

# the Golf Course

Incorporating Golf Greenkeeping

JUNE 1989



## Irrigation

How to use pop-up sprinklers to apply water correctly

## Construction

Geotextiles are finding a growing market in golf course construction

## Management

Sid Arrowsmith talks about his methods of improvement at Royal Portrush Golf Club

## Education

A report from Elmwood College on the education of greenkeepers



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# the Golf Course

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## CONTENTS

# the Golf Course



The new Eden Course at St Andrews under construction by Brian Pierson

JUNE 1989

16

### Never use water to make greens soft

Jim Arthur discusses the use of irrigation systems and pop-up sprinklers

18

### Geotextiles in Golf Course Construction

How filler membranes are being used in ground engineering on golf courses

20

### Keeping Royal Portrush in top condition

Sid Arrowsmith, head greenkeeper talks about his management of this leading Irish golf course

24

### Enville has long term improvement plans

John Lelean visits this staffordshire course and meets John Palmer who has worked on the course since 1972

28

### Scots aim for better practical training

Elmwood hopes to start one-year full time courses

30

### Floral centre pieces for the Ryder Cup

Nearly 30,000 blooms will be planted at The Belfry

## Departments

8

### Clippings by the Mower

9

### Out and About

A round-up of news and new products

32, 33

### Appointments

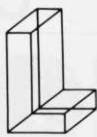
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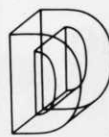
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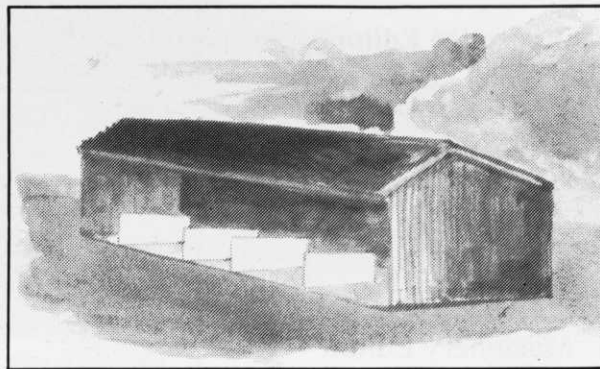
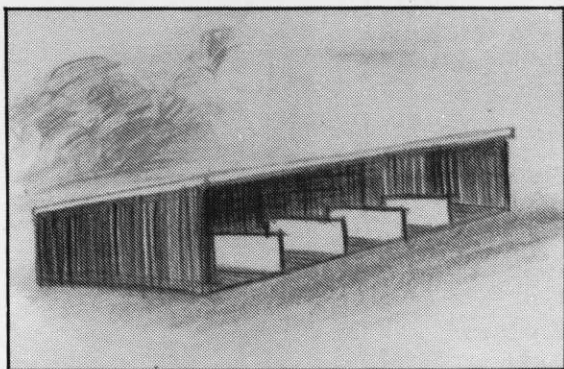


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# RÉSUMÉ



## FRENCH

Des systèmes d'irrigation qui surgissent automatiquement existent maintenant sur tous les terrains de golf modernes. Cependant, les greens peuvent s'engorger d'eau et se couvrir de chaume à la suite d'une mauvaise utilisation de ces systèmes. Jim Arthur, célèbre agronome et expert-conseil en matière de terrain de golf discute les méthodes d'irrigation et donne des conseils généraux sur la bonne utilisation de l'eau sur les terrains de golf. Page 16. Sa réponse au problème de l'irrigation est la suivante: peu et souvent, environ 800-1000 litres d'eau pour 500 mètres carrés de green.

A la Page 18, Alan Cudmore discute la manière dont l'utilisation des membranes géotextiles dans la construction peut permettre d'améliorer les terrains de golf. La fonction de filtration des géotextiles est soulignée dans l'article ainsi que son utilisation dans la construction des bunkers et des lacs.

Le problème des prés d'herbe annuels (poa annua) sur le terrain de golf de Royal Portrush est désormais contrôlé par les méthodes adoptées par le responsable en chef Sid Arrowsmith sur ce parcours de golf irlandais de haut niveau. Une interview Page 20 de ce grand expert en matière de gestion de terrain de golf révèle la façon dont les pulvérisations foliaires organiques de produits tels que le "Maxicrop" sont utilisées pour améliorer l'épaississement des fétuques et des agrostides sur les greens et les tees. D'autres problèmes auxquels Sid Arrowsmith au Royal Portrush doit faire face sont les brûlures causées par le vent et les rafales givrantes qui se produisent en hiver.

Notre rubrique régulière "Sur le Terrain" Page 24 décrit ce mois-ci la visite de Enville Golf Club dans le Staffordshire où John Lelean parle à John Palmer qui travaille sur ce parcours pendant 17 ans. Il est prévu de remplacer tous les appareils à moteur à essence par le diesel. John Palmer parle du drainage et du chaume. Les greens de Enville sont percés de trous à des centres de 2.5 cm régulièrement. Un drain Verti a été utilisé l'année dernière pour

percer une couche compacte dure et la croissance des racines atteint désormais 23 cm l'aération des fairways est pratiquée régulièrement, ce qui favorise le drainage.



## SPANISH

En la actualidad, los sistemas automáticos de irrigación son muy comunes en todo campo moderno de golf. Sin embargo, el uso incorrecto ha tenido como resultado la inundación del campo de golf y el que sufra de pajilla. Jim Arthur, un agrónomo bien conocido y asesor en campos de golf, analiza los métodos de irrigación y aconseja acerca del uso correcto de agua en los campos de golf. Página 16.

Su respuesta al problema de irrigación es: poca y con frecuencia, aproximadamente 1000-1200 litros por 500 metros cuadrados de campo de golf. Alan Cudmore, página 18, considera cómo el uso de membranas geotextiles en la construcción puede ayudar a mantener mejores campos de golf. La función de filtración de los geotextiles se subraya en el artículo, además de su empleo en la construcción de hoyas de arena y en la construcción de lagos.

El problema de los pastos anuales de pradera (no anuales) en el campo de golf Royal Portrush se ha controlado en la actualidad mediante los métodos adoptados por el cuidador en jefe de este importante campo de golf irlandés, Sid Arrowsmith. En una entrevista, en la página 20, este experto líder en la administración de campos de golf revela la forma en que los pulverizadores foliares orgánicos, como por ejemplo Maxicrop, ayudan a fortalecer canuelas y agrostidas en los campos de golf y tees. Otros problemas a los que se enfrenta Sid Arrowsmith en el Royal Portrush son las quemaduras causadas por el viento y las heladas por viento que ocurren en el invierno.

Nuestro artículo regular, On the Course, página 24, presenta este mes una visita al Campo de Golf Enville en Staffordshire en donde John Lelean platica con John Palmer, quien ha trabajado en este campo de golf durante 17 años.

Se tienen planes para reemplazar todos los equipos que funcionan con gasolina por otros que funcionan con diesel. John Palmer platica acerca del drenaje y la pajilla. Los campos en Enville se tratan con puas haciendo orificios a distancias de 2.5cm de manera regular. El año pasado se empleó un drenaje Verti para romper una capa compacta dura y el crecimiento de las raíces es en la actualidad de 23 cm. Se está empleando regularmente aereación. Fairway y ésta ayuda con el drenaje.



## GERMAN

Automatische 'pop-up'-Bewässerungssysteme werden heutzutage auf jedem modernen Golfplatz eingesetzt. Falscher Einsatz dieser Systeme hat jedoch zu Staunässe im Grün geführt, das dann zusätzlich auch strohig wird. Der bekannte Agronom und Golfplatzberater Jim Arthur erörtert die verschiedenen Methoden der Bewässerung und gibt allgemeine Hinweise zum korrekten Einsatz von Wasser auf Golfplätzen. Seite 16. Seine Lösung zum Bewässerungsproblem heisst 'wenig, dafür aber oft' und er empfiehlt ca. 1000-1200 liter pro 500 Quadratmeter Puttergrün.

Alan Cudmore erklärt auf Seite 18, wie die Verwendung von Geotextilmembran bei der Konstruktion zu besseren Golfplätzen führt. Die Filtriereigenschaft von Geotextilmaterial sowie sein Einsatz bei der Konstruktion von Bunkern und Seen wird in diesem Artikel hervorgehoben.

Das Problem des jährlich auftretenden Wiesengrasses (poa annua) auf dem Royal Portrush Golfplatz wird nun durch die Methoden von Sid Arrowsmith, dem Hauptbetreuer der Grüns dieses berühmten irischen Golfplatzes unter Kontrolle gehalten. In einem Interview auf Seite 20 verriet uns dieser führende Experte der Golfplatzverwaltung, wie die Verwendung von organischen Laubsprays, wie z.B. Maxicrop, bei der Verdichtung des Fesques-Grasses und der Beschungen auf Grüns und Abschlageplätzen hilft. Zu weiteren Problemen, die Sid Arrowsmith auf dem Royal Portrush antrifft, gehören Verbrennung durch Wind und vom Wind herantragener Frost, im Winter.

'Auf dem Golfplatz', unser regelmässiger Artikel auf Seite 24, besucht diesen Monat den Enville Golf-Club in Staffordshire, wo John Lelean sich mit John Palmer, seit 17 Jahren Betreuer des Platzes unterhält. Es bestehen Pläne, alle benzinangetriebenen Geräte durch Diesel zu ersetzen. John Palmer spricht auch über Entwässerung und Strohbildung. Die Grüns auf dem Enville-Platz werden regelmässig durch Hohlbohrung bei einem Abstand von 2.5 cm. entwässert. Letztes Jahr wurde ein Verti-Abfluss zum Durchbruch der festen Erdlage eingesetzt und die Wurzeln wachsen nun 23 cm. in den Boden. Die Golfbahn wird regelmässig belüftet und dies hilft ebenfalls bei der Entwässerung.



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The Berkshire Golf Club



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Gordon Hiscock - Head Groundsman  
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# CLIPPINGS

## By The Mower

### **Greenkeepers golf tournament in Switzerland**

We hear from ex-pat. Ian Tomlinson that he is organising a Greenkeepers Golf Tournament in Switzerland and inviting eight of the clubs on the French side of Lake Geneva to take part. Ian, who moved out to the Lausanne Golf Club as course manager some four years ago has to complete his course alterations at the same time as maintaining his greens through the playing season. Come november, everything is buried under several feet of snow, so it is on with the skis until the thaw reveals the chaos to be cleared before the golfers arrive. He is hoping that this first Swiss Greenkeepers Championship will attract a sizable entry. We hope the Brits will give a good account of themselves with the little white ball.

### **Open day at the STRI**

The Sports Turf Research Institute at Bingley are throwing open their doors for two days on the 28th and 29th June to celebrate the 60th anniversary of the Institute. Great strides in the work of this self financing body have been made under the directorship of Dr Peter Hayes and although golf course work has always been a principle market, other sports, particularly football and racing have made an increasing call on the services offered by the STRI.

Visitors to the trial grounds will be able to see how turfgrass cultivators are tested, various methods of construction, with particular emphasis on sand green research.

It promises to be an educational couple of days. We wonder just how many laymen members of golf green committees will take advantage of an opportunity to improve their knowledge?

### **Hawtree & Son to design new Harrogate course**

Harrogate will have yet another golf course to add to those at Oakdale, Starbeck and Pannal in the near future.

It will be sited inside 140 acres of Rudding Park, where the magnificent Rudding House has already been converted into a luxury hotel.

The owners have been looking at suitable land for an 18 hole golf course for some time and there were intentions to use adjacent farm land and disused railway line, but they have now decided to put the course inside the park.

The design of the £1m plus scheme has been contracted to Hawtree & Son.

### **Technical hitch on Nomix Panther Lance**

The revolutionary hand held Nomix Panter Compact Lance, designed to spray chemicals with pin point accuracy with minimal drift, has met with a manufacturing technical hitch according to Marketing Manager Mark D'eath from Chipmans.

The lance was due on the market this month but it is likely to be delayed until sometime early in June.

It appears the American end of the project have put in such a large order it has caused problems with the launch in the UK.

The Nomix lance is a completely self contained unit with its chemical pack loaded into the handle in a similar way to the arming of a hand held machine gun. The pack contains just 750mls of chemical, weighs under 2kgs, and using a total droplet control system can cover three miles of fencing with a 15 centimetre band.

### **Message from East Anglia**

Message from Mick Lathrope, secretary of East Anglian Section BIGGA wishes the Golf Course well as an independent magazine. Mick says he still thinks the magazine is the best greenkeepers.

### **No Ryder Cup tickets for BIGGA members**

Neil Thomas, BIGGA's administrator, has failed in his attempt to negotiate with the PGA over complimentary tickets for members of the association. The PGA have given a real snub to members of BIGGA over their request and have suggested if any greenkeeper who is in BIGGA wants to see the Ryder Cup they apply for tickets as a member of the general public.



## OUT AND ABOUT



Smiles all round! Peter Roberts (left) general manager Toro Irrigation, David Golding education officer BIGGA and right Graham Dale sales manager Toro mower division of Lely Import Limited, reveal the Young Greenkeeper's award plaque.

### "Young Greenkeeper of Year" Scholarship includes US trip

Following a series of recent discussions, David Golding, BIGGA's Educational Officer, has now confirmed the creation of a new scholarship award for British student greenkeepers. Known as the "Toro Young Greenkeeper of the Year Award" the scheme is open to Phase II City & Guilds and Scotvec students studying at, and nominated by, any of the ten "Turf Colleges" recognised by the Greenkeepers Training Committee. The scholarship features an eight week visit to the USA. Sponsorship for this excitingly new development is provided by the Toro Company through its UK distributors, Ringwood based Toro Irrigation Ltd and the Toro Mower Distribution Division of Lely Import Ltd, St. Neots.

"We are delighted that Toro have contributed in such a positive and practical manner" says BIGGA's David Golding. "As for the scholarship, it is a wonderful opportunity for a young greenkeepers to visit our cousins across the water and learn from the best of their golf course management techniques."

During the scholarship time spent in America, the award winner will join the

"Winter School for Turf-grass Managers" course at the University of Massachusetts. The course, which is run by the University's Department of Plant & Soil Sciences, will last for six weeks and cover subjects ranging from soil fertilisation, grass diseases, golf course irrigation, work planning and management to servicing an internal combustion engine!

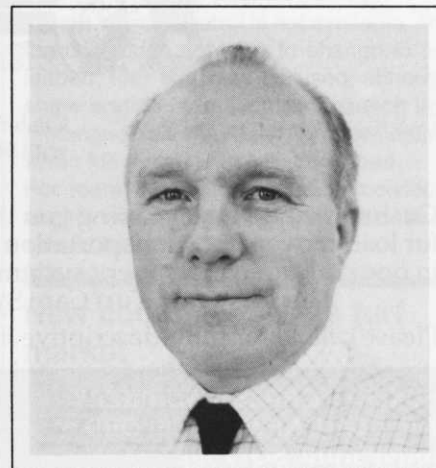
In addition, the winning student will also spend time at the Toro Corporate headquarters and Mower Division in Minneapolis and at the Toro Irrigation manufacturing complex, Riverside, California.

"Both Graham Dale and myself are keen to promote added interest to the effort many young greenkeepers are putting into their studies" says Peter Roberts, general manager, Toro Irrigation Limited. "As their knowledge and experience grows, they will be looking for even more sophisticated equipment to help them during their working careers - so why not help them now!"

### Turfmaster Manager

As part of moves to strengthen manufacturing and quality control, David Cheshire has been appointed manufacturing manager, of Turfmaster Machinery. Mr Cheshire is a product engineer with a

design and project engineering background. He joins Turfmaster with extensive experience in a number of light engineering companies, particularly Electrolux and Millpledge Systems.



David Cheshire

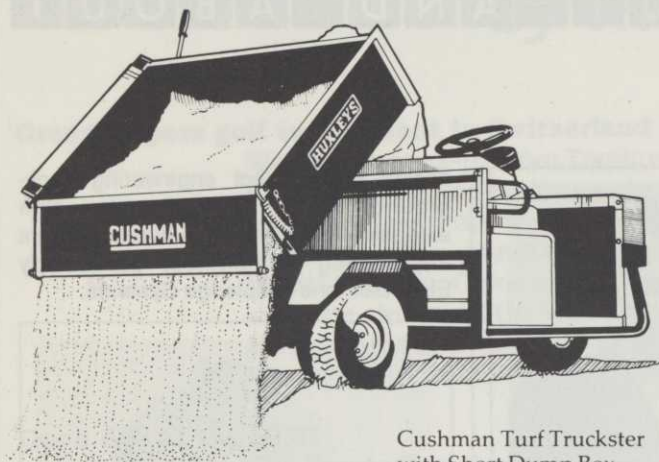
### Cotswold open day for Toro

The Cotswold Hill golf club wanted 700 members to have exactly the right insight into how the club was maintained, according to Head Greenkeeper Tony Williams. "It is very important that all members, get some understanding of the work done through the winter and summer months and see the equipment required to maintain a first class course."

An Open Day was held whereby all members were welcome to the club to find out for themselves how much time and effort is spent maintaining the course (designed by Course Director Maurice Little) to the exceptionally high standard enjoyed today.

Tony, who has four ground staff working for him, described what is entailed in achieving the perfect playing conditions. The members day coincided with the delivery of four new Toro turf machines, two Greenmaster 3000's and two Reelmaster 216 2-wheel drive mowers supplied by County Mowers, of Whitney, Oxford. Tony, who started work at Effingham Golf Course with his father admitted that he will only use Toro Greenmasters on his greens. He has had demonstrations of other greensmowers but always comes back to the Toro. After liaising with Maurice Little and Brian Berry, chairman of the greens, they agreed that the lightness of the Toro Petrol Greensmower was

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# OUT AND ABOUT

ideal. Fitting grooming reels has also increased the 'professional' look of the greens, removing thatch and horizontal grasses.

At the end of the day everyone agreed that the exercise had been a real success and one or two members even admitted that perhaps they would spare a thought for the organiser's next time they were in the bar.

petrol as a safeguard of our environment, they are aware of the problems arising from the un-availability of two star petrol - the grade most widely used for powered turf-grass machinery.

The Association has issued the following guidelines for four-stroke engines used to power mowers and other machinery. All engine manufacturers approve and

combustion chamber and valves.

This action is recommended as a precautionary measure, as in a few instances the use of unleaded petrol could result in existing carbon deposits breaking loose causing mis-firing and internal damage.

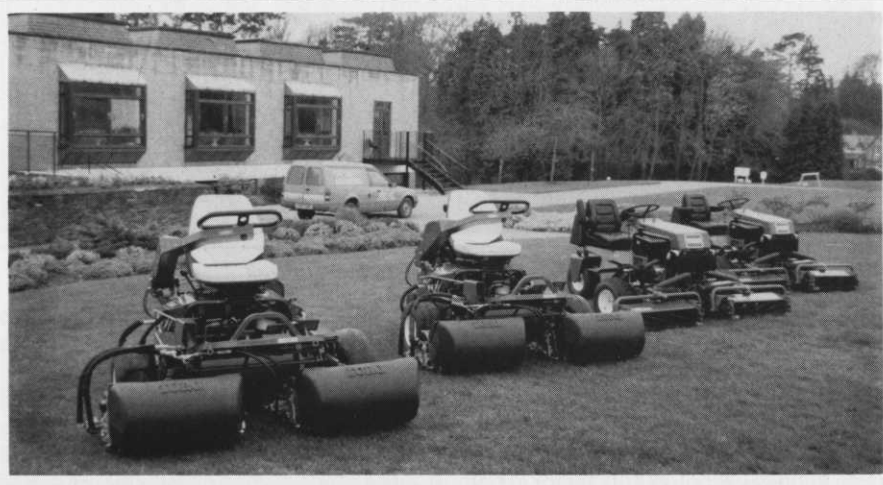
Where two star petrol is not available, and the user does not wish to change to unleaded, four star may be used, although some engine manufacturers caution that prolonged use may lead to over-heating when full power is being developed. For more detailed information individual engine manufacturers or concessionaires should be consulted.

## New company enters turf market

The multi-million pound market is about to be joined by a new South Humberside company which expects to be one of the top five producers in the UK in its first year. Tillers of Worlaby, near Brigg will produce several different grades of seeded turf aimed at the top end of the market - primarily for golf courses, bowling greens and general landscaping.

Managing director Tim Fell has wide experience in both horticulture and agriculture - he established Lindum Seeded Turf in 1984, a business which he ran successfully for five years until setting up this new venture.

A graduate in Agricultural Botany, he spent several years as an agrochemical sales-



Toro machines at Cotswold Hill Golf Club

## Guidelines for use of leaded and unleaded fuel

Whilst the Garden Machinery Association whole heartily support the government moves to promote the use of unleaded

recommend the use of unleaded petrol in new engines.

When changing from leaded to unleaded petrol in engines that have run for a considerable period of time i.e. 50 hours or more, most engine manufacturers advise the removal of carbon deposits from the

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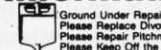


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Please Repair Pitchmarks  
Please Keep Off the Grass



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150 yds. to centre of Green  
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## OUT AND ABOUT

man for Fisons, before returning to the family farm in Lincolnshire.

Investment in the new company is in excess of £1/2 million and the first field-grown turf will be available from the spring of 1990.

Tim Fell told THE GOLF COURSE; "We have spent considerable time finding the best soils for turf production, selecting A1 high quality speciality seed and putting together an experienced team of growers and sales personnel - we are aiming for the top in terms of output and quality".

The company plans to sell through wholesale distributors, large volumes of high quality turf which will be available all year round.

### Mower saves hard work on banks

One of the country's most beautiful golf courses, Broadstone in Dorset is a tough test of golf. The undulating heathland also poses supreme problems for maintenance with its many steep banks.

In the past, tee banks and similar areas, have been cut by hand - with difficulty and labour intensive. However, the recent purchase of a Ransomes Turftrak 4-21D with its four wheel drive and a 60in rotary deck has allowed most of these steep areas to be cut by machine - with a greater degree of safety, in less time by one man. "It is amazing where it will go", said Adrian Archer, course manager. "As yet we haven't used it anywhere near it's potential".

The club bought the Turftrak following a demonstration by Stanley West Ltd of Ferndown because they saw and believed in its sure-footedness - furthermore 'the price was right'.



Adrian Archer cutting a tee bank with the Ransomes Turftrak

In justifying the selection of the 21hp model Adrian stated that this diesel provides ample power without being stressed. The wide tyres not only provide exceptional grip but never mark the turf. The good weight distribution of the Turftrak was seen as an important contributory factor in both grip and in minimising turf damage.

The rear hydraulic linkage - category 1 - will allow him to use Broadstone's existing implements for the full range of slitting, sanding and other duties. He also intends to buy the triplex reel mower unit. As staff become used to the Turftrak's capabilities, Adrian expects them to take it into places "where no machine has gone before" - and to do it with ease.

Already he has been amazed at the ease with which the machine climbs grassy banks, only tempered by the worry of finding rabbit burrows in its path to upset

the equilibrium, a problem only likely to be encountered when working at extreme angles.

Adrian commented about the speed with which the machine could cut but then added that perhaps this comment should be deleted as some club members already thought that his staff drove too fast!

The machine has already become a favourite with the five staff for its comfort, quietness and effortless manoeuvrability - it has full hydrostatic steering. Other plus points already noticed have been the strong halogen lights and the large toolbox which takes waterproofs as well as the tools required for basic maintenance. Another plus - was the ease of tensioning the drive belts or the speed and simplicity of changing or removing equipment.

The prime use for the machine - the one for which it was principally bought - is for



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cutting the extensive areas of the rough at Broadstone. It is also a safer method of cutting steep banks than using hover mowers with ropes.

## French students at Sisis

Sisis Equipment (Macclesfield) Ltd hosted a party of French greenkeeping students, from the Lycree Agricole Henri Queille at Neuvec, in mid May.

The students travelled from France by coach and spent two days with Ransomes

professional products outside North and South America;

Ransomes USA will control the United States manufacturing and distribution operations of Ransomes professional grass machinery products together with sales of all Ransomes professional products throughout North and South America. Ransomes Consumer Division will look after the UK and European manufacturing and distribution of Ransomes' consumer products including the businesses of GD Mountfield and the recently acquired

Roy Ashwell, Managing Director of G D Mountfield Limited, becomes the Director responsible for Ransomes Consumer.

Eric McCoy and Helmut Adam continue as Directors responsible for Ransomes Commercial and Ransomes USA respectively. Colin Booth and Keir Wyatt will continue as Finance Director and Marketing Director, respectively, of Ransomes Commercial.

## Jacobsen exclusive for IOG students

For many years the Institute of Grounds manship has led the UK in organising seminars, training courses and examinations on all aspects of turf culture. Now with the help of the Jacobsen Division of Textron Inc in the UK the Institute is to organise a Turfcare Seminar for 20 top students from colleges throughout Britain. Students will be invited to attend on the recommendation of the Institute in association with accredited educational centres. The three day venue will feature lectures and demonstrations from respected worldwide turf care professionals and educators.

In addition to the August seminar, two British students, along with an IOG representative, will be invited to attend the US Jacobsen College Student Seminar at Racine, Wisconsin, the home of the Jacobsen company.

The Jacobsen College Student Seminar has been running in the United States for over 25 years and is recognised as being the major event in the Turf Care Industry.

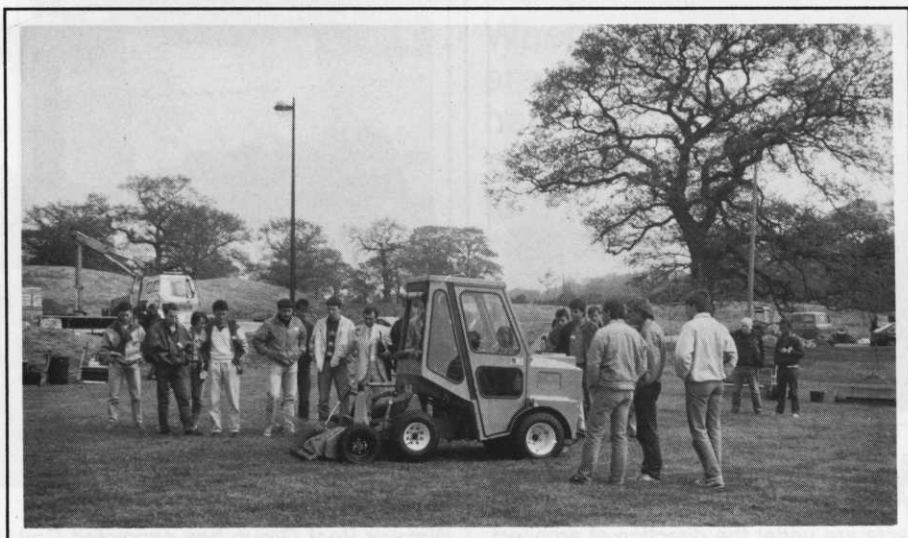
## Better to be safe than sorry!

Kerrypak's Tildenet safety perimeter netting is used widely throughout the sports industry worldwide, providing cost-effective and discreet protection for spectators and property from possible damage from stray balls.

It is particularly practical for golf courses and ranges where it blends sympathetically into the local environment whilst playing its important safety role.

Rot-proof and tear resistant, Tildenet safety perimeter netting is available in various widths, and advice on exact requirement and how to install the netting to achieve its maximum effect is readily available from Kerrypak or their agents.

In addition to safety perimeter netting,



John Ashton demonstrates the Hydromain 20

at Ipswich before arriving at the Macclesfield factory.

Pictured John Ashton, one of the Sisis demonstration team, putting the Hydromain 20 through its paces at a local golf club.

## Name change at Ransomes

Ransomes Sims and Jefferies PLC is to ask for shareholder approval, to change its name to Ransomes PLC. This change in name reflects recent changes in the Group's activities, particularly its withdrawal from the farm machinery market to concentrate on grass machinery, where it is one of the world's leading manufacturers. It also proposes a restructuring of its business into four divisions reflecting the key markets in which the company now operates:

Ransomes Commercial Division will handle the UK and European manufacturing and distribution operations of Ransomes' professional grass machinery, together with worldwide sales of all Ransomes

Granja, France and BTS Green, Italy.

The Property Division will be responsible for Ransomes' property activities through Ransomes Property Developments Ltd and Ransomes Park Ltd which are involved in property developments and investments respectively within Ransomes' 170 acre site, outside Ipswich.

This restructuring of the Group's operations will give greater focus to the four key areas of Ransomes business. It will also enable Bob Dodsworth to devote more time to the development of Ransomes' worldwide business. He previously combined his role as Group Chief Executive with the management of Ransomes' Ipswich operation. He will be supported by a newly appointed Group Financial Director, Geoffrey Comer.

A number of Board changes have also been made. Geoffrey Comer a chartered accountant becomes Group Financial Director. He joins Ransomes from London International Group where he was Group Treasurer.

# OUT AND ABOUT

Bristol-based Kerrypak also offer golf practice netting either for cladding existing golf net frames, or in full frame kit form. Designed to professional standards, the kit is easy to assemble, and dismantles to a compact size for easy storage.

Both Tildenet products are competitively priced and can be obtained through Kerrypak's UK and international distributor network. Further information is available from Kerrypak Ltd, Longbrook House, Ashton Vale Road, Bristol BS3 2HA. Tel: 0272 669684/662455.

the clients planning permission that the course must be constructed by a recognised contractor under the architectural supervision of a member of the British Association of Golf Course Architects. This is a sure way of stopping housing applications in conjunction with golf courses being used purely for financial gain on planning and with a poor quality golf course resulting.

The company is also involved in the reconstruction of the Eden Course at St Andrews including the first ever lake on

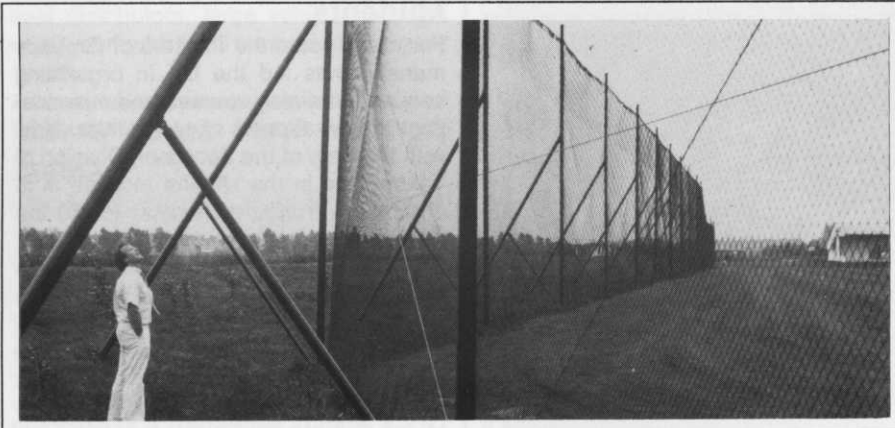
providing a construction management team again working under the direction of Donald Steel at Vila Sol, an 18 hole course on the Algarve.

## Grass care system from SCH

S.C.H. (Supplies) Ltd has recently introduced a new grass care system which has been named the 6-1 Grass Care System. The system in standard form, has a working width of 48ins (122cms) and is an ideal low cost grass care system for



sports clubs, colleges and schools, amenity grass areas and larger estate gardens which require a grass care system but cannot justify the cost or have the use for a more sophisticated system.



Tildenet safety perimeter netting

## Pierson's progress

Brain D. Pierson (Contractors) continue to dominate the UK golf construction scene with two 18 hole courses currently under construction at Tarporley in Cheshire and at Bodmin, Cornwall. The latter to a design by Hamilton Stutt is the first occasion where it has been written into the agreement of

the hallowed turf as well as the completion of the new Jubilee course. Both these contracts are under the direction of architect Donald Steel and links management trust secretary Alec Beverage. Throughout the construction Walter Woods links supervisor and his staff have been of great assistance. On the continent Pierson's have been rebuilding at Chantilly and they are

## New manager for Wessex Peat

Wessex Peat Group has appointed Carl Crome as general manager in order to maintain the expansion of the peat products growing mediums and sports turf dressings. Carl joins the company after 15 years management experience within the industry.

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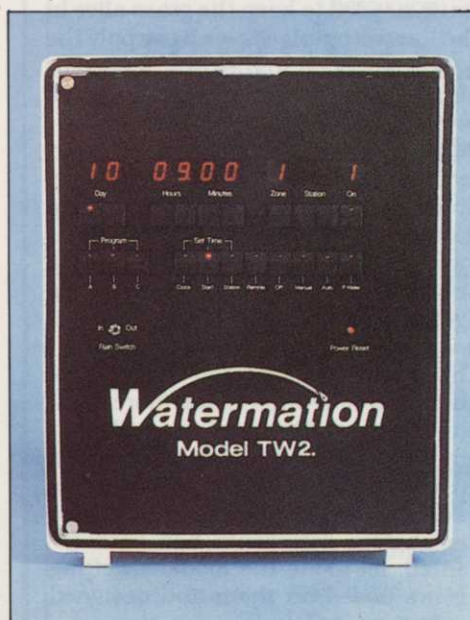
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## IRRIGATION



# Never use water to make greens soft

Jim Arthur discusses the methods of irrigation and gives advice on the correct use of water.

**W**hile everyone plays lip service to the fact that the main problem measured in terms of weeks duration in Northern Europe golf greens is drainage and not drought, nevertheless a week of sunshine has most of those controlling course management, (and this is not synonymous with golf course managers!), rushing to put water on. It would be more sensible to use this heaven sent gift to control annual meadow grass on the lines of the old Scottish greenkeeping adage 'a good drought gets rid of a deal of rubbish' but one has to accept that most of today's golfers like it green – and in their books if grass is not green its dead or dying!

Automatic pop up irrigation is here to stay – I suppose today there are more clubs with it than without – so it is important that this useful facility is not abused. Pop ups are only a way of watering at night, when there is minimum evaporation, without tying up staff during the day (when often in the

old days of hose and sprinkler watering greenkeeping staff could do little more than mow and water greens). They also prevent players interfering with hose and sprinklers, which is far more significant an advantage than hoses interfering with play!

What pop ups cannot do is apply water other than uniformly and that only when the system is properly designed, fully functional and efficiently employed. Badly designed systems are less commonly found than they were a decade ago – the 1976 and 1977 droughts demonstrated only too dramatically how bad was the coverage on some – notably the three headed systems for large greens, where one could stand in the middle of a green and not get wet! It is no answer to such poor coverage to merely increase the duration of irrigation, the dry areas stay dry and the wet ones become waterlogged and thatched.

The aim of pop up irrigation should be to apply the equivalent of a light shower

each and every night, to give the minimum needed to keep the grass alive in the low wetter places, and to apply the balance needed to the drier, raised or sloping areas by hand-held, open hose preferably early in the morning.

Penetration overall must be achieved by long term aeration (however this is done), backed up locally on drying patches by using even hand forks or local quite deep (4" minimum) slitting or solid tining, and employing wetting agents copiously and before the soil has become dry and waterproofed.

There is nothing new in dry patch – (although it is often made more obvious because of the contrast with wetter lower areas). Sixty years ago greenkeepers were using hand forks and soft soap solutions on dry patches long before detergents had been invented, let alone the modern wetting agents based on them and designed for turf use.

There is one hearsay that must be demolished, namely the theory that



## IRRIGATION

greens should be watered heavily at periodic intervals, and allowed to dry out before applying more water.

This probably derived from the restraints imposed by hose and sprinkler watering. Unless an army of men could be deployed at night to constantly move hoses and sprinklers from green to green as well as to different areas of greens, this meant leaving them on a few greens all night - or at least for long durations. Thus greens were over-watered, but no hose system could cope with watering 18 greens simultaneously, even if, semi-automatic control measures could be devised. The folly of developing this technique to pop ups is that it needlessly perpetuates a fault.

If, reducing the argument to the absurdities preached only a few years ago, greens were watered with pop ups once a week in one application, the demand on the system to water all greens at once would astronomically increase costs, in terms of much larger reservoirs, pumps and pipe work. Consequently when watering in sequence, assuming that ten minutes a night was the norm we would be watering each green for 70 mins, i.e. the cycle for 18-19 would be in the region

of 20 hours a night and day! When would we play golf?

If the course is split into three or four zones to reduce the nightly watering period to more reasonable levels some greens at any given time would be waterlogged bogs, others drying out and others rock hard and virtually impermeable even with aeration.

The answer is little and often - every night in drought, emulating a good shower i.e. about 200-250 galls per 500 sq. yd. green. Of course, stress symptoms must be noted ('shine' on greens means they have gone too far), but it is vital to use water as an aid to management, starting as late in the season as one dares stopping early (late August) to go into the winter with dry greens. Never use water to make greens soft and holding, to make the greens grow or to make it green. The old motto 'If in doubt don't water' is still a good one, but it is fully accepted that some compromise on appearance is necessary, but the problem with pop ups originally was that it was fatally easy to apply too much without realising it. Once annual meadow grass invades, it needs more water to stop it seeding and dying - so

a vicious spiral ensues.

Modern and well designed systems give much more precise and accurate control and distribution, but since we are aiming at wide surrounds and approaches, identical botanically and in all aspects save height of cut to putting surfaces, then we should water surrounds periodically not constantly in relation to their poorer permeability by setting the pop ups to 'full circle' and back with an 80% increase in duration. This counteracts to some extent the effect of wind and other factors, but missed areas must be tackled by hand held hose - it is no answer to step up the time. Fixed arc heads should be changed to adjustable arc heads, especially if the former are 180°.

Individual greens e.g. elevated ones drying out quicker will need more than others (some may need no irrigation at all) but a very rough guide is not to exceed 50 gass/100 sq. yards which on most systems equates with about 6 minutes on the controller or 10 mins full circle. The correct use of water as a servant, not a master, on long term green condition and all year round play cannot be over emphasised.

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# Geotextiles in golf course construction

Sometimes referred to as filter membranes or separation layers, geotextiles have a history of use in the construction industry going back some 20 years. Alan Cudmore manager for Geo Synthetics at Chemie Linz looks at their use on golf courses.

**T**he industry has now defined the functions of geotextiles as separation, filtration, drainage, reinforcement, protection, and sealing. These functions are as important to golf course construction as they are to other forms of ground engineering, and it is not surprising to learn that whereas previously the only use of geotextiles in golf courses has been in separating the sand in bunkers from the ground below, that other and more varied uses are now commonplace.

Taking each function as defined, not only can these products be used in bunkers as a separation membrane, but consideration can be given to this use when constructing an access path or road when there is the need to perhaps separate a granular chip from the sub base in approaches to the Club House, or in car park areas where there is a need to separate the base course from sub base, or the base course from the surface dressing. Such products can be used to separate wood chips from the underlying ground



## CONSTRUCTION



*Geotextiles being used in the construction of a sports ground*

where an all weather walkway is constructed.

The filtration function of geotextiles is well known and is used in conjunction with the separation function to allow rain water to pass easily through the geotextile without harming the separation function.

Used in drainage trenches geotextiles can separate the filter media from the surrounding earth, whilst enabling water to flow in easily without contamination of the filter media. Additionally perforated pipe drainage systems can be wrapped in geotextiles to perform the same function.

Geotextiles manufactured by the needle punching method also have the capacity to drain water within the plane of the material. Thus by installing one of the thicker varieties of this type below the surface of the area to be drained on a crossfall, new concepts of controlled drainage of rainfall can take place.

The reinforcement ability of a geotextile is best defined as placing a blanket below ground level to support material above, whilst separating the different soil layers to stop collapse of the

structure. A new concept of interest is the use of these products to provide reinforcement to near vertical earth embankments, by formation of retaining walls, consisting of the existing material within the embankment contained in mattresses of the geotextile. Such embankment can be made aesthetically acceptable by implanting vegetation through the geotextile.

The protection function of the geotextile is best illustrated by its use in conjunction with a geomembrane (impermeable liner) used to contain water in man made lakes. The geotextile prevents puncture of the liner by migrating flints from the ground surrounding the lakes. Another protection function is the use of the geotextile some 100-150 mm below the surface level of grass to enable root growth to penetrate and bind into it. When divots are taken from the grass surface the root growth remains intact, and the grass returns more quickly to the damaged area. Similarly any flints or other rubble migrating from below will be contained below the geotextile.

The function of sealing is to use the

geotextile as a host to a liquid material which hardens when set. The most wide use of this function is in resealing areas of roads and car parks whose surface are badly cracked or spalled. Both concrete or asphalt surfaces can be effectively sealed before the top dressing is applied to prevent the ingress of water. The function is also applicable to sealing flat roofs on existing buildings.

Based on these functions many derivative products are now available with such diverse capabilities as protecting bushes and plants from frost, protecting concrete from natural elements whilst setting, stopping weed growth and increasing crop yields. A definitive Design + Practice manual is available to enable designers to select the correct grade of geotextile.

**For more information:**

**Alan Cudmore  
Chemie Linz UK Ltd  
12 The Green  
Richmond  
Surrey TW9 1PX  
Tel: 01 948 6966**

# How one of Ireland's great courses keeps in top condition



**W**hen Sid Arrowsmith took up his appointment as Course Manager at Royal Portrush Golf Club in County Antrim - the only venue outside England ever to have hosted the Open Championship - he had barely five weeks to prepare both the Dunluce and Valley courses for the Club's Centenary week celebrations in the second week of June '88.

The greens and fairways of the Par 72 Dunluce and Par 70 Valley courses where some 100,000 rounds of golf are played each year were all suffering from threatened infestation by perennial ryegrass, the cause of which he puts down to the wind, and to a far lesser degree, birds carrying the previous season's seed from the surrounding agricultural land. His answer to this and to the added problem of the

emergence of annual meadowgrass on some of the greens was to use a predominantly organic spray regime to encourage the thickening out of the finer - fescues and bents - which in some areas were very weak and thin. To clip the greens much finer to discourage the broader leaf grasses and to hand pull clumps of ryegrass from both sandy mix courses.

Given the right conditions, Sid would adhere to a 100% organic regime, but the sandy soil necessitated the use of Nitrogen immediately prior to the Centenary week and in readiness for 4 major tournaments over the next 2 months.

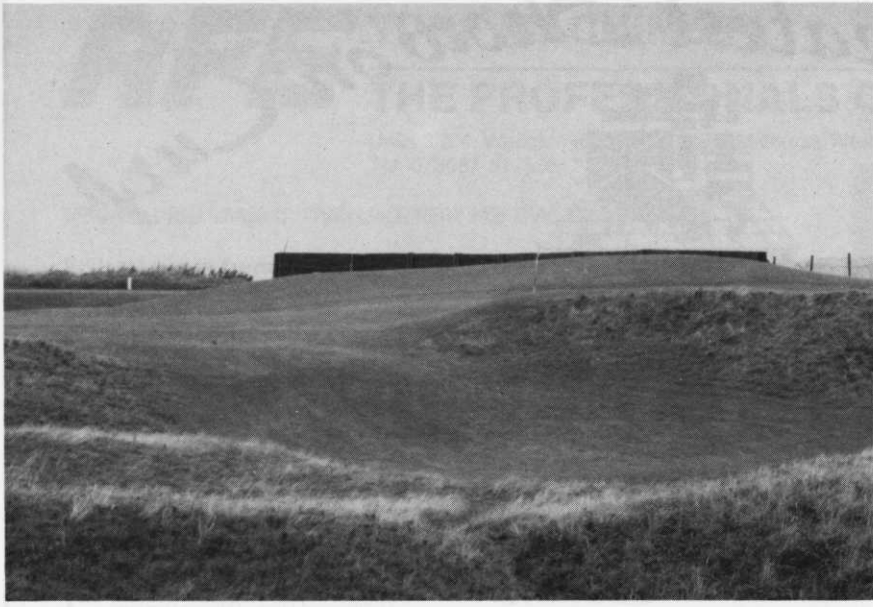
When greenkeeping at Southport he had regularly used Maxicrop foliar sprays and the success there made Maxicrop the automatic choice for Royal Portrush.

Starting in mid-May when the soil had warmed up a little he used a mixture of Maxicrop plus 17% Nitrogen and Maxicrop Mosskiller and turf conditioner (itself with a 3% Nitrogen content) at a rate of 5 litres of each per 227 litres of water every 3 or 4 weeks on the greens and 3 applications of 12 1/2 litres of each per 227 litres of water per hectare on over 200 hectares of fairways.

This same basic programme continued through 'till Christmas although the level of Maxicrop Mosskiller and Conditioner was increased at the expense of the Maxicrop plus 17% Nitrogen.

In terms of nitrogen content, this mixture equates quite closely with that of Maxicrop Supergrass which he also tried and discovered the grass looked even better, which is why, in 1989, he

## MANAGEMENT



will be using a combination of the new No. 4 (Supergrass) and No. 2 (Moss Killer and conditioner) from the company's newly established Amenity Pro-Series.

He has found that even when spraying in less than ideal conditions the results are still good. The combination of reduced Maxicrop plus 17% Nitrogen and Moss Killer and Conditioner sprayed in December has helped harden the growth while, in summer, high levels of Maxicrop doesn't scorch and, throughout the season it gives good colour," he said. "Even more important, an application immediately after a major tournament when the greens are subjected to intensive mowing, results in very good, strong

recovery."

One problem that beset surrounding courses, yet left Royal Portrush unscathed in the Autumn, was Fusarium Patch and, for this, once more gives the credit to Maxicrop and points out the fact that the saving in terms of time and money through avoiding this disease alone makes it's use cost-effective.

The root stimulating properties of seaweed foliar feed together with regular aeration has helped keep the soil healthy and provided a deep-rooted sward with improved shoot density and steady, hardy growth, avoiding the 'sappy' growth or sudden flushes that no Course Manager ever wants to see. His relief is that the natural

bacterial and micro-organisms within the soil also benefit from Maxicrop natural trace elements to help form an even better root environment.

Species that have particularly benefited from this at Royal Portrush are Festuca and Agrostis.

Application has always been easy, quick and simple and, in Sid's view, will be particularly importantly in respect of the new spraying regulations that came into force in January 1989.

"Certainly its ideal for early Spring or late Autumn dressings but, in my book, weather permitting, it is possible and desirable to spray throughout the winter as well as the other three seasons. Such regular use, without interfering with play, keeps moss at bay and helps maintain a really healthy deep-rooted sward all year long" he concluded.

Sid's other requirement was to encourage plant growth to withstand not just the wind burn from the off-shore winds (the courses are a mere 90 metres from the sea), but the wind blown frosts that occur in winter. Even so, his initial 5-week target of making both courses look 'the best they'd ever looked' in time for the Centenary celebrations, when players from 55 Royal Golf Clubs from around the world were in attendance, was also achieved.

To mark that very special occasion, the players dressed in nineteenth century costume and tackled the ten original holes, thanks to the intimate course knowledge of the club professional, Di Stevenson's, father. 'Stevie' as he is affectionately called was the Club's professional for 50 years before being succeeded by his son and he was able to point to the spot where the original holes would be and were, indeed, found.

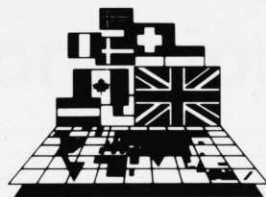
The very next week, the Valley Course, where the Par 3 eighteenth is named 'Stevie', the Causeway Coast Open Competition took place, involving 4 clubs and over 800 participants.

The following week it was the European Quadrangular Championship between Ireland, France, Germany and Sweden on the Dunluce course, in turn followed by the Irish Championships in the third week of August.

Meanwhile, the requirements of over 1200 members including a large contingent of regular member visitors from America (12 from Atlantic City alone) on both courses and on the 3 putting greens could not be overlooked.

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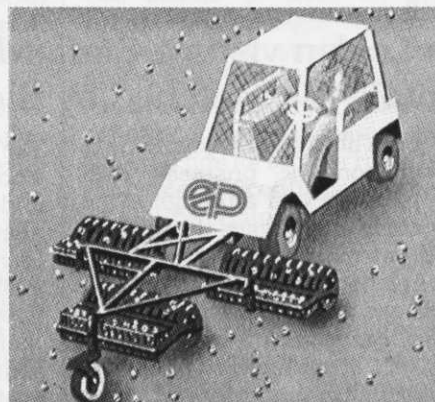
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# Enville has a long term improvement plan

John Lelean visits a Staffordshire gem where the hospitality is matched by the surroundings

One of life's great enjoyments is to combine business with pleasure and although some of our readers might insist the labours of a golf journalist are just one long round of pleasure, unfortunately this is not always the case.

There are exceptions and a visit to Enville Golf Club in the West Midlands certainly fell into this category.

My own club at Wetherby, through our past Captain John Fitton, has struck up a rewarding relationship with Enville, where we play a twelve aside team on a home and away basis. We go there in April, they come to us in September, with overnight accommodation of course. There is no way anyone is going to drive home after a surfeit of such extra-ordinary hospitality!

Enville must be one of the best kept secrets in British golf. Mention the name outside a 50 mile radius of Stourbridge and no one has heard of it. We all hope it stays that way.

For your ears only, and I trust greenkeepers will keep the news in the family, it is 36 holes of classic golfing country, carved out of pine forest and developed into a predominately heath land course.

The two courses, inter changeable when necessary for maintenance work, are the Highgate and the Lodge. The Highgate is longer, 6451 yards with a SSS of 72, the Lodge, slightly shorter at 6207 yards, SSS 70, but by general agreement much tighter, with some outstanding holes.

The Head Greenkeeper is John Palmer, who has been on the staff since 1972 and succeeded to the top job some 18 months ago.

He runs the course with eight full time staff. Two of the younger greensmen have completed the first and second year stages of the City & Guilds equivalent at Elmwood College in Scotland, but are continuing a block release for the third year module.

"We have not done a great deal of training in the past, but this is changing", said John Palmer. "During the winter we have had workshop training on our various items of equipment. The Agriculture Training Board sent in a mechanic to train staff on tractor maintenance and a dealer from Derby instructed staff on mower maintenance and the Kohler engines".

"Two have also been away on a chain saw safety course".

"This year we serviced four machines ourselves at a cost of only £250 each and this saved the club a great deal of money".

The club subscribed to the STRI and the Bingley based agronomist, David Stansfield visits regularly to check progress and offer advice.

"We view his recommendations more as a guideline than a tablet of stone", added John. "I don't believe it is practicable to work to a three year programme. There are too many factors to take into consideration such as the weather, the amount of play the courses receive in a year and most essential the money we have avail-

able".

"To achieve what I have set out to do could take two years, three years or even five. If the job is done correctly the courses will come right but in their own time".

Capital expenditure at Enville is now planned five years ahead, based on the assumption that machinery in constant use will last about five years before the cost of spares makes them uneconomic to retain.

John Palmer, conscious of running costs, plans to replace all the petrol driven machinery with diesel over the next six years and that includes his triplex mowers. He already has one diesel Toro GM with groomer units and says the improvement in the putting surface has been quite remarkable, despite the fact he is no longer cutting at the previous club policy of one eighth throughout the summer season.

"This was too low," said John. "The bents and fescues were struggling and only the poa could survive. Now cutting at 3/16ths or higher the groomer units have increased the green speed considerably".

Similarly, to encourage good growth he has reduced the pH from 7.0 two years ago to about 5.8 by applying nitrogen. This he believes is about the level to maintain otherwise his finer grasses could be adversely effected.

Asked to identify his main problems, John was quite definate; drainage and thatch. He said he was now working to a much stricter slitting programme for the greens, tining down to 6 inches, verti-cutting regularly and hollow tining to one inch centres. The verti-drain used last year broke through the pan and now root growth is down to 9 inches and he is aiming at eleven.

The day we played the course John was hollow tining and had not top dressed, but although there appeared to be more holes than green, no one complained because the putts still ran reasonably true.

When the top dressing is applied it is a 70:30 mix of sand and Fendress on the principle that a little and often is far more beneficial than a once a year heavy dosage. A top dressing of pure sand is used in the Autumn only.

He gives the greens a feed of seaweed extract and liquid iron and has cut out granular feeding completely.

During the winter, in common with most courses he had a couple of outbreaks of fusarium and treated with a Mascot Contact Fungicide. Next year he will probably vary the product, not because it was unsuccessful, but to ring the changes so the disease does



One of Enville's most spectacular holes, the 16th on the Highgate Course



## ON THE COURSE

not become immune to a specific treatment.

Mechanical aeration is also the policy for the fairways. John recalled that when he joined Enville in 1972, the fairways were so thin on grass cover they were mown just once a month. Now due to regular winter slitting and verti-cutting the sward has thickened to require cutting weekly during the season.

Although this has created extra work, the finer grasses have become dominant, there is less need to divot and weeds have been almost eliminated. Fairway aeration is also helping his other problem - drainage. There are a number of water catchment areas on the course that come into play and these will need lifting and draining into one of the numerous streams that criss cross the fairways. Because the course was developed out of woodland, rather than agricultural land very few drains were already in existence. Trees soaked up the rain water and the surplus ran off into the ditches. As most greenkeepers now find, the areas laid out for tees at Enville are proving to be far too small for the amount of all year play that his courses receive. To overcome the problems created by excessive wear, last winter

John added length or width to five tees and has ten more planned for increase in the future.

The fashion in the 1960's to have two tier tees, when the backs were only used for weekend competitions has created considerable difficulties with both wasted ground and awkward maintenance. John has already started to level off his tees, but encountered one big snag at his fifth hole when he discovered the elevated layer was built on sandstone and it had to be broken up with a JCB.

He is now aiming to have around 600 square yards of teeing ground for all the short holes, though the course layout causes certain restrictions on some holes. Spreading the wear is the only answer and this is achieved by moving the markers daily.

Bunkers are the least of his worries. He uses Moneystone White from Cheshire, has no mechanical bunker raker, just manual raking on Mondays and Fridays with encouragement to the members to keep them tidy. A neat idea seen at Enville were their moveable bridges. Instead of a fixed bridge across the fairway streams concentrating wear to a focal point, the wooden structure, wide enough to pull a golf cart can be moved by two

men a yard to the left or right on a weekly basis.

They are easy to construct from two base timbers of equal length, tapered at either end with a high point in the middle. Slats are nailed across the two beams to form an attractive humped back design. The structure is strengthened with stretchers and lifting struts at either end.

As to the future? John Palmer sees his primary objective bringing the greens to perfection for all year round golf and that means a continuous programme of slitting, tining, coring and verti-draining.

At some time the irrigation system installed in 1972 will need updating, but this is likely to involve a major capital project.

Meanwhile my club have already made plans to welcome the Captain and his team from Enville in September and we in turn are anticipating our return to the West Midlands in 1990.

I might then be tempted to give you an update on how John Palmer is getting on, though this is dependent on whether I make the team. If the improvement in my game matches the promises given by our professional when he sold me my new clubs, then read these columns next year!



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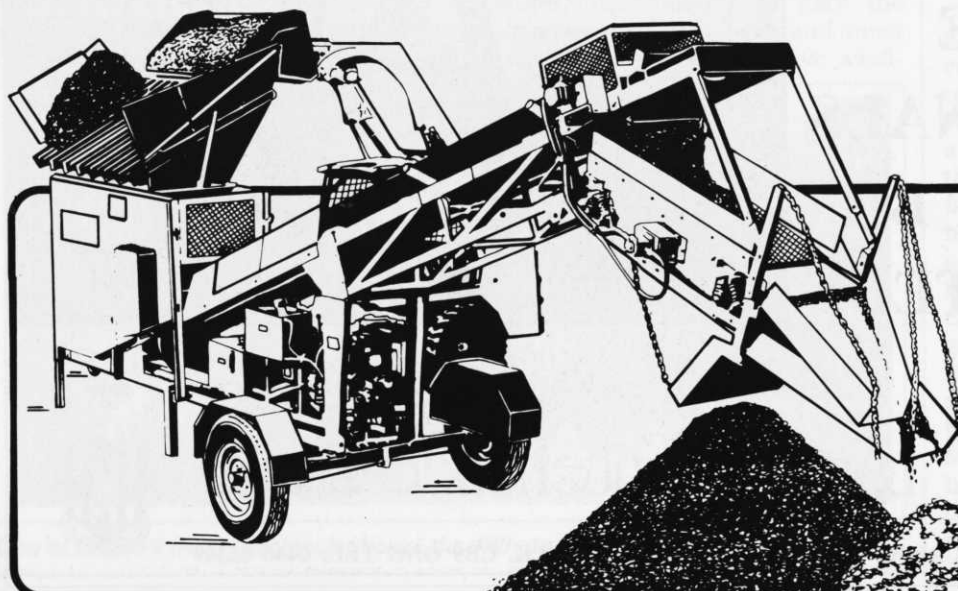
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# Scots aiming at better practical training

From September Elmwood hopes to start one year full-time courses for greenkeepers

**S**ince greenkeeper training started at Elmwood College of Agriculture at Cupar, Fife in 1973, facilities have steadily improved to give young trainee greenstaff every opportunity to develop their knowledge of golf course maintenance.

At present they have 180 students on the College role drawn from not only Scottish golf courses, but from Northern Ireland, Eire and even the South of England.

Four full size greens and a putting green have been built in the extensive grounds for students to develop practical skills, which dual as a four hole course for recreational golf.

The college which has residential facilities for 80 students runs its modular SCOTVEC course on a

modular programme basis, mainly on block release.

Basic practical tasks such as hole cutting, top dressing and turf lifting are taught in the first year, backed by the necessary theory, so not only do students understand how jobs are done, but why and when. This combination of outside activity on site combined with class learning continues throughout the three year course, so by the time students reach the third year stage, young greenstaff are tackling construction projects for greens and tees.

The merits of raft, carpet and sealed systems are examined and working in teams they are given the opportunity to put the theory to work.

Last year students were involved in a

raft green construction with a root zone layer consisting of 80% sand with 20% loam over a synthetic filtration membrane. Bunker construction is also included with practical exercises in building and renovating bunkers suitable for parkland, heathland and links courses.

Grass identification is an essential part of the Elmwood College syllabus. Knowing the correct cultivars to use and encourage on greens, tees and fairways and how each species reacts to various mowing regimes and soil conditions.

Further practical knowledge is obtained by visiting some of the best known golf courses in Scotland where the Head Greenkeepers at St. Andrews, Gleneagles, Carnoustie, Ladybank,



*Rebuilding a greenside bunker the traditional way*

## EDUCATION



Carnoustie's head greenkeeper Mr J. Philips shows students the identification of grass species.



Workshop maintenance is part of Elmwood's syllabus.

Thornton and Balbirnie Park to name a few are extremely cooperative in passing on a lifetime's practical experience to help those setting off on a greenkeeping career.

Machine maintenance is also included in the syllabus.

Through inter-departmental cooperation with the engineering section,

students obtain workshop experience on a wide range of pedestrian and ride-on mowers, top dressers and aeration equipment.

A staged practical drainage project and the installation of an irrigation scheme is planned for one of the greens this year and in September 1989 the college hope to start a one year

fulltime course for greenkeepers. This will include a period of industrial training on local golf courses.

For further information contact:-  
The Principal, Elmwood Agricultural and Technical College, Cupar, FIFE.  
KY15 4JB Tel. 0334/52781

## Scientific Congress of Golf

The world's first congress organised on golf is to take place in Scotland next year.

**A** scientific congress of golf is planned to take place at St Andrews University next year from 9th - 14th July. The congress has the sponsorship of the Royal and Ancient Golf Club and is aimed at bringing together scientists from different disciplines whose research is related to golf.

Announcing the congress to THE GOLF COURSE'S sister magazine Turf Management, Dr Martin Farrally said that a meeting of golf researchers or a forum for an exchange of information between researchers and coaches, teachers and players.

It seemed to the Department of Physical Education where there are students studying sport and exercise science at undergraduate and postgraduate level, that 1990 offered a wonderful opportunity to initiate a world congress which it was hoped would become a regular feature since the 1990 Open Championship will be played there.

The congress will take place in the week prior to the Open, at the same time as the Bell's Scottish Open at Gleneagles. The initial response to circulating the preliminary announcement to the P.G.A.'s and N.G.A.'s worldwide is most encouraging, and indicates that the sorts of people attending will be a complete cross-section of golf - equipment, manufacturers, golf turf and green researchers, university academics, international team and individual coaches and so on from around the world.

The congress has already received support from professional and golfing academic bodies such as the British Association of Sports Sciences and the Professional Golfing Association. The Royal and Ancient Golf Club have provided a substantial grant, their views on the congress being expressed by Michael Bonallack: "Golf is now played in practically all the developed countries in the world and the forecast growth to the year 2000 indicates an expansion equal to or greater than that of any other sport.

It would now, therefore, seem an appropriate time to hold the First World Scientific Congress of Golf, and where could be a better venue than St Andrews where golf has been played for over 500 years and which will be hosting the Open Championship in 1990 for the twenty-fourth time.

The Royal and Ancient Golf Club are delighted to support this venture".

Further information on the First World Scientific Congress of Golf can be obtained from Dr M.R. Farrally, Department of Physical Education, University of St Andrews, The Sports Centre, St Leonards Road, St. Andrews, Fife, Scotland.



# Floral centre pieces for the Ryder Cup

*Nearly 30,000 blooms are being prepared for planting at The Belfry to make a colourful display*

**F** ormer regular Army Physical training instructor Derek Ganning, course manager at The Belfry, is a man with flowers on his mind. Not simply birthday or anniversary bouquets, or even those which his wife Anne tastefully arranges to win prizes at exhibitions in the Midlands.

The blooms he has on his mind at the moment number nearly 30,000 and at this stage they are being nurtured in greenhouses over a hundred miles from his base.

But when they are moved from Warrington in Cheshire to The Belfry

in Sutton Coldfield early next September, they will be admired by thousands of people. They will become centerpieces on the Brabazon course, scene of the Johnnie Walker Ryder Cup, the blue riband of golf, in which the European side aim for a record third successive and historic win over the American giants of professional world golf.

The begonias, marigolds and lobelias have been carefully chosen. They will provide a splash of red, white and blue in rockeries and flower beds all over the golf course and will be seen not only by the 27,000 golf fans who will

visit the Ryder Cup each day - attendances are being restricted and it has become an all-ticket event - but also by millions of television viewers throughout the world and particularly in Europe and America where the event will be screened live.

"We spent a lot of time planning the types of flowers we would use and exactly where we want to display them. At the moment they are being grown in Warrington before being transported here", he said. The Belfry, one of Europe's top golf and leisure complexes, is owned by Greenall Whitley, the Warrington based brewers, and

## LOOKING AHEAD



the flowers are being tended by their gardeners at their North-west base. Ganning, course manager since 1981 at the Belfry with its two golf courses, hotel and leisure complex, has already experienced the fruits of a Ryder Cup victory. He was responsible for the course preparation for Europe's historic first win in twenty-eight years back in 1985, and he has also been involved in course preparation for several major international golfing spectacles over the years.

"But the Ryder Cup is different. It generates tremendous excitement and enthusiasm and it is a matter of pride for myself and the eleven staff who work full time on the golf courses to ensure that everything is perfect. It may sound strange but we all feel that it is the one time in our lives when we are actually representing our country", he said.

The flowers, of course, are just one tiny segment of a huge jigsaw which makes up the total of the Ryder Cup itself. Apart from the preparation of the tees, greens and fairways, and other on course work, Ganning and his team will, additionally, have to cope with the demands of the biggest tented village ever seen at any golf tournament anywhere in the world where upwards of 7,000 VIP guests will be entertained each day in hospitality areas which will match any others at major sporting events throughout the world.

"Fortunately we now have many of the facilities they require already installed and they are permanent. In future years whenever we have a big tournament we can tap into the facilities but for myself and my staff and for Peter Watkins who is in charge of the maintenance at the hotel in the weeks

before the Ryder Cup itself, we will be on call twenty-four hours a day", he said.

"In 1985 there had been some criticism of the course. There were people who had said it would not be up to championship standard in a hundred years. We were happy to prove them wrong. In September we have to ensure that the course is superb and prove again what a magnificent test of golf it is even to many of the best players in the world", he added.

In September even more attention will be paid to the requirements of the spectators. Stands will be erected at the back of each of the eighteen greens and several more spectator stands are to be built alongside fairways on the finishing holes. And a huge new spectator mound between the eighth and fourteenth fairway now offers a marvellous vantage point for hundreds of spectators.

But the famous Brabazon course, which annually sees around 90,000 rounds of golf played on it, will not be closed in the weeks prior to the Ryder Cup. "Play will be restricted because of the need to ensure that it is in pristine condition and also to allow the greens staff to work without too much interruption but the public will be able to play on it right up to the week of the event", he said.

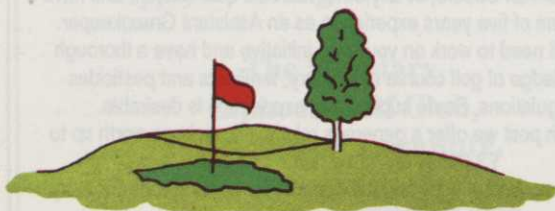
Not that Ganning, a sixteen handicap golfer at the nearby Handsworth Wood club will get much time himself. "The clubs will be put away. A major tournament demands every moment of your time to ensure that everything is taken care of. Nothing can be left to chance particularly in something as important as the Ryder Cup", he added.

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