IMPROVING RUNWAY OPERATIONS FROM A CAR PARK

The way that we adapt to our environment in everyday life can teach us about how we do this at work. In this article, **Sebastian Daeunert** describes how Frankfurt tower contemplated changes to runway operations, ultimately giving controllers responsibility for their way of working.

KEY LEARNING POINTS

1. **It is up to us to put safety and human factors theory into practice.**
2. **Too much reliance on rules can have a bad effect on our sense of responsibility.**
3. **We need to adapt how we work to how things work. Involving sharp end operators in the design of work is the way to improve work.**

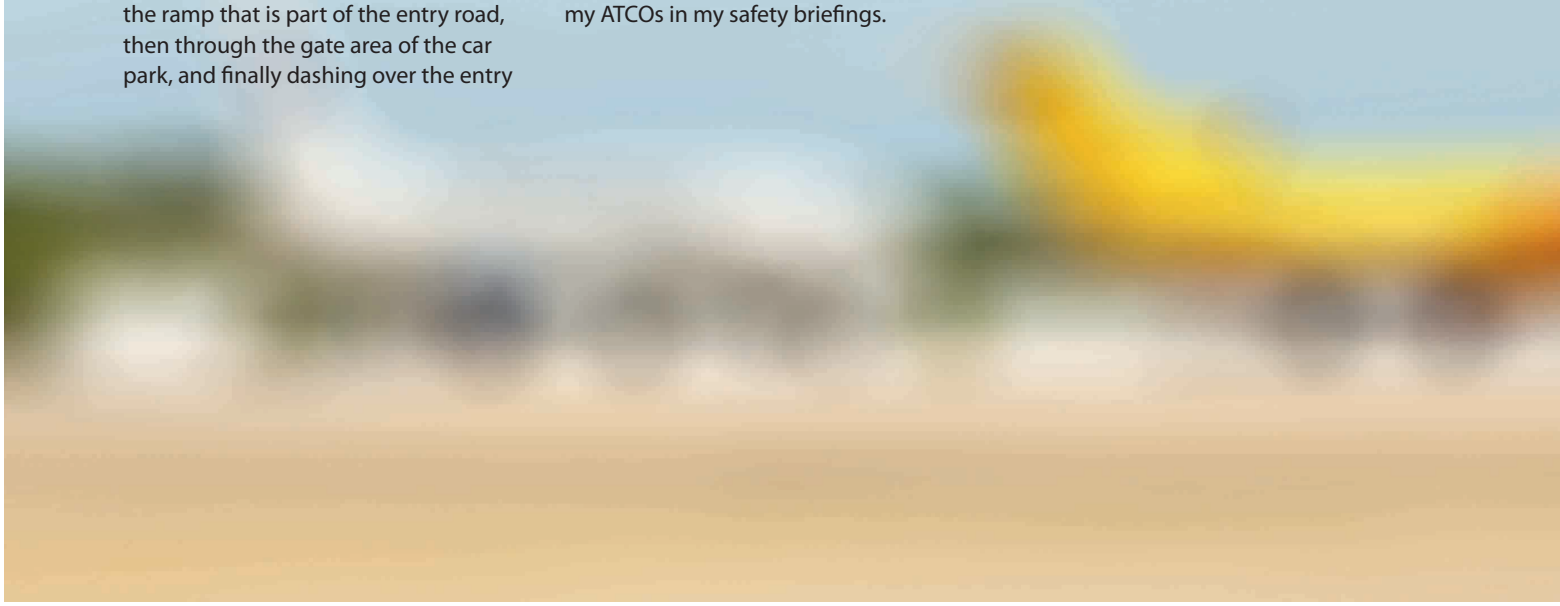
Every morning when I go to work to our control tower at Frankfurt Airport, I park my car on the fifth floor of the staff car park. Instead of taking the long official way across a bridge, over the road, then back via a traffic light crossing the road again, I save 10 minutes by taking the back-door staircase. Everybody I know does this.

This means taking a staircase leading to the ramp that is part of the entry road, then through the gate area of the car park, and finally dashing over the entry area. It requires balancing on a narrow ledge that is officially not a pedestrian walkway, with buses and trucks passing within inches at speed. Drivers blow their horns at the dark figures crawling underneath the barriers in the darkness of the early morning. It's pretty scary at times.

I like to present this case as an example of work-as-done vs work-as-imagined to my ATCOs in my safety briefings.

Why? Because it has a happy ending. Last year, the airport operator did something wonderful. Instead of locking up the door of the backdoor staircase, or putting up a fence blocking the path, they simply added an official wide pavement walkway with a red and white protective fence facing the road. There even is lighting, making the dark figures of the early morning clearly visible to the drivers of the cars on the other side of the fence. Now everyone can take the little 'secret walkway' officially and safely.

Isn't this how it should be? Put your ear to the operation. When you see a deviation, interview the operators and then adapt the system to it, so that everyone can do it safely and according to a common standard.



When I was at a EUROCONTROL human factors conference in Lisbon in 2015, reviewing the slides for my presentation (everyone else was sightseeing in Lisbon), I finished early and a thought came to my mind.

What good are all these ideas and thoughts if we don't use them in real life. As interesting as they may be, there is always a danger of us ending up in that famous ivory tower ourselves. Already I was scribbling on my notepad, ideas pouring from my head, how to adapt those interesting ideas to our airport in Frankfurt. And I soon realised: all these ideas are definitely adaptable to real life.

Were we not making too many rules? Was this not the feedback I received from my ATCOs, that they felt they had no decision power anymore because everything was prescribed? Were these not the complaints I heard, that too many outsiders were governing their work in a very destructive and complex manner? Politicians, noise abaters, rule-makers and yes even us – the safety people.

I was wondering if we should not make new in-roads to the way we are dealing with our rules. It turned out to be nothing less than a complete culture change in our local administration.

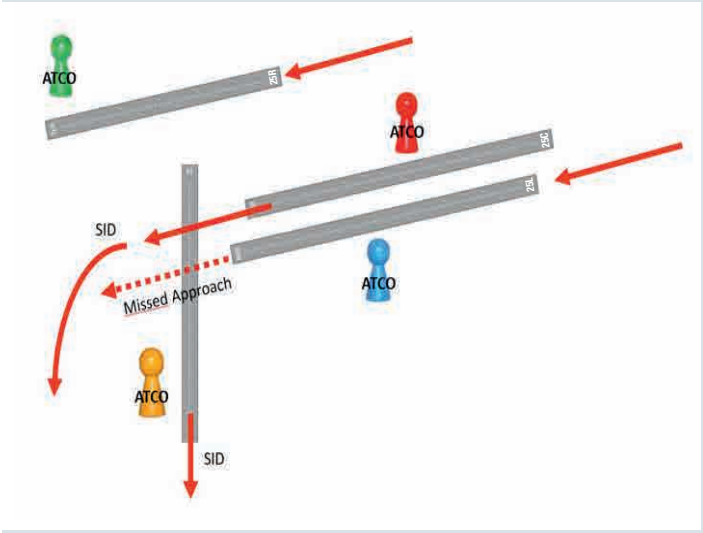
The plan was to help our ATCOs reclaim that important sense of responsibility, which goes hand-in-hand with behaving responsibly.

After initial rather irritated reactions by local management, they quickly started to get into discussions with me and then agreed to put this on a broader base, working together with our central safety management. Thanks to that we soon had Prof. Woods doing workshops at our tower followed by a EUROCONTROL Regional Conference. Our base had just grown so much wider.

We started to get to work. My initially irritated bosses soon became fans and strong supporters of the idea, seeing the benefits of it. Without that it would have been dead before it started.

In Germany we have a saying: "To cut off old beards", meaning getting rid of things that have always been there but nobody really knows why. We reviewed several procedures that were seen by our controllers as annoying and found out that some of them had no reason other than "It has always been done this way". We deleted them, turning some of our controllers heads ("They really mean it!") with very little effort.

We continued towards the harder stuff, the holy grail of operating our airport. Should controllers be allowed to work both Runways 25L/C from one working position if traffic allows?



What is behind this is that RWY25L is used for landings, runway 25C for departures. Inbound aircraft taxi towards RWY 25C, hold there, are then sent to the departure RWY25C controller for crossing and then to Apron. This additional frequency change is seen as a nuisance by many controllers, but is necessary as two controllers may not operate one runway on different frequencies.

When there is a missed approach a lot of coordination has to be done, thanks to an environmentally-inspired departure route, which crosses in front of the end of RWY25L. This has led to misunderstandings in the past and adds complexity. When there is little or medium traffic, so the argument of some of our controllers goes, a lot of complexity could be avoided by working both runways from one position: "It is easier to coordinate with myself in my own head" one of them said.

The other side says that workload increases with the number of planes on the frequency. Add this to existing complexity and it may be a danger.

This had been subject to heated emotional discussions and the final and never-to-be-discussed-again outcome: one controller, one runway!

"I was bred to be a race horse and now they make me plough the field", one disappointed controller had written. Still, there was the silent majority, wasn't there? Those who approved but wouldn't say so?

Things had quietened down. To my knowledge though, more and more controllers were simply disobeying the rules and keeping aircraft on their frequencies for the runway crossing anyway. To me this represented a danger: while some were doing it, others weren't. And each one doing it was doing it in a different way.

Should we really open that can of worms again? Stir up all the dust that had so comfortably settled? We decided yes. By now we all had agreed that to follow operations and constantly evaluate what the 'sharp end' is doing is the only way to go. Even if it is painful, there is no other way.

We invited a group of 10 controllers to a meeting; a good mix of those for and against runway consolidation (there seemed to be no middle group). The meeting showed that it is sometimes hard to break old habits and you consciously have to force yourself towards the new. The initial approach was to put airport traffic graphs on the wall, hour by hour and to extract a complex set of rules at which minute what runways can be worked in unison. If followed through, a complex algorithm of 'When? What? Where?' might have resulted. Quickly, this idea was abandoned.

We have highly trained, professional controllers, whom we rightfully demand to behave in a responsible manner. Can these people not decide by themselves when to work runways in unison, and when not? Do we really have to make rules?

After several meetings we came up with the idea of an extended trial (one year) where we give a recommendation regarding the traffic load but leave the decision in our controllers' hands.

A safety assessment has been made before the trial and we will be starting it shortly.

My personal feeling is that when we hand back responsibility to our controllers, they act responsibly. Responsibility means the freedom to make decisions but also the need to be held responsible for them. This is to me the core function of any controller. It is also the reason we are so proud of our job.

To encourage responsibility means to have people who enjoy their work but also do everything in their power to do a responsible and safe job. It is a high motivation. Taking away responsibility means conditioning people to become mere accessories to a set of rules, who will just do as they are told, but have no relationship to what they are doing. They will become bored, irresponsible and eventually break the rules.

By seeing our controllers as resources and not as a danger that has to be contained in order to make our system safe, we keep the quality and satisfaction of everyone up. For management this initially means a leap of faith in their direction. However, the result is a better, safer system.

This in my view was only achieved by looking at work-as-done and adapting work-as imagined.

This does not mean that anything goes. If you see people crossing a high-speed Intercity express railway line you may well have to stop them initially because there could be casualties. But in the long run the question must be: "Why are they crossing it when they know it is dangerous?". The solution may be a pedestrian bridge over the railroad tracks or, like in the case of our car park, a safety fence with a brightly lit pedestrian walkway.

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