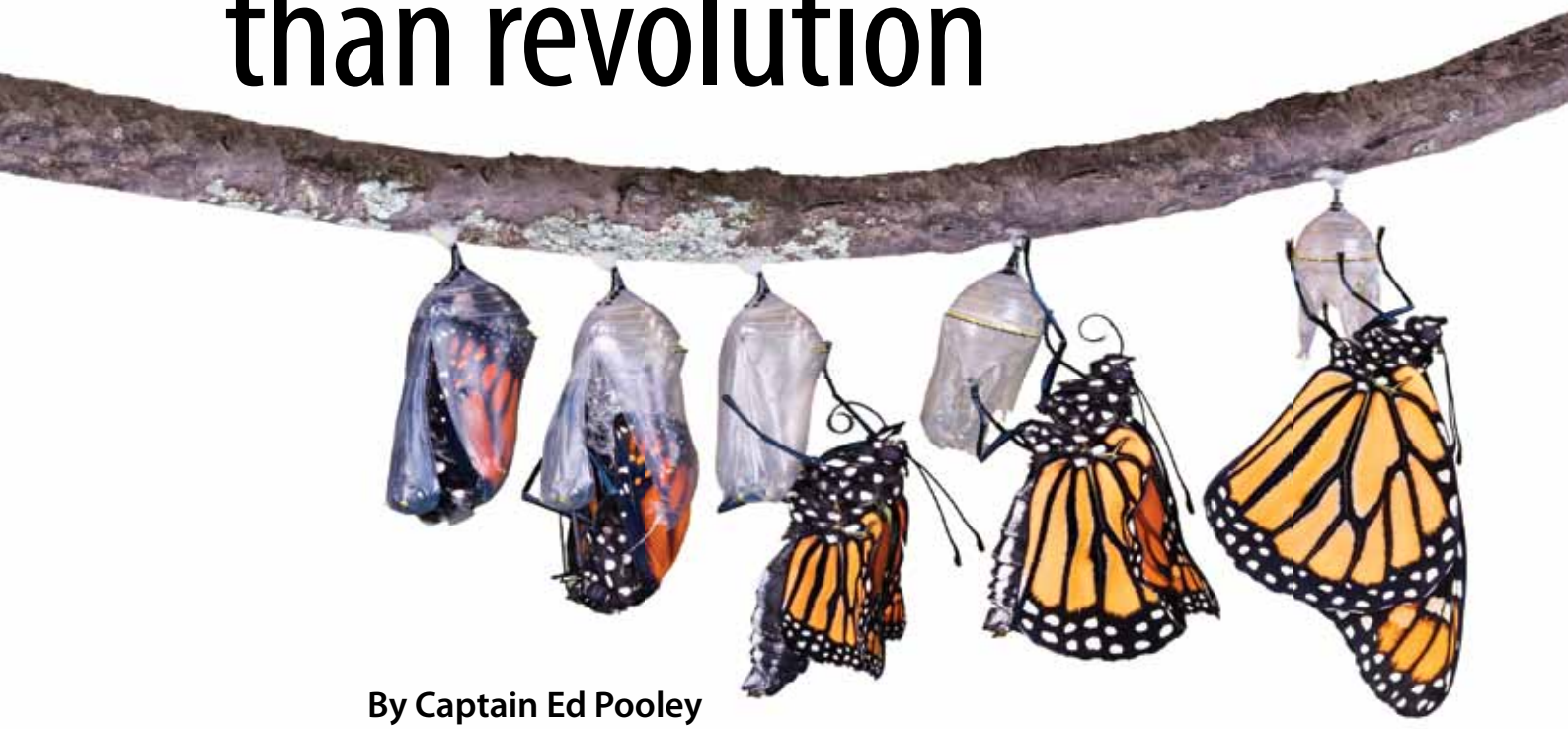
Evolution is better than revolution



By Captain Ed Pooley

A lot has been written about fatigue in the context of shift-working professionals by experts in the study of it. Recent contributions sometimes seem to forget that many flight crew (I am one) have been fortunate enough to spend their whole operational careers under the protection of mandatory flight-time limitations (FTL) schemes.

Of course, even the best of these have never provided comprehensive "fatigue risk management" and have often been slow to keep up with the changing face of aviation, notably long-haul multi-time zone operations and the implications of the growing dependence on automated flight management. But, coupled with sensible employer rules about commuting to work and a similarly sensible approach by regulators to the approval of justifiable exceptions, they have often been pretty successful in setting an outer boundary which has provided a proportionate defence against fatigue. Leading schemes like that of the UK have been in place for over thirty years. They have dealt fairly well with that element of the fatigue risk which derives from unreasonable planned demands in human performance on duty. And done so for a role which demands not only the intermittent management and execution of demanding tasks and the overall monitoring of complexity during quieter times but also the ability to respond to the unexpected at any time. A good FTL scheme has just left those fortunate enough to be working within it to act in as responsible a way in the run-up to assigned duty periods as they do when working them.

But of course it's no longer that simple, even if it ever was. Current attention to fatigue risk management for flight crew has unsurprisingly been driven by a few leading ultra long-haul operators concerned to maintain safety standards in their increasingly challenging environment and, almost in parallel, by leading short-haul operators who have been concerned to maximise crew productivity whilst effectively managing fatigue risks.

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Both of these groups have needed to organise exceptions from the rigidity of typical FTL scheme rules and have been able to do so by providing their regulatory authorities with evidence of a comprehensive fatigue risk management system (FRMS) approach. Some of the FRMS approach depends simply on tailoring FTL schemes to their application so that equivalent risk management is achieved in widely differing applications. The rest of their focus has typically sought to ensure that the implications of off-duty behaviour are fully recognised and that the employer's 'just culture' environment has appropriate channels for the both reactive and proactive communication of specific fatigue occurrence and more general fatigue concerns.

There is one other vital point to mention about fatigue, which is personal. In a way, it is rather like low-level cabin air contamination. It affects superficially similar people differently. Sometimes the self-awareness of individuals is enough to act as their defence, but it is not always so straightforward. Hence the move to something more than just a 'good' FTL scheme.

ANSPs are beginning to approach this safety issue. As they do so, they are able to draw upon flight operations experience whilst taking account of both similarities and differences between the work of pilots and controllers. Some of these are obvious, others perhaps less so. On the differences front, controllers can stay in one time zone whilst on duty and whereas multi-crew aircraft present a formalised and ever-present opportunity for one-on-one teamwork between the pilot and the co-pilot, the circumstances of an individual controller are usually rather different. In addition, the management of controller working time can more easily take advantage of regular breaks during on-duty periods – elsewhere in this issue is an excellent guide for controllers on how to make the most of scheduled breaks during duty periods. On the similarities front, both controllers and pilots share an exposure to the sudden onset of unexpected scenarios. They also, in many cases, share an exposure to workload that can, even in the absence of an abnormal or emergency situation, routinely vary dramatically from the very low to the very high.

ATM, however, seems to have had a history of a far wider range of duty time schemes than that seen on FTL and many of these have been far less likely to properly recognise the risk of fatigue even before the evolution to a potential FRMS. The FAA rules on controller rest periods between duties have been a salutary reminder that even 'leading' ANSPs have sometimes ignored what seems obvious to the accident investigator.

There is much for ATM to learn not only from the latest on aircraft operator FRMS initiatives and all the academic research we have recently seen on fatigue, but also from the history of leading FTL schemes and their evolution. Of course the broader approach which FRMS brings is the right one and provides a reliable way to ensure that the underlying rules set appropriate limits. But I would suggest that there is merit in proceeding at a moderate pace towards ATM FRMS rather than attempting to leap to the cutting edge in one go. Much of the essential wisdom of the rules which form the core of any FRMS comes in the first instance from a rational 'common sense' analysis of what is reasonable. New survey techniques, behavioural models and the valuable expert guidance now available can and should nowadays refine this process, but they may not necessarily be the best place to start if the rule-base has been absent or nominal in the past.

I will close by adding an important reminder which I could just as well have started with:

> There is a crucial difference between tiredness, which is a normal and (provided it does not occur routinely) acceptable feature of life at work, and extreme tiredness (aka fatigue), which is an unacceptable state for any hands-on professional in any safety-critical industry.

A number of expert writers on this subject seem to use the two terms interchangeably, which is at best careless and at worst misleading.

Of course, I absolutely accept that it the recognition that it is the exploration of the boundary between the these two over simplified states which is where a comprehensive FRMS scores over the more limited scope of the old-fashioned rulebook approach of FTL. But I repeat that, as usual, if we want to have the least pain (and the maximum cost-benefit) from safety improvement, we should first take careful note of what has gone before as a prelude to targeting the all-embracing gold-plated objective.