



Think Ergonomically

Manufacturers have really started to take operator comfort seriously. Improved seats, reduced noise levels, lower vibration and even power steering combine to make long hours on repetitive jobs less tiring. Often overlooked, however, are advances made in ergonomics. The way controls are positioned can make a huge difference to how any item of equipment feels to operate. James de Havilland reports.

Nostalgia has a funny habit of coming with a box of ready to wear rose tinted spectacles. How often have you heard someone describe a given tractor or mower as the best machine a company has ever made? Spend a few hours behind the wheel of one of these almost mythical bits of kit today and the chances are the experience will initially seem somewhat less than expected. Surely the seat was not really that hard and the steering so heavy? Was it really necessary to lift your foot up that high to operate the clutch?

Machinery evolution is certainly a lot faster than in the natural World and it is this relentless pace that has seen each new generation improve upon what went before. Although the differences between each new model generation can sometimes be slight, those upgrading from older tractors to a new one often notice just how much the designs have evolved.

All pretty obvious stuff so far. Less clear is the subtle differences made during a machine's production life. Although manufacturers are often 'guilty' of calling something new when in fact all that is changed are the model's numbers to accommodate a new Tier II engine, some more subtle developments go unnoticed simply because listing the detail changes takes too much effort. A good example is the move from a manual to electronically controlled PTO.

It's a small change such as this that can make all the difference. So when it next comes to looking at a new tractor, do not rule out a given model because it essentially seems pretty much the same as the 10 year old example you are seeking to replace. The chances are the odd ergonomic nip and tuck will make the latest version more pleasant to operate.



Massey Ferguson is a name many will associate with yellow MF135 based highway tractors, a good number of these once ubiquitous tractors being pressed into service with a set of gangs for fairway mowing. The company now offers a broad range of kit targeting the ride-on mowing market, with a comprehensive range of small tractors to suit golf users. Although its ride-on mowers includes models manufactured by US based MTD, Massey is a stickler for good operator comfort, with an eye for ergonomic detailing. Take this hydrostatic control pedal on its MF 22-28GC. A long pedal like this allows heel and toe operation, a design some prefer to side by side pedals. Again, details like this are easily overlooked when buying



Seating remains something of a hot topic among operators; manufacturers sometimes offer a choice of seat but not necessarily with attractive enough pricing to tempt buyers to select the 'deluxe' option. Ransomes began to offer an air suspended seat as an option on its Highway models early this year. The value of this type of springing is not so much in added comfort but in the way the suspension automatically compensates for different operator weights. This is a real bonus on machines that may be operated by several different people. Fairway mowers will not really benefit from advanced suspension systems, but a seat that offers a good range of adjustment and support for the lower back is important. Larger tractors are offered with heated seats, an option that many would appreciate when mowing on a chilly morning

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Golf courses were early adopters of compact tractors, but over the years the size of machine has started to creep up again. From a manufacturer's standpoint, a larger tractor is easier to make operator friendly, there being more space to fit a reasonably roomy cab. The bigger the cab, the easier to place controls ergonomically. The pictured John Deere 4520 is a good example of modern tractor design, the cab having fully glazed doors with good visibility to the sides. Although an older generation tractor will probably do just as much work in the hands of the same operator, the more current design should be quieter and easier to use. This is a definite plus when it comes to getting more done in a day. Of equal importance, good kit helps to attract and, of equal importance, retain quality personnel



What on earth does a telescopic handler have to do with the ergonomics of equipment used on a golf course? Frankly, not a great deal. But the reason why this control layout of the current JCB 531 loader is interesting is that shows how this British built machine combines good ergonomics with some style. Operators feel they are operating something a bit special, the chrome rimmed dials with their white faces lending an air of GTI to machine destined to handle muck and big bales. Although it is all too easy to get sidetracked by added 'glitz', good looks and good ergonomics can go hand in hand. A JCB 531 is an absolute doddle to operate



A modern fairway mower, such as the Toro Reelmaster 540, is a product of evolution. Go back ten years to sit on this model's predecessor, and the Toro family genes will show the mowers have much in common. But if it were possible to work the two machines side by side, the new machine will be quieter, smoother, easier to operate and more comfortable. The arm rest controls are now simpler and easier to operate. An experienced operator would get used to this new machine within a morning. Older machines would take longer to really get to grips with

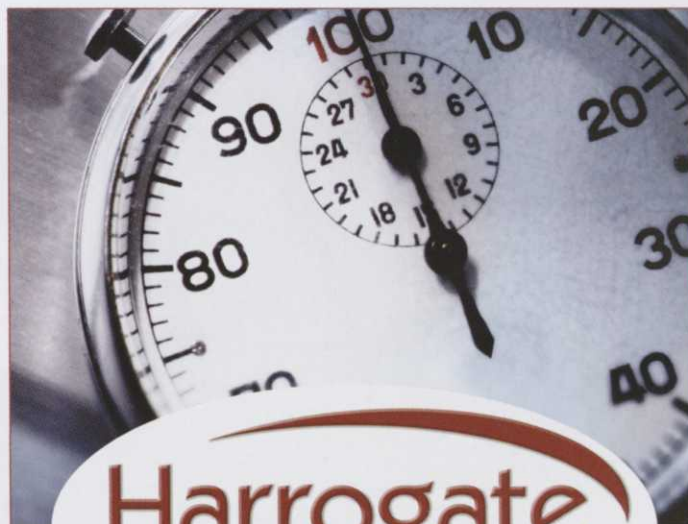


Kubota knows a thing or two about small tractor design. Although some would say certain models seem have 'old fashioned' looking controls, the company is one that gently improves its ergonomics, a fact that many operators of a fleet of machines appreciate. So although the simple levers of this STV40 model may look pretty ordinary they actually operate with 'well oiled' precision. Why change to a flashy design when the existing system is liked by operators? Take a closer look and note the PTO is engaged electronically. It is really important to try a given tractor model before assuming a flashier looking alternative is easier to operate

Good ergonomics encompass all aspects of a tractors control and operating environment. A good test is to see how quickly all the main controls identify themselves. Modern tractors should make it easy for an experienced operator to just jump on the machine and operate it without resorting to the instruction manual. That is not to say the latter can be ignored, but more that operating a forward reverse shuttle or engaging the PTO should be obvious. Notice how the view from this John Deere cab extends down to floor level. Good visibility is a critical point, and important as more kit will come with cabs in the future



Hydrostatic drive has become the default transmission choice on many compact tractors, this allowing the designers to do away with floor mounted gear levers. A small detail, maybe, but a clear floor really does make working a small tractor more comfortable. Of equal importance tractors, such as the New Holland TZ21 pictured, benefit from much improved ergonomics. The levers to the side of the operator are laid out so they fall 'readily to hand'. Even the shape of the levers are hand friendly, the simple round knob on the end of a shaft still having its place but typically on infrequently used controls



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