PERFORMANCE LOSS

By

The SOL Loss Adjustment Committee (SLAC)

There are four rules, three for determining Loss, one for determining Recovery.

Rule 1.

If, when you execute a manoeuvre, your Performance is already below 93%, you will not incur any further penalty.

Rule 1a. Corollary:

If your Performance is NOT below 93%, you will be hit by the full loss that computes and the Multiplication Rule applies: NEW PERF = OLD PERF X (1 - PERF LOSS).

Rule 2.

If, on executing a manoeuvre, you remain on the same tack (i.e. the TWA sign is NOT reversed), you will incur a penalty based on the number of degrees you turn through, as follows -

PERF LOSS = (PI / 180) X (ANGLE / 25).

Rule 3.

If, on executing a manoeuvre, you change tack (i.e. the TWA sign IS reversed), you will incur a penalty based on your boat's polar speed immediately after the manoeuvre, as follows -

PERF LOSS = SPEED / 200.

Rule 4.

Once a loss has been calculated and applied, it will reduce over time on the basis of a degradation function, which can best be captured by the following two approximations:

RECOVERY TIME ≈ SPEED X LOSS / 5.4

DIST LOST ≈ (SPEED X LOSS)^2 / 10.8

You may find it handy to print off the tables below and fold them back-to-back with a bit of sellotape around the edges to make a cog sheet, so that you don’t have to do the sums every time you need to make a decision.

The upshot of all this is that if a tack, gybe, luff or bear down is likely to bring your performance down below 93% (i.e. to leave you with a loss of more than 7%) once on your new course, you should break a manoeuvre down into two steps (which confusingly may require more than two course changes):

1. One to bring performance down to just below 93%
2. A second to complete the manoeuvre without incurring any further performance loss

To effect A. there are basically two options:

1. Reduce your performance to just below 93% whilst staying on the same tack or gybe.
2. Reduce your performance to just below 93% immediately after you have tacked or gybed.

1. SAME TACK OR GYBE.

If you are at 100% before you execute a very big round up or a bear off, you should turn through 102⁰ and then complete the rest of your turn in the next server jump. Of course, it will be rare indeed that you will want to turn through more than 102⁰, e.g. from 45⁰ to 147⁰ TWA, whilst on the move, so this is an almost trivial scenario.

It is more likely that you will want to turn through more than 102⁰ coming out of a BBQ. Not very likely, but more likely. After a BBQ your course is set at 0⁰ TWA and your performance at 80%. One server jump on and your performance is back to 100%. But to get going again you will have to bear off, so if you want to bear off onto a run, go onto 102⁰ TWA first, and then onto the course you actually need.

Finally if you are at less than 100% performance, say 95% or 96%, and you are contemplating a tack or a gybe onto an angle that will get you below 93% performance, you could change course (once or twice or thrice) to get down just below 93% and then execute the tack or gybe with impunity.

2. CHANGE TACK OR GYBE

If your performance is near enough to 100%, and you are contemplating a tack or a gybe onto an exit boat speed of 14kn, you should break a tack or gybe down into two steps.

Tacking.

Put her head-to-wind first and then put her on the new course. Your tack will be free as the exit boat speed will be zero, and the only penalty that will apply will be a loss of c 3% for a turn of c 45⁰ onto a proper course.

Addendum:

Sailing a maxi or a multi, think of it as giving your foredeck hand an opportunity to make sure the clew doesn’t snag and your pit a chance to winch in rapidly before full load comes on, thus avoiding having to lift the skirt back over the railing afterwards.

Sailing a DN iceyacht, just remember if you simply turn the leading skate abruptly, you will brake her speed but not turn. A turn in steps is the only thing that will work.

Gybing

Gybe onto a super-deep course that gives you slightly more than 14kn of boat speed, and then correct onto the hotter best VMG course.

Addendum:

Sailing big boats, think of your foredeck hand and the look he’d give you if you just crashed from 145⁰ TWA (i.e. c 90⁰ AWA) on port to ditto on starboard, and more importantly wonder will you hold your rudder or simply rotate.

And sailing the DN, again, only a gradual turn will get you round.