

# OPSGROUP DANGER CLUB FOR TUG

## What is Danger Club?

CRM and safety stuff has been around for years, and it is definitely really beneficial. But we've heard the usual cases discussed a hundred times over - the Tenerife disasters, the Kegworths (British Midlands)... They are huge learning opportunities, but even after learning from them (at nearly every CRM session) **incidents and accidents are still happening, and we want to ask why?**

We figured looking at the incidents (and non-fatal accidents), where the "stuff" that happened is stuff that could happen to any of us, might be better - to bring it back to our own operations and what we've all seen on the line.

We also figured talking about it together, sharing information and insights, might be **even better!** So, we decided to try and create a space where people can start **talking about the humans in human factors**. After all, we are all just fallible humans figuring out where our faults may lie, so let's talk about them in a normal, useful, *human way*.

## The One we talked about at TUG

A Global 5000 was routing from ZBAA/Beijing to VHHH/Hong Kong in November 2016. **Long story short**, the crew were fatigued, there wasn't good CRM between them, and at the start of the approach they seemed to lose SA and didn't know what height they were actually cleared to.

The Captain disconnected the autopilot, banked to 44° and descended at 3600 fpm down to a height of 390 feet before a "Terrain, Terrain, Pull Up" warning triggered (and thankfully did result in them at least levelling off and continuing to land).

**That was a 'long story, short', and a fair few things happened in between. If you want to read the full report then [you can do so here](#).**

We read it, chatted about it, and came up with a few talking points on the bits that really stood out for us.

## The Talking Points.

### When or how does the non-flying pilot take control?

This is much easier on training flights because both the trainer and trainee are often **sort of expecting it**, or at least prepared for it (and for what comes after). On a line flight, if it reaches this level, the **startle factor is an added “uh oh!”**

### So, what can we do about this?

Having an **‘intervention model’** to help prioritize the right level of intervention can be really beneficial. We’ve used **‘Ask, Suggest, Direct, Take over’**. You might have something different, but the same principle applies. Basically, just have something that helps you decide how critical (time/safety) the situation is, and ‘how much do I need to intervene, right now?’

But taking over - saying “I have control” - is worth a little think too, because when you do this you are **effectively taking the other person out of the flight deck**. So, what that means next - how you rebuild their mental model and bring them (and CRM) back into the flight deck - is as important.

**And what is meant by ‘control’ can be defined differently too.**

### What do we mean by control?

Well, the obvious *“my controls, get your hands off!”* goes without saying. But what about a possibly more simple **‘taking control of the situation?’** If we ‘trace the chain’ back before the flight, there were already warning signs. This included rostering practices that provided the crew with only six hours rest, the willingness of the crew to accept the duty when they were obviously fatigued, and a lack of mitigating factors during the flight itself.

So, the crew and company could have intervened and ‘taken control’ at many points prior to the actual event when **all the holes in the Swiss cheese eventually fell into line**. Remember too that identifying a threat or an error isn’t the end of the story - mitigating or fixing it has to happen as well.

## **And then there is ‘taking control’ of the airplane.**

We phrased this discussion point as **‘How are we assessing the most appropriate level of automation?’**

In the DC (Danger Club) scenario, the captain became confused and **‘cognitively incapacitated’** (a great term, because incapacitation doesn’t always mean totally passed out. Sometimes we might just find our brain goes entirely useless on us and makes terrible (or no) decisions). In this situation, a result of this meant he went from a very high level of automation to none, and subsequently mishandled the aircraft with a very high rate of descent to **390 feet from the ground, 6 nm from the runway.**

**It may not always be the best answer to get rid of the automation entirely.** Taking control of the situation means recognizing what needs fixing and fixing it. However, ‘taking control’ of the airplane means making it do what you need it to, and that might not require full removal of all the automation.

## **How to build a healthy flight deck atmosphere?**

Admitting our limitations is a good starting point. In the DC scenario it seems as though **the PIC wouldn’t admit he was impaired** by fatigue, and didn’t accept the FO’s offer to fly the approach. As one TUG member phrased it – ‘he wouldn’t eat humble pie’. In other words, we can’t always be the superman/woman we’d like to be. It’s a good idea to pre-brief these limitations with the other pilot ahead of time.

If a pilot is losing SA it’s important to bring that pilot back into the fold. A TUG member offered a great suggestion to ensure that the other pilot to remain calm: **ask the other pilot if he/she is, okay,** and if necessary take the controls to allow the other pilot the cognitive space to get back ahead of the airplane.

This comes back again to how best to intervene. If the other pilot is overloaded, just pointing out what they’ve done wrong ain’t always going to help fix it. **What we say, how we say it, and when we say it all matter.**

## CRM training in the corporate environment.

Airlines, which have big training departments and the resources to effect change, are moving towards a new training paradigm - **Competency and Evidence Based Training**. [Here's something we wrote about it earlier.](#)

But some corporate folk have said their exposure to CRM is often limited to post-sim training statements such as: "Great CRM in there". **It's not trained properly.** The challenge with corporate flying is often that it doesn't have the same level of standardization or structure when compared to the airlines, and this in turn creates additional challenges.

So, if you're in a sim and the examiner/trainer says "nice communication!" or "bad decision making", **ask them "Why?"** What was good, what was bad, what do you want to do better next time? How did what you do lead you closer or further from an optimal flying state?

And you can sit with colleagues and start to **play the "What If?" game**: thinking about grey area situations, how you would deal with them, what skills you would use. If you're only getting the basic maneuver revalidation sims and not much else, then having these 'What If?' and 'What would you do if...?' conversations can be really helpful.

## Finally, Fatigue.

This is a big topic, and it ain't something we dug into deeply during the chat. Our main takeaway from the discussion, though, was that it is something we have already experienced and will likely continue to experience. Knowing your own limits is important, recognizing it (and what it might do to your performance and behavior) is very important, and doing something about it is very, very important!

If you can trace that chain back and fix a Swiss cheese hole early (on the ground!), that's great. But if you misjudge it and find yourself looking down a darkening tunnel of hours more flying, thinking "Wow, I'm tired!", then there are two things to remember:

- 1) You're gonna have land it no matter how fatigued you might be
- 2) There are still things you can do now! Here are some possible mitigation strategies: Controlled rest, handing over control, briefing what to expect (so if your brain gives up a little, the other pilot(s) can spot this and help!), reducing or managing your workload by proactively doing things, and of course not making your life harder by taking out automation when it's there to help.

## **Danger Club**

The whole idea Danger Club is to gather these insights, hear what folk have to share, and learn from each other. The plan is to hopefully see less danger across the whole industry, and not just on the flight deck but across all roles and responsibilities.

After all, we're all human.