



## SAFE CUTTING OF SLOPES AND BANKS ON THE GOLF COURSE

David Weston reports on his procedure to safely cut the slopes and banks at the golf course.

Secretary At Work: January 2005 *(reviewed January 2012)*

The exercise of ensuring that your Club has carried out Risk Assessments for the safe operation of machines on slopes and banks would appear to be very simple.

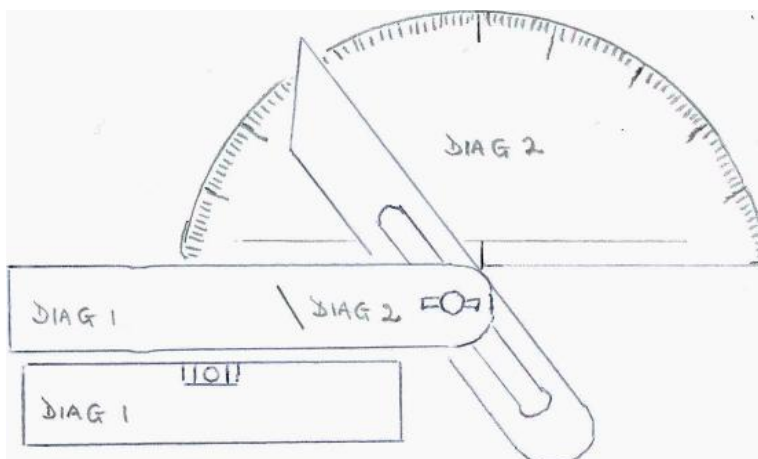
“Measure the slopes and check with the Manufacturers’ information as to whether the machine is safe to operate at that angle.”

Part one of this exercise was relatively simple to complete on my home course. I listed all the relatively severe slopes and banks that need to be cut and measured them in relation to the horizontal. I then checked with the staff as to which machines were used to cut them. I listed all the areas I wished to measure in table form with a space for the slope angle for each to be added, leaving some spaces for those I’d forgotten or extras I wished to include. The exercise to assess the whole of the course was completed in two and a half hours.

My results were as follows:

- ⌘ Greens: only three greens have a noticeable slope (4 to 7 degrees) (Toro GM5)
- ⌘ Green Surrounds/Banks: (10 to 27 degrees with one short but severe bank at 37 degrees) (Jacobsen- Triking)
- ⌘ Tee Banks: Those that are cut, range from 9 to 27 degrees. (4-wheel rotary Victor and Flymo) The banks of the tee with a 37 degree slope have been planted out with shrubs to avoid the necessity of regular maintenance.
- ⌘ Fairways: There are two short but severe slopes on the fairways measured at 17 and 25 degrees. (Toro 5300)
- ⌘ Other rough banks including the banks of the stream: 24, 28, 31, and the stream 45 to 60 degrees.
- ⌘ (4-wheel rotary Victor and Flymo)
- ⌘ Rough/Semi-rough and between tree areas: No severe slopes (Tractor & Gangs/Offset Rotary)

My measuring device consisted of a sliding bevel from the local “cheap” shop and a torpedo spirit level. The bevel nut was tightened fairly tight and the handle placed on top of the spirit level. With the spirit level horizontal, the metal bevel was adjusted to coincide with the slope. The bevel slope was then placed through the centre of a protractor with the handle parallel to the horizontal, and the angle measured off (see diagrams 1 and 2).



The next task “check the manufacturer’s recommendations” proved to be frustratingly difficult. The Triking was the only machine for which any information was readily available. The “slope angle” of 18.5 degrees was written on a panel on the machine itself. The specifications of a brand new, recently delivered, Toro 228 rotary cutter, not specifically a banks machine, were also readily available: 20 degrees across, 30 degrees up and down, maximum at 50percent 10/15 degrees. Perusal of the operating manuals for the other machines on site revealed no further information.

I was now intrigued as to why the information for the two machines differed, what it meant, and how was it measured? Were manufacturers obliged to test and publish the results of those tests to prospective purchasers?

Mr Ivan Millar of John Deere was particularly accommodating. He explained that there was a worldwide standard ISO 5395, a European standard EN 836 and ANSI standards B71.1 and B71.4 to which manufacturers had to conform. These standards had been introduced between 1996 and 1998. His firm’s machines are tested on a static bed with a 75 Kg or 90Kg weight to simulate the operator. The bed is tilted side to side (across) and the angle at which one wheel lifts is noted. The bed is then tilted fore and aft (up and down) and that angle noted. The safe angle is 50percent of each limit. I now had a full explanation for the details for the new Toro, but was no wiser as the significance of the value for the Triking, nor had I any information for any other machine.

I rang several manufacturers for machine details, but the person “who could help” never seemed to be on site. I tried ringing tractor manufacturers to discover whether they had similar tests for their machines. Yes, they did tests but because of the range of attachments to the front and rear of machines, different types of tyres, and the use of stability weights, they did not make their results available “in case they were misinterpreted”. It was up to the Club to carry out their own Risk Assessments!”

Perhaps the Health and Safety Executive would be able to explain how they expected a Club to competently evaluate such Risk Assessments. No, it was not within their brief, it was the responsibility of the local authority Environmental Health Officer. On asking if I could expect a

consistency of response from officers from different local authorities, the response was “no comment!” When I explained to the switchboard operator why I was asking for the Environmental Health Officer, her initial response was “it’s not the sort of thing he has responsibility for”. It may have been the slight irritation in my voice when I explained that the HSE had referred me to her authority for help and advice, that I was immediately connected to the officer. He was particularly helpful, he had had no direct experience of slopes on golf courses but the agricultural world was likely to be a better reference industry for the type of information I was seeking. He would look into it and let me know. True to his word, within a few days I received several H&S Booklets on “Tractor Driving” and advice on Training Courses for prospective Tractor Drivers through the IOG together with a pamphlet on “Risk Assessments on Golf Courses” under “What equipment is being used? Is it safe to use on the slopes on your course? The advice given “was to measure the slopes and check with the manufacturer as to the safe angle of use for the particular machine”.

After three weeks, with many hours wasted on the phone waiting to be connected to the “right department” the loop was now complete, I was back where I had started and I had achieved nothing.

By law, all fertiliser bags must carry the N P K values of their contents. Why does a similar system not operate for machines? If we employers, and our course managers who advise on the purchase of equipment, are to make informed choices about the health and safe working conditions for our employees, it should be mandatory that all manufacturers make their test results available. Values for noise tests, vibration tests, and slope tests should be printed in all their advertising literature as part of the machine specification. Some details are available in current advertising literature but it would be particularly useful, if all past-machine specifications were published on the firm’s web-sites, allowing easy access to any interested party. Without such details, how can an objective Risk Assessment be undertaken? Any assessments then become subjective.

“The staff have cut those slopes for the past thirty years without accident, therefore it must be safe!”

“We warn them to take extra care if the grass is wet!”

“There are more 4-wheel drive units now in use, with wider wheel bases, so the manufacturers are producing ‘safer’ machines!”

At one club, the operators of two Toro GM5s, one with verti-cut units and the other with cutting units and both with slick tyres, were caught in a thunderstorm and decided to return to the sheds together. They both aqua-planed coming down a fairway on a degree of such a slight slope that I wouldn’t even have bothered to measure it in my survey. One machine came to no harm, but the other ploughed into a tree and was written off. Fortunately, the operator jumped off and was unharmed. How many of us have that particular set of circumstances covered by a written Risk Assessment?

I think we have a responsibility to our profession, to report ALL accidents that have happened on golf courses that did or might have caused injury, to Headquarters. The circumstances, naturally without reference to any club, could then be published annually. It is not a pleasant experience to be investigated following a serious accident on your course. It would have been better if it had never happened, but at least if all your course signage and paper work is in order, you will be secure in the knowledge you have done all you could have to have reduced the risks.

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