Roland Taylor lifts the lid, or should that be the grass bucket, on the greens mower

Short back and sides

It is easy to forget just how much precision is required for a cylinder and bedknife to produce a high quality finish. The concept was originally developed by Edwin Budding from his system for cutting the nap off cloth, which was developed well over 170 years ago, and had to be highly accurate to avoid damage to the material. The environment in which it worked was clean with very few hazards, and the cloth could be kept level. These conditions are very unlike those in which a modern mower works, which are relatively hostile. Dirt, dampness and abrasives abound and mowing surfaces are very rarely flat. Blades can be quickly dulled and are sited in a position where there is always the risk of damage. Under these conditions if a greensmower is not correctly looked after, things can soon go badly wrong.

Getting the best results

As most readers are well aware the critical factor for achieving a quality finish is the reel to bedknife adjustment. This also plays a significant part in the mower's over-all performance. If the reel is set tight to its bedknife then the result is similar to applying a brake and all the components are placed under extra loading. To compensate, the engine governors open up and more fuel is consumed. In addition, heat builds up in both the reel and bedknife causing further damage and possible scorching of the turf. The finish on the green deteriorates fast.

If the reel and bedknife are "off" adjustment there is less chance of heat, but the same applies as far as the rest of the mower is concerned, and the poor quality of cut will be obvious. Sand or dirt can be trapped between the cutting surfaces causing bluntness and damage.

Most modern greens mowers have either a 9 or 11-bladed reel with optional bedknives. The number of cuts (clips) per metre depends on the speed of the reel and the forward motion of the mower. Again adjustment can affect the finish, but there are other influencing factors. These include slack drive belts or chains, incorrect engine speed and the volume of grass being removed.

The height and frequency of cut also plays a significant role, especially in the speed of greens. In the past one method of overcoming the problem of a slow green was to close shave. The adverse results this produces far outweigh any advantages and today it is not recommended, even as a stop gap measure. By removing a large amount of the leaf area, the natural process of photosynthesis - so vital to healthy plants - is drastically reduced. The plants become weak and susceptible to disease, poa annua and other weeds will become quickly established in the thin turf. Mowing should be carried out frequently with the machine set at 5mm. Regular light verticutting or grooming will deal with lateral growth and help to open up the turf to allow light and air to penetrate and circulate. It will also contribute towards speeding up a green.

Moving forward

When one looks at the history of cylinder mowing, it is surprising that it was almost 100 years after their introduction that a multi-bladed machine specifically designed for greens - the Ransomes Certes - was introduced. This was a push model, in spite of the fact that motorised mowers had been introduced over 20 years earlier and were being used on golf courses for cutting the fairways.

Greenkeepers had to struggle, pushing these greensmowers until the 1950's when manufacturers recognised a potential market and introduced petrol engine models.

Prior to the Second World War the need to speed up the mowing of greens was met by the introduction of the Overgreen, which towed three Certes push mowers. This machine was a forerunner to the triplex mowers that appeared in the UK from America in the 70s.

Now, 30 years on, the high profile that golf enjoys throughout the world has led to a plethora of greens machines. The biggest decision for

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most of today's greenkeepers is whether to go for a walk-behind or triple mower and which model to buy.

Some, or all, of the following factors are likely play an important role in helping decide which one.

Types, size and location of greens

If greens are heavily undulating, stepped, or if access is restricted, then a pedestrian model is almost certainly the best choice. On large greens the highly manoeuvrable triple is the answer. These can also be used on small greens but problems may occur if the machine has to be constantly turned on the actual playing surface because of the surrounding landscape, such as banks.

Time and staff

As we all know there are never enough hours in the day, or enough members of staff to carry out the host of tasks needed to keep a modern golf course in tip-top condition. A triple can make considerable savings in time and labour.

Personal preference

There are arguments for and against both these methods of mowing greens so, at the end of the day, it is what best fulfils each course's requirements. For some clubs, one compromise is to regularly mow with triples and use hand machines for competitions and special events.

On the market

Pedestrian

These come in cutting widths from 41cm (18?) to 66cm (26?) and are powered by petrol engines. There is generally a choice of bedknife thickness and ranges of optional equipment including turf groomer or verticutter, rotary brush, smooth or grooved front rollers.

Triples

Petrol, diesel and electric powered versions are available and working widths range from 1.50 metres up to 1.78 metres, depending on the make. All cutting units are fully floating and

there are ranges of alternative turf maintenance units such as turf groomers, verticutters and brushes from each manufacturer.

Demonstration

Because greensmowers (pedestrians or triples) are designed for a specific application, it is hardly surprising that the technical data is often very similar. Therefore the only way to make a true comparison between different makes and models is to mow a green! This is why a demonstration is so important. Whilst the time factor alone would not justify seeing all the makes and models available, certainly more than one should be accessed under identical conditions. When dealing with nature there are so many variables that no two greens will be alike. To obtain a true picture, all the mowers demonstrated should be viewed on the same day and in as close a locality to each other as possible.

A demonstration is not only a chance to evaluate a mower's performance but also an opportunity for operators to access its ease-of-use and to decide whether they are going to be happy using it.

For the future

The indications are that making mowers more versatile in relation to general turfcare maintenance has increased over the last few years. A number of machines are now on the market with interchangeable cassettes or attachments. Other changes likely to occur in the future will involve power sources, as possible legislation on exhaust emissions takes effect.

The one thing that is unlikely to alter to any degree is the actual principle of the cutting system. Budding was a clever guy, and golf, like so many other sports, has a lot to thank him for.