

**Bill Oliver gives a helpful look into sprayer safety and new European and HSE standards of compliance with a view to up-dating or buying new sprayers.**

# it with confidence Spray



Does your sprayer need updating?  
Will the one you buy comply with the latest machinery safety regulations?  
What are these regulations?

You may find that equipment bought in the last 12 months does not meet required standards. I'm afraid there is a need to constantly reassess and accordingly up-date all machinery, not just sprayers, and to introduce engineering controls that further reduce injury and exposure to operator and the environment.

Employers have a duty to supply equipment that is safe for use. The new provision and use of work equipment regulations came into effect on 1 January 1998 and state that it is the responsibility of the end user, where reasonably practicable, to up-grade existing equipment to conform to the latest standards.

OK - where do we start?

First, for those making the best of what they

have already got. If your sprayer is lying in the yard; is over three years old; is rusty, with cracking pipes and a well-used pump, then it's not so much "What can I do?" but "How can I safely and legally dispose of the contaminated unit?"

If your sprayer is clean and has a good size pump it may be worth bringing it up to the latest standards. However, remember that paying out for the new add-on features for your old sprayer does not alter the fact that there is still the heart of an old unit underneath.

Second, for those looking at a new sprayer. There are lots of factors which you will have to consider in choosing the correct specifications which will work best for you and comply with all the latest recommendations and guidelines. Increased safety doesn't come without a price, but with this price you gain from higher work rates, a wider spray window and automation of essential functions from within the cab.

Contrary to popular belief size does matter. Larger capacities do save time, money and most importantly, reduce the amount of handling of concentrated chemicals.



What is right for you? With a larger tank you can maintain a higher work rate, although if the ground is soft or steep in some areas you don't have to fill the tank right up. Think first and then ask our advice. We at Gambetti make a large range of truck-mounted units of 350/450/600 litres and 650/850 litres for longer wheel bases.

Tractor-mounted sprayers are available from 200 to 1000 litre. Trailed sprayers range from 650 to 1500 litre with special units designed with you, for you.

However, many other factors influence the chemical application and price of sprayer.

#### **Pumps**

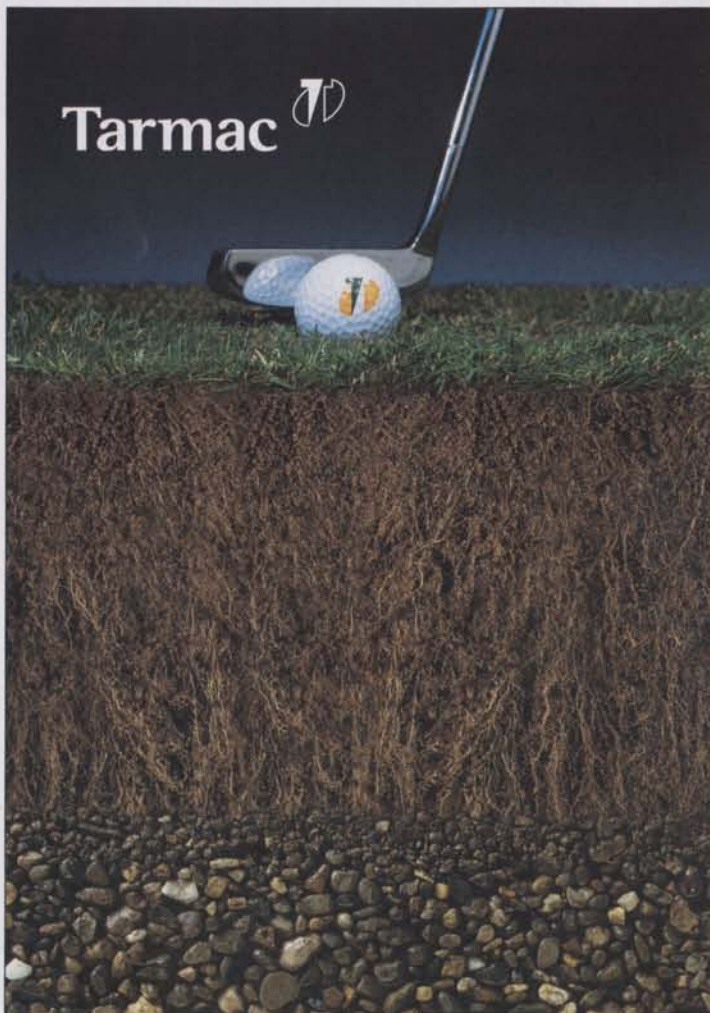
The diaphragm pump is the best for reliability and the ability to handle abrasive substances and suspensions. Beware, there are a lot of sizes. Some manufacturers sell small pumps on small sprayers but

a 3-diaphragm pump as standard gives excellent output without having to run at full throttle, thus relieving wear and tear on the pump and giving a smoother, quieter vehicle.

#### **Controls**

Pesticide regulations state that you must have a pressure balance unit such that if you turn off one section the others should not increase in pressure. I have yet to see the same in writing for sprayer legislation. This type of control will also allow for increase/decrease in forward speed as long as you do not change gear. Beware hydrostatics! Hydraulic drive pumps have similar increase/decrease as direct drive units and usually are within plus or minus 2% of sprayer output but please check induction tank/chemical hopper.

Here's where there are big changes under Supply of



## Great golf is built on

# Topsport

At Tarmac we take sport and leisure extremely seriously.

Created to satisfy the most exacting professional requirements, Topsport is a tried and tested range of specialist products for use in the construction and maintenance of a vast array of sports and leisure surfaces, and has been used by some of the UK's premier sporting venues.

Used extensively by golf courses throughout the UK, including Royal Birkdale, our impressive range of rootzones (up to USGA Standard), topdressings, bunker sands, pathway materials and drainage aggregates ensure maximum performance all year round.

Topsport products can be supplied nationwide and are matched by first-rate technical and sales support from Tarmac Quarry Products, the UK's largest aggregate producer.

Not only determined to meet, but to exceed customer expectations, our aim is to ensure that whatever your particular needs, Topsport has the proven experience, quality and expertise to help you achieve perfect results.

**For further details on any of the  
Topsport range of products telephone**

**01298 213740**

Tarmac Quarry Products Limited, Moorcroft, Lismore Road, Buxton,  
Derbyshire SK17 9AP.

Machinery (Safety) Regulations BS EN 907 Agricultural and Forestry Machinery Sprayers and Liquid Fertiliser Distributors.

#### Chemical Induction Hopper

The BS EN 907 standard states that sprayers shall be equipped with a transfer device and HSE takes this as a device complying with ISO 5681: 1992 and meeting the test standards of BS6356 parts 8 and 9. The EN 907 standard does go on to say that "if this is not possible" the filling hole on the sprayer shall be so positioned that the height from the ground or from a platform is not more than 1500 mm and the horizontal reach between the rim of the hole and the rim of the tank shall not be more than 300mm. The important words are "if not possible."

A manufacturer's technical file must show that it is not possible to fit a transfer device before they take



advantage of the direct filling into a sprayer using the dimensions referred to. Examples of when the "not possible" derogation may be applicable would be if the induction hopper caused stability problems on the sprayer (eg if the system was very large in relation to

the sprayer) or if there was no safety benefit from fitting it (eg the induction system could only be fitted in such a way that filling had to be carried out at a similar height as filling direct into the spray tank.)

HSE would look very critically at any claim that fitting any form of

induction system was not possible. Certainly cost would not be a factor normally taken into account in such a decision and, for example, HSE would not consider claims that an induction system could not be used because the sprayer pump had too low an output for the sys-

# XRT 272™

## ARRIVES TO CONQUER ALL TERRAINS...

Club Car®

The utility vehicle designed specially for Xtremely Rough Terrain.



- 11-horsepower, 351 cc engine
- Four-wheel hydraulic brakes
- Independent front suspension coupled with semi-independent rear suspension
- Aluminium I-beam construction and aluminium cargo box

**Call the Sales Hotline: 01235 537575**

Club Car UK Plc Dunmore Court, Wootton Road, Abingdon Oxfordshire OX13 6BH

#### NEW CLUB CAR ALL-TERRAIN VEHICLE FEATURES DIFF-LOCK TRACTION

Club Car has launched the new XRT 272 rough terrain vehicle for construction, greenkeeping and general maintenance applications on golf courses. Based on extensive input from golf industry customers, the versatile XRT 272 model features a strong, durable design combining excellent load-pulling and hill climbing power with superior stopping ability, enhanced stability and increased traction via a differential lock system.

The XRT 272 model is a multi-purpose utility vehicle - it can easily be transformed from construction to maintenance mode simply by replacing its heavy-duty, all-terrain, four-ply rated tyres with turf tyres for working on grass. The XRT 272 vehicle is also fun to drive, providing versatile and tangible proof that utility vehicles can be tough and attractive at the same time. Users can customise the XRT 272 with accessories such as a light bar with halogen worklights; a 680 kg (1500lb) rated, remotely-operated front or rear-mounted winch; a hydraulic dump or electric lift bed; side step bars; a heavy-duty brush guard; a bed liner; a canopy top and windshield and beverage holders.

While competitive products have been engineered for other applications and then adapted for golf course use, the CLUB CAR XRT 272 vehicle was designed specifically for golf course professionals. "During golf course construction, tough ground conditions are often encountered. We have engineered a smarter, stronger, more versatile machine - one with power, stability, traction and stopping power to conquer trackless terrain and work harder in the field, where it counts," said Jerry Hanss, Regional Manager for Club Car Europe. By combining these advanced features, Club Car has created a utility vehicle that is without doubt the best in its class."



tem to work as a fair reason for not fitting an induction system - if this was the case it would suggest that the manufacturer had not met essential health and safety requirement 1.1.2 that relates to integrated design.

Overall HSE considers that in all but the most exceptional circumstances induction systems should be a standard fitting.

From a wear point of view I would also recommend a venturi type unit which puts the chemical into the tank without being taken through the pump in neat concentration, thus relieving clogging and wear on valves. This will not allow any neat chemical to be accidentally left in either the control or the pump. Concentrated chemical is thus never pressured over 0.5 bar.

#### **Clean Water Containers**

BS EN 907 is clear that all sprayers shall be equipped with a clean water tank with a minimum capacity of 15 litres. There is no exemption for small sprayers. HSE therefore considers that a clean water supply should be a standard feature of all sprayers.

#### **Protective Clothing Lockers**

BS EN 907 does not cover these

nor, specifically, does the Supply of Machinery (Safety) Regulations. However, it is still the view of the HSE that to meet the duties imposed by Section 6 of the Health and Safety at Work Act 1974, they are an item which should be provided with any sprayer to help avoid the contamination which will be inevitable if contaminated gloves or clothing have to be kept in the cab.

#### **Hose Pipe Holder**

This holds the hose a safe distance from the contaminated tank to prevent suck back into the mains water supply but also stops the next user of the hose from being contaminated.

I would like to see the following safety features added to the above list.

#### **Multi Turret Nozzles**

These cut down on nozzle change contamination. They encourage operators to select the correct size of nozzle tip to give the correct droplet size on the spray target, thus cutting down drift and using expensive chemicals to full effect environmentally. It can now be considered an offence to the environment if spray drift is

deposited other than on target.

Swath marking with foam marker and spray dyes also increases the accuracy of chemical application by minimising overlap and overdosing.

Low drift nozzles are very good and I hope to do an article very shortly on these.

Some of this article will seem very basic to trained end users but there are hundreds, probably thousands of sprayers in golf/amenity use that do not come close to these safety specifications from the HSE let alone the new legislation from the Environmental Protection Agency. Most sprayers are very poorly looked after but expected to be ready for use at any time and in an emergency.

I hope I've helped and look forward to seeing all of you at shows and on my travels. Have a good year.



Bill Oliver works as Technical Sales for Gambettibarre (UK) Ltd who also supply the Rogers Windfoil Booms which fit on any sprayer.