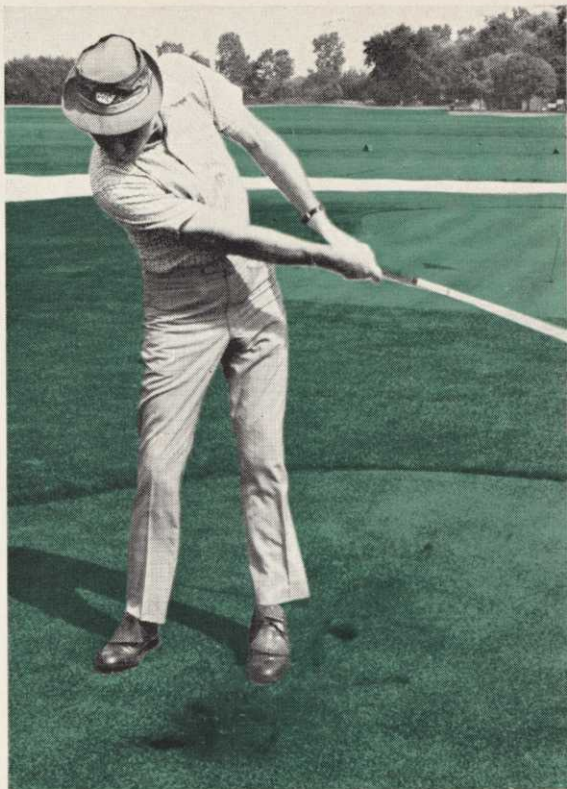


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GREENKEEPER

HON. EDITOR: F. W. HAWTREE

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CONTENTS

TEE SHOTS	PAGE 3
POP UP WATERING SYSTEMS	5
WATER WHEN YOU WANT IT	6
AUTOMATIC GOLF COURSE WATERING	8
SECRETARY'S NOTES	12
ANNUAL CONFERENCE	12
ANNUAL TOURNAMENT	13
DIAMOND JUBILEE DINNER	14
PREPARING AN ANNUAL BUDGET	15
NEWS FROM THE SECTIONS	18
BUYERS' GUIDE	21
TRADE NEWS	23, 24

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Tee Shots

The Spanish Open Championship was played at Pals, province of Gerona, this year. The course is mostly in pine trees, just back from the beach. Some of the early fairways are narrow and occasioned the comment – 'No question of whether to play the big ball or the small ball here. The big one wouldn't fit'.

The new Portsmouth municipal course on Portsdown Hill was opened on the 13th May. The site provides magnificent views over the harbour as well as inland to the north. Municipal courses continue to take the lead in new construction – Swindon, Worsley, Nelson, Cheshunt, Bedford, Sheffield, Bebington, all have plans afoot or work going on.

Work on Wellingborough Golf Club's new 18 hole course has just begun. Messrs. Spearman Construction Limited of Epping are the contractors. The present 9 hole course will disappear under houses in three years time.

Portmarnock's new 9 holes are looking about ready for play, now under the able care of John Temple, who has also been in charge of the construction over the past five years. Play is expected to start in June. There is also a new 9 holes at Howth Castle not far away. The castle is famous in May and June for its rhododendrons.

The Editor.



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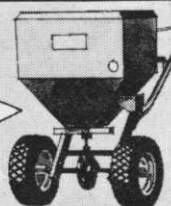
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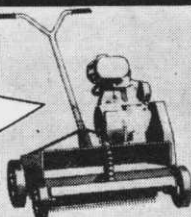
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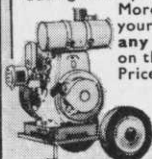
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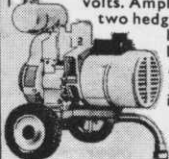
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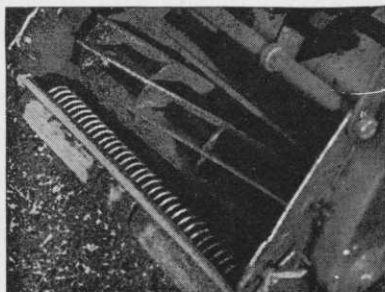
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Pop up Watering Systems

by

G. Barnes, *Cameron Irrigation Company Ltd.*

The ultimate in golf course watering is obviously a fully automatic pop-up sprinkler system, where a watering programme is set up upon a controller, and watering of the greens and/or tees is carried out automatically throughout the night, but unless the system has been properly designed, and the right output sprinklers have been installed around the greens to ensure adequate coverage, much of the advantages of the system are lost.

In designing pop-up systems, Cameron's always ensure that adequate overlap is obtained from the sprinklers to ensure that the centre of the green is always sufficiently watered. This may seem an obvious comment to make, but nevertheless systems are installed, particularly if the golf club tries to install one 'on the cheap' where this point has not been fully appreciated, the result of which is brown patches appearing in the centre of the green during prolonged dry weather.

Wind will also affect the distribution from the sprinklers, and therefore it is an advantage to have a fairly heavy precipitation from the sprinkler which can help to overcome the force of the wind. The type of sprinkler installed by this company meets all these requirements, and in addition is extremely robust and virtually vandal proof.

The body is made of galvanised steel, as well as the lid, which in addition has a thick rubber top. The top rises under water pressure, against a very strong return spring so that when the water is turned off the spring retracts the sprinkler making it very difficult to prise open when not under pressure.

Quite often when clubs have an automatic system installed, they overlook the fact that they are going to need water around the course for purposes other than automatic sprinkling, therefore when an automatic system is installed it is essential to include some hand watering points on the system to allow water to be drawn off for any other purpose. Cameron designed systems always include a hand watering point at the rear of each green, in addition to the electric control valve.

Automatic control

Automatic operation of a system is achieved by having a solenoid valve at each green with wires leading back to a control panel, situated at some convenient position on the course, usually in the pumphouse. A watering programme is then set up on the controller, and the solenoid valves open in sequence according to the length of time set up on the control panel.

Cameron control panels can be set to water each green for a different period of time, if required, from a minimum of 3 minutes, to a maximum of 30 minutes. It is also possible to have an alternative time setting, if this does not suit the clubs requirements. In addition to opening and closing the solenoid valves, the control panel automatically starts the pump at the commencement of the irrigation cycle, and then automatically turns the pump off at the end of the cycle.

If a fairly heavy precipitation sprinkler has been installed around the greens, it is also possible to remove dew from the greens in the morning, by giving say 30 seconds sprinkling per green. Provision for this to be done entirely automatically, can also be made as an optional extra on all Cameron control panels.

Portable sprinklers

If a club cannot afford to install an automatic watering system, and still has to rely on portable sprinkling of greens and tees, it is well to bear in mind that there are now available larger output sprinklers, which will require less moves to complete the watering programme. The LKA30/2F sprinkler is one of these, and can water an average size golf green from one central position, and yet requires no more than 400g.p.h. flow rate. This sprinkler is now used on many golf courses, and is a big improvement on the smaller output garden type sprinkler.

It is also possible to have a semi-automatic watering system utilising these sprinklers, at a fraction of the cost of a fully automatic pop-up system.

The course has to have electric control cable laid around it and a control panel and solenoid valve installed. After this however, all that is necessary is for 18 such sprinklers to be placed in the centre of each green last thing at night, and the control panel set to commence watering operations. Each sprinkler will then come on automatically in turn and water the greens. In the morning the ground staff remove the sprinklers from the green and store them at some convenient point,

ready to put out the next night. A system like this can be installed for around £1500, as against an average cost of around £8000 for a fully automatic pop-up system.

Fairways watering

Watering of selected areas of the fairways is now becoming more popular in this country and although on overseas courses pop-up sprinklers are installed to do this job, in this country it is more usual to use an above ground sprinkler.

Again a large output sprinkler is very useful for this purpose, and the most suitable one from the Cameron range is the ZK30WS. This has a cast distance of 75ft. and requires a flow rate of approximately 1000 g.p.h.

Water when you want it

by

Watermation Limited of Godalming

Watermation was founded 2 years ago to provide a complete design and installation service for automatic 'pop-up' water systems for all turf areas with the main concentration being the designs for golf green watering. This Company deals with all matters concerning the project from the surveying of the Golf Course, negotiations with electricity and water boards right through to the complete installation. Their technical advice is freely available to all with watering problems. It is very important if your Club is considering improvements to its water system or even the installation of water to the greens for the first time, that such a firm is consulted even if it is only intended to install a manual watering system at this stage. Eventually most clubs will have automatic systems and therefore the pipework network should be installed to meet this future requirement.

Watermation systems for greens watering utilise commercial type 'Pop-up' sprinklers of very robust construction being manufactured from bronze and cast-iron. These sprinklers are mounted flush in the turf around the periphery of the green and spray water on to the green at night time under automatic control from a centrally mounted programmer. This programmer can be erected in any convenient position for the greenkeeper's use and will enable him to set up a watering cycle to completely suit the characteristics of the golf course, it having independent timing from 0-60 minutes for each green. In addition to the automatic control which is operated by a time clock incorporating both a time and calendar wheel, there is a patented rainstat which automatically turns off the sprinkler system when it rains and then permits the controller to commence normal operation when the turf needs water without any resetting.

SPORTS TURF RESEARCH INSTITUTE

The 21st A.G.M. of The Sports Turf Research Institute was held at Bingley on Monday, 24th April under the Chairmanship of Mr. Alan Sowden.

In its reference to research during the past year, the annual report (which was adopted) points out that the Institute is the acknowledged merit testing centre for amenity grass varieties in the U.K., and that currently over 200 varieties are in trials. The flow of new material is all the while increasing. In spite of this, however, and the fact that amenity grasses account for 33% of the value of grass seed used in the U.K., there is still no official recognition of, or support for, this work. Equally, there is increasing awareness on all sides of the need to develop mixtures for hard wear under sports conditions and for low maintenance in general amenity areas. The Institute has plans for extending its work on these aspects and developing extension trials on other areas, but lack of staff and financial resources prevent much of this widely needed research from being undertaken.

The Director also reported that, at the suggestion of seedsmen representing some of the main turfgrass breeders, the Institute is forming a Turfgrass Trials Committee, with strong represen-

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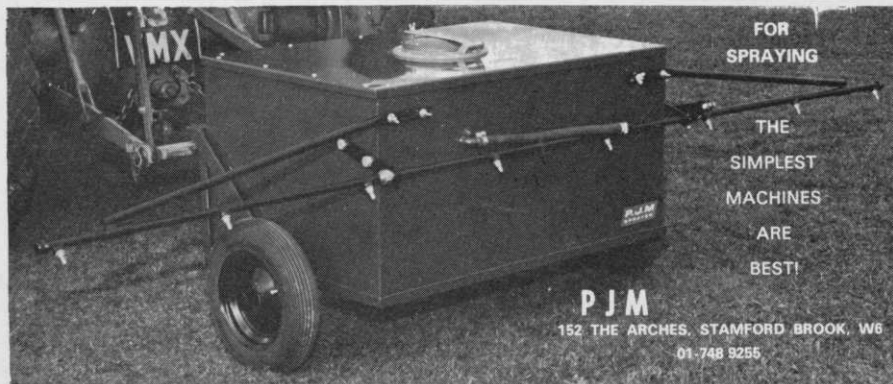


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tation from users of amenity grasses, as well as from the seed trade. It is hoped that the new Committee, for which invitations have already been sent out, will help the Institute in making its research policy as effective and valuable as possible.

Other research work included trials with fungicides and herbicides, the development of techniques for testing fungicides under controlled conditions, investigations into some aspects of disease resistance, the control of annual meadow grass and studies of soil permeability.

The advisory service continued to operate for the benefit of subscribing sports clubs, golf clubs, schools and parks departments, etc. and there was an increase of 5% in the number of advisory visits made during 1971.

A total of 128 greenkeepers and groundsmen, etc. attended instructional courses held in spring and autumn.

Financially, the Institute, which is a non-profit organisation, usually manages to break even, more or less – during 1971 there was a deficit of £348.

Automatic Golf Course Watering

by

Wright Rain

What are Pop-up sprinklers?

Pop-up sprinklers provide the most sophisticated labour saving and precise means available for the planned irrigation of grass playing surfaces.

Irrigation systems can be designed to apply appropriate amounts of water for varying soil conditions to any size or shape of area by using the right sprinklers at the right intervals.

Precision watering is carried out at night when playing surfaces are not in use, transpiration losses are low and wind-drift is reduced.

Most Toro pop-up sprinklers are gear driven rotary models. Some may be adjusted to water virtually any part of a circle, whilst others are pre-set to cover a full, three-quarter, half or quarter circle.

The Toro range embraces sprinklers to cover radii from 8ft. to 155ft., operating at pressures from 25 to 100lbs./sq. in. and applying from 0.25in. to 0.57in. of water per hour.

New additions to the already comprehensive range are the 620 and 640 series.

Automatic control

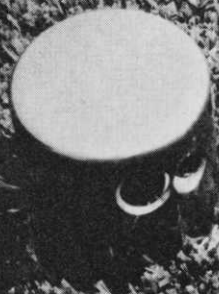
The 'brain' of this type of system is an automatic sequence controller. A programme of automatic watering is set on this unit and can be varied at any time in a matter of seconds.

The time the watering sequence is to commence is set up on the controller for the late evening – after the last player has reached the 19th! Whilst it is usual for the programme to be set for nightly watering, days can be omitted from the watering sequence to provide watering every other night if required, every third or fourth night, once a week or even once a fortnight.

The sequence controller starts and stops the electric pump automatically, as well as opening and closing the solenoid control valves. Each green has its own solenoid valve installed in an underground hydrant box which is usually situated at the rear of the green. After some experience with the system the head greenkeeper soon learns the length of watering time required for each individual green and sets the controller accordingly.

When the installation is completed and brought into operation, the soil is brought to 'field capacity' as soon as possible, i.e. moist from the surface down to the sub-soil. Thereafter the system is used to apply only sufficient water to make up for the moisture loss daily. This 'topping up' process therefore requires only a short application of water at a slow rate every night. Moisture loss due to evaporation is negligible as watering is carried out during the hours of darkness.

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*Mole ploughing supply pipe around a green. Note the negligible disturbance of the turf.
Photograph: Wright Rain Limited*

Installation

The days of opening and backfilling trenches have passed and instead the underground water main together with the electric control cable are now installed by a specially developed mole-ploughing technique. This includes the piping around each green as well as the general water supply mains over the course.

Rigid P.V.C. pipe is used for the water mains. It is non-corrosive and is resistant to attack by all soil acids. It has an indefinite life and the efficiency of the system will not be impaired by reduced water pressure due to closing up of the bore in the pipes by a rust deposit which eventually occurs in ferrous pipelines. On average, installations are completed in about four weeks in good weather conditions.

Whilst most golf courses in the U.K. have been installed with a system for watering the greens only, certain variations have been carried out. Apart from the addition of tee watering, possibly the most notable is a permanently installed 'pop-up' sprinkler on the approach apron to the green. The sprinkler is of the full-circle spray coverage type and is installed about 40 feet in front of the green.

On some courses, fairways are also watered. Automatically controlled sprinklers can be used for watering the fairways and a number of overseas golf courses have been so equipped.

With more and more golf clubs availing themselves of permanently installed automatically-controlled watering systems, the trend has been set. Beyond doubt the initial capital cost of this type of installation on a golf course is justified by the subsequent overall improvement to the course.