Safety has always been of paramount importance for all those involved in the turf care machinery industry. But with the sharper legal focus on employee health and safety, it is becoming an even more prominent issue. Today it impacts directly on how Course Managers and Greenkeepers manage their machinery fleets.

For everyone responsible for course management, the regulations governing the safety and operation of course machines are clear. They can be found in The Provision and Use of Work Equipment Regulations (PUWER) 1998, which in part state that equipment provided for use at work must be:

- 'Safe for use, maintained in a safe condition and, in certain circumstances, inspected to ensure this remains the case.'
- 'Used only by people who have received adequate information, instruction and training.'

So let's look at these two key statements in turn:

1. Safe for use, maintained in a safe condition and, in certain circumstances, inspected to ensure this remains the case.

Implementing and following a machine maintenance schedule has many benefits, but improving the performance of the machine and aftercut appearance is the primary aim though following maintenance schedules and looking after your machine will give other benefits. Chief among these are operator safety, machine reliability - resulting in less downtime - and a reasonable return on the residual price when the time comes to sell.

Daily checks differ from course to course, though standard check-sheets can be found in the operator's manuals supplied with the machine.

Most daily checks are second nature with experienced operators and take little time to complete. Checking for fluid leaks, damaged hoses and units can be carried out with a cursory glance and investigated further if required, whereas interlock switches, braking, steering and instrument operation are normally checked the moment the operator drives from the shed. Checking oil levels, air filter and tyre pressures becomes routine and takes little time to do. It is possible with some greens machines that a difference of 1 psi in the tyre pressure will give a 0.25mm mismatch, which is visible to the naked eye.

At the end of a day's work, it is worth taking the time to wash units down with low-pressure water - lubricate to purge any water and top up the diesel tank to minimise any condensation forming in the tank over night.

One of the most important daily checks is to verify the unit is on cut. This will reduce the risk of damage to the reel, excessive wear on the moving parts and give a better quality of cut. There are so many variables that can affect quality of cut and it is important to understand all factors involved.

It is important to check the following to maintain reel mower performance on a daily basis:

- **Bedknife to Reel Adjustment** - Both the reel and knife's cutting edges need to be straight and sharp, so grind as necessary and back lap little and often. The reel should be adjusted to the bedknife so that it pinches paper when placed between the two and cuts paper when it is passed over the bedknife into the path of the reel. This is one of the most effective preventative maintenance practices.

- **Attitude Adjustment** - Where units have this capability, is normally set for the height of cut used. 'Attitude' refers to the bottom of the bedknife and the ground plane under the cutting unit. A large angle is referred to as an aggressive bedknife attitude. The opposite applies to a small angle and in this less aggressive set-up the bedknife can be riding on the turf. This is one of the first places greenkeepers should look when trouble-shooting aftercut appearance issues. Designs in units, such as the DPA unit and the Bedbar pivot location, now allow for operators to maintain a virtually-constant aggressiveness as the reel wears.

- **Rollers need to be set parallel with the cylinder** using a set-up plate and at the same time roller bearings should be checked for excessive play. Modern components such as the DPA unit have rollers that are parallel with the reel throughout and do not require the need to 'parallel'.

- **Height of cut needs to be checked for desired finish**. As with tyre pressures, errors in setting the height of cut on a greens machine by as little as a 0.25mm mismatch will be visible to the naked eye. With courses achieving ever-lower heights of cut on their greens, it is becoming more critical to achieve continuity through setting heights of cut.

It is important to maintain continuity across all cutting units and ideally to ensure the same person sets all units. Again, this is another area to look at when trouble-shooting aftercut appearance issues.
Greenkeepers using Toro equipment can now take advantage of in-house training. Manufacturers produce videos covering casting an eye towards the construction industry, with its seen the introduction of a mandatory operator's licence but both general and machine-specific safety on the golf course.

It is only a matter of time before we see something similar in our industry. Jaynes looked at the requirements for installing machinery, and pointed out the clear introduction of the CITB licence for machinery operators, I executive reviewing the use of machines in the courses. This has come about in part, due to the Health and Safety training:'

2. 'Used only by people who have received adequate information, instruction and training':

In the Continue to Learn booklet of this series of articles - volume 2, 2005 - Keith Jaynes looked at the requirements for installing machinery, and pointed out the clear distinction between installation and operator training. Therefore I shall not attempt to deal with installation again here.

Suffice to say, manufacturers and golf club employers share a responsibility to ensure machines are installed legally. Before an operator uses any new machine, a competent person should always cover a comprehensive installation briefing. Those responsible for receiving machines should sign installation/delivery paperwork only when they are happy that a complete installation handover has been given.

The past few years have seen an increase in operator training courses. This has come about in part, due to the Health and Safety executive reviewing the use of machines in the agricultural/groundscare industry and the possible introduction of a mandatory licence for all operators.

Some dealers have seen this structured training as an opportunity to contribute to the safety of the industry and improve customer care and after sale satisfaction. Manufacturer's training or accredited training through Lantra, is generally available from manufacturers, training providers or local dealers. We have not yet seen the introduction of a mandatory operator's licence but casting an eye towards the construction industry, with its introduction of the CITB licence for machinery operators, I believe it is only a matter of time before we see something similar in our industry.

There are a variety of resources available for golf courses to offer in-house training. Manufacturers produce videos covering both general and machine-specific safety on the golf course. Greenkeepers using Toro equipment can now take advantage of a variety of operator training courses run by distributor Lely UK, which are unique in the industry. Courses are part of a year-round training programme and are held over two days at Lely's St Neots training facilities. The sessions are very popular and comprise:

**GOLF COURSE MANAGER'S COURSE**

Designed to provide an understanding and knowledge of how best to manage a machinery fleet, including routine paperwork. Covers available information to assist turf professionals in the management of their courses. Also includes a brief look at Health and Safety on the golf course.

**GROUNDSCARE OPERATOR'S MAINTENANCE COURSE**

Provides an understanding and knowledge of troubleshooting, routine servicing and maintenance of Toro groundscare machinery. Covers principles and factors that affect clip, unit configuration and after-cut appearance, as well as giving training in the use of Toro equipment.

**GROUNDSCARE MECHANIC'S COURSE**

For troubleshooting, routine servicing and maintenance of Toro groundscare machinery. Training in the principles and factors that affect clip, unit configuration and after cut appearance. Participants also learn about grinding procedures.

**SPRAY TECHNICIAN'S COURSE**

For training in using and calibrating a pro-monitor and pro-controller. Additionally deals with troubleshooting, routine servicing and maintenance, including sonic booms.

Ian Sumpter is Training Manager for Lely UK Turf Division.