

THE UNWELCOME BREAK

by JIM ARTHUR

overcomes the surface tension of the strata above). In this case, however, we are upside down! The largest particles are on the surface and there is no attraction for water or roots to penetrate inhospitable compacted lower levels. Roots cease, or move laterally, there is no anchoring or stability and a clear root break shows. Such root breaks persist for many seasons. Intensive deep aeration may help, but is often counter-productive because the turf is so weakly anchored that it tears up. Anyone who has Vertidrain greens with a root break will have all too lasting memories of the disturbance, especially if there has been some slitting beforehand. But one has to be cruel to be kind and persist, which means telling one's members well in advance what to expect – and the reasons why they should be understanding.

As with so many problems in greenkeeping, this is self-inflicted – and the tragedy is that those responsible for the disaster (be they ignorant advisers, inexperienced greenkeepers or interfering green committee men) will have moved on – often to repeat their heresies on other courses.

In severe cases, when frequent deep aeration would leave the greens looking like a battlefield, it may be necessary to lift the turf, (if it will lift mechanically, which is not always the case), cultivate the turf bed (taking the opportunity to ameliorate a structure-less soil with humus worked intimately and deeply into the root zone) and then after proper preparation of a turf bed replace the turf (or improved quality turf).

If your greens have been mismanaged by predecessors, e.g. by heavy sanding, then it is not always wise to switch to an organic rich top dressing, as in a year or so the buried sand layers will cause a break.

In the case of new greens it is sensible to match the top dressing with the root zone 'analysis'. If you have been silly enough or unlucky enough to have taken over American type pure sand greens, then you must stick to pure sand of the same physical analysis – and this means that such greens have limited powers of retention of water and nutrients and if not 'fed and watered' regularly and intensively, they will die. If you feed, you will end up with *Poa annua*. The moral is don't start with the wrong foundations – wrong because this type of green is designed for conditions (e.g. desert) which do not occur in temperate Europe.

Equally, if you have old greens built without stone carpets on local clay soils (and many built in the sixties were) then clearly you do not top dress with clay (or sand) but build up as quickly as you can with a root zone of good sandy humus rich top dressing and aid drainage by intensive, deep frequent aeration.

Another cause for root break on new greens is where a totally unsuit-

able, poor draining, de-structured soil has been used as a root zone; inhibiting anything other than shallow rooting. Then, if in an attempt to improve levels or thicken up the grass cover, generous top dressings are applied; the better the quality of the top dressing in relation to the root zone, the worse the problem. Then the turf lives in that surface zone, there being no inducement for the roots to penetrate lower into 'hostile' country and the surface layers will lift when aerated.

Root breaks are much easier to avoid than to cure. The secret is to catch them early and aerate like mad. If you find the hole cut plug starts to break off in clearly defined layers – no roots to hold them together – then get cracking. If you can hold a full depth plug by the turf and it holds together, with roots coming out of the bottom of the plug, then you will never suffer from root breaks.

Looking at the profiles of hole cuts can be very revealing. It is like the annular rings on a tree trunk. Look, 20 years ago, there is a thick black band when old so and so was 'peat mad'. There, even longer ago, is the time when we were using the wrong sand – or charcoal. One can even date the 'rings' and say with confidence that 30 years ago 'someone' was doing the wrong things but that 'someone' is probably not any longer capable of being got at! Ah well, such is life. But beware of being the same miscreant being criticised in 30 years time! Follow sound greenkeeping practices and do not chop and change and the grass will thank you by developing a deep, uniform root system, with no trace of root-breaks and all their attendant problems!

■ Especially written by agronomist Jim Arthur, this article appears in response to specific requests received from greenkeepers, in particular those who have experienced root break problems of some magnitude on new course constructions where unsuitable root zone materials have been employed.

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THE WINNING COMBINATION



Professional
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DAVID WHITE reports on the BIGGA-ICI Professional Products National Golf Tournament

I'm convinced of it, the spirit of Old Tom Morris must have settled on Graham Wood's shoulder throughout his and his team's many days of skillful preparation, leading up to the staging of the BIGGA-ICI Professional Products National Golf Tournament at Dunbar Old Links last month. Further, I'm sure also that Old Tom conveyed a ghostly message of encouragement to Dunbar's wizard of the fairways, heartened to see how Graham set proud the old master's creation, conjuring conditions for competitive battle that were, certainly to this links addict, pure perfection.

Links addiction is classified contagious, a disease for which there is no known cure, though strangely enough it is not something contracted by every golfer and some take precautionary steps to ensure immunity by playing most of their golf on lush, parkland tracks – thus when they come to play on courses over which the game itself evolved some five centuries ago – like Dunbar – they find the sandy soil which serves to create firm and often very speedy playing surfaces far too difficult, missing the ball control they mistakenly thought was mastered – on softer, and of course more forgiving, greens.

I make this point simply to put the results of this exquisitely sited tournament into perspective, for some greenkeepers were able to conquer Dunbar's conditions, others were



Trophy winners at Dunbar 1993

bewitched, bothered and bewildered. It became clear to this observer that whilst golf is not always meant to be a fair game, some were of the opinion that this links golf, breezy Dunbar style, was altogether too unkind, finding the examination paper beyond their game and leading to three days of head shaking and general disbelief at the irony of it all.

It is thus to the credit of those who had the 'measure' and made the grade – the shot makers, the bump and run merchants, the 'far and sure' strikers, and of course those who found a delicate touch on Dunbar's delicious greens, that the cream rose again to the top, as it always does.

What a great abundance of talent there is in the greenkeeping fraternity these days. From the very beginning of this BIGGA-ICI Championship we were witness to some masterly performances, with the first to break from the pack on this breezy Monday being Alastair Holmes, who for a long time sat content in the

clubhouse with a gross 75, before two other players, David Worsfold and Stuart Greenwood (a links man proper from nearby North Berwick), matched this score to take first and second nett handicap honours. First blood, then, (and the Fisons Bowl) to David Worsfold's nett 70.

On Tuesday the breezes blew once more – not fiercely as they so often do, but enough to ruffle the collar and certainly enough to cause a few blips when selecting the correctly numbered weapon. I'll admit to being unsure what constitutes a breeze, or when a breeze becomes a wind, thus I'm betting there will be some who dispute my classification – no matter, wind or no wind, Dunbar links was the undisputed master!

Breeze or not, this day it was David Spurdon's turn to shine with a nifty 72 to win the Standard Golf Trophy, and for Mike Hughes, the Midlands Mashie Manipulator, in typical good form to register 73 to tie with Graeme

CONCENTRATION

The concentration and Professional Products



George Paterson demonstrates the concentration needed to win the ICI Professional Products trophy and best nett score over 54 holes.
Right, David Worsfold collects the Toro Trophy from BIGGA chairman John Crawford



➔ Ferguson; Mike eventually taking honours by virtue of a better inward nine. Though Mike's 36 hole total of 146 tied with Michael Finney, his lower second round was good enough for him also to take the coveted David Royle Memorial Trophy, with the low gross Toro Trophy going to first day victor, David Worsfold, and the Junior category falling to a most consistent player, Colin Garnett, who also subsequently won the overall Junior category. Lest we forget, George Brown played and scored beautifully also, whilst wishing he'd been born six days earlier – he was to be 55 on the 9th – and thus he was beaten by father time and a slightly more mature gentleman, Gordon Payne, whose 160 won the over fifty-five's... is it a sign of my own advancing years that all of 'em appear mere kids?

If all wagers are not settled on the links, there's always the practice putting green on which to finalise matters – for the Vitax Putting Trophy. On this occasion it was the 'wee bantam', Barry Holt, who cruised round in low numbers, and though he may line up the 'wrong' way, he certainly proved that he can nail 'em!

Tuesday evening of ICI Tournament week means banquet time. We've found some wonderful friends in ICI Professional Products, together with the tournament co-sponsors and ICI's business associates, and they never fail to make us proud to be part of their celebratory team, as they also are an essential part of ours. It is customary for ICI's David Siddon to make a presentation, and if ever a man deserved the praise (and the award) David bestowed upon him, that man was Graham Wood. David also delivered us a few well-chosen words spiced with a smidgen of propaganda and jokes that are show stoppers – telling us what we know already but love to hear – they're the greatest of guys. This year we were entertained by the obligatory comic, also a bonus in the swirl of pipes, Kirsty Greenwood's lovely highland dancing, and a Sept of the Gunn Clan, Cecil George, stirring us with his magnificent Burn's 'Address to the Haggis' – I swear it, we could all but taste the heather.

Having written earlier that cream rises, it was the final day that saw the ascendancy of George Paterson, who took just 69 strikes (the

lowest gross round recorded) to clinch a bevy of awards. First he took the William Hargreaves Trophy for low nett (67), plus the ICI Professional Products Trophy for low nett (221) over 54 holes, although it was a shame that the three-way tie left Mike Sheehan and Michael Finney (both also on 221) pretty well out in the cold, after the card playoff. The Netlon Trophy (54 hole low gross) was presented to Malcolm Latham for his exceedingly worthy efforts over the 54 holes.

To clinch the supremacy of Scottish talent, George Paterson, Alick Mackay and Paul Murphy waltzed away with what is always a mostly highly prized trophy – the Jubilee Cup – for team honours and for the honour of the North of Scotland.

Let us give thanks then to Dunbar Golf Club and its most talented team, also to ICI Professional Products and their many colleagues, who contributed so unstintingly. We learned from David Siddon that this classic event moves to the West Country in 1994 and, no doubt, many of the old and familiar faces will make this, as always, an event not to be missed.

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TOURNAMENT RESULTS

THE FISONS BOWL – Monday:

1st – David Worsfold
75-5=70
2nd – Stuart Greenwood
78-7=71
3rd – Michael Finney
78-7=71
Gross – Alastair Holmes 75
Longest drive – Andy Peel
Nearest the hole – David
Spurden

THE STANDARD GOLF TROPHY

– Tuesday:
1st – David Spurden
82-10=72
2nd – Mike Hughes 78-5=73
3rd – Graeme Ferguson
81-8=73
Low Gross – Barry Holt 78

THE VITAX PUTTING TROPHY

Winner – Barry Holt

THE DAVID ROYLE MEMORIAL
TROPHY (nett 36 holes)
Senior 0-14
1st – Mike Hughes 146
2nd – Michael Finney 146

THE PATTISON TROPHY
(nett 36 holes)
Junior 15-28
1st Colin Garnett 154
2nd Andrew Smith 156

THE TORO TROPHY

(low gross 36 holes)
David Worsfold 158

OVER 55's (36 holes)
Gordon Payne 160

THE ICI PROFESSIONAL
PRODUCTS TROPHY
(combined nett 54 holes)
Winner – George Paterson
221

SENIOR 0-14
1st – Mike Sheehan 221
2nd – Michael Finney 221
3rd – Barry Holt – 223

JUNIOR 15-28
1st Colin Garnett 234
2nd Andrew Smith 239
3rd – Mike Bryant 241

THE WILLIAM HARGREAVES
TROPHY (Final day)
1st – George Paterson
69-2=67
2nd – Barry Holt 76-4=72
3rd Stephen Pope 82-10=72
Gross – Barry Holt 76
Longest Drive – Malcolm
Latham

NEAREST THE PIN

(Awarded by Jim Fry)
Stephen Goode

THE NETLON TROPHY
(54 hole gross)
1st – Malcolm Latham 234
2nd – Barry Holt 235

THE JUBILEE TEAM TROPHY
Alick Mackay, George
Paterson and Paul Murphy
(North of Scotland)



Clockwise: Cecil George's 'ode to the haggis'; Jubilee Team winners, Mike Hughes in full flight; and ICI Professional Products' David Siddon, left, presenting a tankard to Dunbar head greenkeeper Graham Wood



AT EASE WITH WINTER TEES

MICHAEL BIRD learns the secrets of Gordon Child's latest success

Picturesque Churston golf course, overlooking Torbay in south Devon, has doubled in size during the past year – without taking on any extra land. The secret behind this amazing feat lies in the design and laying out of an 18 hole winter course on Churston's 140 rolling acres by head greenkeeper, Gordon Child.

Retaining all the existing greens, Gordon has established 18 new tees for both men and ladies, all strategically placed so that players approach and leave the winter tees on a different route from those used for summer play. The result has been so successful that there are now 18 measured holes at Churston utilised for winter golf, meriting their own card and providing golfers with a new challenge which has been met with virtually universal approval.

"Wear, tear and compaction were causing increasing problems between green and tee and on the pathways from the existing tees to the fairways," explained Gordon. "Although we had started using winter tees on a few holes several years ago, the recent dry summers pushed us into taking a close look

at the whole course to see if we could reduce the overall level and rate of wear throughout the year." With active encouragement from Andrew Chaundy, the manager of Churston Golf Club, an active programme of doubling the number of tee positions was started on the course in 1991. The objective from the start was to get 'traffic' moving along a different route for six months of the year, providing the green staff with more time, space and safety in which to renovate and repair worn and compacted turf.

"Although the course is quite fertile on the down-slopes and in hollows, there are places where the underlying sandstone is close to the surface with very little soil cover," commented Gordon. "These areas simply never recovered and the erosion had begun to spread onto adjacent turf as players looked to avoid the stone and rock with their spikes and trollies. In winter, the same happened on the lower-lying clay soils, which puddled up quickly when autumn rains fell on turf where grass cover was thin or non-existent due to wear."

The first step in planning the 18 winter holes involved walking the course to ascertain and note where the ground damage was greatest. As on many courses, wear and compaction was found to be most pronounced on the approaches to tees from the preceding green, on the waiting area beside the tees and on the turf between the tee and the fairway landing zone. However, altering the pattern and density of such wear involved more than simply building a new tee alongside an existing one or mowing an area of the fairway ahead of the normal tee. In all cases, Gordon wanted to re-route the traffic so that it approached and left the new winter tees in a completely different direction from those used during the summer. Yet this had to be achieved while still allowing a clear, safe and challenging shot towards the next green. The bonus of this scheme was that it also produced new ball landing zones on the fairways, cutting the level of compaction in any one area and giving the green staff greater time to repair divots and treat turf wear over the first 150

to 200 yards of each par four and par five hole. "In a number of cases, we built a temporary tee and let the golfers try out and comment on the new position before building the proper winter tee," commented Gordon. "All the tee building has been accompanied by a fair amount of pathway construction to guide the players along the desired route, helped by white lines and decorative hoops in the ground."

One other measure taken by Gordon to reduce turf wear and tear is to make the fairways a little narrower on the approaches and at the entrances to the greens: "This has produced more walking on the semi-rough, which is able to absorb wear better than closer mown fairways," he explained. "All in all, our first winter season with 18 new tee positions has proved most successful. However, it'll take a couple of years before everything is in place as there are still several tees to be built or to complete. Despite this, the course has definitely benefited from the measures taken, with improvements noted by both the golfers and green staff."

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Gordon Child's hole-by-hole guide to the new winter tees at Churston Golf Club



A completely new combined summer and winter tee has been built for the ladies on the 12th. The ladies former tee, on the far left, is now used by the men in winter

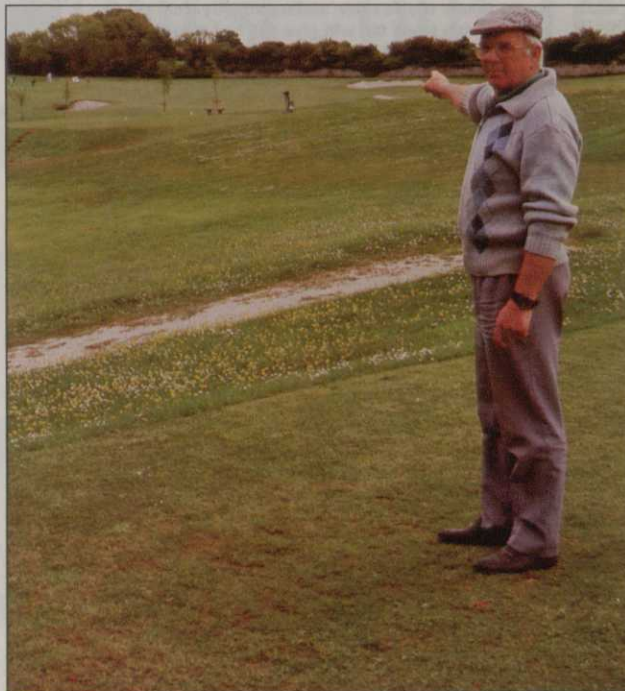
1st Positioned on an area cut out of flat ground some 60 yards forward and to the right of the summer tee. Players now approach the tee from in front of the practice green, keeping traffic away from the clubhouse. At 181 yards instead of 242 yards, this is a very good short winter hole.

2nd This tee is yet to be constructed, winter play having been from a mat 30 yards in front of the existing tee. A good pathway has meant that players stay off the turf from green to tee in winter and summer.

3rd One of the first new winter tees built, positioned forward and to the right of the summer tee. Players now leave the green to the side rather than at the front. The new tee position has actually improved the hole due to the better line to the fairway.

4th Constructed on spare ground adjacent and slightly forward of the existing tee, it is also used by the ladies in summer. Has shortened the men's hole by 20 yards with minimal change to the view from tee to green.

5th Moved forward by 100 yards, turning the hole from a par 5 into a par 4. The new tee position is approached along a signed pathway from the



Gordon Child, standing on the new winter tee for the 14th hole, points back 80 yards to the summer tee

opposite side of the 4th green to the normal summer pathway.

6th Positioned to the left and about 25 yards behind the summer tee, turning the hole from a par 4 to a par 5. A signed pathway has been laid from the front of the green to the far side of the new tee, ensuring that players and trollies approach and leave the tee along a fixed route.

7th An existing small tee ahead of the original is

to be extended on this dog leg par 4, reducing the hole's length by 35 yards. A white line on the turf helps keep trollies away from the front of the green, where turf wear has been highest.

8th This is an unusual par 3 hole in that a completely new summer tee has been built to the rear of the original, which has become the winter tee, thereby extending the hole by 12 yards during the summer. Players now

leave the green in different directions during the summer and winter months.

9th A new winter tee has been constructed 30 yards ahead of the summer tee, approached by a new pathway from the green. Having seen the tee, the ladies requested that it be adopted for their use all year round due to the improved driving position, removing the need to hit the ball over dense gorse.

10th Two winter tee positions have been tried on this par 4 hole, giving completely different shots to the green. The first, just ahead of the summer tee, retains the par 4 measure; the second, to the rear of the 9th green, makes the hole a challenging par 3 and has proved popular with players.

11th This was an interesting exercise. The existing men's tee was extended sideways and a new ladies tee built ahead of it for summer use. The original ladies summer tee was then joined by a second new tee to make two new winter tees – one for men and one for ladies. Again, both sets of tees are approached from different directions from the preceding green.

12th A completely new summer/winter tee was built for the ladies offset to the left and ahead of the original,

AT EASE WITH WINTER TEES

with the ladies old summer tee becoming the new winter tee for men. The result has reduced the driving distance onto the uphill fairway for the ladies, thereby improving the hole.

13th Again, a completely new forward tee has been built for men's winter use with the summer tee extended to spread the wear. Traffic approaches and leaves the two sets of tees on different paths.

14th A new winter tee has been constructed well forward and to the right of the original, reducing the hole from a 508 yard par 5 to a 438 yard par 4. The two tees are approached by two separate gravel paths from the 13th green.

15th A new medal tee has been built for summer use with the old medal tee becoming the normal summer tee and the old summer tee switching to winter use, giving different approaches during winter and summer. The ladies tees have not changed.

16th This is still under deliberation. At present, an area of grass has been cut to the left of the summer tee with a further

two possible teeing areas to be assessed next winter.

17th The existing tees were removed on this superb par 3, and one huge tee constructed in its place for the drive across a valley. The single tee provides sufficient room for moving the tee boxes to a host of new positions during the year with wear from tee to green minimised by a permanent gravel pathway.

18th Here, lack of space dictated that the new winter tee be cut out of the fairway ahead of the existing tee, reducing the hole's length by just 23 yards, while providing a new landing area for drives from the tee. As on other holes, this has helped to spread fairway wear and tear, while enabling divot holes to be repaired successfully.

Summer course: 5981 yards, par 70. Four par 3's, 12 par 4's, two par 5's.

Winter course: 5574 yards, par 69. Four par 3's, 13 par 4's, one par 5.



Right: A new tee position and a pathway from tee to green on the short 8th will give the turf time to recover during the summer months.

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Hydra

HUGH TILLEY on how to get the best from your system

Hydraulics are a very flexible means of transmitting power and one which is being used increasingly on golf course machinery.

From the original concept by Harry Ferguson, hydraulics have developed from tractor implement lift to driving and controlling all manner of machinery, and these uses are constantly being expanded and refined. In particular a growing number of machines, such as self-propelled mowers, have hydrostatic drive for its flexibility and manoeuvrability, however the advantages of this drive are gained with a loss of efficiency and 'feel,' though this is seldom a problem unless engine power and tractive power are critical – as they could be on slopes, towing trailers or ground driven (trailed) gang mowers. For most tractor users the conventional clutch and gearbox is still the most efficient means of power transmission, and this only needs serious questioning if the main use is for high manoeuvrability work such as loader work – where the torque converter is well proven. For mowers and (perhaps) turf maintenance vehicles, hydrostatic drive is normally ideal, although not all operators like it because it is not 'positive.'

Many users remain woefully ignorant about how to get the best from their systems, nor do machinery suppliers always know the best ways of fitting and operating their machines on all tractors. This ignorance is liable to mean below optimum output, inefficient operation and may even lead to injury or damage to man or machine, nor should the maintenance requirements be ignored.

To many greenkeepers 'maintenance' means simply checking the oil level, this is a minimum requirement and regular inspections should be made of pipes and fittings to ensure that they are in good order. A common problem is chafing damage because fastenings or protective covers have been lost, – hot oil at well over 2500 psi is a very potent force. With hydraulics, cleanliness is certainly next to godliness and those who ignore it risk expensive problems for the future. In daily terms 'clean' means not adding oil from a can or jug which is covered in dust, dirt or water, replacing dust covers and wiping hose connectors clean

before connecting them. Damage caused by the ingress of dirt and water can be very expensive – even if it does not stop the machine it is likely to cause a dramatic loss of efficiency. Most manufacturers fit an efficient filtration system, but don't overload it and always service (that normally means *replace*) the filter as per the manual. Diagnosis and repair beyond simple replacement usually means calling in a specialist dealer.

Most tractors use a multi-purpose oil drawn from the back axle, whereas mowers and 'closed' hydraulic systems, including some tractor steering systems, normally use special hydraulic grade oil, thus it is usually necessary to keep more than one grade of oil in the shed, – ensure that everyone knows which is for what! Change intervals for hydraulic oils are infrequent – thus they are often forgotten. Hydraulic oil is not good for turf, leaks are often caused by damaged washers or 'O' rings – these are cheap and mostly easy to replace.

Tractor Hydraulic Systems

To many greenkeepers operating an implement on the rear linkage is simply a matter of attaching it and operating the lever. However most tractors over 45hp provide two control modes – 'position' and 'draft.' With position control the links are positioned in direct relationship to the position of the lever in a quadrant, while draft control is designed for ploughing or cultivating and thus is seldom required on the golf course – though in theory they could work with slitters. Older David Brown and Massey Ferguson tractors have another mode (TCU or pressure control) which gives a 'semi-float' option providing a constant but adjustable lift force – this can be very useful in suitable circumstances. Newer tractors may have a 'mix' facility to allow position and draft modes to be intermixed, – for golf course work set it to 'position' and forget it – unless operating a plough or cultivator! Any tractor with a position quadrant should have adjustable 'stops' which can be set to limit or lock the lever – they are useful and a safety measure so keep them functional. Electronic control is coming to progressively smaller tractors – this gives fingertip control

with a dial to set height and a simple switch for up and down – it is very positive, accurate, simple and strongly to be recommended.

Compact tractors may have a similar position control system with the lever operating in a quadrant, but some have a simple spool valve, which means you have to hold the lever in lift or lower position until the links have reached the height required, thus chains or stays are necessary to ensure that the implement cannot be dropped too low (or raised too high) by accident. Draft control may be factory fitted or available as an option should it be needed.

Spool valves

Today's tractor is expected to operate or control a multitude of machines using its external hydraulics, these include simply tipping a trailer, driving the spreading mechanism of a topdresser or operating gang mowers. These external services are normally controlled from a spool valve or valves with quick release couplings fitted at the back of the tractor, although it is often possible to plumb into the lift linkage system, – with older tractors this may be the only way to do it.

The spool valve is simply a device to control oil flow, most tractors have at least one as standard with the option to fit more in a bank. Quick release (push fit) couplings have become standard, these are faster, cleaner and safer than screw type (Dowty) connectors. Modern practice in fitting should ensure that they pull out easily and safely if the operator drives off without disconnecting – as is inevitable sooner or later.

Common spool valves are anything but common and they come with a bewildering variety of features such as float position, kick-out, motor detent and zero leak – or without if you don't specify them. Most valves can be used for both single and double acting rams (a double acting ram is powered both ways – out and in), however it should be possible to lock them so that they only work one way, this means that the single hydraulic pipe has to be connected to the correct coupling. The 'float' ability is useful for a loader, however it is also useful for any other situation where the ram/s