AROUND BUNKERS

These sometimes have banking and it is not always possible to cut this with a fairway mower. Again the hover or brush cutter machines are ideal for these areas. The edge around the bunker can be cut using edging shears, but a faster way of carrying out this operation is with a mechanised unit built especially for the job. The machine consists of a vertical blade which has a guide that runs along the bunker edge, while the blade trims the feather of grass. On some machines the cutting head can be rotated and used for trimming up against walls or posts and along the edge of tarmac or concrete paths.

KEEN BLADES

With all the modern equipment now available it is easy to forget some of the fundamental factors that result in the course looking good. The blades on a cylinder mower like a rotary must be kept sharp. They also require setting at the correct distance from the bed knife. Too hard and they will act like a brake and place considerable strain on the machine’s other components, especially the engine, which will use more fuel oil and increase the amount of pollutants discharged into the atmosphere. Likewise if the cutters are not adjusted close enough, the grass is torn rather than cut, this distresses the turf and causes a similar loading, as mentioned before, on the machine.

Hydraulic drives have made backlapping easy, but it should be realised that this is only a stop gap measure and the cylinder and bed knife need grinding as soon as possible.

Cruising round the course in an ergonomically designed seat and often with a cab, an operator can easily forget what is happening underneath the machine. The good greenkeeper is one with keen eye, sharp ear and good sense of smell.

Maintaining fairway, tees and bunkers have come a long way since the beginning of the last century. There are probably no readers who have a flock of 300 sheep or several hundred rabbits to contend with but because the boundaries are continually being pushed back more complexities occur to contend with.

Greenkeeping has become more demanding and sophisticated and Mr Glass would be hard pushed to keep up with today’s technocrats. On the bright side, at least today, it doesn’t take nine days to cut each of the fairways once, on an 18-hole course and spend all that time looking at the rear end of a horse.
Managing and Taking Control

"If the responsibility for the management of the golf course rests on one individual the benefits to the golf course and therefore the golf club as a whole are immense."

That statement may seem rather obvious to people who accept the concept of management responsibility, indeed many who believe in this simple principal are officials within our golf clubs.

So why is it that in the vast majority of golf clubs, golf course management responsibilities appear to be ill defined, and even worse shared between staff, officials and/or committees?

In other words when things go wrong no-one knows who to blame and the easy answer is to blame the person "in charge" of, but not necessarily responsible for, the golf course.

This person is invariably the Head Greenkeeper, or in some cases it is a Course Manager, however when this is the case it more than likely turns out that the person may be a Course Manager in name only and is not "managing" at all, but merely doing as they are told.

In my experience if no one person is held responsible for something being done then it will most probably not get done at all!

There are many varied management structures in place in golf clubs but no matter what structure you may have I would advocate that there must be one person responsible for the management of the golf course - and it would seem the most likely name for that person would be a "Course Manager" because it best describes what that person does and what that person is responsible for.

The reason that this "ideal" scenario is far from common place at the moment quite frankly is that there are insufficient numbers of fully qualified, competent Course Managers to go round.

Some of my colleagues may baulk at that observation but I would suggest that those who do are the ones who do not carry out all of the necessary duties, which will be detailed in this series of articles.

Whenever I hear of problems on golf courses they invariably result from ill defined areas of responsibility, and this proves to me why there are problems - we as Course Managers must take responsibility for the management of the golf course in all its varied aspects, which include difficult as well as easy times - it is all too easy to hide when things are not going well but this only delays the inevitable.

My belief is therefore that you must have a Course Manager fully responsible for the management of the golf course.

There may be managing committees and managing sub committees (quite rightly in my view) but the responsibility for the golf course must rest with the Course Manager.

Over this series of articles I will cover what I believe to be the minimum requirement/remit/job description of that person.

TAKING A MAJOR ROLE IN THE FORMULATION OF POLICY

After reading my preamble some may think I advocate that I can do what I want when I want - not true. Indeed if I did I am sure either the course or my employer would suffer in the long term - we all need guidance and parameters in which to operate effectively. That is why having a policy in place is absolutely essential.

So what is policy?

Briefly explained it is an agreed system in which we work - note the word "agreed" - the club sets policy - not the Course Manager.

That point is extremely important - we may think the course is ours (a certain personal pride is no bad thing) but it belongs to the members and we are employed by those members to carry out their instructions.

That said however because we are trained to manage golf courses, and possess the knowledge, expertise and above all experience, to avoid future disasters - we must be involved, and indeed take a major role in the setting up of such a policy.

If, for example, the club aimed to have a policy of no aeration "we don't want all those holes all over the greens disrupting our puts" and lots of water so that "we can stop the ball on the green more easily" - it would be the Course Manager's duty to convince the club of the catastrophic results, and that a different policy, based on proven course management principals, should be adopted.

In this way policy is set and the Course Manager is responsible for that policy being carried out.

I do not have the space to go into every detail of what should be within the agreed policy, but suffice to say it should cover every area of the course from greens to conservation areas, to clubhouse surrounds and car parks.

It should also contain all staff and committee responsibilities. This may sound daunting at first but believe me if policy is set out at the beginning your working relationship with the club will be much more amicable and workable.

The biggest aggravation I hear from colleagues is that the committee/officialdom, General Manager/Secretary (or all of them!) are always "interfering" in the work on the course.

If you set policy and work within it there is no need for any interference - everyone knows what the aims are, and how they will be achieved.

The course will be managed in a way which the club can understand and relate to, and in the case of a written "golf course policy statement" is clearly defined and documented.
TO OVERSEE THE SHORT, MEDIUM, AND LONG TERM MAINTENANCE OF THE GOLF COURSE WHICH IS DICTATED BY THAT POLICY

This covers the common sense decisions made by us, mostly without even realising it, on a day to day/week to week/month to month basis.

It covers decisions on staff working singly, in pairs, in groups, using extra hours effectively and managing your staffs time as well as your own, e.g. two or three tasks may be carried out at the same time thus making obvious savings, not only in time but also in machinery wear and fuel costs.

I also believe that it is essential to re-evaluate how/when we do anything on the golf course on a regular basis - there is always a better way no matter how well we think we do it already.

The most important word in the previous heading is "oversee" - Course Managers are employed to manage, not to sit on equipment cutting grass all day every day - you save your employer a considerable amount of aggravation and therefore money because you think and manage.

It is one of my beliefs however that we must earn the respect of our staff by not only being capable of doing any task we ask of our staff (no matter how menial) but also assisting staff where and when appropriate.

What we have to do is find the balance between overseeing, administration and the physical use of our own labour as part of the overall course staff, so that the course is run as efficiently as possible.

Overseeing should not mean spying on staff, this is time wasting and counterproductive - in my experience staff respond extremely well to trust.

TO PRESENT AND IMPLEMENT WORK SCHEDULES

The Course Manager must be capable of assessing the duration of every task on the golf course and convey this information as and when necessary.

This can take many forms but can be broken down into the four seasons where particular types of work schedules are identified as well as a general schedule on day to day tasks.

The largest schedule will probably be the annual Winter Programme which is very different from the day to day work which is carried out during the main playing season and is presented and approved well before the actual work commences.

I have found a "three part system" helpful in outlining what must be done on an annual basis - this necessary annual work (part 1) is often forgotten in favour of some exciting new tee or bunker project and this gives you an opportunity to let everyone know that if you don't do this on an annual basis the course will suffer.

For this reason the following parts are in order of priority.

Part 1 Necessary Annual Course Maintenance

- Checking course drainage
- Checking trees - stakes, ties, lopping etc.
- Checking replacing bridges
- Refurbishment of course equipment/furniture etc.
- Machinery annual overhauls and maintenance
- Health & Safety up dates etc. etc.

Part 2 Agreed Priority Work

The committee/officialdom. General Manager/Secretary would be expected to have more of an input in this section.

The work agreed to be carried out should be the result of constructive feed back from the membership on what improvements they would like to see on the golf course (if you have been communicating well with the general membership you will probably know what this will entail).

Part 3 Golf Course Alterations and Major Projects

Following a golf course architect's appraisal this section would cover improvements to the golf course in design terms e.g. movement of bunkers, tee or green realignment etc.

It may also cover major drainage or pathway projects etc.

The Winter Programme preamble must state when it starts and when it will be completed as well as stating how many staff will be involved and how that staff will be allocated to which project.

Ideally a master plan will have been prepared - probably as part of the "golf course policy statement" so that the Winter Programme is not viewed in isolation but part of an overall strategy looking well into the future.

Regular course reports to the club must be produced throughout the year as a form of work schedule covering progress and work envisaged so that committees and members are kept well informed on what has/what is/what will be carried out on the course on their behalf (more detail on this area under the future heading of "communication").

Forward planning is so important in ensuring things run smoothly for ourselves and our staff as well as the membership.

Without going into any great detail written schedules must be kept in an open form with access for all staff which is up dated on a daily/weekly/monthly basis so that everyone knows what is planned for today/tomorrow/next week/month.

This is in addition to year planners, holiday schedules, fixture lists, etc. in this way the allocation of staff, materials, and equipment will be as efficient as possible.

In the real world however things change - in our case the weather is mostly in control of what we do and when we do it - but this should not be used as an excuse for not taking the time and effort to plan ahead.

TO PRESENT AND IMPLEMENT MACHINERY MAINTENANCE PROGRAMMES

A fully detailed machinery maintenance schedule is very reliant on sufficient finance - I will therefore cover this area more fully under the next article heading of "controlling finances".

I will, however, cover two important points at this time. An accurate up to date machinery and equipment inventory is absolutely vital and is the responsibility of the Course Manager.

An efficient, clean, warm, tidy, and well designed workshop where all tools and equipment are kept as well as good, comfortable canteen/rest facilities for all staff sets the scene for the whole establishment.

In all the visits to golf clubs I have made the condition of the course is almost always directly related to the condition of the workshops and staff facilities.

KEEPING ACCURATE RECORDS

My comments within this heading in my last series of articles mentioned the help of the Health & Safety Executive in this area - probably meaning the fear factor which certainly made me aware of the need to keep accurate records.

Health & Safety matters take up a considerable amount of our time now and I will cover this in more detail in the final article of the series - records relating to Health & Safety will include Health & Safety policy documents and records of updates, risk assessments, COSHH, machinery repair and servicing etc.

Probably the best "to hand" record is the diary - both written and electronic.

We as a staff could not operate efficiently without relating to diary entries and the information it gives us - also should you move on it is a formidable record of everything which has gone on in the name of golf course management and is extremely helpful to the next Course Manager in making decisions on future maintenance.

Lastly, there must be an accurate plan of the golf course with all underground services clearly illustrated - it is amazing how many golf courses still do not possess this necessary documentation and only find out when a major contractor arrives to dig holes - you can imagine what happens when you're not sure what is underground.

Expenditure records will be covered under "controlling finances".

KEEPING UP TO DATE WITH MODERN METHODS, MATERIALS AND EQUIPMENT

Whenever I turn round there is yet another new material or piece of equipment or machinery and no matter how tedious it may be it is our duty to keep up with developments in all areas.

The best way I have found is to meet colleagues at every possible opportunity, both in the line of business, e.g. BTME, Education Conferences, seminars etc. as well as semi-social occasions, such as BIGGA golf days etc.

The most obvious occasions to see and talk about products and services would probably be demonstrations and trade days, but I still find it more helpful talking to colleagues when making buying decisions - I would not even consider buying any product without first discussing it with someone who may have used or trialed it before.

The amount of product information now is mind boggling but we owe it to our employer to at least consider alternatives to improve golf course conditions and if that means wading through every book, circular, article, flyer etc. then so be it.

Today's golfing member deserves an efficiently run golf course for the subscription paid and more and more of these members are questioning where their money is being spent.

A Course Manager totally responsible for the golf course is I believe the only way to ensure that requirement is met in future.

Duncan McGilvray
With increasing pressure on both water management and general course management the modern Golf Course Manager should be aware of advances in technology, and how they can be of both financial and environmental benefit to the long term maintenance regime of the course.

Using technology couldn't be easier or have more benefits. For example products that are available to assist course management include GPS technology (Global Positioning Systems), Digital aerial imagery, PC based irrigation control systems, Pump system management, Weatherstations, Palm top technology, and Radio and telephone remote control / communication.

This article does not suggest that every item will assist in the daily management of your particular course, however that you are aware of the products and their ability to assist.

With water costs rising (£0.90 per cubic metre (220 gallons) in some areas and many clubs using approximately 60 - 100 cubic metres of water per night), and the forthcoming changes in water distribution legislation - the water bill, a PC based irrigation management system is able to assist in managing both system hydraulics and monitor water usage.

Clever programme software can allow the end user to input pipe sizes and allocate flows to pipes allowing hydraulic management and prevention of pipe network overload. This maximises efficiency and reduces hydraulic stress within the system. Each branch or section of the pipeline can have added a sensing device/data retrieval unit which will feed real time information back to the control system, closing down the branch of the pipeline in the event of too high a flow/too low a pressure (pipeline burst). These actions are logged by the PC and/or sent as a text/radio message to the Course Manager.

As well as the benefits of easy programming, sprinkler precipitation rate calculations and run time calculations, the installation of a PC control system can also enable the acquisition and use of an accurate course plan that at a touch of a mouse can identify and print in colour scaled as laid irrigation.
Roger Davey looks at the aims that are available to assist the modern Course Manager with their irrigation requirements.

plans, service routing, drainage layouts, bunker positions, Greens sizes, buggy path layouts, etc.

These course images can either be captured as a digital aerial image or via GPS ground mapping, however the end user must be aware that each is different in its entirety. Many people providing digital aerial images do so without realising that potentially unless rectified prior to supply, they will be inaccurate due to the curvature of both the lens and the earth, therefore providing an ‘inaccurate’ image.

Digital aerial image plans are provided in specialist drawing files such as BMP and will graphically show every feature of the terrain – as long as the pixel resolution is great enough (generally a resolution of 25cm is recommended). Plans can then be added to in layers, ie. layer 1 – irrigation mainline, layer 2 - sprinklers, layer 3 - drainage pipe layout, etc by a specialist CAD drawing program.

The Global Positioning System (GPS) is a worldwide radio-navigation system consisting of 24 satellites and their associated ground stations. GPS uses these ‘man made stars’ as reference points to calculate positions of objects to define points of measurement. The points of measurement are recorded on the ground and a layout plan produced.

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The accuracy of GPS can be affected by many factors including the number of visible satellites, interference and distance between reference base station and roving receiver. Generally a minimum of four satellites are needed to pinpoint a good position with the accuracy increasing as the number of satellites increases (the number of satellites changes as the horizon alters during the day). As GPS is dependent upon a direct line of sight with the satellites there are many situations, particularly around shaded greens and tees on a golf course, where GPS reception is degraded to such an extent that accuracy is unobtainable. This situation however can be overcome using additional equipment, occupying a position of good reception ie. the middle of the fairway, and offsetting your position.

As with most products, the more expensive the survey the more accurate the detail - what use is a GPS mapped plan if it is not accurate? The end user should always seek clarification of accuracy and detail.

Both digital aerial images and GPS maps can provide an image of the area in question which can be used to accurately plan and calculate all activities from irrigation to the tracking of course vehicles, area calculation for fertiliser applications and as an image of the course, for course alteration meetings. GPS has the added advantage of having the ability to accurately record all as laid products within the map - sprinklers, pipelines, telecommunications, electricity, gas, oil, etc.
Once acquired, some PC based irrigation control systems can accept extra tools like hand held palmtop computers such as the Compaq® iPAQ™ which has the ability to import the course map and remotely operate the control system in real time simply by a tap of the stylus on the map to turn on, off or pause areas of irrigation.

Palm top database management can take place in the field; changes to runtime, adjustments to ETo scheduling can be undertaken and then back in the office the palm top quickly synchronises with the central control computer and the database is updated automatically.

Remote communication of this type is achieved by the use of radio remote control. However some systems also accept mobile phone communications which allows the simple remote operation of the system by standard mobile phones using the keypad to provide instructions to the PC. These instructions can be relayed from anywhere that allows phone reception, even another country!

The radio remote control facility utilised by the palm top/irrigation control system can also double up as the internal communication system that Greens staff require to assist with the smooth programming of works and to monitor other course activities - competitions etc.

External influences created by the weather which effect water application rates and plant evapotranspiration can also be monitored by irrigation system weather stations which will report back to the PC to advise of changes in water requirements. Weather stations can record temperature, humidity, rainfall, wind speed, and solar radiation — downloading this information on a
regular basis assisting with application rate calculations and run time cycles.

This may to some people seem like a toy, however, courses that use approximately 300 - 500m of water per night can save between 10% and 15% of water within a cycle by employing such technology; this equates to a value in mains water monetary terms of between £27 - £68 per night and over a 100 night period, this is a figure not taken for granted in both monetary and environmental terms.

Over the last 10 years the introduction of industrial technology within the irrigation pumping station has become more and more prevalent, most noticeably the use of variable frequency drive units. These manage the performance of each pump, slowing down and speeding up the pump motor - matching produced flow with required demand, minimising hydraulic stress and making the units extremely energy efficient. The affinity laws which govern pumps show that a 20% reduction in pump speed will result in a 50% reduction in electrical energy consumption by the motor. In the past pumps have constantly worked at full speed simply bleeding excess water back into the storage reservoir/tank - wasting energy and accelerating pump wear.

Pump station monitoring software can be used to link the pump station to the central control system providing real time communication and optimising irrigation cycles. It can also monitor and react to changes in station capacity ie. should one pump of a three pump station fail, the irrigation flow manager will receive instructions to reduce available water by 33% and prolong the cycle, ensuring that a cycle is achieved and that station failure does not occur due to low flow.

Now even further advances lay in store for this industry, integrating the technology with other aspects of course operations - GPS controlled mowing!!

Perhaps by raising the stakes, we raise the game... 10 years ago would you have considered that a standard family car when purchased would come with satellite navigation, climate control, DVD player and intelligent speed limit control? Technology is all around us today and not just for the people of tomorrow.

Roger Davey is Managing Director of Irritech Limited - Independent Irrigation Consultants Tel: 01823 690216, www.irritechlimited.co.uk

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BRIDGING THE KNOWLEDGE GAP

Lee Bridge and Peter Lacey describe their progress towards an HNC, part funded by a Ransomes Jacobsen Scholarship

It is now some nine months since I started my scholarship studying towards my HNC in golf course management (distance learning) and it seems to have flown by. I really don’t know where the time goes. Before you know it we will all be out on our courses struggling to keep up with the grass and working our socks off as usual. I don’t know if that’s a good or bad thing although I suppose it is a bit of a mixed blessing really. On one hand it’s nice to be out there with the warmer weather but, on the other, does the grass really have to grow that much?

On the college front it is going really well, I have received some really positive feedback on most of my assignments so far and personally I am pleased about that.

As I am writing this update I have just recently sent off a tutor marked assignment on health and safety legislation, and am awaiting feedback. This subject is probably not the most popular one among all those in the industry but the way this unit has been tackled is quite unique. Instead of the usual reams and reams of paper to sift through it’s all conveniently placed on one single cd-rom including loads of extra bits as well. Being quite a complex subject there are loads of up-to-date information on the disc, ppe assessments and noise assessments to name just a couple.

The disc is divided into two main themes - employment legislation and health and safety legislation. After you have absorbed all the information on the disc you are required to carry out three separate assignments on each subject. These become progressively harder as you reach the main assignment. Starting with about 20 questions which ensure you have understood the subject matter, then progressing to the tutor marked assessments which involves four more in depth tasks to carry out. These tasks are designed to show your tutor that you have understood the subject and can apply the information to the tasks.

One of the tasks in the employment legislation section is to produce a notice about arrangements for taking holidays in the coming year, bearing in mind club and district championships are being held on your golf course. The section is then completed with the main assignments which are made up partly of tasks from the previous assessment. You are also asked to produce a formal style report evaluating whether your golf club complies with current legislation on each subject matter ie. employment legislation and a health and safety audit on your course.

Overall I have found the college course very worthwhile and interesting and I am thoroughly enjoying it. All the units I have completed have been easy to follow and understand, and all are well presented.

Starting the course last September with the unit about communication, presenting complex communication for vocational purposes. This unit is divided into three main assessments with some other tasks to carry out as well. The main assessments on this unit mirror the three main areas of communication with these being writing, oral presentation and holding...