The aircraft wing

Let’s imagine that you are an aircraft wing, not any old aircraft wing but a brand-new wing on an Airbus A350-1000; There you are, on the tarmac at Orly prior to a flight to La Réunion.

The aircraft has been cleaned and is sitting empty on the tarmac – no pressure, no stress. The pilot starts up the APU, the cabin crew are onboard, and the engines are starting to turn; maybe a bit of flexion of the wings but nothing to worry about.

The passengers start boarding, luggage is being put into the hold and the engines are turning slightly faster – a bit of vibration in the wing but nothing the wing of an A350- 1000 can’t handle. The aircraft has been towed out of its parking lot and is on the runway ready for take-off, the engines are winding up; the breaks are off and the plane is thundering down the runway ….. V1 …. VR and finally V2, the flaps are angled, and the wheels are off the ground – there is now a fair amount of stress on the wings, the leading edge is under pressure and gravity doesn’t want the plane to stay in the air. But it does!!

As the flight progresses, the plane will go through zones of turbulence, temperature changes and different weather conditions; all of this causes pressure and stress on the wing, but the wing holds up and lands safely at St. Denis in a temperature of 40°C – having left Orly at a wintry -2°C.

Now let’s take a look at us. There we are on our way to work, listening to the radio, maybe a bit apprehensive about the day to come but not under pressure and not feeling particularly stressed.

We park our car, and the first SMS arrives, a colleague needs to see us to discuss a lead-time slippage on an important project – the first pressure & stress.

Walking quickly to the office, the telephone rings and it’s the boss wanting you to go directly to his/her office to discuss an urgent problem – more potential pressure and stress.

And so, the day goes on; difficult meetings, a negotiation with a supplier, a report to finish without all the information available, work to reschedule ……. and just as you are about to go into an end of the day meeting, your spouse rings you asking you to pick up your son at school …….!!

How are you at the end of your day!?!?

Let’s go back to our aircraft wing. So, why doesn’t the aircraft wing give in to all the pressure and stress it is exposed to?

Wings are designed by engineers who understand strengths of materials; they will have chosen highly resistant and “tough” materials (all materials are tough, but some are tougher than others), they have calculated “rupture” stress and have built in margins, they will have strengthened and “toughened” certain parts of the wing, they will have reinforced the parts of the wing more “exposed” to pressure and they will have tested the wings under extreme conditions to insure the overall “wellbeing” of the wing.

Also, the wings are regularly inspected for signs of stress and fatigue, moving parts are oiled and greased and other

parts are cleaned.

There is, obviously, a big difference between an aircraft wing and us.

Aircraft wings are fairly “predictable” in how they will perform under pressure and when they will rupture, we are much less predictable, and no two people will react exactly the same way to pressure.

However, we are similar to an aircraft wing in that we can “toughen” ourselves; engineers will use tempered metals, reinforced hinges, toughened fasteners, etc., i.e. they will work on the different components of the wing. Just as we can work on and develop ourselves; we can develop the control we have over our lives; we can develop our commitment to getting things done, we can develop our capacity to get out of our comfort zone and seek challenges and we can develop the confidence we have in our skills and in ourselves.

In order for us to “survive” the pressure and stress we experience at work; we need to apply the same principles as stress engineers.

Firstly, we need to be in good shape and our “critical components” need to be looked after, eating, drinking, sleeping, etc. We need to be aware of our limits and stay within our margins.

Secondly, we need down-time; we need some “laminar flow” during our turbulent days.

Thirdly we need to look after ourselves, exercising regularly, health checks, etc.

Metal toughness contributes to the absorption of energy and plastic deformation without fracturing

Mental Toughness contributes to positive behaviour, increased performance and better wellbeing.

If you would like to read more about Mental Toughness you can do so here: www.boblarcher.com/category/mental-toughness/

If you would like to evaluate, explore and develop your Mental Toughness, do not hesitate to contact me at boblarcher@boblarcher.com