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Official publication of the British & International Golf Greenkeepers Association
SEPTEMBER 1993



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GREENKEEPER International

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Greenkeeper Education and Development Fund

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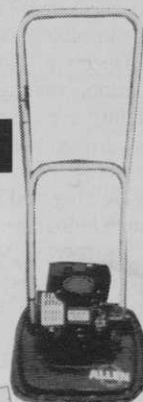
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Faces and places



■ The Rt. Hon. Viscount Whitelaw, president of BIGGA, officially opened the new Sedburgh Golf Club last month, five years after the old course, high in the Cumberland fells, had been deemed virtually unplayable by members. Bruce and Lorna Wilson and John and Jean Handley, whose adjoining farmland

hosts the new Maxel designed and constructed course, fought a long battle with planners and conservationists before the first sod was turned.

Viscount Whitelaw, who is Sedburgh's first honorary vice-president, opined that there would always be those who claimed that golf courses were a threat to wildlife, but as long as more and more people wanted to play the great game, there would be a need for new courses. He also praised the sympathetic design, which utilises natural features to the full, appearing as if it had 'always been there'.

■ A new specialist group has been formed by the Institute of Agricultural Engineers (IAgrE) to cater for those involved with leisure, sport, and the environment – with an engineering requirement or demand. Named the Amenity and Ecological Engineering group, its formation reflects changes taking place, with farmers diversifying into the leisure and sporting sectors and environmental concerns taking precedence. As a result, agricultural engineers are being called upon increasingly to research, educate, advise, design, develop, manufacture and supply equipment and services within areas other than food production.

The agricultural engineering profession is well placed to respond, first because it has long been involved in environmental manipulation through drainage, erosion control, land reclamation and levelling, water storage and irrigation. Second, it is the only engineering discipline with a scientific base in biological science. The new group aims to embrace all aspects of biological science and 'clean' technology: the creation, management and maintenance of sports and amenity areas and the design and management of landfill sites. In conjunction with BIGGA at BTME in January 1994, the group will hold its first public function, a seminar on engineering and its applications within amenity and the golf course industry.



■ Readers may remember Gordon Mitchell writing in Greenkeeper International earlier this year after they had a break-in at the club's equipment store – the story goes that the intruders were eventually spotted in Leek High Street wearing John Deere caps, removed during the break-in,

couldn't explain where they'd got them, and were subsequently arrested and charged.

Among other equipment, the club runs a John Deere 2243 greensmower, 1070 compact tractor and 305 five-gang fairway mower – hence the visit to John Deere's HQ, to update themselves on the parts service and new machines for the golf course – and to be presented with some new hats! Our picture shows the suitably attired Gordon, right, with assistant Rob Pickford.



■ A cautionary tale for those who are forced to chase around the course – Ian Holoran, who assures me he certainly wasn't 'doing a Mansell', came across two golfers blocking his way on the course at Middlesbrough, braked hard on a sloping path and slid less than delicately into a very muddy stream. The result? A well bent Greens King and a

shaken though thankfully unhurt Ian Holoran. The trade, no doubt, were swift to make unscheduled sales calls!

■ The chance to win an expenses paid trip to attend the 1994 Golf Course Superintendents Association of America (GCSAA) Convention in Dallas, USA and £1000 worth of free Farmura products for the golf course awaits the winner of the Blazon 'Better Way to Spray' photographic competition. Second and third place runners-up will receive £500 and £250 worth of free Farmura products respectively.

The competition is open to greenkeepers and turf managers and each entrant will receive a free 110 camera and film, although entrants may use their own camera if they wish. The photographic theme is 'Summer on the Golf Course' and entries will be judged by a panel of experts chaired by David White, editor of Greenkeeper International. Your winning entry could well end up being featured in Greenkeeper International, certainly it will be displayed at the 1994 BTME in Harrogate. For information call 0233 76241 or speak to a Farmura products distributor.



■ At the All Seasons Golf Day staged at Foxhills, Jack McMillan, left, received a special award in recognition of his recent MBE, presented by Terry Huntley, chairman of the Surrey section of BIGGA, and John Hobbs, sales director of All Seasons Dressings.

■ With the expansion in golf courses through the country, the GTC approved Warwickshire College has taken steps to increase its provision and has just completed the construction of a third green on the college golf course. The work fits in perfectly with the curriculum as students get hands-on experience in the specialist tasks involved during construction, while at the same time the college expands its facilities, thus increasing its resource base. Sponsorship for the green construction has been important and the college has benefited from collaboration with a number of companies including Boral Lytag Ltd, Greenkeeper Ltd, Greenbase and AquaPipes Ltd.

■ Jason Hampton, 22, of Cartmel, Cumbria, has been awarded The Rufford Cup as best overall student following his three year BTEC National Diploma course in Golf Course and Sportsground Management at Sparsholt College, Hampshire. Jason, formerly from Brixham in Devon, plays golf with a handicap described as 'low' and gained work experience during the course duration at the Woodbury Park Golf and Country Club.

At the college's presentation ceremony, The Lord Sainsbury, KG., wished students of this 'most prestigious' college every success and recommended that, in their future positions, they should always remember the customers for their goods and services. "The customer should always be given good value, this being the sum total of quality and price".



■ Jimmy Richardson, secretary of BIGGA's North East section, has taken on the formidable task of managing the 180 acres that form Matten Hall Golf Club, located 20 miles west of Newcastle upon Tyne. Built by Golf Design and Management and designed by 'Mr Happiness', pro golfer Mark James, the 6600 yard course will be in full play by the autumn of 1994, with nine holes opening next spring.



■ David Culpin has been appointed John Deere's area manager for the whole of Ireland. He replaces Chris Meacock, who had previously taken up a similar role in the East Midlands. David became Agricultural Engineering Student of the Year while attending Caythorpe College and has been a member of the British Society for Research in Agricultural Engineering (now Silsoe Link). He lives in Palmerston, Dublin.

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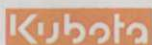


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Education

Video is a first for BIGGA and industry



The launch of BIGGA's first turf management training video, wholly sponsored by companies contributing to the Greenkeeper Education and Development Fund, took place at the Open Championship in July.

This video, the first in a planned series, focuses on the spray application of pesticides, fertilisers and the other chemicals within a golf course environment. Entitled "Setting the Standard in Spray Application", topics include the integration of chemicals with mechanical and cultural practices, the matching of power units with sprayers and defining the standard of equipment and course requirements.

The film details the progress of a typical sprayer operation from start to finish demonstrating the essential Health and Safety requirements and the current Codes of Practice. The complete calibration procedures for a boom sprayer is featured, together with the correct methods for handling, measuring and mixing chemicals prior to application.

The video has already been acclaimed as a major training aid for all those involved in turf management.

Filming of the video took place at the Belfry Golf Course, venue for the 1993 Ryder Cup.

More than 1,500 free copies have already been sent to course managers and head greenkeepers, who are BIGGA members, at golf clubs throughout the UK.

Additional copies of this most informative video – which would help both golf course members and committee members to understand the skills involved in maintaining golf courses – are available at a cost of £18.75 (BIGGA members) or £23.75 (non-BIGGA members), inclusive of VAT, postage and packing. Send your cheque or postal order made payable to BIGGA to: British and International Golf Greenkeepers Association, Aldwark Manor, Aldwark, Alne, York YO6 2NE.

■ The Toro/PGA Student Greenkeeper Award regional finals have now been scheduled. The Welsh final has already taken place and the five other regional finals will take place from 9–13 September at various college locations throughout the country. The eight finalists to include two from Ireland will be featured in the next issue of Greenkeeper International and the winner being chosen at the National final at BIGGA Headquarters on 10/11 October. Good luck to all the finalists.

■ If you have not yet attended one of BIGGA's Management Courses, please consider doing so this year and getting booked in Year 1 now!

Years 2, 3 and 4 are filling up rapidly as these delegates have already gained the benefit from attending one of these courses and want to come back for more! It's not too late to book so complete the green registration card in this issue of the magazine and send to HQ to reserve your place.

■ Last month members were advised of changes taking place regarding the provision of financial services and that details would appear in this issue of the magazine. At present details are not yet finalised but should be so for the October issue of Greenkeeper International. Meanwhile, members who need further information or advice should contact either Neil Thomas or John Pemberton at BIGGA HQ on 0347 838581.

GOLF COURSE IRRIGATION

A NEW STUDY

by PAUL HERRINGTON and MARTINA HOSCHATT

This study, undertaken over 1991-3 by the Department of Economics at the University of Leicester to assess the possible implications of climate change for the demand for water, concerns itself with both the public water supply (PWS) and direct abstractions (DA's), concentrating on those demands thought to be especially sensitive to climate.

Mr John Shildrick of the BTLIA helped in the compilation and distribution of a questionnaire to a sample of members of BIGGA, and five NRA regions in the south and east of England (Anglian, Southern, South West, Thames and Wessex) were targeted as the area most susceptible to water scarcity problems. A questionnaire was produced, the objectives of which were:

- to gain a factual picture of present golf course irrigation in terms of quantities, sources, uses and timing;
- to assemble information about annual water costs;
- to ascertain the possible response to a hypothetical doubling of water prices, from both PWS and DA's;
- to invite comments about the possible implications of global warming for course water use.

The questionnaire was sent to 298 BIGGA members and there were 89 returns (30%), covering irrigation activities on 114 golf courses: 95 18-hole (83%) and 19 9-hole (17%). The consensus estimate is that there were about 1600 golf courses in England and Wales in 1992. Assuming that half of these, 800, were located in the five NRA regions, returns represented 14% of courses in the south and east. The returns were from 21 counties, from Cornwall across to Lincolnshire; of these 35% came from Hertfordshire, Kent and Surrey.

Size of Golf Course Complexes

One of the 89 responses gave information about a 64-hole complex (14000 yards, in Surrey), one for a 39-hole complex (15000 yards, in East Sussex), nine for 36-hole complexes, and twelve for 27 holes. Of the remainder, six were for 9-hole courses and sixty for 18 holes. 18-hole courses ranged from 5300 to 7100 yards. Numbers of rounds played per year

ranged from 2500 to 80000. The 44 18-hole courses providing use information revealed an average of 44250 rounds per year.

Irrigation Systems and Uses

Virtually all courses provided information of the type of irrigation system used. 76% made use of automatic systems with pop-ups, 12% had manual installations (with sprinklers working from hose-points), and 11% had mixed automatic and manual systems. Just one course had no fixed installation at all, and two reported travelling sprinklers in addition to an automatic system. As recently as 1987 it was reported in Turf Management that as many as 11% of courses had no form of irrigation system. However, the regional breakdown of that 11% is unknown.

Most courses (56%) irrigated both greens and tees in a climatically average year; a further 27% watered greens only, 7% irrigated greens, tees and approaches, and the remaining 10% watered fairways in addition.

Sources of Water

We obtained information on sources of irrigation water for 100 'courses', a course sometimes defined as a 27-hole or larger complex. 33 courses reported more than one type of source, 'types' being defined as • PWS (direct) • PWS (into storage first) • DA's (direct) • DA's (into own storage first).

The various possible source combinations are best summarised in the Venn diagram shown as Figure 1.

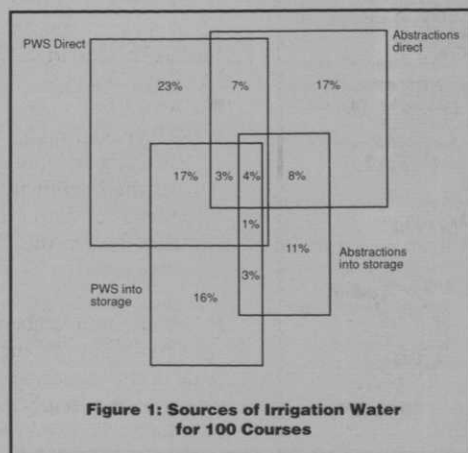


Figure 1: Sources of Irrigation Water for 100 Courses

This shows that 64% of courses made use of mains water (= PWS); of these 30% used PWS only directly, 19% PWS only for storage and 15% a mixture of directly and for storage. 54% of courses made use of direct abstractions; of these 24% used DA's only directly, 15% only for storage and 15% a mixture. 47% of courses used only direct supplies, of one sort or another, while 30% irrigated only from storage and 23% used a mixture of the two. Of the 39 courses using abstractions directly, 58% abstracted from boreholes and 42% from a river or lake.

Quantities of Water Used for Irrigation

We sought information from courses concerning the quantities of water used for irrigation over the years 1990, 1991 and 1992. Table 1 shows the resulting average figures. (In Table 1 and throughout this section we have omitted the data from two new courses which each reported using 10 million gallons in 1992.)

	No of courses ³	1990	1991	1992
PWS-only courses				
Information for all three years (Q6)	16	3.97	3.77	2.85
1992 information only (Q6 & Q7)	39	3.76 ⁴		2.70
DA's-only courses				
Information for all three years (Q6)	9	3.32	2.86	2.23
1992 information only (Q6 & Q7)	27	5.42 ⁴		3.64
All courses				
Information for all three years (Q6)	40	6.36	5.07	3.79
1992 information only (Q6 & Q7)	84	5.42 ⁴		3.23

Table 1: Average Water Quantities Used on Courses¹ (Megalitres²/year)

Notes

- (1) Strictly speaking data refer to responses received and therefore to complexes rather than courses. Virtually nothing is known about irrigation of separate components of > 18-hole complexes; we therefore apply our water use averages to courses, although average course use will be lower than the average complex use data listed in the table.
- (2) To convert data to millions of gallons per year, divide figures by 4.546.
- (3) Number of courses providing this information < 100% of sample.
- (4) As explained in the text, the 1990 estimate in italics is derived by multiplying → 8

the average 1992 course use (derived from the much larger number of courses reporting 1992 information only) by the 1990/1992 ratio for the courses reporting information for all three years. In this way, we make maximum use of the available information.

(5) Q.6 and Q.7 refer to question 6 and question 7 in the questionnaire.

Averages for 1992 were lower than earlier data for two reasons: the wetter weather in many parts of the south and east from June onwards, plus some restrictions on watering in earlier months. Without further study it is impossible to establish the extent to which the 1992 averages reflect restrictions-suppressed and therefore less than 'true' demands. We are thus inclined to label the '1992 information only' figures for 1992 as demands relating to a climatically 'average' year, and those for 1990 (in italics) as our best estimates for a 'hot, dry' year. 1990 estimates have been calculated by applying '1992 information only' to 1992 averages, the 1990/1992 relativity factors established from courses providing data for all three years.

Results: courses using only mains water reported using an average of 2.70 Ml (about 600,000 gallons) in 1992; we estimate the corresponding average for 1990 to be 3.76 Ml, 39% higher. Courses using only direct abstractions (from borehole, river or lake) irrigated an average of 3.64 Ml (800,000 gallons) per course in 1992, and 49% more than this in 1990. For all courses for which we have information, however, the estimated averages were 3.23 Ml (710,000 gallons) in 1992, and 68% more than this in 1990. For courses using both mains water and direct abstractions, the average quantity irrigated was higher: 5.50 Ml (1,210,000 gallons) in 1992. Based on the responses of only eight courses providing the relevant information, 53% of this was from the PWS and 47% from direct abstractions.

These average figures hide very skewed distributions; for all categories of courses the most frequently reported irrigation use was in 1992 between 200,000 and 400,000 gallons (0.91 to 1.82 megalitres).

If our sample of 114 courses is typical of the 800 estimated in the south and east, it is possible to estimate that total golf course water use in 1990 in the five NRA regions was 1601 megalitres from the PWS and 1618 megalitres from DA's (assuming that water taken from courses' own storage in that year was balanced by new water drawn from piped supplies or from abstractions). In other work undertaken for the DoE we have estimated total PWS industrial and commercial use in the south and east to be 1939 Ml/day in 1991 and total abstractions for all spray irrigation at 170 Ml/day. This therefore suggests that golf course irrigation use represented 0.23% of the PWS and 2.6% of total spray irrigation in 1990.

These percentage shares of course take no account of seasonal distribution. Because of the concentration of irrigation in May to August, golf course use may represent nearly 1% of total PWS industrial and commercial use over this period of the year.

Costs and Timing of Water Use

60% of respondents provided information on costs, and, as would be expected, water costs are significantly higher when there is reliance

GOLF COURSE IRRIGATION

on the PWS. Annual costs for 24 PWS-only courses ranged from £400 to £5000, with an average of £2100; for 15 courses using only direct abstractions, costs ranged from £34 to £2350, with an average of £308. All 49 courses reporting cost data revealed average 1992 water costs of £1582. Turf Management had reported a 1986 figure of £645, suggesting an increase of nearly 150% over the last six years (although the regional difference in the surveys should be noted).

All 89 responses gave information on water use timing. Only ten clubs claimed to use water in April, and even then it was generally only 5% of annual use. 44 clubs used water in May (mostly 10% of annual use), but 80 watered in June and 87 in July. 68 irrigated in August and only 16 in September. The most common pattern was to use 10% of water in May, followed by 30% in June, 40% in July and 20% in August.

What if the Price of Water Were to Double?

It is likely, whether or not global warming occurs as predicted, that the real price of water will continue to increase significantly over the next decade. For PWS's this trend is already very clear, while for DA's incentive-based charging schemes are now the subject of public debate. We wished to sound out those responsible for course irrigation management as to their responses to a large increase in the price of water, and so we hypothesised a doubling of real price and presented various possible reactions for checking.

	No of courses responding	Yes	Maybe	No
<i>Reduce water application (with existing techniques and resources)?</i>				
PWS-only courses	37	30%	27%	43%
DA's-only courses	27	26%	19%	55%
Mixed courses	15	20%	27%	53%
All courses	79	27%	24%	49%
<i>Construct more storage capacity?</i>				
Courses with no storage	37	38%	27%	35%
Courses with some storage	44	39%	32%	29%
Courses with PWS and DAs	16	69%	31%	0%
All courses	81	38%	30%	32%
(Average water costs of 'all courses' groups)	(44)	(£2320)	(£1650)	(£1250)
<i>Change irrigation technique/ technology?</i>				
Present technology: automatic	62	40%	36%	24%
Present technology: manual + hose points	7	71%	29%	0%
Present technology: mixed	6	50%	17%	33%
All courses	75	44%	33%	23%
(Average water costs of 'all courses' groups)	(40)	(£1880)	(£2030)	(£810)

Table 2: Responses to Water Price Doubling
in Real Terms

Two respondents complained about recent trends towards sandy top dressings on greens and tees, with one complaining this had probably doubled water use on a particular course in the last seven years.

The first question, about application (would a doubling in price 'affect the amount of water you apply with existing techniques and sources?'), is essentially about a short-run decision, implicitly assuming irrigation technique and equipment to remain unchanged. Only a quarter said they would cut back water use. Another quarter might, but half thought they definitely would not. These results are unsurprising; when courses are locked into a certain irrigation system, there may well be only limited scope for economies in use. There were no significant differences in the average annual water costs of courses answering yes, maybe and no.

On the question of more storage, involving a once-and-for-all investment (and therefore a longer-term) decision, there was more interest. Overall, nearly 40% of the 81 courses responding thought they would be induced to construct more storage by a doubling of water prices and only one third thought they would not. Significantly, the present average annual water costs of 15 courses saying 'yes; more storage' were nearly double those of the 14 courses responding negatively. This accords with what economic analysis would predict. On the other hand, it was surprising that courses with no storage at present seemed no more interested in additional future storage than those already having storage facilities. Courses with mixed supplies, perhaps already alive to the dangers of water scarcity, were particularly interested in adding storage in the event of a large price increase.

Even more interest was expressed in changing irrigation techniques and technology if the price was to double in real terms. Nearly half of all courses registered a definite 'yes', and

GATION A NEW STUDY

less than a quarter ruled this out. Again, economic factors seem to be at work here: the courses answering 'yes' or 'maybe' have at present average water costs more than twice as large as those registering a firm 'no'.

Further Information about Water Use

We invited greenkeepers to offer other relevant comments or information about course water use, especially in relation to the possibility of global warming, and 34 (38%) responded to this request.

Reactions covered a wide variety of aspects of course irrigation, with most frequent mention being made of the need to produce and encourage more drought-resistant grasses for a warmer climate and of current and future plans to construct reservoirs for on-course storage. Typically these provide storage of between 1.5-2.5 million gallons (7 to 11 megalitres), and one current application was described for a licence for two borehole abstractions, to fill two large course water haz-

ards which would also serve as reservoirs for use when mains water was restricted or became too expensive.

Two respondents complained about recent trends towards sandy top dressings on greens and tees, with one complaining this had probably doubled water use on a particular course in the last seven years. Two more drew attention to greater use of courses leading to compaction and hence greater run-off and therefore even more water being needed. As though in response, another two reactions drew attention to the usefulness of tining turf regularly in the peak summer season to assist water penetration.

Two clubs pointed out the usefulness of misting irrigation in very hot weather and two more saw great virtue in the use of wetting agents (one recorded a 'dramatic reduction' in water use after using a 'hand hose with wetting agent gun plus a monthly blanket wetting agent').

The influx of U.S. irrigation technology was

criticised ('different conditions and different budgets there'), but another respondent was pursuing US style plans to treat the effluent from the clubhouse and an associated hotel, hopefully to supply up to 4000 gallons (18000 litres) per day for course watering.

Other comments covered supply restrictions and the need to modify the game itself as well as balls and clubs for warmer conditions. Finally, three East Anglian greenkeepers claimed they would be unlikely to lose sleep over future water shortages induced by climate change since the same phenomenon would most likely ensure their courses were completely submerged by rising sea water!

■ This is an abridged version of the document 'Golf Course Water Use', a 16 page study document by Paul Herrington and Martina Hoschatt. Copies are available from the University of Leicester, Economics Department, Leicester LE1 7HH, price £1.50 including postage - cheques, made payable to The University of Leicester, should be sent with order.

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One does not see so much today of the root break phenomenon on putting greens, partly because most greenkeepers (though sadly not all) believe in and practice much more aeration, if only to counteract the compaction caused by ever-increasing play. Other sound practices, especially regarding top dressing, help to avoid the problem. Few will admit to having such a problem (unless they have inherited it) as in most cases it is the result of bad greenkeeping methods, albeit often started many years earlier.

I have, even to this day, vivid memories of this situation, dating back many years. Three in particular demonstrate the symptoms, if not the cause. First is the sight of long strips of greens being rolled up like a Swiss roll on drum-type aerators, in the absence of any anchorage, with a severe root break just below the surface.

Another is the sight of white grass leaves growing under the lifted turf, contrasting with green leaves above. The turf, finding air if not light under the sod, produced leaves not roots, presumably in some doubt as to which way up it was!

Thirdly was the sight on so many courses, so proud of their nice green greens, of the turf on a putting green lifting like an enormous blister, a foot or more above the putting surface simply by inserting a fork nearly horizontally and raising it, when the turf rose with it. When the fork was removed the blister subsided with a hiss of escaping air! All such shallow rooted greens were very drought susceptible and consequently were always heavily watered, with the inevitable result that the grass type changed, because of shallow surface rooting conditions, to annual meadow grass, making matters worse in a vicious spiral.

The cause of such root breaks is simply identified. It is almost always due to changing the top dressing in physical character and quality. This most commonly occurs when heavy sanding had earlier been carried out, often in a misguided attempt to firm up soft, soggy putting surfaces. There is one golden rule in top dressing and that is that it should be consistent. Ideally it should be the same as the root zone, but in our less than perfect world this is not always possible or sensible. With new greens built with specially mixed, sandy, humus-enriched root zones, it is sensible and easy to use the same mix for top dressing to ensure a consistent and uniform profile right down to the stone carpet. If however, as I have seen recently, the root zone is very unsatisfactory (in a specific case something like 25% of fines and virtually no humus, poor draining and root inhibiting) what do you do? It would be silly to use a humus-enriched sandy top dressing, as the roots would have no incentive to delve deeper for nutrients, and improved surface conditions would encourage shallow rooting annual meadow grass. Using the same awful root zone mixture would seal the surface and cause flooding, poor drainage after rain, and soft putting surfaces. Pure sand is the alternative — and inevitably causes root breaks.

Worse still, when heavy sanding starts to show problems, advice is unwisely proffered to change the mix — and then one really is in trouble. After a fairly short time, the grass lives on the top. There is no attraction for roots to penetrate sterile and often compacted (because humus-free sands and soils become destructured and consolidated) layers beneath. This in a way is comparable with a perched water-table green where successive layers 'fill' with water, and when the total water holding capacity of that layer has been reached then the water can flow to the next layer (as its weight

THE UNWELCOME BREAK

by JIM ARTHUR

overcomes the surface tension of the strata above). In this case, however, we are upside down! The largest particles are on the surface and there is no attraction for water or roots to penetrate inhospitable compacted lower levels. Roots cease, or move laterally, there is no anchoring or stability and a clear root break shows. Such root breaks persist for many seasons. Intensive deep aeration may help, but is often counter-productive because the turf is so weakly anchored that it tears up. Anyone who has Vertidrain greens with a root break will have all too lasting memories of the disturbance, especially if there has been some slitting beforehand. But one has to be cruel to be kind and persist, which means telling one's members well in advance what to expect – and the reasons why they should be understanding.

As with so many problems in greenkeeping, this is self-inflicted – and the tragedy is that those responsible for the disaster (be they ignorant advisers, inexperienced greenkeepers or interfering green committee men) will have moved on – often to repeat their heresies on other courses.

In severe cases, when frequent deep aeration would leave the greens looking like a battlefield, it may be necessary to lift the turf, (if it will lift mechanically, which is not always the case), cultivate the turf bed (taking the opportunity to ameliorate a structure-less soil with humus worked intimately and deeply into the root zone) and then after proper preparation of a turf bed replace the turf (or improved quality turf).

If your greens have been mismanaged by predecessors, e.g. by heavy sanding, then it is not always wise to switch to an organic rich top dressing, as in a year or so the buried sand layers will cause a break.

In the case of new greens it is sensible to match the top dressing with the root zone 'analysis'. If you have been silly enough or unlucky enough to have taken over American type pure sand greens, then you must stick to pure sand of the same physical analysis – and this means that such greens have limited powers of retention of water and nutrients and if not 'fed and watered' regularly and intensively, they will die. If you feed, you will end up with *Poa annua*. The moral is don't start with the wrong foundations – wrong because this type of green is designed for conditions (e.g. desert) which do not occur in temperate Europe.

Equally, if you have old greens built without stone carpets on local clay soils (and many built in the sixties were) then clearly you do not top dress with clay (or sand) but build up as quickly as you can with a root zone of good sandy humus rich top dressing and aid drainage by intensive, deep frequent aeration.

Another cause for root break on new greens is where a totally unsuit-

able, poor draining, de-structured soil has been used as a root zone; inhibiting anything other than shallow rooting. Then, if in an attempt to improve levels or thicken up the grass cover, generous top dressings are applied; the better the quality of the top dressing in relation to the root zone, the worse the problem. Then the turf lives in that surface zone, there being no inducement for the roots to penetrate lower into 'hostile' country and the surface layers will lift when aerated.

Root breaks are much easier to avoid than to cure. The secret is to catch them early and aerate like mad. If you find the hole cut plug starts to break off in clearly defined layers – no roots to hold them together – then get cracking. If you can hold a full depth plug by the turf and it holds together, with roots coming out of the bottom of the plug, then you will never suffer from root breaks.

Looking at the profiles of hole cuts can be very revealing. It is like the annular rings on a tree trunk. Look, 20 years ago, there is a thick black band when old so and so was 'peat mad'. There, even longer ago, is the time when we were using the wrong sand – or charcoal. One can even date the 'rings' and say with confidence that 30 years ago 'someone' was doing the wrong things but that 'someone' is probably not any longer capable of being got at! Ah well, such is life. But beware of being the same miscreant being criticised in 30 years time! Follow sound greenkeeping practices and do not chop and change and the grass will thank you by developing a deep, uniform root system, with no trace of root-breaks and all their attendant problems!

■ Especially written by agronomist Jim Arthur, this article appears in response to specific requests received from greenkeepers, in particular those who have experienced root break problems of some magnitude on new course constructions where unsuitable root zone materials have been employed.

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DAVID WHITE reports on the BIGGA-ICI Professional Products National Golf Tournament

I'm convinced of it, the spirit of Old Tom Morris must have settled on Graham Wood's shoulder throughout his and his team's many days of skillful preparation, leading up to the staging of the BIGGA-ICI Professional Products National Golf Tournament at Dunbar Old Links last month. Further, I'm sure also that Old Tom conveyed a ghostly message of encouragement to Dunbar's wizard of the fairways, heartened to see how Graham set proud the old master's creation, conjuring conditions for competitive battle that were, certainly to this links addict, pure perfection.

Links addiction is classified contagious, a disease for which there is no known cure, though strangely enough it is not something contracted by every golfer and some take precautionary steps to ensure immunity by playing most of their golf on lush, parkland tracks – thus when they come to play on courses over which the game itself evolved some five centuries ago – like Dunbar – they find the sandy soil which serves to create firm and often very speedy playing surfaces far too difficult, missing the ball control they mistakenly thought was mastered – on softer, and of course more forgiving, greens.

I make this point simply to put the results of this exquisitely sited tournament into perspective, for some greenkeepers were able to conquer Dunbar's conditions, others were



Trophy winners at Dunbar 1993

bewitched, bothered and bewildered. It became clear to this observer that whilst golf is not always meant to be a fair game, some were of the opinion that this links golf, breezy Dunbar style, was altogether too unkind, finding the examination paper beyond their game and leading to three days of head shaking and general disbelief at the irony of it all.

It is thus to the credit of those who had the 'measure' and made the grade – the shot makers, the bump and run merchants, the 'far and sure' strikers, and of course those who found a delicate touch on Dunbar's delicious greens, that the cream rose again to the top, as it always does.

What a great abundance of talent there is in the greenkeeping fraternity these days. From the very beginning of this BIGGA-ICI Championship we were witness to some masterly performances, with the first to break from the pack on this breezy Monday being Alastair Holmes, who for a long time sat content in the

clubhouse with a gross 75, before two other players, David Worsfold and Stuart Greenwood (a links man proper from nearby North Berwick), matched this score to take first and second nett handicap honours. First blood, then, (and the Fisons Bowl) to David Worsfold's nett 70.

On Tuesday the breezes blew once more – not fiercely as they so often do, but enough to ruffle the collar and certainly enough to cause a few blips when selecting the correctly numbered weapon. I'll admit to being unsure what constitutes a breeze, or when a breeze becomes a wind, thus I'm betting there will be some who dispute my classification – no matter, wind or no wind, Dunbar links was the undisputed master!

Breeze or not, this day it was David Spurdon's turn to shine with a nifty 72 to win the Standard Golf Trophy, and for Mike Hughes, the Midlands Mashie Manipulator, in typical good form to register 73 to tie with Graeme

CONCENT

The concentration and Professional Products



George Paterson demonstrates the concentration needed to win the ICI Professional Products trophy and best nett score over 54 holes.
Right, David Worsfold collects the Toro Trophy from BIGGA chairman John Crawford



➔ Ferguson; Mike eventually taking honours by virtue of a better inward nine. Though Mike's 36 hole total of 146 tied with Michael Finney, his lower second round was good enough for him also to take the coveted David Royle Memorial Trophy, with the low gross Toro Trophy going to first day victor, David Worsfold, and the Junior category falling to a most consistent player, Colin Garnett, who also subsequently won the overall Junior category. Lest we forget, George Brown played and scored beautifully also, whilst wishing he'd been born six days earlier – he was to be 55 on the 9th – and thus he was beaten by father time and a slightly more mature gentleman, Gordon Payne, whose 160 won the over fifty-five's... is it a sign of my own advancing years that all of 'em appear mere kids?

If all wagers are not settled on the links, there's always the practice putting green on which to finalise matters – for the Vitax Putting Trophy. On this occasion it was the 'wee bantam', Barry Holt, who cruised round in low numbers, and though he may line up the 'wrong' way, he certainly proved that he can nail 'em!

Tuesday evening of ICI Tournament week means banquet time. We've found some wonderful friends in ICI Professional Products, together with the tournament co-sponsors and ICI's business associates, and they never fail to make us proud to be part of their celebratory team, as they also are an essential part of ours. It is customary for ICI's David Siddon to make a presentation, and if ever a man deserved the praise (and the award) David bestowed upon him, that man was Graham Wood. David also delivered us a few well-chosen words spiced with a smidgen of propaganda and jokes that are show stoppers – telling us what we know already but love to hear – they're the greatest of guys. This year we were entertained by the obligatory comic, also a bonus in the swirl of pipes, Kirsty Greenwood's lovely highland dancing, and a Sept of the Gunn Clan, Cecil George, stirring us with his magnificent Burn's 'Address to the Haggis' – I swear it, we could all but taste the heather.

Having written earlier that cream rises, it was the final day that saw the ascendancy of George Paterson, who took just 69 strikes (the

lowest gross round recorded) to clinch a bevy of awards. First he took the William Hargreaves Trophy for low nett (67), plus the ICI Professional Products Trophy for low nett (221) over 54 holes, although it was a shame that the three-way tie left Mike Sheehan and Michael Finney (both also on 221) pretty well out in the cold, after the card playoff. The Netlon Trophy (54 hole low gross) was presented to Malcolm Latham for his exceedingly worthy efforts over the 54 holes.

To clinch the supremacy of Scottish talent, George Paterson, Alick Mackay and Paul Murphy waltzed away with what is always a mostly highly prized trophy – the Jubilee Cup – for team honours and for the honour of the North of Scotland.

Let us give thanks then to Dunbar Golf Club and its most talented team, also to ICI Professional Products and their many colleagues, who contributed so unstintingly. We learned from David Siddon that this classic event moves to the West Country in 1994 and, no doubt, many of the old and familiar faces will make this, as always, an event not to be missed.

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TOURNAMENT RESULTS

THE FISONS BOWL – Monday:

1st – David Worsfold
75-5=70
2nd – Stuart Greenwood
78-7=71
3rd – Michael Finney
78-7=71
Gross – Alastair Holmes 75
Longest drive – Andy Peel
Nearest the hole – David
Spurden

THE STANDARD GOLF TROPHY – Tuesday:

1st – David Spurden
82-10=72
2nd – Mike Hughes 78-5=73
3rd – Graeme Ferguson
81-8=73
Low Gross – Barry Holt 78

**THE VITAX PUTTING TROPHY
Winner – Barry Holt**

**THE DAVID ROYLE MEMORIAL
TROPHY (nett 36 holes)
Senior 0-14**

1st – Mike Hughes 146
2nd – Michael Finney 146

**THE PATTISON TROPHY
(nett 36 holes)
Junior 15-28**

1st Colin Garnett 154
2nd Andrew Smith 156

**THE TORO TROPHY
(low gross 36 holes)
David Worsfold 158**

**OVER 55's (36 holes)
Gordon Payne 160**

**THE ICI PROFESSIONAL
PRODUCTS TROPHY
(combined nett 54 holes)
Winner – George Paterson
221**

SENIOR 0-14

1st – Mike Sheehan 221
2nd – Michael Finney 221
3rd – Barry Holt – 223

JUNIOR 15-28

1st Colin Garnett 234
2nd Andrew Smith 239
3rd – Mike Bryant 241

**THE WILLIAM HARGREAVES
TROPHY (Final day)**

1st – George Paterson
69-2=67
2nd – Barry Holt 76-4=72
3rd Stephen Pope 82-10=72
Gross – Barry Holt 76
Longest Drive – Malcolm
Latham

**NEAREST THE PIN
(Awarded by Jim Fry)
Stephen Goode**

**THE NETLON TROPHY
(54 hole gross)
1st – Malcolm Latham 234
2nd – Barry Holt 235**

**THE JUBILEE TEAM TROPHY
Alick Mackay, George
Paterson and Paul Murphy
(North of Scotland)**



Clockwise: Cecil
George's 'ode to
the haggis';
Jubilee Team
winners, Mike
Hughes in full
flight; and ICI
Professional
Products' David
Siddon, left,
presenting a
tankard to Dunbar
head greenkeeper
Graham Wood



AT EASE WITH WINTER TEES

MICHAEL BIRD learns the secrets of Gordon Child's latest success

Picturesque Churston golf course, overlooking Torbay in south Devon, has doubled in size during the past year – without taking on any extra land. The secret behind this amazing feat lies in the design and laying out of an 18 hole winter course on Churston's 140 rolling acres by head greenkeeper, Gordon Child.

Retaining all the existing greens, Gordon has established 18 new tees for both men and ladies, all strategically placed so that players approach and leave the winter tees on a different route from those used for summer play. The result has been so successful that there are now 18 measured holes at Churston utilised for winter golf, meriting their own card and providing golfers with a new challenge which has been met with virtually universal approval.

"Wear, tear and compaction were causing increasing problems between green and tee and on the pathways from the existing tees to the fairways," explained Gordon. "Although we had started using winter tees on a few holes several years ago, the recent dry summers pushed us into taking a close look

at the whole course to see if we could reduce the overall level and rate of wear throughout the year." With active encouragement from Andrew Chaundy, the manager of Churston Golf Club, an active programme of doubling the number of tee positions was started on the course in 1991. The objective from the start was to get 'traffic' moving along a different route for six months of the year, providing the green staff with more time, space and safety in which to renovate and repair worn and compacted turf.

"Although the course is quite fertile on the down-slopes and in hollows, there are places where the underlying sandstone is close to the surface with very little soil cover," commented Gordon. "These areas simply never recovered and the erosion had begun to spread onto adjacent turf as players looked to avoid the stone and rock with their spikes and trollies. In winter, the same happened on the lower-lying clay soils, which puddled up quickly when autumn rains fell on turf where grass cover was thin or non-existent due to wear."

The first step in planning the 18 winter holes involved walking the course to ascertain and note where the ground damage was greatest. As on many courses, wear and compaction was found to be most pronounced on the approaches to tees from the preceding green, on the waiting area beside the tees and on the turf between the tee and the fairway landing zone. However, altering the pattern and density of such wear involved more than simply building a new tee alongside an existing one or mowing an area of the fairway ahead of the normal tee. In all cases, Gordon wanted to re-route the traffic so that it approached and left the new winter tees in a completely different direction from those used during the summer. Yet this had to be achieved while still allowing a clear, safe and challenging shot towards the next green. The bonus of this scheme was that it also produced new ball landing zones on the fairways, cutting the level of compaction in any one area and giving the green staff greater time to repair divots and treat turf wear over the first 150

to 200 yards of each par four and par five hole. "In a number of cases, we built a temporary tee and let the golfers try out and comment on the new position before building the proper winter tee," commented Gordon. "All the tee building has been accompanied by a fair amount of pathway construction to guide the players along the desired route, helped by white lines and decorative hoops in the ground."

One other measure taken by Gordon to reduce turf wear and tear is to make the fairways a little narrower on the approaches and at the entrances to the greens: "This has produced more walking on the semi-rough, which is able to absorb wear better than closer mown fairways," he explained. "All in all, our first winter season with 18 new tee positions has proved most successful. However, it'll take a couple of years before everything is in place as there are still several tees to be built or to complete. Despite this, the course has definitely benefited from the measures taken, with improvements noted by both the golfers and green staff."

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Gordon Child's hole-by-hole guide to the new winter tees at Churston Golf Club



A completely new combined summer and winter tee has been built for the ladies on the 12th. The ladies former tee, on the far left, is now used by the men in winter

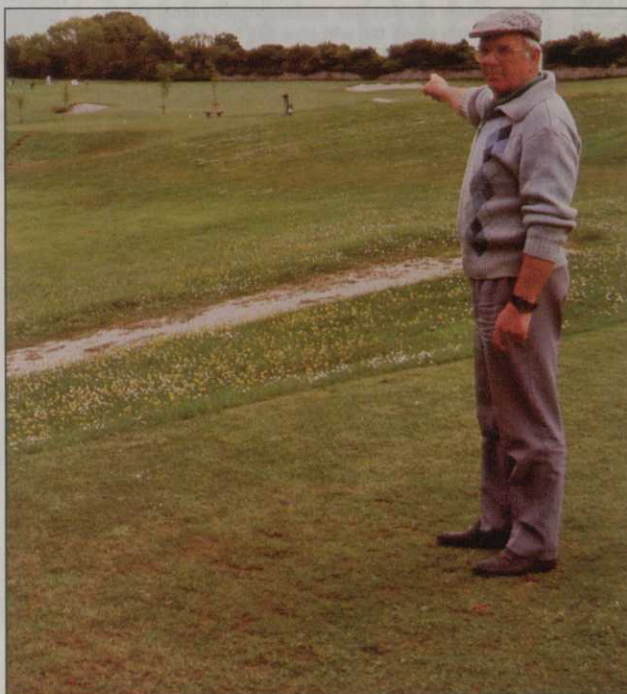
1st Positioned on an area cut out of flat ground some 60 yards forward and to the right of the summer tee. Players now approach the tee from in front of the practice green, keeping traffic away from the clubhouse. At 181 yards instead of 242 yards, this is a very good short winter hole.

2nd This tee is yet to be constructed, winter play having been from a mat 30 yards in front of the existing tee. A good pathway has meant that players stay off the turf from green to tee in winter and summer.

3rd One of the first new winter tees built, positioned forward and to the right of the summer tee. Players now leave the green to the side rather than at the front. The new tee position has actually improved the hole due to the better line to the fairway.

4th Constructed on spare ground adjacent and slightly forward of the existing tee, it is also used by the ladies in summer. Has shortened the men's hole by 20 yards with minimal change to the view from tee to green.

5th Moved forward by 100 yards, turning the hole from a par 5 into a par 4. The new tee position is approached along a signed pathway from the



Gordon Child, standing on the new winter tee for the 14th hole, points back 80 yards to the summer tee

opposite side of the 4th green to the normal summer pathway.

6th Positioned to the left and about 25 yards behind the summer tee, turning the hole from a par 4 to a par 5. A signed pathway has been laid from the front of the green to the far side of the new tee, ensuring that players and trollies approach and leave the tee along a fixed route.

7th An existing small tee ahead of the original is

to be extended on this dog leg par 4, reducing the hole's length by 35 yards. A white line on the turf helps keep trollies away from the front of the green, where turf wear has been highest.

8th This is an unusual par 3 hole in that a completely new summer tee has been built to the rear of the original, which has become the winter tee, thereby extending the hole by 12 yards during the summer. Players now

leave the green in different directions during the summer and winter months.

9th A new winter tee has been constructed 30 yards ahead of the summer tee, approached by a new pathway from the green. Having seen the tee, the ladies requested that it be adopted for their use all year round due to the improved driving position, removing the need to hit the ball over dense gorse.

10th Two winter tee positions have been tried on this par 4 hole, giving completely different shots to the green. The first, just ahead of the summer tee, retains the par 4 measure; the second, to the rear of the 9th green, makes the hole a challenging par 3 and has proved popular with players.

11th This was an interesting exercise. The existing men's tee was extended sideways and a new ladies tee built ahead of it for summer use. The original ladies summer tee was then joined by a second new tee to make two new winter tees – one for men and one for ladies. Again, both sets of tees are approached from different directions from the preceding green.

12th A completely new summer/winter tee was built for the ladies offset to the left and ahead of the original,

AT EASE WITH WINTER TEES

with the ladies old summer tee becoming the new winter tee for men. The result has reduced the driving distance onto the uphill fairway for the ladies, thereby improving the hole.

13th Again, a completely new forward tee has been built for men's winter use with the summer tee extended to spread the wear. Traffic approaches and leaves the two sets of tees on different paths.

14th A new winter tee has been constructed well forward and to the right of the original, reducing the hole from a 508 yard par 5 to a 438 yard par 4. The two tees are approached by two separate gravel paths from the 13th green.

15th A new medal tee has been built for summer use with the old medal tee becoming the normal summer tee and the old summer tee switching to winter use, giving different approaches during winter and summer. The ladies tees have not changed.

16th This is still under deliberation. At present, an area of grass has been cut to the left of the summer tee with a further

two possible teeing areas to be assessed next winter.

17th The existing tees were removed on this superb par 3, and one huge tee constructed in its place for the drive across a valley. The single tee provides sufficient room for moving the tee boxes to a host of new positions during the year with wear from tee to green minimised by a permanent gravel pathway.

18th Here, lack of space dictated that the new winter tee be cut out of the fairway ahead of the existing tee, reducing the hole's length by just 23 yards, while providing a new landing area for drives from the tee. As on other holes, this has helped to spread fairway wear and tear, while enabling divot holes to be repaired successfully.

Summer course: 5981 yards, par 70. Four par 3's, 12 par 4's, two par 5's.

Winter course: 5574 yards, par 69. Four par 3's, 13 par 4's, one par 5.



Right: A new tee position and a pathway from tee to green on the short 8th will give the turf time to recover during the summer months.

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Hydra

HUGH TILLEY on how to get the best from your system

Hydraulics are a very flexible means of transmitting power and one which is being used increasingly on golf course machinery.

From the original concept by Harry Ferguson, hydraulics have developed from tractor implement lift to driving and controlling all manner of machinery, and these uses are constantly being expanded and refined. In particular a growing number of machines, such as self-propelled mowers, have hydrostatic drive for its flexibility and manoeuvrability, however the advantages of this drive are gained with a loss of efficiency and 'feel,' though this is seldom a problem unless engine power and tractive power are critical – as they could be on slopes, towing trailers or ground driven (trailed) gang mowers. For most tractor users the conventional clutch and gearbox is still the most efficient means of power transmission, and this only needs serious questioning if the main use is for high manoeuvrability work such as loader work – where the torque convertor is well proven. For mowers and (perhaps) turf maintenance vehicles, hydrostatic drive is normally ideal, although not all operators like it because it is not 'positive.'

Many users remain woefully ignorant about how to get the best from their systems, nor do machinery suppliers always know the best ways of fitting and operating their machines on all tractors. This ignorance is liable to mean below optimum output, inefficient operation and may even lead to injury or damage to man or machine, nor should the maintenance requirements be ignored.

To many greenkeepers 'maintenance' means simply checking the oil level, this is a minimum requirement and regular inspections should be made of pipes and fittings to ensure that they are in good order. A common problem is chafing damage because fastenings or protective covers have been lost, – hot oil at well over 2500 psi is a very potent force. With hydraulics, cleanliness is certainly next to godliness and those who ignore it risk expensive problems for the future. In daily terms 'clean' means not adding oil from a can or jug which is covered in dust, dirt or water, replacing dust covers and wiping hose connectors clean

before connecting them. Damage caused by the ingress of dirt and water can be very expensive – even if it does not stop the machine it is likely to cause a dramatic loss of efficiency. Most manufacturers fit an efficient filtration system, but don't overload it and always service (that normally means *replace*) the filter as per the manual. Diagnosis and repair beyond simple replacement usually means calling in a specialist dealer.

Most tractors use a multi-purpose oil drawn from the back axle, whereas mowers and 'closed' hydraulic systems, including some tractor steering systems, normally use special hydraulic grade oil, thus it is usually necessary to keep more than one grade of oil in the shed, – ensure that everyone knows which is for what! Change intervals for hydraulic oils are infrequent – thus they are often forgotten. Hydraulic oil is not good for turf, leaks are often caused by damaged washers or 'O' rings – these are cheap and mostly easy to replace.

Tractor Hydraulic Systems

To many greenkeepers operating an implement on the rear linkage is simply a matter of attaching it and operating the lever. However most tractors over 45hp provide two control modes – 'position' and 'draft.' With position control the links are positioned in direct relationship to the position of the lever in a quadrant, while draft control is designed for ploughing or cultivating and thus is seldom required on the golf course – though in theory they could work with slitters. Older David Brown and Massey Ferguson tractors have another mode (TCU or pressure control) which gives a 'semi-float' option providing a constant but adjustable lift force – this can be very useful in suitable circumstances. Newer tractors may have a 'mix' facility to allow position and draft modes to be intermixed, – for golf course work set it to 'position' and forget it – unless operating a plough or cultivator! Any tractor with a position quadrant should have adjustable 'stops' which can be set to limit or lock the lever – they are useful and a safety measure so keep them functional. Electronic control is coming to progressively smaller tractors – this gives fingertip control

with a dial to set height and a simple switch for up and down – it is very positive, accurate, simple and strongly to be recommended.

Compact tractors may have a similar position control system with the lever operating in a quadrant, but some have a simple spool valve, which means you have to hold the lever in lift or lower position until the links have reached the height required, thus chains or stays are necessary to ensure that the implement cannot be dropped too low (or raised too high) by accident. Draft control may be factory fitted or available as an option should it be needed.

Spool valves

Today's tractor is expected to operate or control a multitude of machines using its external hydraulics, these include simply tipping a trailer, driving the spreading mechanism of a topdresser or operating gang mowers. These external services are normally controlled from a spool valve or valves with quick release couplings fitted at the back of the tractor, although it is often possible to plumb into the lift linkage system, – with older tractors this may be the only way to do it.

The spool valve is simply a device to control oil flow, most tractors have at least one as standard with the option to fit more in a bank. Quick release (push fit) couplings have become standard, these are faster, cleaner and safer than screw type (Dowty) connectors. Modern practice in fitting should ensure that they pull out easily and safely if the operator drives off without disconnecting – as is inevitable sooner or later.

Common spool valves are anything but common and they come with a bewildering variety of features such as float position, kick-out, motor detent and zero leak – or without if you don't specify them. Most valves can be used for both single and double acting rams (a double acting ram is powered both ways – out and in), however it should be possible to lock them so that they only work one way, this means that the single hydraulic pipe has to be connected to the correct coupling. The 'float' ability is useful for a loader, however it is also useful for any other situation where the ram/s

Hydraulics

need to be free to move while the machine works, such as with some sweepers and mowers where height control wheels take the implement weight. A zero leak spool is required where the hydraulic service needs to be 'locked' without 'creeping,' (with pressure in the ram) during work, although standard valves are seldom a problem. If it is a problem the first option is to replace the spool's 'O' rings, and if this does not cure the problem look at the seals in the ram before considering replacement – either may be worn or scored. A kick-out spool valve allows the operator to move the lever to its extreme and leave it, knowing that when the oil pressure builds up as the ram is stopped the lever will 'kick-out,' this is useful in situations such as lifting and lowering trailed gang mowers, as the operator can then concentrate on turning. The kick-out should be adjustable and can be disabled for other operations. A motor detent valve is specifically for hydraulic motors, it holds the spool open for a constant flow but it must not block the return flow when returned to the middle (neutral) position. Ideally it should be capable of being set so that the motor cannot be inadvertently reversed, – with some motors, stopping the return flow abruptly and/or reversing them will blow the seals. The common alternative of using a piece of string to hold the lever is potentially dangerous as it may be impossible to stop the oil flow quickly in an emergency, this similarly applies to the locks, catches or pins sometimes fitted as a 'kit.' In older tractors with only single acting valves – or those which use the linkage lift hydraulic circuit for driving a hydraulic motor it may be essential to install a separate return pipe to the tractor – some tractors have a special port for this, others may need a special arrangement such as drilling into the oil filler.



Controls

Common problems with spool valves are that there may not be enough of them or they are in the wrong place – this is often the case with loaders. Answers from loader manufacturers vary but most use a separate spool valve block. There is a safety requirement to keep all high pressure hydraulic pipes away from the operator, i.e. outside the cab – this may mean longer levers or even Bowden cables, both of which are prone to problems and generally lack precision. Up market loaders are likely to use electro-hydraulic controls, which have the advantages of fingertip actuation and simple flexible fitting, further they can combine up to three actions in a single lever, the third action, for instance the clam of a 4 in 1 bucket, being operated by a rocker switch on top of the

lever. A relatively simple answer to not having enough spool valves, suitable mainly for single acting and infrequently used services, is to use a diverter valve, these are available for manual or electric actuation. Electric actuation is gaining in popularity, particularly for mowers, as it allows the designer flexibility to optimise his pipework, thereby reducing the risks of damage and leaks, it also lends itself to tidy control consoles and automatic operation. For most operations a simple on/off or up/down actuation is all that is required, however for some operations – like loader or hedgecutting operations – it is best if the operator has lever control with proportional control so that he has a graduated response. Flow adjustment may be built into the spool valve, into the tractor hydraulic system or into the hydraulic circuit itself. If an implement drops too fast or raises too slowly the first consideration should be to see if there is an adjustment. Occasionally a restrictor is fitted into the circuit, often a disc with a small hole, this may not be the correct size for the machine, tractor or oil grade, however it is easily replaced. Remember that oil

is thinner when hot.

Other users

While tractors were the prime users of hydraulics, on today's golf course the most intensive user of the principles are inevitably ride-on mowers, particularly greens triples, however these are purpose built and self contained thus it can be assumed that the hydraulics are 'right,' – nevertheless no less care, cleanliness and maintenance is required, especially when all power transmission and control is hydraulic. Many turf maintenance vehicles also provide a hydraulic service and rudimentary lift linkages, one model is also hydrostatically driven, however it is electronically controlled to give it constant speed.

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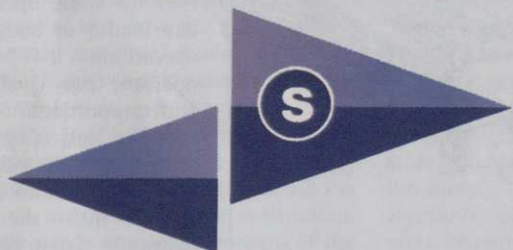
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Top marques for man from Farmura

There were, I suppose, three attractions in the offing as I prepared to visit Jonathan Harmer early in August. First, I had been cooped up too long and it was a day when the sky was filled with fluffy clouds and the sun shone – a day too good to stay tied to the keyboard of my faithful Apple Mac. Second, I was to drive to the village of Egerton, through a delicious part of the south described as England's Garden and into the very heart of Kent's hop country – where the most delectable beer in the world is brewed. Third, a positive magnet, I was to meet a man who shared my passion for motor sport, a fellow enthusiast who raced vintage MGs and who was just as likely to while away the time showing proper concern for such things as camshaft profiles, carburettor jet settings, and the right line to take through Becketts – with 7000 rpm protesting and a horde of MG 'T' racers snapping at one's tail lights!

Of one thing the reader may be sure, though Jonathan Harmer is a 'play-hard' sort of fellow, enjoying, as his motoring trophies reveal, his 'on the limit' racing with the MG Car Club, he is without doubt also a 'work-hard' sort as well, which is why I didn't get all my own way with the interview. Truth is Jonathan was eager to tell me of the Farmura connection,



It's life in the fast lane for Farmura's Jonathan Harmer, as DAVID WHITE reports

while I was pressing him into revealing something more dashing, perhaps some racing scoop. I'll put this down to his sporting modesty, telling myself meanwhile not to forget my journalistic *raison d'être*, which is firmly embedded in turf. That stated, I suspect that something in the air of Egerton generates motor sport mania, for in a village of less than one thousand souls there's a fellow who races Bugatti's; a classic car restoration buff; a Ford Rally Cross champion; the youngest ever Mini

Cross champion, a kid of just 16... and there's Jonathan, who is simply potty about MGs and crazy enough to race them – I tend to like that in a subject.

Born and raised in Egerton, where for over 50 years his father farmed apples and strawberries, Jonathan, 44, recalled driving his first car – an Austin Ruby that cost £8 – when he was just eight years old! He and his brother used to take a hose and saturate the grass around the orchards in order to practice hand-brake turns – he grins when remembering how relaxed his father was about such high spirited activities, grimaces on recollecting his returning home on one fateful occasion, after a lengthy absence at school, to discover that the trusty Ruby, stripped down like a 'racer' of course, had been buried in a quarry – part of a tidying up plan for the farmyard! He could, he swears, take me to within ten feet of the burial plot.

Though with Farmura for some 15 years, seven as managing director, Jonathan did not immediately follow in the family business, rather he became a 'travel bug' after finishing school, setting off (with full parental blessing, let it be known) to 'see the world' – a trip that took him to South Africa and later to Rhodesia where, but for the changes that were taking

place politically, he well might have remained, for he fell in love with the grandeur of it all, describing Rhodesia as 'near to paradise.' In the event he stayed for a year, working variously as salesman and Land Rover delivery driver, before returning to England to take a place at university and later to live in London and work at being 'something in the City', in his case broking insurance.

Meanwhile farming of all varieties was in a state of flux, and changes were being thrust upon the community. Jonathan's father saw the 'writing on the wall', perhaps a good deal earlier than most, and sold the farm's land (a very shrewd move, as it turned out), at the same time acquired the business that is Farmura Limited. History will show that Jonathan's father was one of the first to successfully farm using both organics and synthetics – integrated management as it is now known – believing that one couldn't just keep on throwing chemical fertiliser down, and proving on his own acres, often to the incredulity and disbelief of officialdom, that such natural organic products did work – and work very well indeed.

Moving on apace, Jonathan credits Jim Arthur with bringing Farmura to the green-keeping fraternity. Jim was advising in Scotland, at Turnberry as it happened, offering his expertise and guidance in order that the course might be returned to former glories and thus gain Open Championship status on the R&A rota. He discovered the Turnberry head greenkeeper using Farmura, sold at that time mainly to farms and market gardens, finding also that it worked minor miracles on the fine links turf, helping to keep *Poa annua* at bay. Further, he found that such organics were increasingly favoured by the more progressive greenkeepers in S.W. Scotland. Contact with Jonathan's father ensured that Farmura products were trialled in greater depth for golf course use, packaged and labelled specifically for such specialised applications, and the rest, as they say, is history.

I asked Jonathan why he thought 'first division' greenkeepers were Farmura's greatest allies, why the championship course managers were so well sold on the efficacy of Farmura liquid organics.

"I think first it's because they want to have the very best," he replied, "they seek always to improve. Second, they know about soil bacteria, they ask questions and bounce knowledge off each other. Finally, they are perhaps more patient, for you can't apply Farmura just once and expect miracles – its application must form part of a properly designed and calculated management programme. I liken it to the motor racing world, if I go to a hill climb and find a driver who is several seconds quicker than me, I'm the first to ask what pressures he's running, what adjustments I should make, what I might do to make me go faster. Yet you may find two golf courses side by side, one is splendid and the other isn't – and the fellow

isn't interested in learning how to make it better, I find that extraordinary." "And is it changing?", I queried. "Yes, I think there is a wind of change, greenkeepers generally are becoming more aware, keener to learn, to educate themselves, but there are still far too many who look for nothing more than a 'quick fix' and have yet to enter the regime of 'balanced management'."

I ask a leading question: "Does Farmura come under the heading of 'mystery and magic'?" – "No, the theory of organics is perfectly logical, it has been well researched and is well documented, so there's nothing mysterious about it, but if you don't understand it, and you've been brought up on the white-hot scientific bumph about NPK, then of course it is." "Do you then dismiss the NPK regime", I



**'There is a wind of change,
greenkeepers generally
are becoming more aware,
keener to learn and to
educate themselves...'**

ask, getting a quick-fire retort: "No, I don't, I think it has its place, but it's no more important than good cultural technique. An idea we've been developing recently – let's call it the triangle, with cultural maintenance, organics and synthetics – shows the greenkeeper in the middle orchestrating all three. You can't take any one of those out and say 'that's the answer', and of course one of the problems in greenkeeping is the quest for a magic technique, a miracle potion. I don't think there's a single magic product – it's 80% hard work (for the greenkeeper) and 10% product application, but if you use the right products in a properly balanced management system you will get results – no doubt about it."

For Farmura this means continuing down the road of being innovators, of being environmentally friendly, of ensuring that everything in the range hangs together with logic. The company was first to introduce liquid iron into Britain, first to import the Australian Turf Iron,

first with liquid organics; and first to put together a range of liquid super concentrates, and though at the time these innovations were thought of as commercially 'dicey', they are not only accepted but indeed thought of now as vital tools in balanced management. Currently Farmura is spreading the 'gospel', along with Milliken and other trade sponsors, with the new BIGGA training video 'Setting the Standard', a film that emphasises quality and professionalism.

The stock question now: "what makes Jonathan Harmer tick?". "Well, I knew you'd ask me, and you know about my racing MGs, but I suppose I could summarise my particular 'tick' by including the happy life I lead with my wife Lynette and daughters Charlotte and Louisa-Jane, I enjoy family life enormously, though developing innovative businesses is also good fun. You're swimming against the tide until the tide changes, but when you start these ideas off there's never a shake of the hand or an offer of congratulations – no one has ever said 'great, you've made life easier'. Sure, we're in business and that must mean making some profit, but it started off as a philosophical approach in a way, we're not hit and run merchants, and I can go back to any of our clients with a very clear conscience, we're ethical. I'll even admit there have been some, though not many, who have said 'Jonathan, this just isn't working', but mostly this has been because they haven't really understood why they are using the products – the fact is, organics take time to work. We live in an instant society: you're hungry, you eat a big Mac, you want a result *now* – remember when glyphates came out and the complaints that came because people were used to weedkillers that wiped out overnight – now it takes three weeks. Nobody likes that, we all want it now, can't or won't wait – the problem is that nobody has told Mother Nature. Organics are longer term products that must form part of good management. Those who think they can go from bare earth to beautiful greens in a few weeks are fooling themselves, but the industry has, I believe, often sold 'snake oil' products on that basis."

Determined to finish with a nifty tale about MGs, I learned that Jonathan started racing about ten years ago, though he's always been an MG fanatic and has never owned any other marque for sporting purposes. Listening to his description of that first race was hilarious: joining forces with two other 'nutters', they'd gone to Silverstone with MG TDs and ended up at the back of the grid, firmly believing the timekeeper had made a mistake! It was pouring buckets and Jonathan couldn't see much further than his bonnet, nevertheless it was foot to the floor – until car after car flew past, lapping him and his companions! First blood, as they say, to the quick guys, second to the guy who puts everything down to experience – always learning, every inch, along life's race track.

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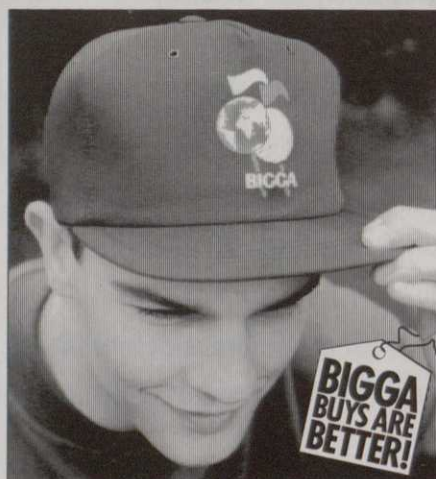
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GREENKEEPERS ON THE HOP

How many holes are there on your course? Are there 9 or 18 – or perhaps the number could even be 1,237? If it's the last figure, then it is likely that your handicap is rabbits. Rabbits are increasing in number throughout the country, mainly due to the waning effects of myxomatosis. Although it is difficult to be precise, it is estimated that rabbit numbers are currently about a third of what they were before myxomatosis arrived and that this number may well double in the coming years as the effects of the disease continue to decrease. Eventually it may kill none. Therefore the message is that problems with rabbits are likely to become more common and more severe.

Problems

One of the most obvious problems which rabbits can cause for greenkeepers is by digging burrows. Many of you may recall the article in this magazine on last year's Open Championship (July 1992, Page 18) in which Chris Whittle, the course manager at Muirfield, described the scale of his rabbit problem where a tee which had been undermined by burrows collapsed when a tractor drove on to it! As if burrows dug into tees were not bad enough, burrows dug into the sides of greens are likely to please even less and there may even be the possibility of claims for compensation if someone breaks an ankle in a burrow hidden in the rough. Then there are also the smaller, shallow scrapes with which to contend. Rabbits seem to love to dig these on fairway grass and these rabbit 'divots' seem to have a magnetic attraction for golf balls, although relief may, of course, be taken under the rules of golf. Last but not least there is the problem of rabbits damaging or killing newly planted young trees on the course and these can be very expensive to replace.

Why do rabbits love golf courses?

Many courses provide ideal habitats for rabbits. There can be a mixture of scrub cover, thick rough or woodland in which rabbits can shelter. From these areas, rabbits can move out to the fairways to feed on the shorter grass, which they prefer to the longer grass of the rough. Populations are higher on sandy soil than on heavier soil types, mainly because young rabbits survive better when rain water can drain freely through their burrows, rather than on heavier soils where waterlogged burrows means cold and damp rabbits. Therefore it is not surprising that many links courses, such as Muirfield, have the worst problems.

Solutions

Under the 1954 Pests Act it remains the legal obligation of occupiers of land to take reasonable steps to destroy wild rabbits on their land or to prevent rabbits from causing damage on adjoining land. Unfortunately, however, there is no simple solution to the problem. There are a range of management methods which can be used. Numbers can be reduced by gassing rabbits in their burrows, by ferreting, trapping or shooting. Tree guards can be used to protect individual trees and fencing can be erected to exclude rabbits.

bits from the course.

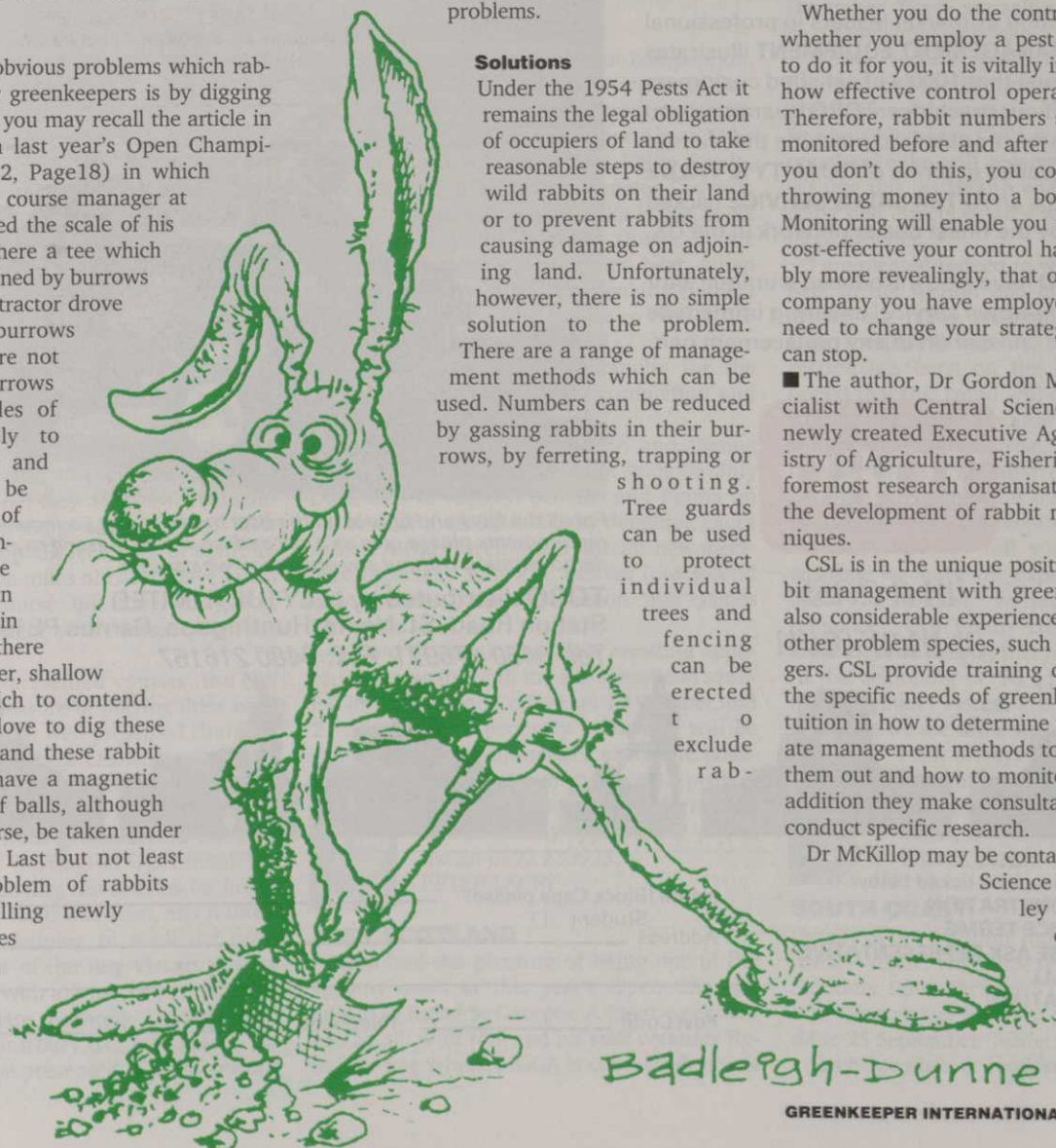
The best results are achieved during winter (November-March), usually by using a combination of these techniques with choice being determined by the particular circumstances. Winter is the best time to initiate a management campaign, because rabbit numbers are at their lowest at this time of year due to natural mortality. Anything done by man before winter will only replace rather than add to this mortality. Also, control at this time of year will reduce the breeding population before the next breeding season begins in January-February and therefore there will be fewer young around that year.

Whether you do the controlling yourself or whether you employ a pest control company to do it for you, it is vitally important to know how effective control operations have been. Therefore, rabbit numbers should always be monitored before and after each operation. If you don't do this, you could well end up throwing money into a bottomless burrow! Monitoring will enable you to determine how cost-effective your control has been (or, possibly more revealingly, that of the pest control company you have employed), whether you need to change your strategy and when you can stop.

■ The author, Dr Gordon McKillop, is a specialist with Central Science Laboratory, a newly created Executive Agency of the Ministry of Agriculture, Fisheries and Food, the foremost research organisation in the UK for the development of rabbit management techniques.

CSL is in the unique position to discuss rabbit management with greenkeepers and has also considerable experience and expertise on other problem species, such as moles and badgers. CSL provide training courses tailored to the specific needs of greenkeepers, including tuition in how to determine the most appropriate management methods to use, how to carry them out and how to monitor effectiveness. In addition they make consultancy visits and will conduct specific research.

Dr McKillop may be contacted at the Central Science Laboratory, Tangley Place, Worplesdon, Guildford. GU3 3LQ.



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Around the Green

Keeping in touch with news and comment from the regions

BIGGA IN EUROPE - HOLLAND

In Holland we presently have 12 BIGGA members, all of whom have received an invitation to attend our first ever meeting, which is organised to take place this month (September). Sponsorship will be arranged locally to cover expenses and whenever we feel payments need to be made these will be allocated – in order that we may operate on a professional basis. A report of our meeting will be sent to BIGGA HQ.

On a personal level, I have a visit to Scandinavia planned for October and will meet with Stig Persson, (journalist, member of the Swedish Golf Federation, Swedish Greenkeepers Association, and BIGGA), and visit his golf course in Sweden. David Golding (Greenkeepers Training Committee), has asked me to contact the Netherlands Greenkeepers Association to discuss and promote the GTC education programme, details of which were requested by the NGA via the Netherlands Golf Federation. I have spoken to the NGA chairman, Ties Straatman, offering him my assistance whenever it is needed.

FREDERICK ten HAGE

NORTH WEST

I have just returned from The Open at Royal St Georges, where volunteer greenkeepers assembled once more to form a greenkeeping support team. This gathering now appears to have taken on the role of an annual reunion, not only for greenkeepers from the British Isles, but also from Sweden and America. It also provides the opportunity to witness some of the finest golf one may ever expect to see – and from inside the ropes! The course was a credit to Derek Scarborough and his staff, who must be relieved that all their preparation is behind them, though they now have the nightmare job of getting things back to normal after thousands of trampling feet, tons of scaffolding and miles upon miles of cables have taken their toll on the course. But don't worry lads, you have about eight years before you start again!

Talking of well-presented courses, the NW section had the pleasure of playing their summer tournament on a well presented course at Warrington GC. recently. Les Kernott and his staff had the course in lovely condition and must be feeling pleased with all the kind comments, not only from greenkeepers but also from members of Warrington GC. I thank the club for their hospitality, the caterers for lovely meals, and Parker Hart, Rite Feed, and Rufford Top Dressing for helping to swell the prize table. The winner of the Reg Vickers Trophy was Neil Wolfrey with a gross 73 nett 70. May I also congratulate Anthony Davies, head greenkeeper at Prestbury GC, who passed his M.G.C. and will be presented with his reward

at the BTME in 1994. Well done, Anthony.

The next tournament will be the Autumn Tournament at Mere GC on Thursday 21 October. The usual arrangements apply, with soup and sandwiches served from noon 'till 12-30, followed by an 18 hole medal round, all rounded off with an evening meal and prize presentation. Your deposit of £10 must accompany an application to play, and the closing date for entries is 14 October. All applications to Paul Pearse. I, Swan Close, Poynton, Stockport. SK12 1HX. Smart dress is essential. Preparing now to go to the National Tournament at Dunbar, I am hoping that whilst away the NW section will beat the Northern section in 'The Roses' match and retain the trophy.



Please don't let me down lads, or I will have to take some stick from Mick Hannam following last year's comments. Any problems or queries please ring 051 724 5412.

BERT CROSS

SOUTH WALES

This years Match Play Knockout competition, sponsored by PRO TURF Equipment of Carmarthen, has completed its first round, with the following results: Mike Jones beat Mike Norfolk, Malcolm Davies beat Philip Swain, Robert Johnston beat Gary Johnston (no relation), Laurence Walter beat Philip Huish, Nigel Owens beat Tyrone Garland, Douge Donne beat Peter Lacey, Robert Frater beat Julian Bartlett Jones, and Andrew Jenkins (father) beat Idwell Morris. Our thanks to PRO TURF for their continuing support.

Our evening lecture programme for the oncoming winter is nearing completion and details will be with you shortly.

Congratulations to both Ceri and Joanne Richards on their tying of the knot on July 24th, also to Andrew Jenkins and Emma on the birth of their 8lb 4oz baby daughter, Laura Ashley. A warm welcome to all our new members, especially Judy Ann Weekes (our second lady member), Gary Johnston and James McKenzie.

A word of warning to those awaiting application forms for both the workshop and seminar at Cannington College on 12 October and 23 November respectively – demand will be great, so get those forms back as soon as possible in order to ensure your place is reserved. Any news or information will be greatly appreciated, 'phone me on 0792 233923.



PETER LACEY

EAST SCOTLAND

I again had the pleasure of being one of the support team at this year's Open Championship at Royal St Georges. A great week was had by all, with Neil and his staff certainly flying the flag where BIGGA is concerned. It was

nice to meet up again with all the old faces and already we are looking forward to 1994 and The Open at Turnberry.

Our annual Committee Match was held on 10 June at Royal Burgess, again sponsored by Scottish Grass Machinery. Our grateful thanks go to them. The Eddie Holt Trophy was won for the first time by 'yours truly' with a nett 71, though only on count-back. Our thanks as always to Royal Burgess for the courtesy of their course and clubhouse facilities, and certainly not forgetting Roger and his staff for the excellent playing conditions – t'was a pity the weather couldn't be kinder.

Forthcoming events are the Autumn Tournament on 14 September at Ratho Park, the East versus North East match on 28 September at Goswick, and the Willie Woods Tournament on 19 October. Notification of these events will be issued shortly.

Don't forget to obtain your tickets for the annual Dinner Dance at Turnhouse on Friday 3 December. These are selling quickly, so don't be disappointed by booking late.

Winter lecture programmes are almost finalised and notification will be issued soon. The 'big one' this year is the Health & Safety lecture at Oatridge College and golf clubs and members alike will receive information concerning this, as Health and Safety is the one thing that affects us all – we are hoping for a large turn-out.

I am pleased indeed to welcome new members to the section and hope that they will attend our many tournaments, lectures etc. Over the past five years, membership in the section has been on the increase and it is hoped that this trend will continue. There are still vast numbers who are not members and we are working on these. It is in everyone's interest to be a member of the Association, with the advantages far outweighing the disadvantages – ask any member.

I don't have to tell you of the dreadful weather we have all experienced. This has been the coldest, wettest summer I can remember, with many courses flooded and more closures during this year than any other. At the beginning of '93 I put in a new automatic sprinkler system and have yet to use it! Lets hope we see some sunshine shortly.



I am always looking for news for the magazine, so anyone with information should contact me, no matter how insignificant.

WILLIE BLAIR

SOUTH COAST

Details of our Autumn Tournament are as follows: – Venue: High Post GC., Great Durnford, Salisbury. Date: Tuesday 5 October. Format: 36 hole Greensome. Fee: £13 per person. Closing date: 25 September. Teeing off: 8.30 a.m.

Each member is requested to bring along

either a non-greenkeeper amateur partner from their own club, or a fellow greenkeeper from another club. Applications to play, with handicap details and fee, to Joe Burdett, 23 Jacobs Ladder, Child Okeford, Blandford Forum, Dorset. DT11 8EA, Tel. 0258 861482.

Fixture cards listing all section and regional events for 1994 are available upon request. Please let me hear from you, so that you can fully participate in all of your Association's activities.

In the Summer Tournament held at Alresford GC, 46 players took part, with local knowledge ruling the day as members and guests of Alresford GC swept up nearly all the prizes.

Results: First – Bob Dennis and Brian Young 47 points, second – Derek Curtis and John Walden 45 points, third Eddie Fox and Peter Kimmins 45 points – all of whom represented the home club. Fourth were Martin Harper and Malcolm Taylor (Andover GC), with 44 points. The prize for nearest the pin was won by Joe Burdett, with the longest drive winner being Mark Webb.

The competition was played over the club's new 18 hole layout, conceived and planned by Mark Webb, head greenkeeper at the club, and his assistant Barry Young, with the assistance of club professional Malcolm Scott. Members I spoke to were impressed with the new arrangement and the quality of the greens.

Thanks are due to our sponsors, Parker Hart and Roffey Brothers, for providing the prizes. David Haskell and Peter Hampton represented the sponsors and they also enjoyed their afternoon of golf.

It was a pleasure also to have Bill Young, one of our honorary life members, in attendance. Bill has the distinction of having been both the head greenkeeper and club professional at Alresford in times past and has a fund of stories about golfers and their peculiar ways!

The connection between Alresford GC and BIGGA goes back a long way, which is much appreciated by members. I would like to place on record our thanks to all the officials at the club.

BOB DENNIS

SOUTH WEST

The thunderstorms of last month have now largely died away, leaving another problem – flies. I've never seen so many of the little devils swarming around the course. There is, you'll be pleased to read, a remedy which can be particularly useful when playing golf. The flies are attracted to cheap perfume. The answer, therefore, is to purchase a bottle and sprinkle it over your opponent. This gives the immediate advantage of playing in a relatively fly-free zone, also of your opponent conceding after nine holes and heading for the showers in an effort to become separated from his personal troupe of little black friends.

No such problems, however, at Enmore Park for the annual Summer Tournament, where a good turn-out in deepest, darkest Somerset saw a most enjoyable day of golf under bright and breezy conditions on a very well prepared course. Our thanks go to Robin and his staff, the catering staff, and of course the club for their hospitality. In this day and age it is quite a commitment for a golf club to shut its course while local greenkeepers enjoy full courtesy, and the South West Section is very grateful to all those clubs prepared to do so.

Around the Green



The results of the Summer Tournament are: 1st P Baynton 95-24=71 (on last nine), 2nd S Shipley 82-11=71. 3rd M Powell 98-24=72. 4th A Johnson 101-28=73. 5th C Jack 101-28=73. The Head Greenkeepers Cup was won by M Pearce 93-18=75, and the Trade Prize by M Samuel 99-28=71. Two's were scored by D Neale and P Worster. Prizes were generously donated by Messrs Avoncrop, Roffey Brothers, Barenbrug, and Rigby Taylor – Thanks to them all.

It is hoped that we can continue with training programmes through the autumn and winter, with Pesticide Application, Chainsaw Maintenance & Operation, First Aid, and Health & Safety at Work all subjects which the average greenkeeper needs to be conversant with. Please indicate your interest to me in writing or by telephone (but beware of the answering machine), as soon as possible. The sooner the better, as it makes forward planning much easier. I should point out that we have yet to have a complete failure and our instructors have been most impressed with the levels of knowledge and understanding. No one need feel afraid to come forward – you can only do yourselves good by taking this training.

It is also hoped to run 'information' days on pest control (i.e. rabbits, moles etc.), and the accurate recording of weather. We are indebted to Fairways Pest Control, and Gordon Jaaback BSc. Agric., for these days. Dates will follow shortly, please indicate your interest.

The next full section meeting is the AGM at Kingsdown GC on November 18, this preceded on November 10 by a visit to Ransomes factory, sponsored by T.H. Whites. Application forms will be posted during late September-October. The AGM will also be my swan-song as section secretary, for I will be standing down after ten years, due to pressure of work and having a handicapped son who needs my attention more than you lot! Finally, my elder son was rebuked by his teacher for saying "Oh



Christ!" in class. When asked what it meant exactly, he replied 'it usually means that Daddy can't find a space in the car park!'

PAUL WORSTER

LONDON

The Summer Tournament was held at Muswell Hill GC on July 12, and following a cloudy start to the day, the afternoon by all accounts developed into a splendid affair. The field of 37 competitors enjoyed a course that was in excellent shape, this clearly reflected in the high standard of golf witnessed. The Sta-Brite Shield was presented to Stuart Green, who scored 39 points. In second place with 37 points was Paul Cooper, this including a back nine score of 22 points. In third place was Mick Sherris, also with a score of 37 points. The nearest the pin prizes went to Doug Smith and Dick Dunne, both hitting excellent shots, with the longest drive being struck by David Paterson on the 16th.

Our after-dinner talk was given by Graham Paul from Sta-Brite, his presentation on water

quality and pesticide contamination being extremely interesting and prompting many questions. Our special thanks to him for standing in at the last moment, also to Linda Exley and Sara Clarke for their help throughout the day. The support from the trade was, as always, appreciated and we thank CMW, G. Browns, Parker Hart, Rigby Taylor, Risboro' Turf, and Sta-Brite for their contributions. Finally I would like to thank Muswell Hill GC for their hospitality and the catering manager



for providing an excellent meal. Our next golf event is at Brookmans Park GC on 6 October – so get those entry forms in!

TONY DUNSTAN

NORTH SCOTLAND

Well, another Open Championship has come and gone. Paul Murphy and 'your's truly' were the North members present, although ex North member Neil Metcalf was there also, as he is a member of the Sandwich staff. We flew down to Heathrow and fellow team member Ronan McKeown took us down to Sandwich. Everything ran smoothly, thanks to HQ staff and David Wood and the lads of the South East region, whilst not forgetting the first tee 'Generals', Cecil George and Jimmy Neilson. One of the many highlights of the week was the Saturday evening football match against the Ring and Brymer chefs. The greenkeepers ran out as 10-4 winners and if Dundee United still seek a replacement for Duncan Ferguson they need look no further than Paul Murphy! All in all it was a great, if sleepless, week with much done to cement European relationships (private joke!). I would like to take this opportunity to congratulate support team member, Paul Seago, on his appointment to Gullane Golf Club, we welcome him to Scotland and wish him all the best.

A new competition launched in Ross-shire and Sutherland Counties to find the Champion of Champions reached its climax at Tain recently. The brain-child of Brora's Robin Wilson, all Club Champions, County Champions and four-day Open winners were invited to compete in a matchplay tournament. The winner was Muir of Ord greenkeeper, Steven MacIntoch.

Robert Hardie of Strathpeffer was the man on form in his club's one round Open. He aced the tenth hole on his way to a 69-8= 61 and first prize. This month sees our Autumn Tournament at Kirriemuir. We look forward to visiting Jim McCormack's course, where I'm sure there will be the usual large turn-out. Let's hope for a decent day weather-wise. I'll see you all there.

Good luck to the Scottish Team in the Hayter Challenge Tournament, to be staged later this month at Sand Moor, Leeds.

One new member this month, Stuart Griffiths of Tain. That's four out of five members of my staff in BIGGA – and I'm working on the other one!

Finally, congratulations to Dundee College for, at last, gaining approved status for Greenkeeping Education. It's good that the the North section has an approved college within its area and we wish Graham Carr and the staff all the best.

IAIN MACLEOD

NORTH WALES

First, I must apologise to Mr P Shaw of High Speed Oils for failing to include High Speed

Oils in my notes for the June issue, the winner of their prize being A Hughes of Portmadoc GC – once again my apologies.

Dates for your diaries: On September 29 or 30 we hope to run a coach to Haydock Park for the trade show. Those interested in attending should contact Terry Adamson or me.

On October 6 our Autumn Golf Competition will be held at Pwllheli GC, the cost being £11.00 for members and £14.00 for guests. I plead yet again, get those forms back early!

A First Aid course will be held at Northop College during the winter months – providing we have enough people willing to attend. For further details phone me, or B Anderson on 0745 826695.

DAVID PROCTOR



EAST MIDLANDS

First of all, I would like to apologise to all section members who may have thought I had emigrated – it's just that having had little to report, I have refrained from troubling the editor with my usual banal prose.

The section's Autumn Tournament this year is scheduled to take place on 21 September at Ruddington Grange GC., Ruddington, Notts. and entry forms/details should be with you by the time you read this. If not, and you wish to enter, please call me on 0509 650140. As usual, this competition will be the qualifier for the Breakwell's match and, along with the results from the Spring Tournament, also for the annual East versus West Midlands game sponsored by Rigby Taylor. Regarding the latter, we are 'at home' this year and well overdue a win.

Well done to all those members who represented the East Midlands at the Hayter Challenge regional final in July. We finished third in the team event, with Russell Allen coming second in his group and Mark Bindley fourth (on count-back) in his, just out of the prizes.

The section is pleased to welcome new members – Dean Cooper and Steven Heap, both of Rothley Park, Anthony Russell of Lingdale, and as an associate member, Nicholas Birch, currently working at Ramsdale Park Golf Centre. I am proud to report that the section's greenkeeper membership has just passed one hundred!

See you all at Ruddington.

TONY HOWARTH



BUCKS, BERKS & OXON.

July has been a hectic one for the section, with two very enjoyable golf matches having been played. The first match was held at Harewood Downs GC on 20 July, though unfortunately the Mid-Anglia section had to pull out, so a Committee v Section event was held instead. I'm very glad to say the committee ran out winners, though no thanks to me, as I lost my match five and four! Our thanks to Harewood Downs GC and to club secretary, Mick Cannon, for all his help, also to Steve Bryant and his staff for producing a stern test for us all and not forgetting Nora Davis and her catering crew for providing us with an excellent buffet.

The second match was held at Calcot Park GC on 26 July and was our annual 'needle' against the club secretaries. The weather held true, the course was in excellent condition, and we were lucky enough to have a very tight result go our way, three to two with one halved match. That includes Simon and Steven from Calcot, who very tactfully lost their

Around the Green



matches against the secretary and past secretary respectively! As always the company was great, the match being played in the very best of spirits, and I have no doubt this will continue to be enjoyed for a long time to come. For the time being the secretaries will have to lick their wounds, waiting until next year at Sonning GC to (maybe) getting their own back (anyone would think I was gloating!). By the way, I won my match this time! Thanks to Calcot Park and secretary Alan Bray for organising the secretaries team, Simon Robinson and his staff for the excellent course, and the catering staff for a wonderful meal.

The section will be running a mini-bus to BTME in January, those interested should let me know ASAP so that numbers may be organised – please! After the go-karting session we need more ideas for social events that

you would like to see staged next year, also ideas for next year's lecture programme. Either ring me (0628 829208) or write with your input.

RAY CLARK



KENT

Perhaps just time to remind you that our regional seminar on the topic of '365 Days A Year Golf' is taking place at Hadlow College on 27 October. We hope for a good attendance, not only from greenkeepers but also from golf club officials, and that everyone participates in what we believe will be a lively afternoon of debate. Already we have seen some heated response to Mike Travers' article in Greenkeeper International, so hopefully this will continue as a sensitive topic. For my part, I think that much of the criticism and comment levelled at the article was unfair and unjustified. Perhaps to stir things up a bit more, I will state that I am a believer in the 365 days a year ideal, in all but the very extremes of weather. I am very lucky that my course over lays gravel, and knowing my site for nearly 20 years I am confident that I can achieve my aims.

I sometimes question the commitment of others, especially the short-sightedness of management at many private clubs, when they fail to adequately invest in the manpower, skills, materials and machinery for varying tasks or to tackle on-going problems, also the failure to allow maintenance tasks to be carried out at correct times due to 'that very important autumn fixture'. Finally, the undue and ill-considered meddling of some green committees in pressurising greenkeepers, especially with regard to the over-watering of greens in summer – don't we all know that this leads to stinking, diseased 'bogs' in winter and ultimately to temporary greens?

I feel that our management practices should be progressive, professional, and most of all positive. For some of you 'young uns' here are some wise old words to ponder: 'You do not get good greens out of a bag of fertiliser or a hose pipe', 'Go into the winter with your greens as dry as possible' and 'Avoid watering

in September'.

On a lighter note, it was good to see many familiar faces at The Open at Royal St. Georges. I'm sure those attending thoroughly enjoyed the atmosphere and the experience. On separate days, David Wood and I raked bunkers for the group comprising Tom Kite, Peter Fowler and Mark Roe. May I say, "Thanks Tom, you're a real nice chap, a thorough gentleman, and thanks for the golf ball". As for Roe and Fowler...

Hopefully another visit to the now open London Golf Club is imminent. The interest in the last visit was almost as staggering as the project itself.

You may already know that secretary David Wood now doubles as our regional administrator. Rumours abound as to whether he will have to cut out three games of golf a week to find the time. And talking of rumours, with many companies pulling out of the IoG Peterborough Show, could we all be trekking back to a race course near a well known royal castle next year?

As for me, well the name remains the same, although we must now say 'Course' and not 'Club', and it is great to be back doing some positive work for a professional, golf-based,

company. The course is coming along nicely, and THERE IS NO GREEN COMMITTEE, just me! Have I died and gone to heaven?

PAUL COPSEY



SHEFFIELD

To begin, I have been asked by David Golding to pass on his sincere thanks to the committee and members of the Sheffield Section of BIGGA for the beautiful, engraved rose-bowl which Barry Heaney presented to him at The Open Championship. David wrote to me, saying "Whilst the recent changes with the GTC resulted in me having to choose between BIGGA and GTC, I trust that anyone who knows me well enough will always understand that the greenkeeper and his or her future remains at the forefront of my mind." We wish David all the best and look forward to working very closely with him at section level in the future.

Winter Lectures: I am pleased to inform you that permission to hold our monthly meetings at Rotherham GC, starting on 7 October and ending on 7 April 1994, has been granted. The lectures will be on the first Thursday in the month, starting at 2.00pm. Please make every effort to support your section. Dates for your diary: October 7, November 4, December 2, February 3, March 3 April 7.

Congratulations to Martin Scothern (Wollaton Park GC) in qualifying at Worksop GC for the Hayter Final to be played at Sandmoor GC, Leeds. Good luck Martin, keep the flag flying for Sheffield.

Our Annual Golf Tournament was held on 21 July at Lindrick GC., with a splendid turnout of 50 players competed for the 27 hole medal competition. The day ran very smoothly and a fine time was had by all. Sincere thanks to Lindrick members for allowing us courtesy of their course, also to Kevin Hazlehurst (course manager) for presenting us with a superb course – the rough certainly sorted the men from the boys! It was very much appreciated to be graced with the presence of Lindrick green chairman, Mr John Boddy. Mr Boddy welcomed us to the club, played golf with us, dined with us and kindly presented the prizes – marvellous.

→ 36

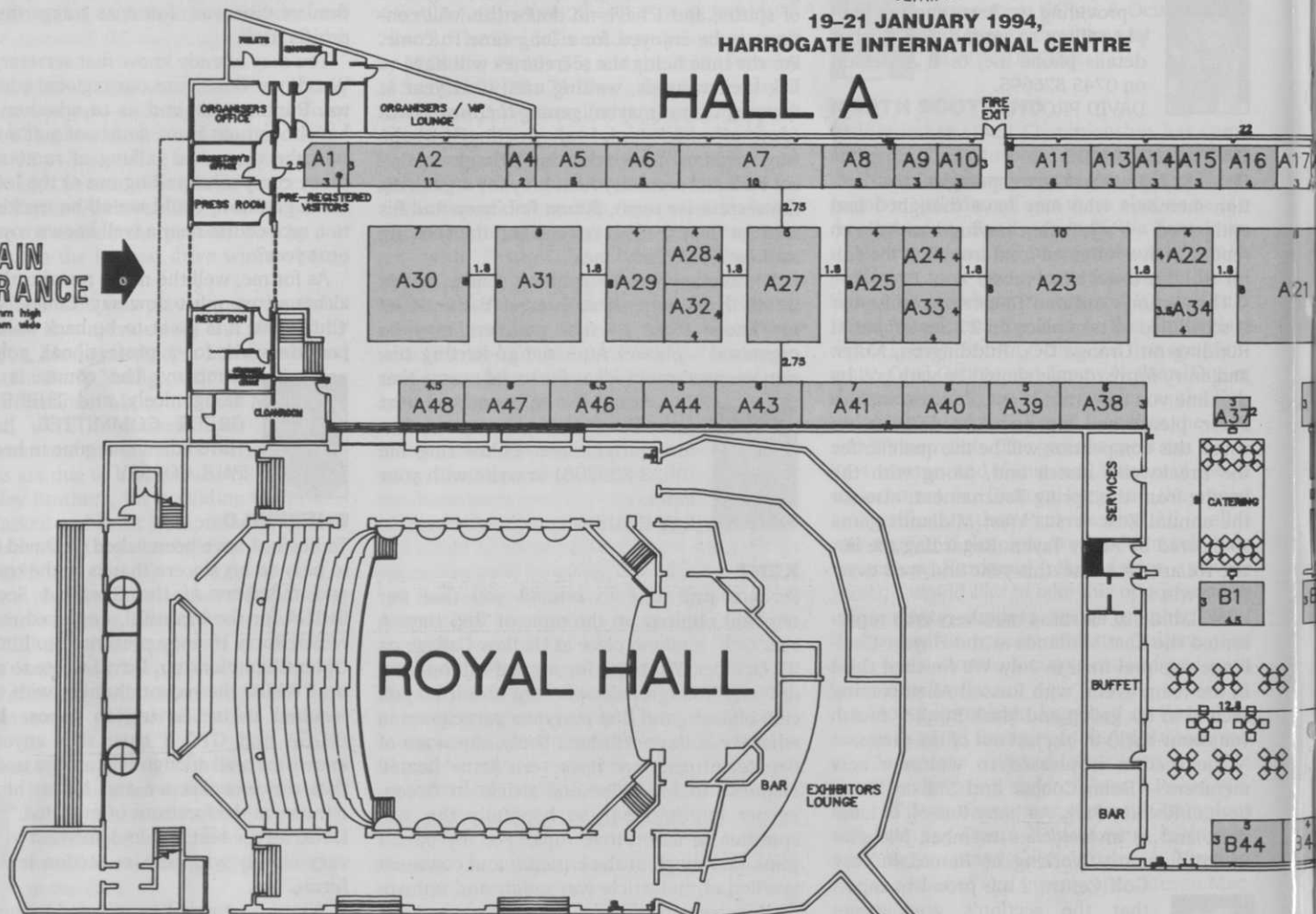
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Claymore Grass Machinery.....B25
CMW Equipment Co.....A40
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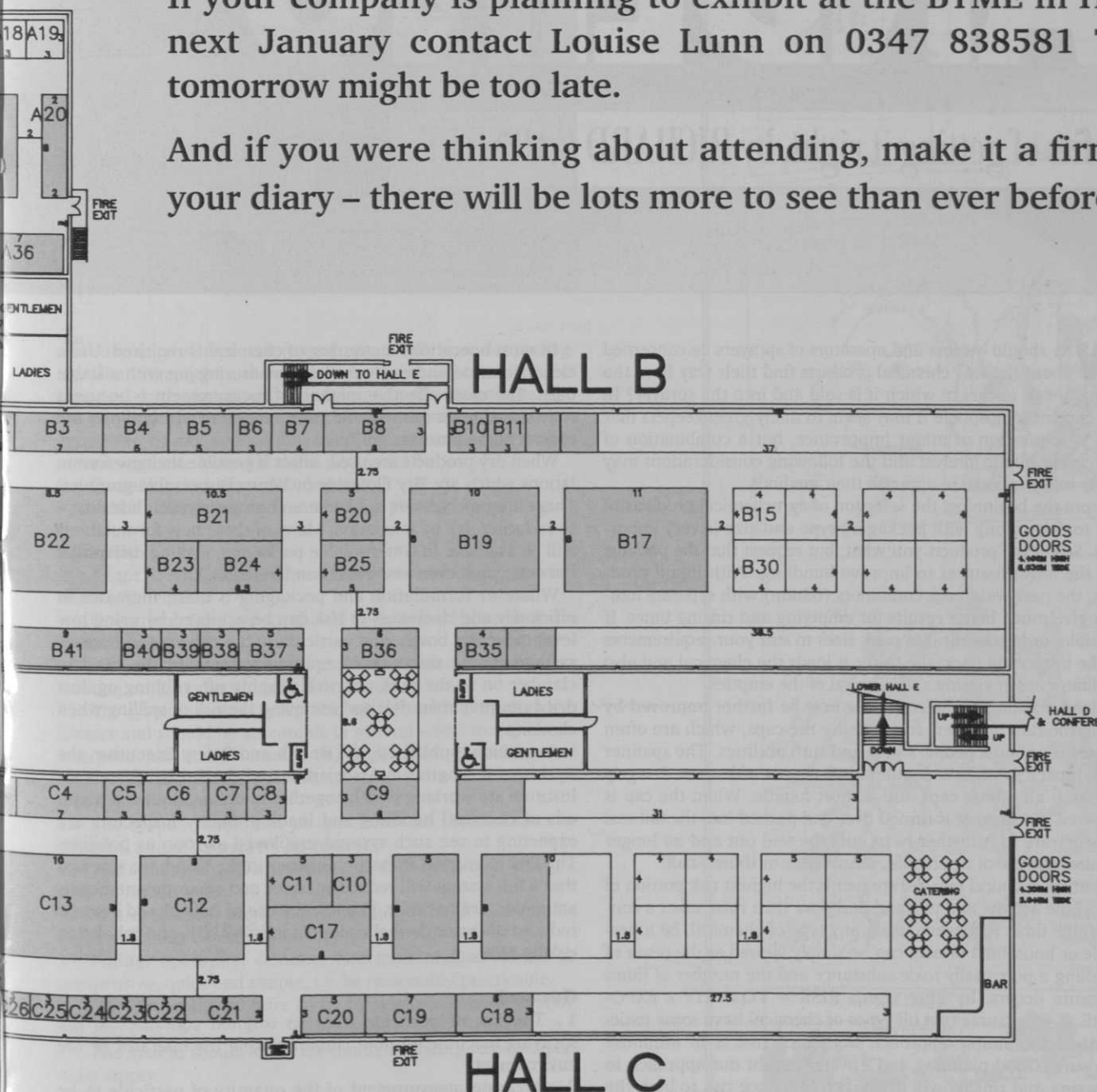
SEEING IS BELIEVING

77% of available stand space in Halls A, B and C is already booked and paid for*!

If your company is planning to exhibit at the BTME in Harrogate next January contact Louise Lunn on 0347 838581 TODAY... tomorrow might be too late.

And if you were thinking about attending, make it a firm date in your diary – there will be lots more to see than ever before in '94!

* 25% deposit paid



New Holland Ford*

Oaklands College.....C26

Oakstead.....C21

Ocmis Irrigation (UK) Ltd.....A28

Parker HartC19

Philip York & Partners.....B10

Prime Waterman Ltd.....B40

Professional Sportsturf Design AssociatesA13

RansomesA30

Rhone Poulenc.....A7

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Sportsground Irrigation Co / Hunters.A10

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Turf-Actant Sales.....C7

United Agri.....*

Vitax LtdA24

Warwickshire CollegeC22

Writtle College.....C27

*Stand number to be allocated

CHEMICAL HANDLING

The benefits of getting it right, by RICHARD GARNETT

Why should owners and operators of sprayers be concerned about the way chemical products find their way from the container or packet in which it is sold and into the sprayer? In the current atmosphere it may seem to many greenkeepers that this is a question of minor importance, but a combination of increasing public interest and the following considerations may cause many users to re-appraise their methods.

From the beginning, the selection of agrochemical products of low toxicity along with packaging type and size is very important. Select the products you want, but request that the package has the latest features to improve handling. With liquid products, the new wide neck containers (63mm) with separate handles give much better results for emptying and rinsing times. If possible, order chemical in pack sizes to suit your requirements as the bigger the pack, the faster it loads the chemical and also facilitates easier rinsing and disposal of the empties.

Clean opening of the container may be further improved by using the new spanners for undoing the caps, which are often tighter than most people's grip and turn abilities. The spanner from Inpack Systems is double sided. On one side there is a grip to match all 63mm caps and a short handle. When the cap is removed the spanner is turned over and pushed into the foil seal to penetrate it. A further twist cuts the seal out and no longer requires the use of a penknife, screwdriver or thumb-nail!

Pouring chemical into the sprayer is the highest risk portion of the whole activity and to stand and pour then rinse takes a considerable time. Risk when using any type of chemical, be it pesticide or household bleach, can be simply viewed as the result of handling a potentially toxic substance and the number of times exposure occurs. In other words $RISK = TOXICITY \times EXPOSURE$. If we assume that all types of chemical have some toxicity, then the simple approach to reduce risk is to minimise exposure. Good planning and a well thought out approach to emptying and rinsing will dramatically reduce risk to both the operator and the environment.

One of the new advances to look out for will be sealed containers that may be connected to your filling system or sprayer and which provide direct transfer of the chemical. If current trials with these systems by leading Agrochemical companies prove successful, then your dealer may have them available in 18-24 months.

The added bonus to this type of container is that once empty, the operator disconnects and, because the container remains sealed, no rinsing is required and it is then returned for refilling with the same product.

In most operations measuring of chemical is required. Use a clean, accurate and easily readable measuring jug with a stable base. The most effective method of measurement is to use a fully closed measurement and transfer system which allows full control of the process.

When dry products are used, select if possible the new formulations which are Dry Flowable or Water Dispersable granules. These are much easier to handle and produce much less dust – so reducing risk by inhalation. Many of these new formulations will be available in water soluble packaging, making disposal of the outer pack even easier and handling safer.

Whatever formulation and packaging is used, increases in efficiency and decreases in risk can be achieved by using low level induction bowls, and particularly the new closed transfer systems. Using this type of equipment removes the need to clamber on to the tank and risk slipping off, rubbing against dried-on spray materials and removing the risk of spilling when climbing.

As recently publicised, the Health and Safety Executive, the Agricultural Engineers Association and the British Standards Institute are working closely together to define improved methods of chemical handling and loading. Safety inspectors are expecting to see such systems employed as soon as possible. The Environmental Protection Agency in the USA have assessed that a full system will reduce operator and environmental contamination dramatically. In tests, the use of fully closed systems reduced operator dermal contamination by 90% and inhalation risk by 85%.

General

- 1 Transfer of pesticide from its original container to the spraying machine without contaminating the operator or the environment.
- 2 Accurate measurement of the quantity of pesticide to be mixed where necessary.
- 3) Rinsing of both the container and the transfer device with the washings returned to the application equipment and ultimately the target
- 4 The device should be acceptable to management and operators, both in terms of technology and cost measured on a comparative basis to chemical usage and application equipment value.
- 5 To be effective, the device should offer a progressive approach beginning at an easily affordable and useful system for bulk dilution but leading to common container access methods



and simplicity of approach to environmentally sounder packaging. The ultimate aim should be inexpensive direct metering of chemical to the target with the minimum of contamination to the equipment. This must be achieved with a system simple enough to fit any application, handling and measuring equipment using basic tools and skills.

6 Container rinsing prior to disposal.

7 Facilitate recycling and re-use where possible for refilling.

Specific

8 Adapt to ANY chemical/pesticide container shape, size and closure dimensions.

9 Operation of the system should take no more time than traditional methods.

10 Use of the system should significantly reduce the safety clothing requirements ideally down to gloves only.

11 The system must be acceptable to the health and safety legislators and should be acceptable in general terms to: (a) chemical/pesticide manufacturers (b) application, handling and measuring equipment manufacturers (c) the environmental lobby (d) the users.

12 The system should not be dependent on the container or chemical manufacturers for its success.

13 The system should allow for special packaging at a future date for added safety.

14 The occasional use of powders and granules and soluble packaging must be catered for.

15 Filling, operating, cleaning and maintenance should be inexpensive, quick and simple, i.e. be reasonably practicable.

16 The system should offer scope for advancement in technology and practices.

17 The system should allow for containers being removed partially empty.

18 Connection between containers and the device should be made using a 'dry break coupling' that allows less than 1ml of concentrated active residue per break.

19 If containers are to be rinsed then this should take place prior to removal, and all rinsate should be directed to the tank. The system should remain 'closed' throughout the process and perform under a range of conditions up to a level that ensures a residue of less than 0.01% of the container's original volume.

■ The author, former college machinery lecturer, Richard Garnett, is designer of the award winning Wisdom closed transfer system for chemical handling.

the Grinkeepers



the Grinkeepers



31 → Prize Winners: Gross – Martin Scothern 106, Nett – L Mason 100, P Lyons 104.5, A Whittington 107, C Hooper, 108.5, K Kirham 109.5, P Heaney 112. Guest prize – Brian Booth (Rigby Taylor). Our thanks to the trade who contributed prizes: Atkins Sports, Steve Boroughs, Rigby Taylor, Parker Hart and Purdey's, and a special vote of thanks to Nancy Park (Lindrick) for her kind contribution to the prize table. Lastly our thanks to Barry and Joan Heaney for making the arrangements on our behalf.

I am pleased to announce that the new rep. for Trident in Yorkshire is Mike Brear. Mike was a greenkeeper at Abbeydale GC for some 15 years. We wish him well in his new venture.



JANE RYAN

SURREY

Walton Heath GC recently hosted the annual England versus Scotland match, and on a course in fine condition the trophy was retained by England by six games to four, many matches going to the last green. Thanks to the club for again hosting a section golf fixture and to Clive and the Walton boys for the hard work carried out on the course.

On the subject of hard work, who saw Dave Andrews on the TV Open highlights, raking the massive sleeper-faced bunker on the fourth? Well done to all section members who helped out, I understand a good time was enjoyed by all.

Derek informs me that this year's Huxley Bowl has progressed (at the time of writing) extremely smoothly to the semi-final stage – well done to all competitors for getting their games played on time and notifying Derek of the results.

On the education front, the committee has been looking at the North East Surrey College of Technology with a view to it becoming a 'recognised' college for Surrey. Currently they are running NVQ courses in greenkeeping.

A fixture for your diary is the Autumn Tournament at Epsom GC on Thursday 21 October – closing date for entries 7 October. This will comprise a 27 hole Stableford, ploughman's lunch and three course evening meal, all for the incredibly low price of just £27.00. Also make note that David White will be our guest speaker at Walton Heath on Wednesday 3 November.

ROGER TYDEMAN

MID ANGLIA

It was Mid Anglia's turn to host the regional final of the Hayter Challenge Tournament in July, Northants County GC being selected as the venue. Although I was unable to attend, the course was by all accounts in superb condition – so thanks to David Low and his staff, who obviously beavered away before the event!

The event was particularly successful for the section, the team prize being won outright and three players qualifying for the final at Sand Moor this month, these being John Gentles (Griffin GC), John Moorhouse (Brocket hall GC) and Dave Piggott (Leighton Buzzard GC). Congratulations to you all and I hope you do well in the final.

The section's Summer Tournament, a 36 hole medal, was held on 27 July at St Neots GC. Thirty members attended and found the rain and windy conditions difficult, producing some quite high scores and several 'no-returns'. However, the weather improved for the afternoon and the day was enjoyed by all. Full credit must go to the top three, who produced the fol-

Around the Green



lowing scores: 1st John Moorhouse (Brocket Hall) 70+72=142. 2nd Tony Freeman (Northants County) 70+73=143. 3rd David Forsyth (Mid Herts) 69+77=146. Best a.m. score Leon Cant (Brocket Hall), best p.m. score Neil Whitaker (Woburn). Our sincere thanks to the officers of St Neots for the courtesy of their course and for the hospitality shown to us, also to Martin Lay and his team for producing excellent playing surfaces. Our sponsors were Boughton Loam, represented by Mike Franklin, and we acknowledge with appreciation Mike's efforts and help during the tournament.

The next golf fixture is the Autumn Tournament at Woburn G&CC in late October. The exact date will be published in October, the day planned to combine golf with our section AGM. Fixture cards, listing events for the remainder of '93 and into '94, will be with you soon.

Finally, I would like to thank my fellow committee members for their help and support,



particularly Gerald Bruce, John Wells and Chris Brook, all of whom put much time and effort into ensuring the smooth running of the section.

PAUL LOCKETT

CLEVELAND

The autumn programme is being prepared. May I remind student greenkeepers that they should be contacting their colleges NOW, in order to book courses for 1994 – don't leave it too late.

Some thoughts on preparing winter greens: start a programme of winter work, i.e. drainage, renovation or construction, as soon as possible, as next year arrives all too soon. It is wise to complete construction work before Christmas if greens or tees are to be in play from May next – early planning is essential.

The new course at Romanby, Northallerton, opened late in July.

Players are required for the match against the N.E. section, a team of 12 being needed for the game scheduled to take place on 27 September. Contact G Munro on 785195 or G Pyle on 784491.



The annual match Greenkeepers versus Eaglescliffe (green committee) ended in a draw. Thanks to all for an enjoyable evening

BRUCE BURNELL

DEVON & CORNWALL

The section's guest day was held again at Launceston GC on Wednesday 7 July, the format being fourball better ball for the Jacobsen Trophy, sponsored this year by MST, Jacobsen dealers for the section. We thank Launceston GC for allowing us the use of their facilities, also the club staff who made our day so successful, with special thanks to George Bailey and his team, who had the course in excellent condition.

Following the evening meal, Mr D Bassett, managing director of MST, presented the prizes to the lucky winners: 1st T Martin & B Long (Torquay) 41 pts. 2nd M Gilbert & R Japes (Launceston) 40 pts. 3rd B Ridgeway & K Mitchelmoor (Fingle Glen) 39 pts.

To conclude the day our after-dinner speaker, David Golding (now education director with the GTC) spoke on NVQ's and the role the GTC has to play in greenkeeper training. Our thanks to David for making the long journey to Cornwall.

The section's first meeting of the winter season will be at Bowood Park GC on Wednesday 27 October, playing a Stableford in the morning for the D O Hunt Trophy, followed by an educational talk by Gordon Child on his management policy at Churston. Please make sure you return entries to me before the closing date, as meals must be booked in advance. Note also that there is a likelihood of limited tee times at meetings this season, as many more are entering our competitions – avoid disappointment by returning entries (with the correct payment) as soon as possible.

Regional dates for your diary are 12 October for the first regional workshop at Cannington College, where Jim Arthur, Donald Steel and Mark Pierson will present papers on golf course construction, design and maintenance. Also the regional seminar on 23 November at Cannington, where speakers will be Derek Green on Dry Patch, Derek Ganning on The Belfry, Barry Cooper on Drainage, and Master Greenkeeper, Kerran Daly. Please book early.



RICHARD WHYMAN

EAST OF ENGLAND

All section members should now be in receipt of details concerning the fourth competition of the season, to be staged at Peterborough Milton GC during the last week in September. It is also planned to hold a winter meeting this year, in conjunction with the AGM, in December – watch this column for details!

Congratulations to Fred Cobb (Newark Park GC) and Daniel Wells (Burghley Park GC) in qualifying at Church Brampton Golf Club for the Hayter Challenge Tournament, to be staged later this month at Sand Moor. We wish them both good fortune.

Congratulations must also go to Mark Jones (Ely City GC), who has been nominated as our section representative for the ICI Premier



Greenkeeper of the Year Award. Should any members have any news, or views that they would like to see aired, please do not hesitate to get in touch with me.

MIKE FINNEY

MIDLANDS

Following news from The Belfry, I have to inform members that The Belfry have decided they no longer need the greenkeeping support team, requested some months ago, for this year's Ryder Cup. I can but apologise to those members of BIGGA who were prepared to give freely of their time, many making firm commitments and even giving up holiday time in order to be available on the day's requested.

News came to me recently of the sudden death of Sam Hagen, course manager at the Vale GC. Sam, aged 35, was well known to members of several sections within the region, working at Kibworth GC for some time before moving to The Belfry, where he played a big role in the success of the last Ryder Cup. Sam then undertook the challenge of constructing a new golf course at Lynham in Oxfordshire, leaving when construction was drawing to a close to take up what was to be his final challenge, management of the Vale Golf Club, where he remained for the past two years. Our thoughts go out to his wife and three children at this sad time.

DEAN CLEAVER

HOLED UP

Filling aerator holes completely, the first time

by **STANLEY J ZONTEK**

Director, Mid Atlantic Region, USGA Green Section

There can be little doubt that deep soil aeration, by solid or hollow tines, has given the golf course manager a very important tool with which to better manage grass under less-than-perfect soil conditions. Unfortunately, the soil in most putting greens in this country is far from ideal, and as an alternative to the expensive and aggravating reconstruction of these greens, most turf managers exercise the option of trying to modify the existing soil through a programme of shallow and deep aeration in conjunction with topdressing.

These techniques are well

understood by the turf manager. What is more difficult is the challenge of filling these deep-tine holes with topdressing material. In fact, due to the difficulty of filling these holes, most turf managers do not even try. A variety of techniques have been used, but the results usually fit one of the following descriptions: The holes are not filled the first time, the holes are only partially filled, and/or the greens are so heavily topdressed that the grass is either badly bruised or else the surface of the green is left buried in topdressing material.

Golfers tend to be unhappy



First step is to apply topdressing sand heavily only to the strip to be aerated

with these results, and with most course managers being sensitive to criticism, it is no wonder we see so many deep aeration operations being just that — the punching of holes into the greens without any attempt made to fill

the holes. It usually is just not worth the aggravation of trying to fill these holes, except on certain troublesome greens. The holes are left open not because it is better to do so, but because there does not seem to be a good method to

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'There is no question that filling holes to the surface

fill the holes to the surface.

Why fill holes in the first place? In terms of improving drainage in a soil profile, there is no question that filling the holes to the surface is very beneficial. In fact, partially filled holes have little effect on water movement through the soil profile. Consequently, in situations where you want long-term drainage improvement, soil modi-

fication, and interruption of layers in the profile, filling the holes is important. My turf tip is the result of a USGA Green Section Turf Advisory Service visit to Wilmington Country Club when aeration and topdressing were being done. Paul Latshaw, Sr., is the golf course superintendent. During our visit, I saw firsthand the filling technique described briefly in the

following steps.

Step 1

Topdressing is applied heavily to the strip of the green to be aerated, in this case with solid tines.

Step 2

One or two passes are made over the topdressed area with a Verti-Drain.

Step 3

After the holes are punched

through the topdressing and into the green, the topdressing is hand-broomed into each hole. It takes several employees to accomplish this task. The back-and-forth action of the brooms works the dry topdressing into the holes completely and gently. This careful brooming allows each aerator hole to be filled individually. If a little extra topdressing is needed, it can be back-brushed over the

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is very beneficial...'



The sand begins to fill the holes by gravity or the 'hourglass' effect, even without brooming



After the Verti-Drain has completed its pass, the crew hand-brooms the topdressing material into the holes. The back-and-forth action completely fills the holes with minimum damage to the turf

hole and, like an hourglass, the topdressing filters down into the hole and fills it up.

Step 4

Excess topdressing then is brushed forward into the area where the topdresser and Verti-Drain make their next pass. Thus, excess topdressing sand is moved forward and not left in place.

Step 5

The whole process is repeated on the next strip of green.

In seeing this technique in action, it was remarkable how little the turf was damaged. The greens were playable soon afterward, and the grass was less bruised and under less stress.

Naturally, matting of the entire green's surface after a heavy topdressing using a steel drag mat behind a wheeled vehicle can be very abrasive to the grass. Also, the heavy traffic over the green as the topdressing material is matted into the surface (usually in a ➔

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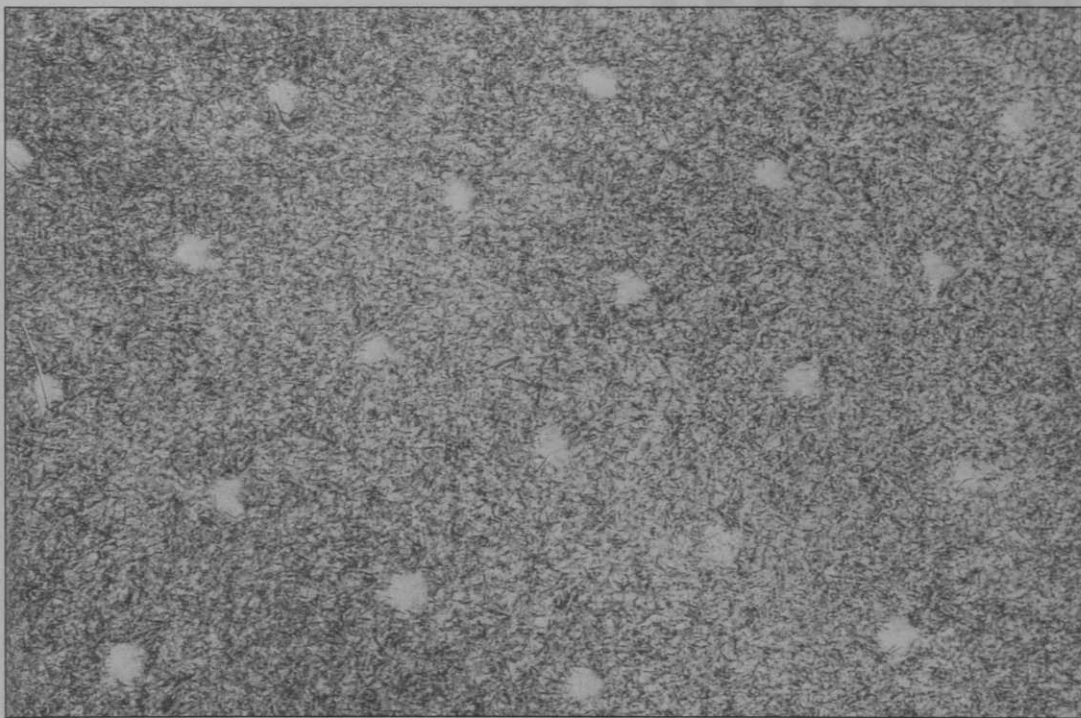
'In seeing this technique in action, it was remarkable how little the turf was damaged'

➤ circular motion) tends to mash down and close the aerifier holes you are trying to fill!

Please note that this turf tip involves significant handwork, and this may be a limiting factor for some golf course maintenance operations.

As with any golf course maintenance technique, what might work well at one course may not work so well at another. There are no panaceas in our industry. However, in situations where you want to fill aerifier holes completely and reduce the scuffing and abrasion of the grass so common with mechanical drag mat use, give this technique a try. It works well for Paul Latshaw, Sr., at Wilmington Country Club, and it could work for you.

■ This article first appeared in the **USGA Green Section Record** and is reproduced here with due acknowledgement and thanks to the **USGA Green Section** and author **Stanley Zontek**.



The final results - holes filled to the surface



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Update



GETTING BIGGA AND BIGGA

WITH five months to go before BTME '94 takes place in Harrogate next January, a massive 77 per cent of available stand space in Halls A, B and C has *already* been taken up by exhibiting companies.

Interestingly, Ford New Holland, who chose not to attend in 1993, have confirmed they'll be back in 1994. However, the site they occupied in Hall A for the first four exhibitions has been snapped up by someone else, so look out for Ford New Holland this time in Hall C.

Don't be left out in the cold next January. Contact Louise Lunn on 0347 838581 for more information if you are interested in exhibiting – but don't leave it too long!

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Each month from June we've been posing questions about the upcoming BTME. Now it's time to tackle a final question and send in all your answers. To help you along, we've repeated the questions and remember all the answers can be found in past issues of Greenkeeper International.

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★ All you have to do to stand a chance of winning, is to write down your answers, numbered 1 to 6, on a postcard, add your name and address, stick on a stamp and post to: BTME Competition, BIGGA, Aldwark Manor, Aldwark, Alne, York YO6 2NF to be received by Friday October 15th. The first correct entry drawn after the closing date will win first prize, the second will win second prize and the third – you've got it – will collect the third prize. *Good luck!*

THE SIX BIG QUESTIONS:

- 1 In April's BTME Update we carried a letter of congratulation from a Sales Director of one of the industry's leading companies. What is his name?
 - 2 In the BTME column in May we introduced our new sales and marketing assistant with special responsibility for the BTME. What is her name?
 - 3 How many promotional information packs had already been sent to interested companies? (June issue)
 - 4 Who is John Deere's Groundcare Division Manager? (July issue)
 - 5 Who is the Managing Director of Multicore Aerators? (August issue)
- And the final question, from this month's column:**
- 6 What percentage of exhibition stand space is already taken up?

Note: competition not open to BIGGA staff. No cash alternatives. Judges' decision is final and no correspondence will be entered into.

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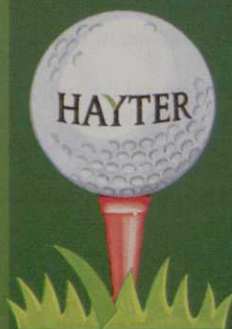
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Trade Topics



Huxleys have introduced a new version of the increasingly popular 358 Greensmower. Changes to the hydrostatic pump, reel drive pump and wheel motors have enabled the maximum engine speed to be reduced to 2100 rpm. This provides extremely quiet operation, reduced fuel consumption, less wear on engine and transmission and a smoother, cooler and more simple operation.

The new 358 also has "quick adjust" Turf Combs, which avoid the need for spanners when setting combs in and out of work, and a faster reel speed which gives improved grass collection. New optional accessories include headlamp, towbar and flag holder. The new Huxley 358 Greensmower is in production now. Details/demo, Tel: 0962 733222.

The names of T Parker Ltd and Maxwell Hart have been known for over 50 years, and as individual companies they were proud of their service and advancements. In March this expertise was merged to become Parker Hart Ltd – a union conceived to further promote innovation and experience to their joint customer base and to give one company the ability to concentrate on the turfcare aspect of the business.

D S Holdings is the name of the holding company now continuing the other aspects already established under Maxwell Hart: Standard Golf (UK) Ltd, sole distributors for Standard Golf of America, Envirogreen, the first national company to specialise in the disposal of empty containers and the safe destruction of full or banned chemical containers, and Concept Surfacing, who have recently added new artificial golf surfaces to their range.

Greenkeeper International is pleased to inform readers that they are very much alive and still located at Winnersh. Tel: 0734 788044.

The much sought after wall chart from Rhone Poulenc Environmental Products has been re-designed. The new chart features information on weeds, pests and diseases, plus details on product choice, application timing and protective clothing. Tel: 0277 301115.

In July H Pattisson and Co Ltd came under new ownership, Mr J F Hinch is now chairman and Mr M C Hinch has taken over from Mr A Hemingway as managing director. In a recent press release, the company declared that it

remains a family concern and assures its suppliers that there will be no changes within the organisation. Tel: 0582 597262.

Eric Hunter Grinders seem to be installing a fair number of their grinding machines into golf course workshops these days. The latest include Mold GC, Caldyc GC, Newbury & Crookham GC, the famous Malone GC in Northern Ireland, the Pine Ridge Centre, and Wimbledon GC. Many course managers are becoming aware of the advantages of 'in-house' mower maintenance, and the technique of 'relief' grinding taught by Hunter's is fast gaining recognition. The method reduces friction against the bedknife – with amazing results: bedknives last 2-3 times longer, fuel is saved by minimal drag, adjustments are needed less frequently and the cleaner cutting action enables mowing to take place in very wet conditions without tear or skid. Details: Tel 0207 70316.

The greenkeeper has access to some well established and effective selective herbicides. These, in conjunction with regular mowing, can provide control of many unsightly and damaging weeds in established turf. Nonetheless, many weeds can survive and thrive even under close mowing regimes, generally those which have a creeping, prostrate growth habit and are missed by the mower, e.g. slender speedwell, which has proved most difficult to control by existing selective herbicides.

Responding to the challenge of developing a new herbicide for the control of such difficult to control turf weeds, Rigby Taylor and DowE-lanco evaluated more than 20 candidate herbicides. The result is Bastion T, a highly effective novel herbicide. Based on two powerful modern herbicides, combined in an ingenious micro-emulsion formulation, Bastion T delivers control of not only a wide range of important, broad-leaved weeds, but also on the tough, low-growing weeds whose control has previously proved so difficult. It promises to become the standard treatment for effective control of weeds such as slender speedwell and yellow suckling clover.

Despite its powerful effect on weeds, Bastion T is safe to desirable turf grasses. Unlike most other selectives it can be applied to young turf as little as two months after sowing, providing much-needed protection in the critical stage of turf development.

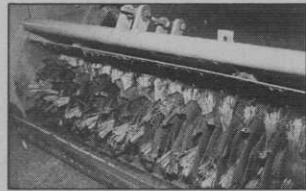
Trials have confirmed the remarkable length of weed control of Bastion T, in many cases up to six months, and it does not cause unsightly scorch of the weeds, which may only temporarily arrest growth. Rather, activity depends on a sure, thorough kill of problem weeds, eliminating the potential for regrowth.

Approved for use through knapsack sprayers as well as conventional hydraulic equipment, Bastion T is a highly versatile product, tailored to meet the requirements of today's turfgrass manager.

Hardi, the market leader in amenity spraying equipment, has developed a sprayer for the Toro Workman 3000 utility vehicle. The sprayer is from the Hardi PS range and has a choice of 300 to 800 litre capacity tank sizes and boom widths of either 6 or 8 metres. The design includes the unique Hardi 3-point quick attach/de-mount system. Prices are from £1,990. Details: Tel 0455 233811.

Complete Weed Control, the UK's largest specialist spray contracting service, has introduced a new corporate folder and series of leaflets covering almost every aspect of weed control.

Containing seven inserts, the folder looks at the following areas: reasons for complete weed control, shrubberies, amenity areas, industrial areas, footpaths and pavements, aquatics and forestry. The pack is free, Tel: 0608 644044.



Leading tractor supplier, Kubota (UK) Ltd, has launched a new range of comfortable, practical

clothing for wear in the field. Available for Kubota's frontline staff, dealers and customers, the new collection, which is designed in classic navy and airforce blue, comprises a jog suit, a cotton polo shirt, a warm polar fleece and wool mix sweater, together with a waterproof, breathable jacket.

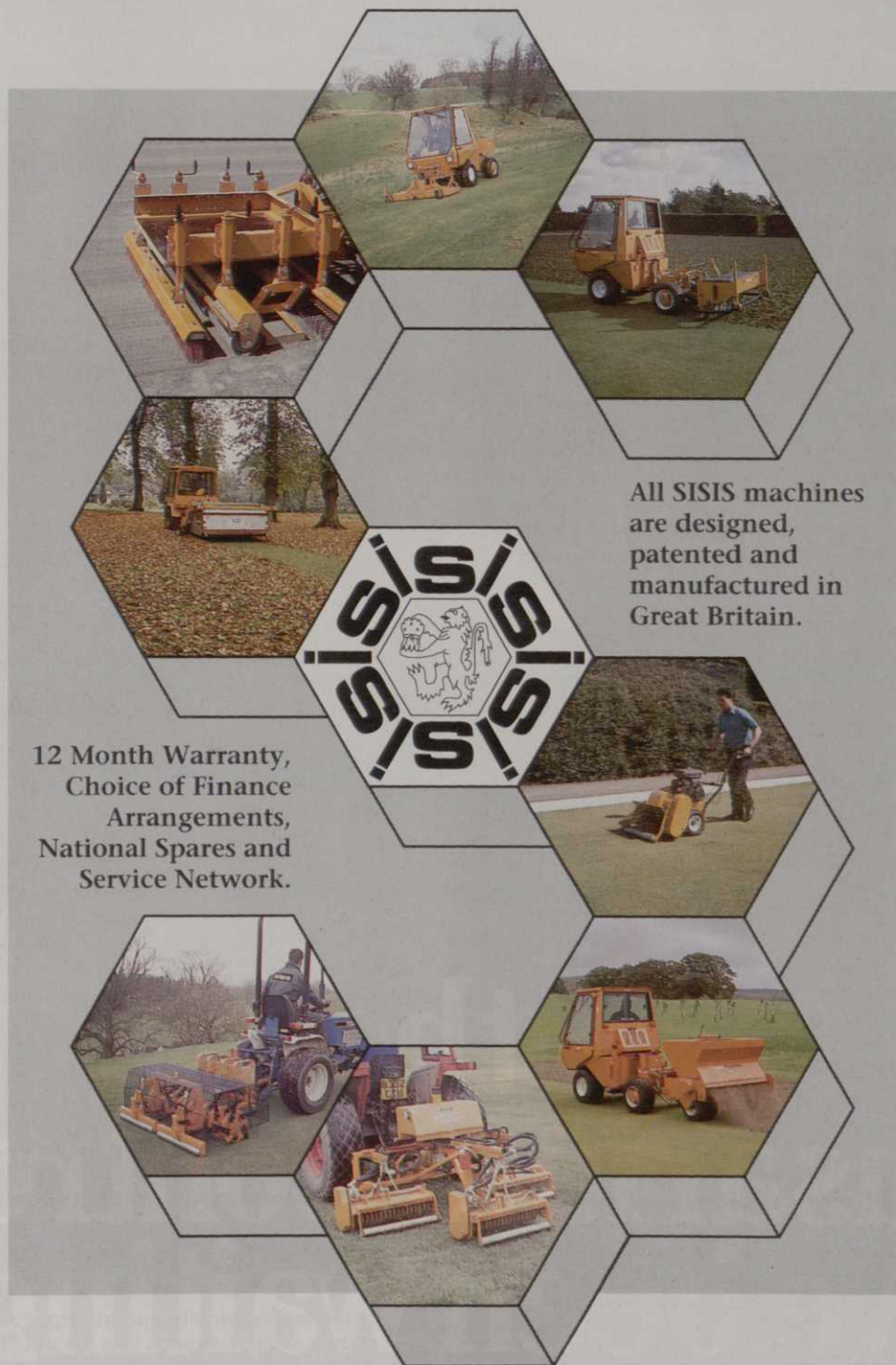
The new Fibagroom from SISIS is a combined scarifier and sweeper which incorporates all the best features of the SISIS Veemo and SISIS Litamisa, with several new design features particularly for undulating ground. The scarifying blades are interspersed with brushes so that the fibre removed is simultaneously collected into the 2.3 m³ capacity high lift hopper. Organic matter such as leaves and twigs are part-mulched before collection.

The reel comprises two independently floating heads to follow ground contours and gives a 183 cm working width. The scarifying depth is quick and simple to adjust, with a single hand control on each head. Details, Tel: 0625 503030.

Scheduled for opening last month, the Oxfordshire Golf Club have taken delivery of no less than 21 Toro's from local Toro dealers, County Motors.

Machinery supplied include ten Pedestrian Greensmowers GR 1000's, two 3000-D Triple Greensmowers, two Reelmaster 5100 Fairway Mowers, two 216-D's for semi-rough, two 325-D's with Re-cycler decks for out of play areas, two Sand Pro 5000's; and one Multi Pro self propelled sprayer used in particular for liquid fertiliser.

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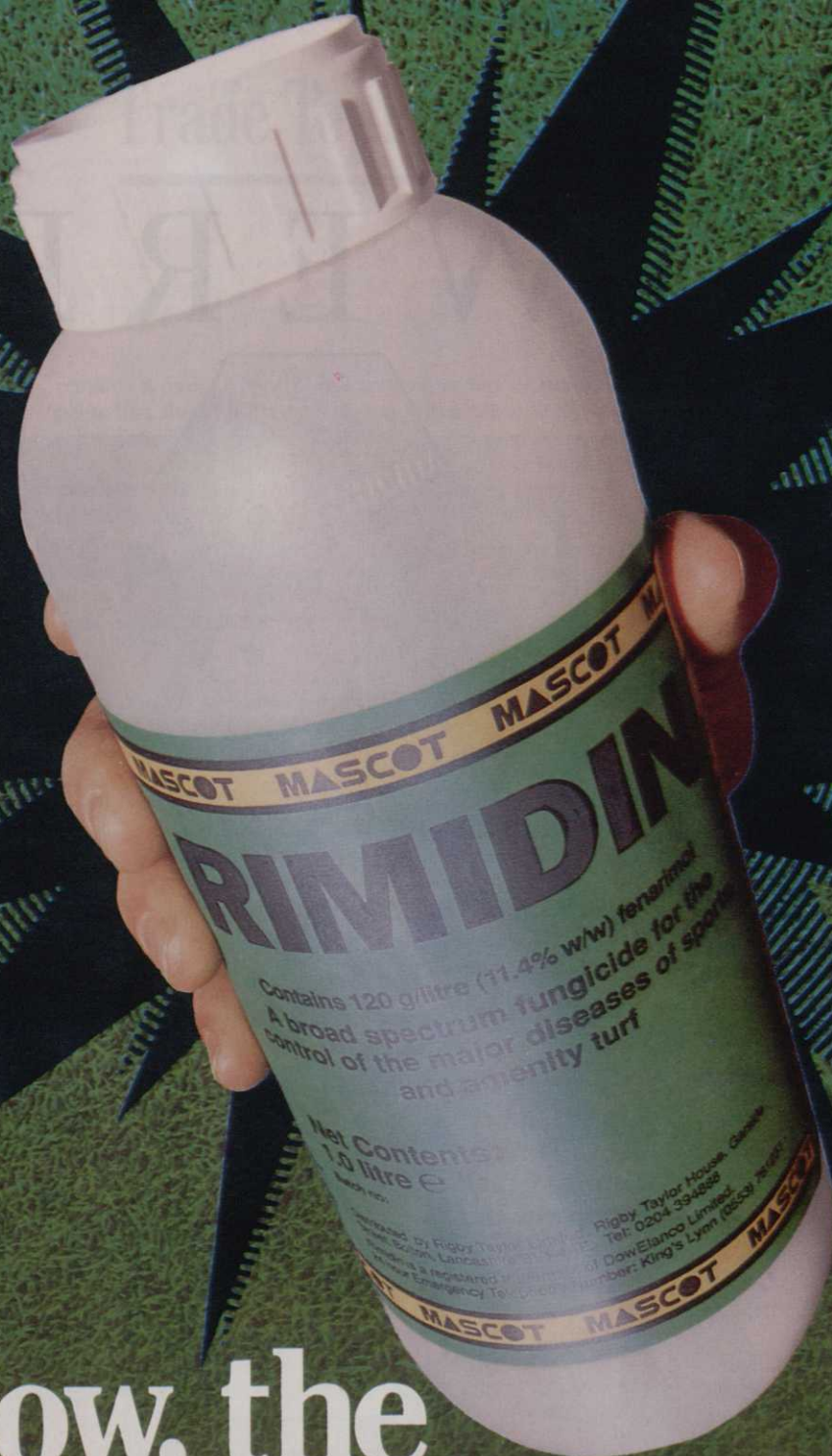
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Earlier this year members of the Kent section of BIGGA visited the London Golf Club, a new 36 hole development situated on the Kentish North Downs close to the Brands Hatch motor racing circuit, perhaps best publicised as the latest course 'that Jack built'. Yes indeed, Golden Bear Inc. heads the architectural team responsible for both courses and Jack Nicklaus personally has designed one of the 7,000 yard courses, the par 72 Heritage championship layout. Rumours, of course, have abounded regarding the total cost of the finished project: could it really be £40 million, was this going to be another luxury, Japanese funded, American bent grass experiment and, inevitably, questions were raised regarding the merits of this type of project and construction in the UK?

This visit seemed an incredible chance to see for ourselves one of the largest golf developments in Europe, so with the help and enthusiasm of the course manager, Joe Paulin, a visit to look at aspects of the site was arranged. To over-simplify the itinerary, Joe greeted us with a brief talk on the details of the site, its construction and technical specifications, whilst irrigation and science supremo, Colin Sainsbury, talked about and demonstrated aspects



of the million pound irrigation system and showed us the newly delivered laboratory equipment for on-site leaf analysis. Dennis Exell, the club's chief mechanic, showed us the extensive machinery storage and maintenance facilities, followed by Steve Marsden, LGC's assistant course manager, taking us on a guided tour of the site, showing us stages of

both on-going and finished construction.

Many of this country's 'experts' may have already prejudged other, similar, constructions of this type and have appeared all too eager to knock and scoff, but the open-minded purpose of the visit was to see which aspects, if any, were relevant to our present or future British greenkeeping practices. The LGC is on a huge

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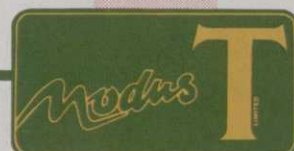


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'The greens at LGC, despite being very large, were all hand mown and at our own courses this would be an ideal daily objective. But...'

— Paul Copsey

site and in every way is a very big project, comprising some 560 acres, 11 lakes, USGA Spec. greens and tees, creeping bent and more traditional seed mixtures, high staffing levels, and the very latest in machinery.

We were, perhaps, somewhat overwhelmed by the sheer scale of the operation, but I am sure in our minds we began to draw comparisons with our own courses, especially bearing in mind Joe's opening address: 'the attitude and objectives of my team – to deliver a top class golfing facility for their client – with the assembled machinery and equipment being the tools to aid in achieving that task.' Well for the 'traditionalist', like it or not, this is perhaps what we should all be aiming for on our own courses, though what seems lacking in our own cases, more often than not, is that 'our' clients – the golf clubs – seem unable to grasp this simple but essential fact.

As an example, various members of our group commented that the greens at LGC, despite being very large, were all being hand mown, and that at their own courses this would be an ideal daily objective. The fact is that we could all do this, given the equipment and (more importantly) the extra staff with which to carry out the task. To extend this

approach to all other areas is obvious. Many of us admire the use of lightweight fairway mowers to regularly mow and stripe fairways, but in general, one pass a week with a trusty (and often rusty) set of gangs has to suffice. In simple terms, many of us are being forced to make cost compromises on the condition of our courses in just about every aspect of maintenance. What we need is for this fact to be fully understood by our club members, especially when they complain of poor course conditions compared to the 'bigger' course they played 'up the road'. It's the same in all walks of life –

you can have anything, as long as you can pay for it!

Staying with the subject of machinery, at the LGC this is cared for meticulously and maintained to perform at its optimum, always ready for use at the crack of dawn each day. With all equipment now being so expensive, shouldn't more clubs be taking this attitude toward extending the life and maintaining the performance of their machines, perhaps by hiring an on-site mechanic, or by improving workshop facilities?

Now some of you are probably still asking the question, 'why do you need on-site lab equipment and why analyse grass cuttings?'. Well, one of the key points that strikes the visitor at LGC is the coupling of site maintenance practicalities with those of science. Joe was at pains to point out that greenkeeping basics never change, no matter how big or small the project, that bigger projects often have bigger and more complex problems, and that greenkeeping will always be an art or skill. Linking these, however, he pointed out the ever-increasing need to understand the science of greenkeeping. The science, he believes, has to be used as a yard stick, as another tool.

I need not elaborate further, for the argu-

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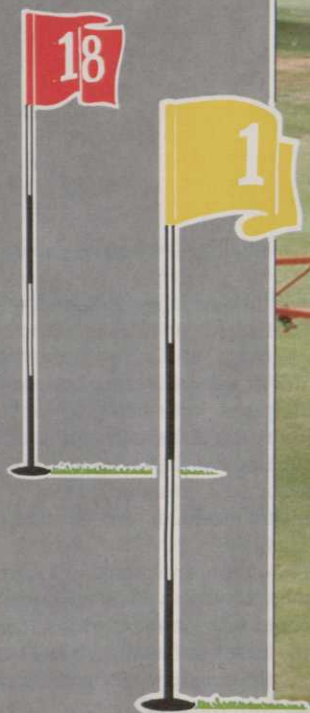
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'It's a glimpse into the future'

ments on testing and analyses have already been, and will no doubt continue to be, aired in this publication. As for the much publicised use of creeping bent, the greens and tees on the Heritage course are sown with 100% Providence creeping bent, whilst the other course, the International, is using a more 'traditional' mixture. Again, may I state my own open-minded approach to these 100% bent grass greens by saying that if the limitations of and the precise way to manage such surfaces are known; and the funds for their intensive upkeep are available, who is to say that it is wrong so to do? The base fact is that if the client specifically requires this type of surface, using this variety of seed is one of the tools to achieve such aims.

To illustrate by way of personal example, on a busy nine hole course with restricted teeing areas, especially on par 3 holes, I must use a Dwarf rye grass seed if I am to stand any chance of achieving year-round play in the context of my particular budget. I will also admit to having successfully revived some very flagging, compacted, *Poa annua* and Rye dominated greens by extensive turf maintenance work, plus overseeding with a 100% Egmont bent. Why? A specific job needed to be done



and Egmont was my tool to crowd out the undesirable species and restore good surfaces. With that achieved as stage one, I am now able to use a more traditional mix and see fescues returning to the sward.

I feel sure those who attended this visit, rather than being completely overawed, viewed some of the techniques employed as perhaps a glimpse into the future. Think of the following practices, common 15 to 20 years ago, and see how they now relate to your current thinking and maintenance policies. Slitting, scarifying, and top-dressing was once an annual operation, the mowing of greens just

three times per week (even in the height of the season) was common, rough and bank mowing was a very occasional practice and 'presentation' was of secondary importance. Look also at some of the materials available. Back then we slogged over areas many times with little more than agricultural fertilizers, now a single pass with a coated, specialised, high nitrogen product will do the job for eight months.

To conclude, I would suggest that everybody retains an open mind; there is no expert who knows it all. Greenkeeping methods and practices have developed over the years through this type of exchange of ideas, although the

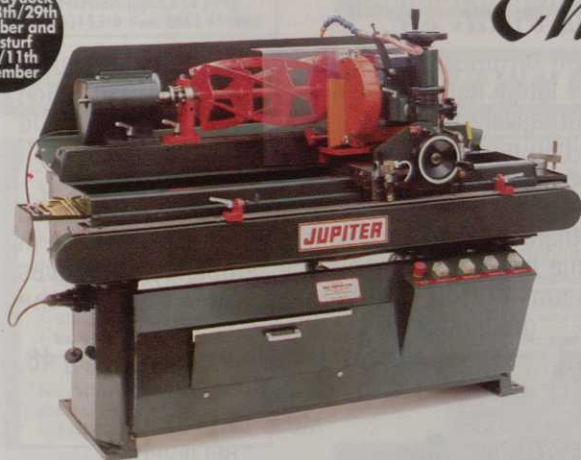


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'The quality and scale of the project is bound to create both national and international attention'

basic principles never change. Joe Paulin is eager to admit that this is still the case and perhaps we have as much to teach those who manage courses of the LGC type as they have to teach us.

As financially successful businesses, some of the early multi-million pound projects had their fair share of problems, but the LGC has some simple advantages over its predecessors. Opening later this year, the recession hopefully will have passed. In addition, the course is much better sited and served by major road and air links than many others. In the ever shrinking world of golf, the quality and scale of the project is bound to create both national and international attention and the sheer challenge of the courses will be a major attraction for Tour events and 'championship' organisers. Many, no doubt, will comment airily that courses of this nature have in the past had their heads in the clouds, but I think the greenkeepers of Kent appreciate that in practice the management team at this project have their feet firmly placed on the ground.

Concise and clear cut objectives, coupled with the raising of practical and presentational standards applied to our own situations, are perhaps goals that we should all be striving for



in the near future. Take a look through Greenkeeper International and you will see the latest equipment and materials advertised. Being able to correctly use them in practice and to be allowed to do so by our 'clients' is perhaps the greatest challenge in greenkeeping, especially

when we come under ever-increasing pressure to raise standards in the face of increased levels of play.

■ The author, Paul Copsey, is course manager at the Barnehurst Golf Course. He is also Kent's ace reporter for section news in *Around The Green*.

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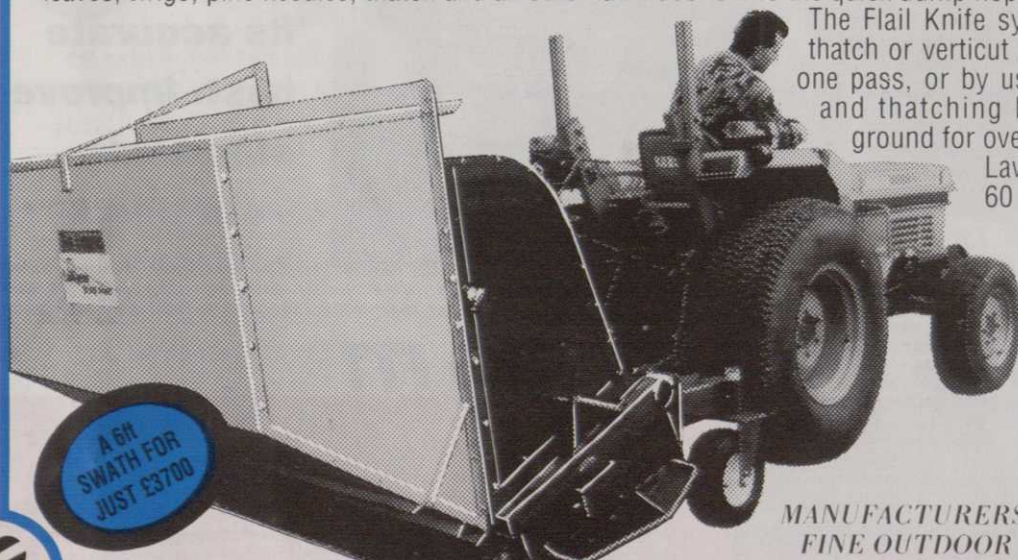
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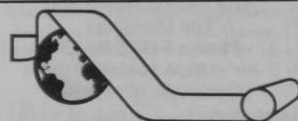
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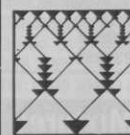
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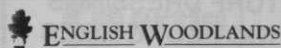
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The Last Word

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Method in madness

Jim Arthur points out in his article on grass identification (July) that the creeping bents such as Penn-cross which we know in the UK as *Agrostis stolonifera* are known as *A. palustris* in the USA.

The Latin *Agrostis palustris* translates as 'Marsh bent'. In other words this species is found in the wild in marshy areas. It is therefore surprising to find a plant of the bog so often used on pure sand golf green constructions.

But perhaps there is method in this apparent madness.

Recent research in the USA has shown that the roots of Penn-cross are capable of penetrating the poisonous anaerobic conditions found in black layer. And where does black layer often develop? On pure sand rootzones of course.

So if you have a golf green with black layer, the grasses which will survive in it are annual meadow grass (because its shallow roots can survive above the black layer) and Penn-cross (because its roots are specially adapted to be able to survive anaerobic conditions and grow through it).

Robert Laycock MSc., CBiol., MBiol., MIHort. General Manager, Karsten Turf Science, Gainsborough, Lincs.

Arthurian legends

I write to say how much I have enjoyed Jim Arthur's two recent articles on mown grass identification. Having come through the 'ligule and auricle' school, with flow-chart at the ready, it is very pleasing to read such pointers on the overview of the sward and the significance of colour. In these days when play seems to be ever increasing and prolonged, it is difficult indeed to find an hour to slip out with a copy of 'Hubbard on Grasses' and a magnifying glass.

When entering the profession but a brief eight years ago it seemed to me that, when talking to those much older and wiser in the ways of greenkeeping, knowledge gained through experience was a valuable commodity and not one to be passed on. Jim Arthur has always been the excep-

tion in not only imparting his wisdom, but doing so in an enjoyable and thought-provoking manner.

I was also delighted to see our own master greenkeepers putting pen to paper in the last two editions of the magazine, in part inspired by one of Jim Arthur's earlier features on casting earthworms. To have current, topical, and sometimes contentious, issues debated can only be good for the profession and, of course, for the high standing of our magazine.

I shall look forward to reading many more Arthurian legends.

Tony Howorth, Head Greenkeeper, Willesley Park GC, Ashby-de-la-Zouch, Leics.

BIGGA in Europe (2)

Having been approached by Neil Thomas earlier this year as representative of this fine Association for the Netherlands, I hasten to react to Colin Fairley's letter (August). By telephone I have updated Colin regarding the present situation in Holland, for by reading the comments of our dear editor I got the impression that communication between Aldwark Manor and Mr White was not quite 100% concerning this subject.

I regret the fact that Neil Thomas did not go into more detail in his AGM report about the 'master plan' I put forward to him recently. This plan has been spread all over Europe, I am happy to say, accompanied by a letter from Neil with more suggestions, plus a request to study the plan and to comment upon it. About thirty people have received this mail and a third have taken the trouble to react and I have read every reply, thanks to my receiving copies.

Please allow me to take this opportunity to thank these people for taking the effort to put pen to paper. Suggestions will be put into my briefcase and brought forward at the next European Forum at Harrogate at the latest.

In Holland all BIGGA members will receive an invitation to attend our first meeting, which is planned for September. I would like to suggest to David White that a new column, called BIGGA INTERNATIONAL NEWS, be

started in his excellent magazine, in the same way as Around The Green (consider it done, see International News in ATG this issue - editor). Hopefully, as the first representative of a continental country, I will be allowed the privilege of 'eating the first slice of a newly-baked cake'.

Frederick ten Hage, BIGGA representative for the Netherlands, George Breitnerstraat 17, 1741 J.V. SCHAGEN. Tel: 31(0)2240 96022.

Cup queries

It was with some concern that I noted the hole cups used for The Open held at Royal St George's this year. According to the R&A Rules of Golf, Section 2 of Definitions, "The hole shall be 108mm in diameter... and the outer diameter shall not exceed 108mm".

I discovered some six months

ago that the Patisson hole cup measured in fact 111mm and, after querying this with the manufacturer, reverted back to the Tacit hole cup, which is the correct size. When I discovered that Patisson hole cups had been used at The Open, I queried again with the representative as to the current dimensions and whether they had been brought back into line. I was advised that they had not. I feel that if we were to adhere to the R&A Rules, our club competitions would be invalidated with the larger hole cups. Would this also apply to other competitions, e.g. The Open?

Stefan G Antolik, Head Greenkeeper, Cooden Beach GC, Bexhill-on-Sea, East Sussex.

• A copy of this letter has also been sent by Mr Antolik to J S Scrivener, Chairman of the Rules Committee, The Royal & Ancient Golf Club of St Andrews - editor.



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The Last Word

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Forward attitude

I have been in the greenkeeping game for approximately 14 years, starting at ground level under the superb guidance of Duncan McGilvray, followed by more of the same with the Welsh 'wizard' himself, Henry Stead, both at the Great Yarmouth and Caister Club. I learned a lot under these two guys, for which I am eternally grateful, and now I lead my own team at Caldecott Golf and Leisure Club.

This club has a very forward attitude when it comes to greenkeeper/management/member relationships. For instance, my team and I are encouraged to enter all club competitions and use the club facilities – including bars and restaurants – and we are never looked upon as 'second-class citizens', a situation which I've no doubt still lingers at some clubs.

We also have been issued with smart polo shirts, sweat shirts, rain suits and American style peaked caps, all bearing the club emblem. The whole team looks and feels part of the complex and our pride and motivation is visible for all to see. Maybe there is a lesson in this for other clubs?

To close, may I express my thanks to my young team: Kevin Bunn, Conal Riches and the splendid 'Jimbo' (James Holliday), all of whom contribute greatly to making my job both easier and more enjoyable.

Steven Davidson, Head Greenkeeper, Caldecott Golf & Leisure Club, Great Yarmouth.

Synthetic surfaces

Occasionally interest is shown in the use of synthetic surfaces on golf courses. In favour is: 1) Their ability to withstand use during adverse weather conditions. 2)

The reduced level of maintenance that is required in comparison to traditionally constructed greens. 3) The fact that they are environmentally friendly.

However, these apparent advantages are to some extent questionable. It is all very well to claim they are able to withstand use during adverse weather conditions, I do not argue with this statement, but surely the demand for course usage will be reduced during, say, heavy snow, as a result of user preference and the difficulty in getting to the site in question. Also, if only artificial tees and greens are being used on a course, what effect does play in these adverse weather conditions have on the approaches and surrounds to a green?

It is true that a much reduced level of maintenance is required in comparison to traditionally constructed greens. However, this should be qualified with the proviso that in the case of a synthetic green it has a limited life expectancy and will need replacing eventually at considerable cost. A traditional green constructed to high standards, using the correct materials and following a strict specification, theoretically has an indefinite life period.

The final point that they are environmentally friendly is true again, but it only tells part of the story. During the manufacture of glass fibre yarns a number of by-products are produced which are not perhaps so environmentally friendly. Also, moss, algae and weeds tend to thrive on areas of synthetic turf and need treatment using the appropriate chemicals. In an article written in the spring 1992 Eurogolf Business magazine, P Nederstigt states that due to the presence of a sand layer in some impregnated 'turf', there is a need

to spray artificials with pesticides due to seeds rooting in this layer.

Surely there are more points against the use of these surfaces than points for: 1) They possess an unnatural colour which generally detracts from the aesthetic appearance of the course and can also cause glare. 2) They are prone to invasion by mosses and algae due to their inherent dampness and low fertility, thus requiring regular remedial measures. 3) They give poor playing characteristics. In the same article mention is made to problems having arisen as regards the playing quality of these surfaces, but surely it must be stressed that the playing quality of a surface is its most important factor in deciding whether to use it or not. Bell, Baker and Canaway (1985) showed that ball/surface interactions included ball bounce resilience, rolling resilience, friction and spin. On synthetic surfaces it is difficult to judge pace and borrow and the surface lacks 'bite', thus reducing the effects of back-spin due to lack of deformation when the ball impacts. 4) Clippings and debris from the fairway fall on to the surfaces and a resultant accumulation of litter occurs which effects the trueness. 5) They have a very high replacement cost. 6) Home advantage occurs.

Having read this you will be under the impression that I am totally against the use of synthetic golf courses. On the contrary. There is a place for them, with areas of urbanisation being a prime example. However, their place must be at present generally regarded as being rather limited to, for example, teeing areas during the winter months.

J H E Spencer, Advisory Agronomist, STRI, Bingley, West Yorkshire.

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EVENTS DIARY

September 7-9: IoG Show, Peterborough, Northants

September 14: Supreme Mowing seminar on maintenance of cutting cylinder, Irvine Golf Club, Irvine. Details from Linda Adams: 0709 873436.

September 14-15: The Hayter Challenge Tournament Final, Sand Moor Golf Club, Leeds

September 24-26: Ryder Cup, The Belfry, Sutton Coldfield, Warwickshire

October 11-12: Toro/PGA European Tour Student Greenkeeper of the Year Award, Aldwark Manor.

October 12-13: Kubota Challenge, The Belfry, Sutton Coldfield, Warwickshire

December 6-7: ICI Premier Greenkeeper of the Year Award, Aldwark Manor.



G O L F



S P O R T S



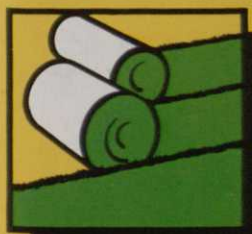
L A W N S



P A R K S

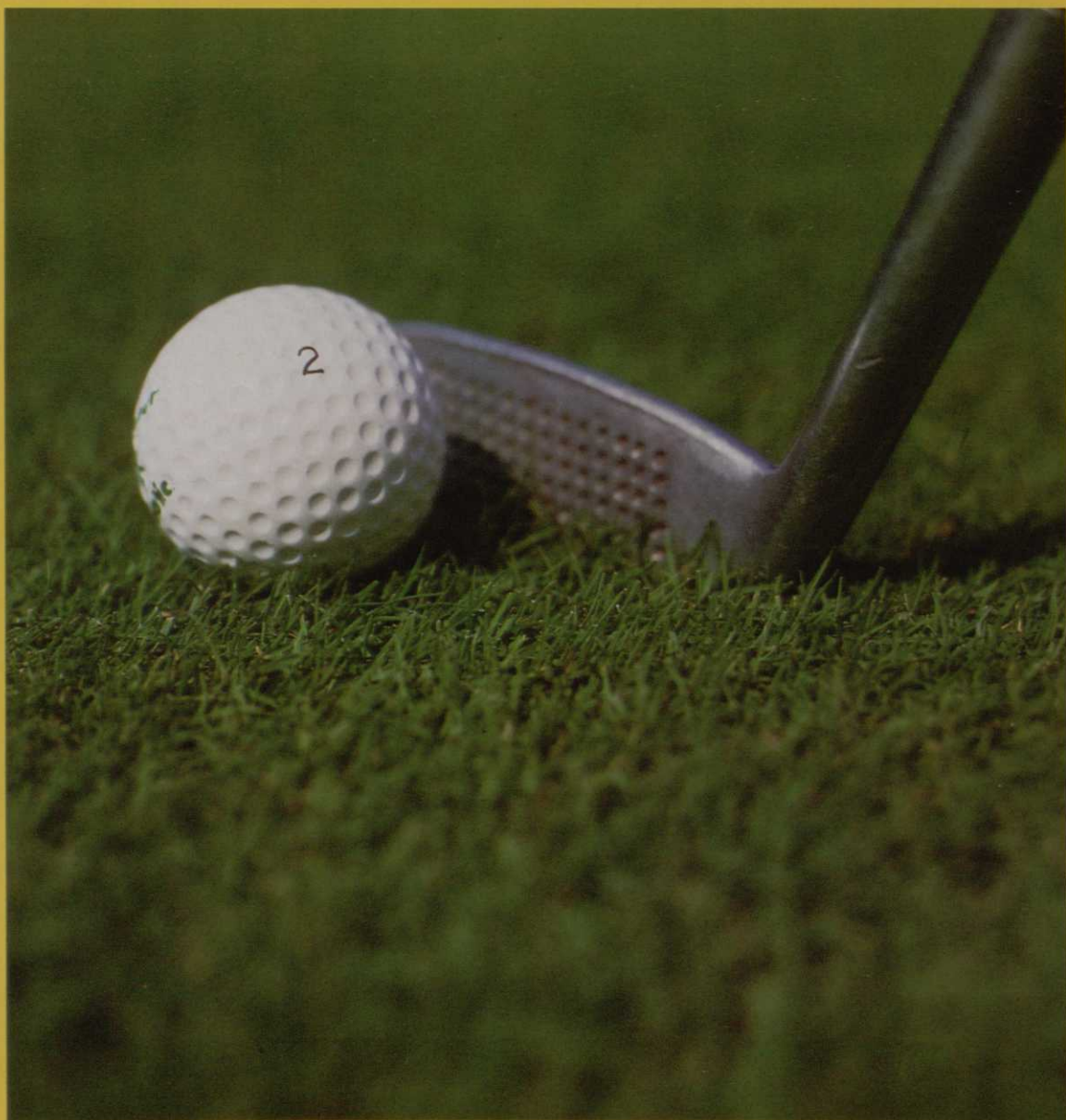


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