

REAL WORLD TEST

Shallow Aerators

GREENKEEPER INTERNATIONAL

Hugh Tilley continues his look at aeration, this month concentrating on shallow aeration.

The condition of turf is dictated in large measure by what happens below ground. Aeration is a vital element of the greenkeeper's work allowing air to get to the roots, and perhaps equally important, surface water to clear. Keeping the top levels of soil open and free of compaction usually requires regular mechanical treatment, this also helps remove thatch.

There are many machines on the market, tractor mounted or self propelled, ride-on or pedestrian – as well as drum type machines which seldom feature on the golf course – and all are offered with a choice of tines and heads. Of course aeration is a total concept and most greenkeepers use a series of machines and programmes in order to achieve their objective thus it would be wrong to view any one machine or programme in isolation.

While most machines use tines worked by cranks to give a vertical motion, there is the Toro Hydroject which uses a water jet to blast holes in the green, and this has the advantage of not leaving debris on the surface. Most of these machines have attachments to row or swath cores so that picking them up is easier, but some manufacturers, such as Ransomes, market their own collecting system. Aeration and coring is inevitably linked to topdressing, often with the top dressing being brushed into the core holes. This may allow the greenkeeper to change the composition of the root zone of the greens – and may even be the prime idea thus more important to some than simply aerating the green. All the machines considered here offered a range of tines, such as coring, solid and slitting, and flexibility over spacing, although to vary lateral spacing it may be necessary to change tine holders. How tines are held into the machine varies, but no-one said that he had trouble keeping tines in. Nor did anyone report difficulty changing tines, most are held in by a pinch bolt, but some



Dennis Ayling and the Sisis Technicore

use a set stud. As no one was trying to work at greater depth than about four inches (100mm) – imperial measure is the norm – there were few problems of tine breakages or bending. However as all were working on mainly greens there should be few stones. Most greenkeepers also used their aerators on tees and approaches. Several mentioned the fact that vibration is inherent in the process and that vibration

could be "a killer" (of the machine) but only one reported this as problem which needed attention, ie regular application of spanners to check tightness.

Changes in distribution have caused Multi-core Aerators to have its own machine made in UK. This totally new model incorporates Ian Waddington's past experience in this field, and includes several features which he considers to be improvements

on the machines which he sold in the past. Two widths are available and both are tractor mounted. While the standard spacing is 61mm, several options are offered and include slitter and mini tine heads. Unfortunately because the machines are so new, Course Managers contacted felt unable to comment and so it has not been possible to include Multi-core in this feature. Incidentally the company has changed the livery and moved headquarters to Wetherby.

Sisis Technicore, at Rowlands Castle Golf Club in Hampshire

"Versatile" was a one word answer to why Rowlands Castle have a Technicore. Dennis Ayling, Course Manager, is extremely pleased with the machine which is run behind an Iseki 320 compact tractor. The club has had the machine for two years and bought it after consideration of several rival, which Dennis commented were "tinny". He has also had satisfactory past experience with Sisis.

Experience with the machine has been that it is fast and gives all the depth needed. The fact that it has a positive action – punching the tines into the ground, and that it is British were plus factors.

There have been no mechanical problems and only tines have needed replacing. The greens are on original soil, and tees are also treated occasionally. Dennis said that in his experience because the underlying subsoil of clay with flint it is essential to work down to the full depth of four inches over a series of uses. Early use trying to attain full depth had resulted in some bent tines. Having used the machine for two years it is now easy to get this full depth – and quicker, treating all greens now takes about a day.

The club has a range of tines including slitting and pencils and as well as using the coring tines in spring and autumn, the pencil tines are used to open up the turf and allow water to penetrate quickly.

Hardi Coremaster 12, at Sonning Golf Club, Berkshire

The Coremaster has been on the course for over two years and



Mark Cheesman aboard the Hardi Coremaster

was supplied by Risborough Turf – and Course Manager Mark Cheesman commented that the back-up from both Risborough and Hardi has been excellent. In fact the machine has given no problems. One of the primary reasons for the purchase of this particular machine is its system of automatic lubrication – to the main bearings, it uses a pumped oil system which has a visible pressure gauge.

Mark said that it was routine to check the system twice a day, particularly for blockages – which are readily spotted, however no problems have been encountered, nor have oil lines split, and there has been no oil on the grass.

The club has a range of tines, hollow and solid, and quadruple holders with close spaced pencil tines. Normal procedure is to hollow core in autumn, following this with over sowing and top-dressing, and to repeat this cor-

ing in the spring. Cores are collected manually. In addition tees and approaches are cored at this time prior to application of a slow release fertiliser. "Quadrating" – using the pencil tines is practised monthly in summer mainly to minimise surface compaction. Mark also stated that this exercise allowed water to penetrate better. He considered that climatic changes over the past years has made this more important than ever before.

Greens are soil based but have no stones to complicate the operation of aeration. Tees and approaches are tined with solid tines in autumn, and the club also undertook some deep tine aeration. Greens are slit weekly in winter.

The club does not have a "set time" machinery replacement policy, thus Mark expects the Coremaster will continue to be operated until it ceases to be eco-

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conomic to repair. However there is no sign of this occurring in the near future. He said that the club keeps detailed records on machinery costs, and has a greenkeeper/mechanic thus it can control repair costs.

Groundsman Industries, at Harpenden Golf Course

This pedestrian operated machine is, according to Stewart Boyes, very efficient and user friendly. He considers tractor mounted machines too heavy and damaging to greens turf and thus keeps them off. He also likes the fact that the Groundsman is self-contained and this allows it to be taken out at a moment's notice – without all the hassle of having to get a tractor free and attach it. As a result the club spreads its use of the machine rather than trying to do all greens at a single session.

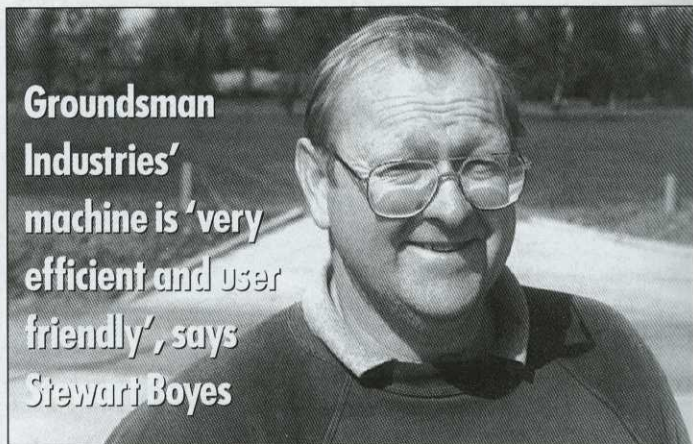
The course was built in 1931 on heavy red clay, thus keeping

the surface open for drainage is particular important.

Harpenden's machine is now four years old and has just been thoroughly overhauled and updated by the manufacturer in Ireland. This resulted in several detail improvements. Service support has been extremely good, Stewart commenting that Groundsman Industries was only a phone call away – and usually on-site within a day to attend to the machine.

Ironically on the day Stewart was visited the machine had just broken down – a problem attributed to the flexible coupling on the main shaft – thus it was not able to be taken out for a photograph! In the past it had proved very reliable.

The club has several types of tine, from one inch upwards, in hollow, solid and chisel forms. Hollow coring takes place in spring and autumn, doing six



Groundsman Industries' machine is 'very efficient and user friendly', says Stewart Boyes

greens over two days per week, this way the number of greens out of play or effected at any one time is minimised. This operation is followed by topdressing using a 70/30 mix and overseeding with bent. Tees and approaches are also cored, but slightly more deeply. Dethatching is seen as the major role in the aeration programme, with the tines only being allowed to penetrate some one inch plus to two inch.

During the summer the greens are treated to slitting using the one inch chisel tines to a three inch depth and this versatility is seen as one of the great advantages of this machine. Another not inconsiderable plus is that it is not an expensive machine, to purchase, maintain nor to run.

Cores are swathed and picked up manually.

Maintenance is very simple, greasing round each time the machine is used, as well as checking engine oil. The Kubota GH250 engine has proved reliable and a good starter. A major result of the recent upgrade has been to further reduce the vibration naturally produced by the operation.

John Deere Aercore 1000, at Wernddu Golf Centre, Abergavenny.

Now in its second season the Aercore is used only for greens and has had a remarkable effect on the speed at which water soaks into them. "It has made irrigation so much more effective that wet

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ter is not now being used. He also reported that aeration had given a great all round improvement of the greens," said Head Greenkeeper, Haydn Woods.

The important reasons for buying the Aercore were its build quality and the service back-up – supplying dealer is Frank Sutton of Raglan. Several competing machines were demonstrated but their build quality had not appeared as impressive.

Keeping the centre open during the winter is vital to the economics of the business and as a result the Aercore is used regularly throughout the winter. Coring is carried out in spring and early autumn. Three quarter inch solid and pencil tines are also used and Haydn commented that tines were not expensive. Cores are collected manually – then sieved so that the soil can be used on the tees.

The machine has suffered no

mechanical breakdowns, it is very quiet and it is fairly quick and easy to fit to the hydraulic linkage and pto – on a JD 855 compact tractor.

Jacobsen Aero King T1224, at Cradoc Golf Club, near Brecon

One of the most picturesque of all courses but one with a chequered past since its 1968/9 establishment. Cradoc is now a private par 72 club with over 700 members. It is on redstone clay and is heavily contoured with some very interesting drives. Head Greenkeeper, Malcolm Davis, is extremely proud of the course and the improvements that have been made to it.

The club buys its machinery from a range of suppliers and the Aero King was bought at an exceptionally good price from the local dealer. It is a 4ft wide pedestrian controlled self propelled machine. However as an ex-demo



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Malcolm Davis with his Jacobsen Aero King T1224



buy it has not been without its problems, some of which were corrected under warranty. Since then club policy has changed to buying new – but Malcolm is happy that he would re-buy Jacobsen should the need to replace arise.

Early problems included replacing four ball joints, a choke cable, safety switches and a gearbox shaft, however once these problems were sorted and the machine became established on the course's machinery list it has proved totally reliable – and the Honda engine has never caused any concern.

The machine is used as an integral part of the club aeration programme which includes slitting using trailed slitters and Verti draining, a machine for the latter being routinely hired in August, with the course shut for two days while it is carried out.

The staff includes four full time greenkeepers plus a part time greenkeeper/mechanic, the latter being responsible for most servicing of the equipment on the

course. Parts supply has been satisfactory. Malcolm recognised that the task the machine does results in an exceptional degree of vibration, thus he accepts that this must take its toll in terms of wear and tear.

Ransomes Ryan GA30, at Bristol & Clifton Golf Club

Head Greenkeeper, John Barr, placed manoeuvrability as the most important feature for the Ryan GA30 at Bristol, but in addition he said it was a fast machine which could comfortably treat 18 greens in a day. This particular machine, supplied by T H White, is now in its second season with no mechanical problems. John said that initially there was some tufting – but it was just a matter of reading the operator manual and adjusting the settings – since then it has been perfect. The club carries out its own servicing.

Soil on Bristol Down – the club is close to the Westurf venue – is sandy limestone, and while drainage is little problem, thatch can build up and there can be surface compaction. As well as greens the machine is used for tees. Some greens and tees have steep bank surrounds and these require exceptional manoeuvrability. John said that the Ryan GA30 scored on this because it could turn so well, and this probably meant a large time saving which gave it an overall work rate to equal any tractor mounted machine.

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Another significant advantage of the machine was its flexibility to reduce the tine spacings without the need for spanners. At Bristol both hollow and solid tines are used, mostly at spacings of around two inch and three inch. Operating depth is down to four inches but this was wear dependent, with about two sets being used per season, but this was not regarded as excessive.

Maintenance and servicing is "quite easy" with guarding easily swung aside. John said that setting up the rockers correctly was particularly important.

Last year the club hired a Shattermaster which improved drainage so that it is virtually certain that one will be hired again or even purchased this year.

Toro Hydroject, at Walton Heath Golf Club, Tadworth

Clive Osgood, Course Manager at Walton Heath, stressed that the



Clive Osgood, right, with the Toro Hydroject

hydroject should not be seen as a complete answer, but simply an additional and complementary option to other methods. At Tadworth, with two courses, they have a range of equipment including a deep tine aerator as

well as slitters.

The principle use is to reduce surface capping on greens, however the machine is also used to treat areas of high wear and trafficking. The most significant advantage of the machine is that it leaves a clean surface which can be played over immediately.

Although the name Walton Heath implies light sandy conditions, in fact the native soil is acidic heavy clay which needs regular opening up. Having two heavily used and prestigious courses makes it possible to justify the Hydroject, but Clive admitted that it was not a cheap machine to buy. Nevertheless running costs

are not high, there have been no repairs and minimal maintenance, and water usage is not heavy. Clive considered that the provision of a trolley to carry the hose (behind the machine) between holes would add to its attractiveness as would a lower price.

At Walton Heath they have no problem in getting the jet to penetrate down to 10". The machine is now in its fourth season and was first bought because the concept looked right to Clive. Certainly the fact that play is only interrupted while the machine is on the green gives it a significant advantage over most other forms of aeration.

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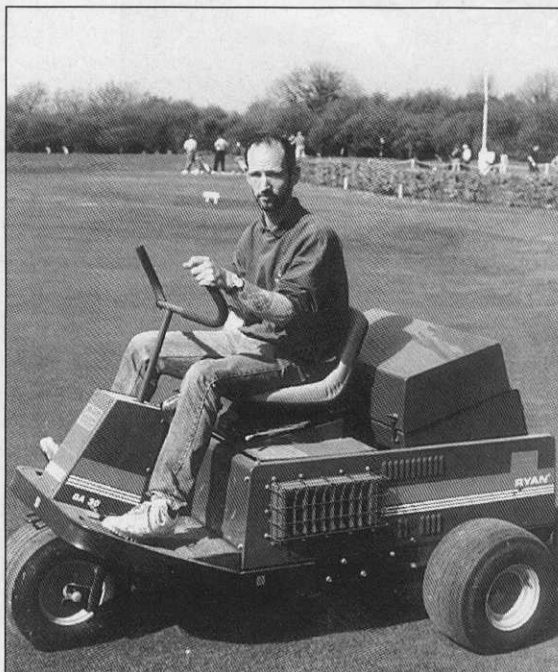


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