mid-range 0 to 10kph and high up to 20kph.

More advanced hydro transmissions will include a cruise control. In outline this will allow the opera-

tor to set the engine throttle at the right speed to drive a mower; typically this will be to achieve a fixed 540rpm at the PTO. The tractor can then be brought up to the desired working speed on the travel pedal, the operator then selecting this as the cruise speed that will then be held automatically. Intelligent cruise control will allow the desired working speed to deviate to accommodate changes in load on the engine. Hit a thick patch of grass or start climbing a steep slope and the forward speed is reduced.

The eHydro system from John Deere and HST Plus from Kubota go a step further. Although they operate in different ways, both these transmission options allow the operator to dial in a fixed cruise speed that is in effect 'locked' to the engine speed, just as it would be with a mechanical transmission. The advantage this offers is in enabling a fixed forward speed to be matched to a set engine speed. This enables aeration kit to be operated at exactly the right forward speed to give consistent, and easily repeated, hole spacing.

Other hydrostatic transmission features to consider include anti-stall, which prevents the engine getting 'bogged down' when driving a loader equipped tractor into a

heap of material. Without anti-stall, the travel pedal will keep the demand for oil from the pump to drive motor fully open, regardless of load. This demand will become too great for the engine, slowing it down to the point where it will eventually stall unless the operator backs off the travel pedal. Anti-stall does some thinking for you, taking over the relationship between engine speed and travel pedal demands automatically. Not all systems are equal, however, with some having a setting that essentially cuts drive before the tractor wheels lose grip; others are more aggressively set and can see the tractor break traction long before anti-stall kicks in. You only find out by trying, with a degree of variation being allowed by the control software.

CVT - variable speeds with mechanical advantage?

CVT transmissions are not quite as easy to describe. In the case of the New Holland EasyDrive system, an amalgam of a variable steel belt drive and planetary gears is used, a mechanical connection between the engine and transmission remaining at all times with the claim this reduces power loss. The Fendt Vario system employs a



combination of hydrostatic pumps, motors and mechanical gears. Vastly different they may be, but the aims of EasyDrive and Vario transmissions are essentially to offer a stepless range of speeds from zero up.

In outline a CVT transmission will do what a hydrostatic drive does but with the potential to improve mechanical efficiency. Both EasyDrive and Vario transmissions use software to control the engine speed and the transmission. EasyDrive is 'simpler' than the Vario system, which in part explains why it is viable to fit it to a lower power range of tractors.

In terms of set-up, EasyDrive can operate in pretty much a similar way to the eHydro and HST Plus systems employed by John Deere and Kubota. The Fendt Vario transmission could have a couple of books written about it and these would still leave room for further explanation. But when it comes to having a setting for pretty much any application you can imagine, a Vario transmission will have a solution. New Holland EasyDrive CVT is an option on New Holland Boomer 3000 series tractors spanning a nominal 41 to 51hp. Fendt only offers a Vario CVT transmission, its tractors starting at 70hp plus.

Summary:

Choosing the right tractor can appear complicated, but if you have a list of set demands you are more likely to make an informed buying decision. The size, weight and type of equipment fitted to the tractor will dictate its weight and horsepower, but other features can make a big difference to you and those that work the tractor. The key is to ask questions, try several different tractors and talk to those you know who have a given make and model. A tractor is a long term investment so it pays to think long and hard before making a buying decision.



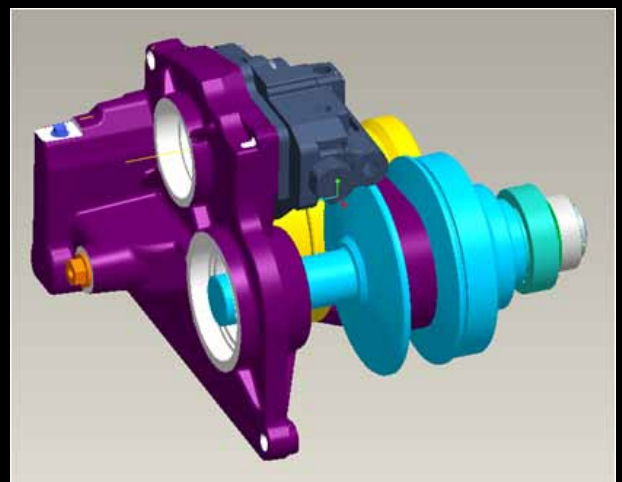
The New Holland EasyDrive CVT transmission is set up using a set of buttons mounted to the left of the operator. The main buttons are pretty easy to understand, with only Speed Set needing a bit of understanding. This control is essentially used to cap the tractors speed to 30%, 60% or 100% of maximum, in effect changing the sensitivity of the travel pedal to suit different applications.



With the John Deere eHydro transmission, setting a fixed working speed is simple; use the travel pedals to attain the desired speed and press set. The speed can then be fine tuned, on the move, using the same switch.



A shuttle forward and reverse lever makes changing direction much faster and is recommended for front loader work. The Power Reverser power shuttle on John Deere tractors allows the shift back and forth to be made without using the clutch.



A 'clever' transmission need not necessarily be complex. The New Holland EasyDrive system is a good example, combining a steel belt variator and epicyclic gearbox to deliver stepless speeds. The variator, with the engine driven pulley that drives the epicyclic sun gear, is coloured blue in the diagram, with the output pulley, which in turn drives the epicyclic ring gear, in yellow. The pulleys open and close under hydraulic pressure, clamping the steel drive band so it will not slip under extreme load. The integral hydraulic pump, shown in black, delivers 42 lpm at 2,600rpm engine speed.

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NOVEMBER 2013

47

A pain in the neck?

Former Course Manager and Master Greenkeeper John Ross now works to improve health and safety in the workplace. Here he looks at various medical conditions that can arise from greenkeeping and advises you how to avoid them

The golf course is a hazardous place to work. Low branches, steep slopes, chainsaw blades, flying golf balls, chemicals – all risks that greenkeepers are exposed to.

Generally speaking, golf clubs will manage that risk because it is visible and obvious through risk assessments, procedures being put in place, and staff training.

These risks are categorised as low likelihood – high outcome events because you can go years without any incidents, and high outcome because of the immediate need for medical attention and the potential for serious harm. It is the potential for harm that raises the alarm and focuses the mind when completing a risk assessment. We visualise the accident, imagine the scenario, and assess accordingly.

However experience tells me this is not where the greenkeeper is most at risk. There are hidden exposures too often taken for granted and often ignored in the risk assessment process. These

are high likelihood – low outcome exposures, high likelihood because exposure is almost certain and low outcome because the resulting injuries are not immediate nor obviously associated with the exposure. One category of this injury is Musco Skeletal Disorders (MSDs).

These injuries often happen over a long period of time and are caused by poor ergonomics, poor posture, repetitive tasks, the exertion of excessive force, working in restricted spaces, or badly planned manual handling. They can also be caused by normal daily activities such as playing sport. MSDs are generally upper limb and lower limb problems and/or back pain. If diagnosed they can be treated – but if not treated they can become chronic problems.

WRULDs (Work Related Upper Limb Disorders)

This is a group of conditions that affect the arms, wrists and hands, caused by forceful, frequent

about the author



John Ross MG

John Ross is a Master Greenkeeper and was a Course Manager for 20 years. After taking redundancy in 2010 he studied for a degree in Health and Safety and is now a member of the Institution of Occupational Safety and Health. He established 'Compliant Grounds' in January 2013 with the intent of providing a qualified competent service to the golf industry - www.compliantgrounds.co.uk

Catch John's 'Accident Causation' seminar at BIGGA's South East Regional Conference on Tuesday 19 November!



WRLDs (Work Related Lower Limb Disorders)

Affecting the hips, legs and ankles these are less common. Symptoms are sore tendons, stiffness, weakness, cramp and swelling of the joints and tendons. Users of early hydraulic driven machinery will be familiar with the phrase triplex knee, this was in fact a WRLD caused by the constant excessive pressure exerted by the knee on a badly designed drive pedal.

twisting and repetitive movements. Common types of WRULDS are tendonitis, carpal tunnel syndrome and hand arm vibration syndrome.

Tendonitis is commonly known as tennis/golfers elbow (medial/lateral epicondylitis) and is caused by repetitive movements and excessive workloads without adequate rest periods.

Carpal tunnel syndrome occurs when tendons or ligaments in the wrist become enlarged, often as a result of repetitive use.

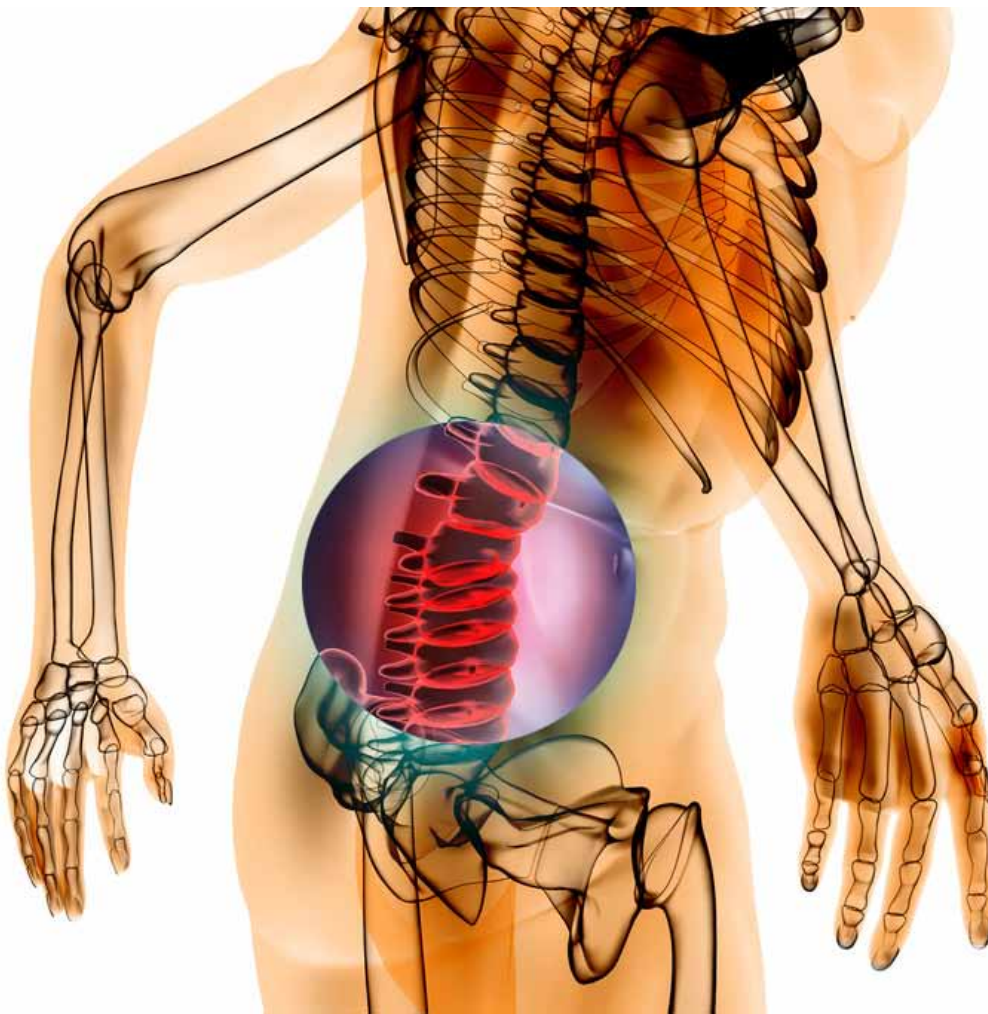
The excessive use of vibrating tools can cause hand arm vibration syndrome and aggravate carpal tunnel syndrome. Hand arm vibration syndrome affects the blood vessels, nerves muscles and joints of the hand.

This is a widespread condition that affects thousands of workers and ranges from a tingling of the fingers in its mildest form to extreme pain and reduced gripping capacity at its severest.

Back Pain

Back pain is a strain of the muscle or other soft tissue connected to the vertebrae. Sometimes it is the intervertebral disc that is strained causing it to bulge, this is called a slipped, prolapsed or herniated disc and the result is the damaged disc pressing on the spinal nerve. If it presses the sciatic nerve, the pain will be felt in the leg some distance from the back. This is called a referred pain.

Depending on which vertebrae are affected the pain can be felt down the back of the leg, or in some cases down the thighs. Eight out of ten adults will have some form of back pain during their life. In many cases there is not a specific underlying problem or condition that can be identified as the cause of the pain. However factors that can increase the risk of pain or further aggravate it include standing, sitting or bending down for long periods, lifting, carrying, pushing or pulling loads that are too heavy, or poor technique in these situations. Operating equipment that exposes operators



TIPS

Here are some quick tips on how to minimise the chances of being affected by the conditions mentioned above:

- Avoid manual handling and repetitive tasks
- Where it cannot be avoided reduce it by rotating tasks, reducing loads and using manual handling aids - (see HSE booklet indg398). If a task can be mechanised, it should be
- Remember manual handling is the moving of any load by bodily force including lifting, pulling, pushing or shoving
- Organise your deliveries and manage your storage to minimise distances travelled and loads carried (storing fertiliser bags at waist height, and liquids with handles at hand height avoids bending and stooping)
- Report concerns to a manager or supervisor
- Make suggestions to improve working conditions
- Use anything provided to prevent MSDs as instructed
- Take breaks from repetitive or forceful tasks
- Do not expose yourself to vibration beyond the exposure action level of 2.5 m/s^2 in an eight hour period
- Be aware of the early symptoms of hand arm vibration syndrome
- Do not use vibrating machinery in the cold, wet or whilst smoking (all reduce blood flow to the nerves)

to body vibration, trips or falls, poor posture or being overweight can also cause back pain.

Sprains and Strains

A sprain is when a ligament is stretched beyond its capacity, these are most common in the arm or wrist and generally happen as the result of an accident or poorly planned tasks. Fatigue is a factor in strains – not tiredness but the sudden use of a muscle that has been idle for a while. A strain is a stressing of a muscle that can result in muscular tear.

Abdominal Hernia

A common injury resulting from lifting or digging, it occurs as a result of a weakness in the abdominal wall which develops into a localised hole through which abdominal organs may protrude. The likelihood of a hernia is increased by a bad diet or smoking.

Employers and employees duties

It is clearly set out in the Health and Safety at Work Act 1974 that

both the employer and employee have duties in relation to managing health and safety. The employer has a duty to ensure - so far as is reasonably practicable - the health, safety and welfare of his employee. The employee has a duty to take reasonable care of themselves and others, and not to intentionally or recklessly interfere with anything provided in the interests of health and safety.

There are other duties relating to the management of risks, and these are set out in the Management of Health and Safety at Work Regulations 1999. They also apply to both the employer and the employee.

The approved code of practice in Regulation 3 states that significant risks and hazards should be addressed, and that all activities including routine and non-routine should be reviewed. Regulation 6 Health Surveillance places a duty on the employer to offer employers health surveillance as appropriate with regards to risks to their health and safety. What this means is the employers are bound by law to identify any risk associated with work, and if identified, to keep records of any occurrences if they arise.

All these conditions can be caused or aggravated by work, or by normal daily activities or hobbies. If a task or piece of equipment is badly designed, it should be highlighted in the risk assessment, and managers should be aware that risk assessments are evidence that would be used in the eventuality of a claim.

Footnote

My personal experience has prompted me to write this piece. I spent five years in pain as a result of both medial and lateral epicondylitis, have suffered sciatica and had a slipped disc. When I was a Course Manager I lost my Deputy for 18 weeks due to two abdominal hernia operations and countless days for back pain.

I know too many greenkeepers with similar injuries and as much as we love golf and golf courses, later in life the price paid can be debilitating. It is well documented that agriculture is regarded as a dangerous profession and the similarities between the farm and golf course are too close for comfort.

To my knowledge there has never been a survey on the cost to the golf industry of days lost through these conditions - however I am sure that if one were conducted, the results would mean minds would become concentrated.