

The straight cut, the clean cut, the whole

cut.



The new 2500 Tri-Plex Greens Mower from John Deere.

Soon, greens everywhere will experience a tri-plex mower that not only delivers a superb straight cut but also excels at the cleanup cut. That's the essence of the new John Deere 2500 – a quality of cut that's second to none.

The 2500's John Deere designed and manufactured cutting units feature a new bedknife-to-reel

design. The superior offset cutting unit design provides the operator with a clear view of the centre cutting unit and helps reduce "tri-plex ring".

Operators have never had it so good. The operator station on the 2500 has convenient fingertip controls for the throttle, reel drive and cutting unit lift/lower.

The 2500 is also extremely ser-

vice friendly. Cutting units can be detached in seconds, with adjustments designed with the technician in mind. And daily service points can be checked from one side of the machine.

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3 829 J

Ad Ref 103

Welcome to the inaugural BIGGA workwear and casual clothing range. Late last year, BIGGA and Stylo joined forces to bring you this exciting range of clothing and footwear for 1999.

Included in the range is the first ever BIGGA approved golf shoe, the Duo - a technologically advanced shoe designed to provide the ultimate combination of on-course comfort and functionality. This shoe accommodates both softspikes or traditional spikes - both with the revolutionary quick-fit Q-Lok system.

All the clothing featured here is manufactured to the highest specifications in durable materials - offering working comfort as well as practicability. All items subtly feature the BIGGA logo.

While all the garments and footwear featured represent exceptional value for money - they have also been designed to be practical and stylish for general leisure as well as for work use.



THE BIGGA COLLECTION

GENERAL WORK & LEISURE WEAR

1

Lister Knitshirt

A classical cotton interlock short sleeved shirt with a jacquard design on collar and cuffs.
BKSH 961 NAVY Navy £17.95
BKSH 961 WHT White £17.95
Sizes S, M, L, XL, XXL



2

Thornproof Gloves

These offer a special covering that protects against thorns and brambles.
BGT 107 GRN Green £2.25
One size fits all

Pimple Palm Gloves

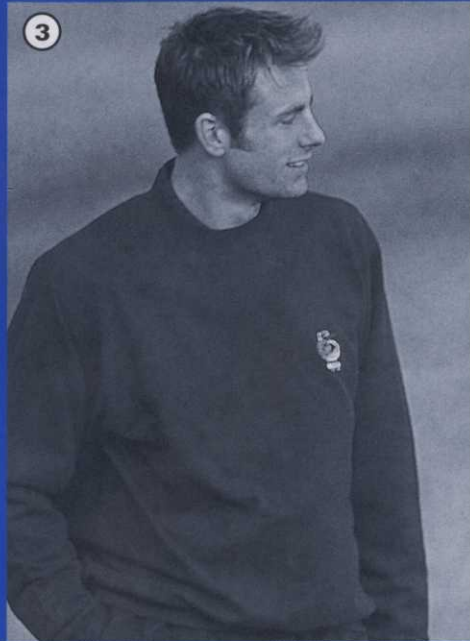
These gloves are pimpled on the palm to provide extra grip.
BGP 108 GRN Green £2.25
One size fits all



3

Sweatshirt

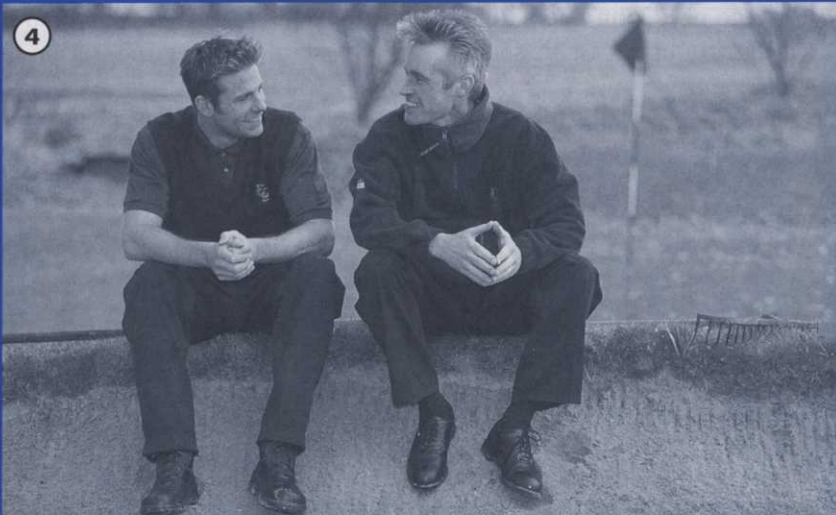
Plain, quality cotton sweatshirt with BIGGA logo.
SWT 105 NAVY Navy £13.49
Sizes M, L, XL



4

Basket Weave Slipover

A practical cotton and acrylic basket weave slipover.
BSWS 550 BLK Black £22.95
BSWS 550 NAVY Navy £22.95
BSWS 550 BTL Bottle £22.92
Sizes M, L, XL



Owen Knitshirt

This is a plain coloured polyester/cotton short sleeve shirt. It has a flat knit colour and features the BIGGA logo.
BKSH 910 BTL Bottle £14.95
BKSH 910 NAV Navy £14.95
Sizes M, L, XL

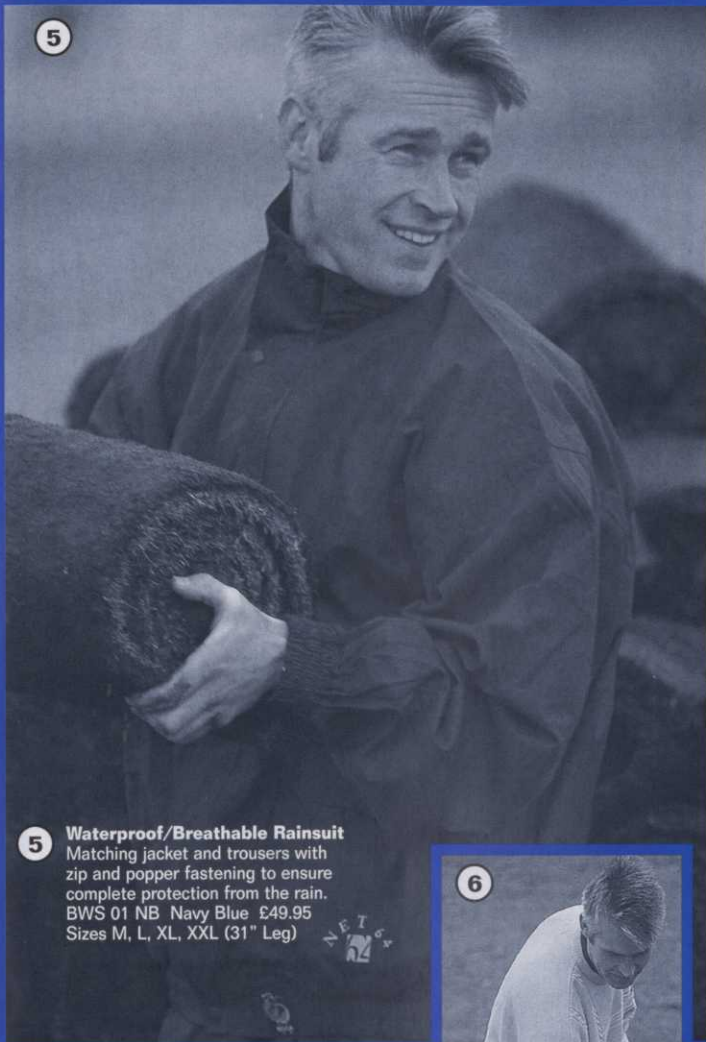
Trousers

Poly/cotton trousers with 2 side slant pockets and 2 rear pockets.
TRS 104 NAVY Navy £17.95 (reg leg)
TRS 105 NAVY Navy £17.95 (long leg)
Sizes 32, 34, 36, 38, 40, 42

Full Zip Fleece

This fleece top is made from Teflon material, which ensures that rain will 'run-off' the garment, making it quick drying and very practical. It comes in navy with a contrasting collar.
BFCL 500 NAVY Navy £29.95
Sizes M, L, XL

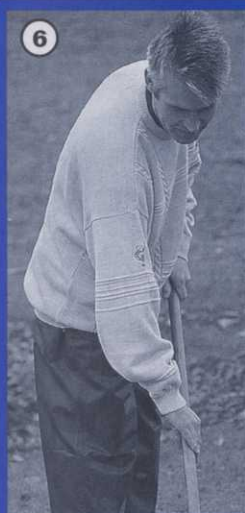
RAINWEAR



5

5 Waterproof/Breathable Rainsuit

Matching jacket and trousers with zip and popper fastening to ensure complete protection from the rain.
BWS 01 NB Navy Blue £49.95
Sizes M, L, XL, XXL (31" Leg)



6

6 Fairfield III

Stylo has produced its own Iso-thermal system sweaters to protect you from the worst elements. The membrane system is ultra thin yet provides full waterproof protection and is completely breathable. The Fairfield III is a transfer cable and argyle patterned sweater which is made from a wool/acrylic twist yarn.
BSWT 375 CRM Cream £49.95
BSWT 375 NVY Navy £49.95
Sizes X, M, L, XL, XXL

Waterproof Trousers

Practical, extra-strength, multi-use trousers.
WPT 102 GRN Green £10.95
Sizes M(34), L(36), XL(38)

WORKING SHOES & BOOTS



7

7 Duo Golf Shoe

Incorporating a technically designed hard-wearing rubber outsole which is suitable for both conventional and alternative spikes. Each pair of Duo comes with conventional spikes fitted and a separate pack of alternative spikes. The shoe utilizes an Iso-Thermal weatherproof membrane system, developed especially for its waterproof and breathing qualities.

MG 486 BBU Men's Black/Burgundy £41.95
MG 487 WNY Men's White/Navy £41.95
LG 833 WBG Women's White/Beige £41.95
LG 834 WBU Women's White Burgundy £41.95
Men's sizes 6-11 including half sizes and 12
Women's sizes 3-8 including half sizes



8

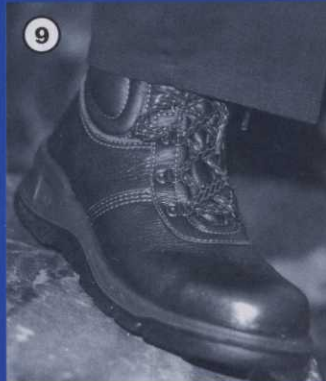
8 Safemasta Steel Toe Capped Wellington Boot

Durable all-purpose Wellington with thick moulded sole and heel grip for easy removal.
SFT 01 BK Black £18.95
Sizes 5-11 plus half sizes 6 1/2 and 9 1/2



9 Stavanga Steel Toe Capped Ankle Boot

Tough, comfortable workboot with padded ankle protection and extra grip. Contoured high-grip sole.
STV 01 BK Black £49.95
Sizes 5-12 plus half sizes 6 1/2 and 9 1/2



9



THE BIGGA COLLECTION

To purchase merchandise from the 1999 BIGGA collection, simply indicate which products you require in what quantities and sizes, using the order form printed here.

(You may photocopy this form to avoid cutting your Greenkeeper International)

All prices shown are inclusive of VAT. Orders under £200.00 will incur an additional £4.00 postage and packing supplement. After completing your order details, next complete your name and address details, and return this form with your VISA details or cheque (made payable to BIGGA) for the full amount (inc postage and packing)

Product code	Size	Quantity	Total price
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EXAMPLE ONLY			
Total goods value			
Plus P+P (£4.00) If order under £200			
Total amount			

Your name, address and finance details

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Please TICK Visa/Mastercard/Switch/Delta (Please delete as applicable) £ _____

Card no. _____
Expiry date _____ Issue no. _____
Signed _____ Date _____

While all orders are processed as quickly as possible, please allow 28 days for delivery



The BIGGA Collection orderline: **01347 833800**

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Ad Ref 203




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Ad Ref 408

54 Greenkeeper International April 1999

Philip Sharples takes a look at what can be achieved today with the help of modern technology, knowledge and water

Water^{saving}



Where does water come from?

Water, there is only so much of it and nature is not making new supplies, only recycling a portion of it. In fact, much of the world's water supply - in excess of 99% - is unavailable for man's most important uses - drinking, manufacturing, sanitation, recreation and irrigation because it is tied up in the world's oceans and polar ice caps.

The amount of water on earth is essentially non-destructible and fixed. Certain types of volcanic eruptions add small amounts of new water, but it is insignificant in the

overall scheme. World wide, some 80,000 to 85,000 cubic miles of water evaporate from the oceans each year.

So now we know a little about this resource do you think we should begin to save, reuse or recycle the water available to us? When applied to turf grass management, it boils down to some very fundamental, down-to-earth changes in habits and practices.

Water Conservation

Every turf grass manager, in the entire world, surely must begin (if not already) to plan and implement a

programme of water conservation and wise management of this finite resource. The immediate results will be savings in cost. Less water will be consumed, which will result in a reduction of the pound spent for the water and the cost to pump and transport it.

But more importantly, far more importantly, it will help the turf manager prepare for the day when it will become necessary for him/her to function with less water. Perhaps the water simply will not be there, physically, (save this year!) in the current quantities or because some bureaucratic or legislative authority will

have diverted it to a purpose considered more politically important.

There are six basic steps that will lead to water conservation and improved management. These often receive far too little attention and respect.

1. Establish watering priorities. Give the highest priority to the most intensively managed areas.

2. Improve irrigation scheduling. Follow sound irrigation practices. Irrigate when there is the best combination of reduced wind, low temperature and high humidity.

3. Reduce, or avoid where possible, other causes of stress. Make certain there is adequate internal soil drainage to ensure maximum root growth. Most importantly avoid root zone saturation.

4. Alter cultivation practices. Test for soil fertility. Raising the height of cut for all areas by as little as 1mm can have a significant effect on the ability of the grass to tolerate stress and make more efficient use of soil moisture. Increase the frequency of soil cultivation to trap moisture and hold it in the vicinity of the root system.

5. Expand the use of mulches.

6. Erect wind barriers on large expanses of open space.

Water Management

It is thought that many involved with the turf management business are guilty of misusing water, to a less-

er degree on golf courses. Yet golf courses do not take full advantage of the many technical accomplishments of the irrigation industry. We must integrate the art of water management and the science of water management. The consequences of not applying what is now known and available in these areas is that we are borrowing a major source of water from the future and missing an opportunity to become leaders as water conservation authorities.

We need to learn more about such things as drought tolerance and rooting characteristics of grasses, water requirements, watering techniques, water conservation, soil-air-water relationships, leaching, weeds and their ecological relationship to the turf grass environment.

As you have read, there are many factors and variables involved with effective irrigation. I would like now to concentrate on one aspect, Irrigation scheduling and application.

Irrigation scheduling and application

Irrigation scheduling technology (computer aided) has developed rapidly and now assists in reducing; water run-off, leaching, salt accumulation, excess evapotranspiration (ET) as well as, monitoring system effectiveness, storing all data and setting application timing, in the field and/or in the office.

The decision to irrigate turf should be made on an "informed" basis. Too frequently irrigation practices fail because they have been established by habit or calendar reference dates. Actually, good irrigation practices are dictated on a day-to-day basis by specific turf grass needs, soil characteristics, projected weather conditions and the purpose and function of the area to be irrigated. Thus, the criteria affecting the decision-making process concerning irrigation involve a dynamic, ever changing set of conditions which all must be assessed by a Course Manager with intimate knowledge of the criteria.

A responsible Course Manager will consider the temperature, atmospheric relative humidity, cloud cover and wind conditions effecting the evapotranspiration rate, plus the anticipated rainfall for the next few days. Finally, an assessment must be made as to the capabilities and weaknesses of the irrigation system in relation to supplying the needed amount of water within a specific

amount of time. (PC operated systems do this for you automatically!) Based on these evaluations only, decisions are made as to when to water and how much water to apply.

This decision is made even more complicated because soil moisture content will vary at different locations on the golf course. Some sites may tend toward perpetual wetness, while others rapid drying. Consequently, the irrigation programme must be adjusted for the variable soil and drainage conditions.

Technological tools assisting irrigation scheduling practices, recording plant growing days and cataloguing fluctuations in rainfall and temperatures (environmental monitoring equipment) also play a vital role, there are three main types utilised:

1. Soil based, to monitor soil water status these include, soil moisture sensors, tensiometers and infiltrometers

2. Plant based, to monitor plant temperatures and water status, the best available technique here (at this moment in time) being visually watching for wilt. I am sure one day chromatography - infra-red mapping of canopy temperature - will be a viable technique.

3. Atmospheric, to monitor atmospheric conditions that influence ET rates, these include, wind speed monitors, temperature gauges and evaporimeters.

All the above used and recorded daily through a weather station and software support will help ensure Best Management Practices are adhered to and utilised.





Packages are available that are specifically designed and developed to assist the turf professional and can advise on all the aforementioned.

All the pre-mentioned, what we will call a "modern system", allows irrigation according to evapotranspiration and soil conditions in a condensed amount of time. A shorter irrigation cycle not only saves money and general wear but starts the system later at night, giving more time for rain and reduced irrigation time reduces inconvenience and irritation to golfing memberships.

In Summary

Installation of a state-of-the-art computer operated irrigation system, or modernisation of the existing can only achieve optimum irrigation scheduling and application.

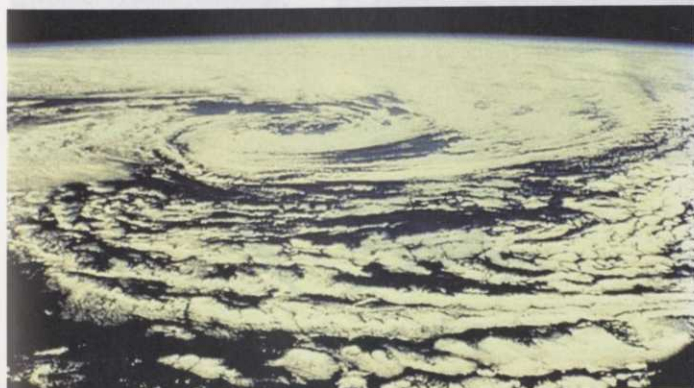
Significant reductions in pesticide usage, fertiliser applications, electricity costs, water usage and even manpower can be achieved by applying best management practices. A

computer efficient, low-pressure irrigation system (low-pressure water is less effected by wind) and site-specific heads allows for low water use and maximum coverage. Optimum water usage means to the turf manager a decrease in:

- * Soil compaction.
- * Fertiliser leaching
- * Salt accumulation
- * Disease susceptibility
- * Wear and tear and pumps and irrigation systems
- * Weed population
- * Insect population

But, perhaps most important of all, it shows the world that the turf grass managers are in fact very environmentally friendly and aware. What do you think?

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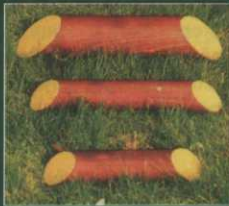
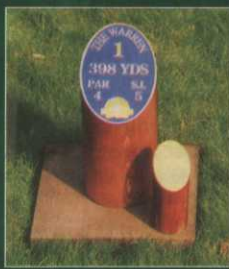


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Ad Ref 127

Carol Dutton, herself a well known face in the industry, speaks with four women who prove that there is a place for the distaff side in what is a male dominated business

Top women

Lynne Green

Carol Dutton, herself a well known face in the industry, speaks with four women who prove that there is a place for the distaff side in what is a male dominated business

Carol Dutton, herself a well known face in the industry, speaks with four women who prove that there is a place for the distaff side in what is a male dominated business



Alison Brace

Carol Dutton, herself a well known face in the industry, speaks with four women who prove that there is a place for the distaff side in what is a male dominated business

Despite Sally Doherty's triumph as Toro Student of the Year competitor last year, the professional turf industry is still a man's world.

Both BIGGA and the IOG report approximately 10 lady members each, out of a total of 6,600 greenkeepers and 4,500 groundsmen.

Saltex last year hosted over 400 companies exhibiting at Windsor, two of which gave women's contact names in the official catalogue, and this year's BTME did little better, with two of the 178 exhibitors sporting women at the helm.

What makes a woman consider entering such a traditional male bastion? How does she cope when she gets there? And are there any signs that attitudes are changing as we move towards the Millennium? I spoke to four brave females who by their very presence in the industry are defying the norm - two at the top of their respective companies, one deputy head groundsperson, and a young student greenkeeper, to gauge their experiences.

Sarah Turner, who at 22 is the youngest of the four, and is studying for her National Diploma in Horticulture while working at Woking Golf Club, has had the smoothest career path so far. Although her parents wanted her to go to art school, she stuck to her guns and took her National Certificate in Horticulture at Sparsholt College while doing voluntary work at Weybrook Park Golf

Club. Having shelved early plans to be a vet, Sarah, who always liked sport, was determined to work out doors, and approached a variety of sports venues for work experience. Weybrook Park accepted her, and led to her present position at Woking.

Sarah's main problem on arrival at the club, was shyness. Course Manager Sandy McKechnie, who has spent 24 years in the profession, with 18 as Course Manager remembers.

"It took her six months to settle in, and she was very shy with all the men." Nevertheless, after that first year as a temporary placement, the club decided to keep her on, paying the course fees themselves Sandy, who has never worked with female staff before, now regards his latest protegee as a full member of the team.

"We would like to keep her when she has finished her course, the only problem I can see is that once she's qualified she is going to want twice the salary she is on now. I don't know if the club can afford it."

Sarah would be happy to stay. "The lads have been great. You get the odd joke but you just join in. I think a few more women are doing male dominated jobs now and as long as we're given the opportunity and are willing to do the work we'll be OK. Some of the work here is very physical and that's quite hard but you just have to cope," she said.

Top women



Lucy Dalrymple

Alison Brace, Deputy Head Groundsperson at Brighton College, did not have such a simple start to her working life. Born an only child of office working parents, she was actively discouraged from attending agricultural college. After travelling for a year when she left school, Alison joined the Countryside Rangers which reinforced her belief that she wanted an outside job.

Alone at home, reading the local paper, while her parents were on holiday, Alison found the advertisement for a trainee groundsperson which launched her career. "There was no-one to say that I couldn't do it, so I wrote off straight away."

The job was with Brighton College, and Alison, who was laughing at herself when I spoke to her, for wearing a mohair jumper while scarring a cricket square, left her interview thinking "I can do that" and has remained ever since.

Now, six years later, and engaged on an NVQ Level 2 course in Turf Care, she insists that she has never encountered any hostility.

"I have never felt victimised, and being a woman can be an advantage. I was on a course two weeks ago, and it was the first time that I had not been the only female. If you are



Sarah Turner

the only woman present, you always get to know the lecturer. They tend to remember you and this can help your studies."

Alison admits that the job has become easier now that she has proved her worth.

"When I first started I had to work doubly hard to get the same respect as a man. In some ways, the doubt is always there. I suppose my parents have said that because I'm a girl I can't do this, and I still feel I have to prove myself."

Lucy Dalrymple, Managing Director of Arbor Eater, suffered no parental misgivings as she was born into the business. Her father was a tree surgeon who invented the original Arbor Eater wood chipping machine, and built one for himself before going into production. What is unusual is the fact that although she is the eldest of four children, Lucy's father chose her, rather than either of her two brothers, to join him in the business five years ago.

Starting in sales and progressing to the technical side, Lucy, who thinks that the key to her success is her obvious enjoyment of the job, her pride in both the Arbor Eater machines and the fact that she is able to continue the family name, admits that at first her technical knowledge and ability to diagnose faults over the phone took some customers by surprise.

"Certain types of men, who tend to be the older chaps, don't like being told by a woman, over the phone, how to fix a machine, especially if they have been trying to do it themselves for two days."

Lucy, who is not technically qualified, is certainly dedicated to both her customers and the machines.

"When the phone starts ringing, usually after 5pm people want answers quickly, and I try to avoid advising them to spend lots of money. If someone has ordered four fusible plugs, then I know that there must be a problem with the machine and I will send one of our engineers round. Our machines are like family. If you look after them, they'll look after you."

As Managing Director, since her

father's retirement last March, Lucy realises that she still has a lot to learn.

"I still have to phone Dad for advice when I don't know what to do, but I think he gets quite upset because I don't need him so much anymore."

Lucy's working history - secretarial qualifications gained after leaving school, which led to magazine production and an editorial job, before she joined an engineering company, gives only slight clues to her eventual career destination.

While co-ordinating engineering staff employed on oil rigs, she found a mistake on a technical drawing, which had escaped the attention of a group of highly qualified men.

"They had been studying the plan for some time, before I wandered over and spotted that a staircase had been drawn with the risers and treads reversed."

With her extraordinarily selective memory, which always remembers solutions to technical faults, (Lucy freely confesses that she forgets other things), and the fact that the family firm provided the opportunity to develop her innate skills, perhaps Lucy's rise to her present position is not so unlikely.

There is nothing in Lynda Green's family background or previous employment to suggest that she would become a Director of C. & P. Soilcare Ltd., but her love of machinery can be detected almost from the start.

Casting her mind back to one of her first jobs, after leaving school, Lynda remembers that the company, Lonnet Aviation, based at Ipswich Airport, was where she was deeply involved with aircraft. Later she worked for Suffolk Light Aircraft Maintenance.

"I spent hours in the aircraft hangar, doing anything and everything - stripping down aircraft fabric, putting wings on, helping to change spare parts, I couldn't keep away. Maybe flying from the age of 12 had something to do with it."

A series of administrative posts led her to the position of secretary to the Financial Director at Ransomes