

SPECIAL SUPPLEMENT

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HindSight is a magazine on human and organisational factors in operations in air traffic management and related sectors. The success of this publication depends on you. Please tell us what you think. And even more important, please share your experiences with us. We would especially like to hear from front-line personnel (the main readership) with a talent for writing engaging articles.

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WELCOME

Welcome to this *HindSight* magazine supplement. While the main issue of *HindSight* 31 concerns learning from everyday work, this supplement concerns the COVID-19 pandemic more specifically. What have we learned about work in this new context? How has the pandemic affected us, and how have we adjusted?

In this supplement you'll find perspectives from the ground and the air, from aviation staff and healthcare staff.

This will be expanded in the next Issue of *HindSight* on 'The New Reality'. How have you and your colleagues adjusted and adapted to work in the context of the COVID-19 pandemic? Let us know, in a few words or more, for Issue 32 of *HindSight* magazine.



Kenneth Chircop
CEO Malta Air Traffic Services
(MATS)

INVITED FOREWORD: MALTA AIR TRAFFIC SERVICES



2020 started as a normal year. The prospects were of yet another record-breaking year both in terms of terminal and en route traffic in the Malta FIR. The anticipated challenges were immense, executing projects and implementing technology that provides additional air traffic capacity without jeopardising the continuous progress in increasing safety levels. With the start of a reference period and a performance regulation mandating highly ambitious cost-efficiency targets, this was not going to be an easy year. It turned out, however, that 2020 will be remembered as the year when life as we knew it changed...

News of the novel coronavirus spreading in Wuhan made the headlines in January. Subsequently, all of us in the aviation industry were following closely what was happening in Asia, horrified with the impact this was causing to air traffic. It did not take long, however, until we started feeling the brunt in Europe. It took only a few weeks, before the European traffic fell to 10% of 2019 levels. The aviation industry had never experienced such a hard-hitting global crisis since World War II.

But what did this mean for Malta Air Traffic Services (MATS) Ltd – the small ANSP providing air navigation services in the Malta FIR? What were the challenges?


As a small island nation with a single airport, Malta's economy depends heavily on air connectivity. It was crucial, therefore, that no matter what the situation, MATS needed to ensure a continuous service. The pandemic, however, brought with it two major challenges: the risk of infection of MATS staff that could compromise continuity of service and the drop in revenue due to the slump in air traffic.

At the start of the pandemic, a crisis management team was quickly set up. The major decisions that were taken at the time were to introduce several measures to minimise the risk of infection and revise

Company contingency plans to adapt to the unfolding situation. Operational staff rosters were modified with the objective to minimise the complement of personnel working in close (but necessary) proximity to each other and limiting to an absolute minimum the mixing of staff between watches, having standby units at home in case they need to be called in urgently and setting arrangements with fumigation companies for emergency call-ins in case of suspected COVID-19 cases, amongst others. All this was possible with the minimal traffic that was being serviced and it also contributed to much needed savings in operational costs. Operational training was halted. Major cost-cutting was achieved through the postponement of all non-essential projects.

Four months passed, quickly but painfully, and the relaxation of air travel measures were welcomed. Commercial traffic started picking up again, despite a slow

pace. Yet again, new challenges were encountered – with an increase in traffic, rosters needed to be revisited, training had to resume and with the knowledge that the virus will be with us for a while yet, projects had to be restarted. This time, however, we knew this day was coming and we had long been preparing for it. A key advantage was also the fact that we had accustomed and adapted ourselves and our lives to live with COVID-19. Once again, we made the necessary changes and we continue learning as we move along.

All this was possible with the professionalism and flexibility of MATS management and staff. We look forward to the days when COVID-19 is no longer a concern, when air traffic starts hitting records again, when the challenges we were accustomed to return. It will take a while, but I am confident that we will get there with patience and perseverance! 

Kenneth Chircop was born in 1982. He studied engineering at the University of Malta and graduated with a Bachelor's degree in Electrical Engineering in 2004. He started his professional career researching avionics systems at Cranfield University, UK. He moved to the industry in 2005, where he spent more than three years at Hunt Engineering UK Ltd., developing high-speed electronic systems for a range of industrial applications. In 2008, Kenneth returned to Malta to join the Department of Electronics Systems Engineering at the University of Malta, during which time he obtained his Ph.D. in aircraft trajectory optimisation techniques and worked towards the setting up of the Institute of Aerospace Technologies within the same university. In May 2016, Kenneth moved back to the industry to take up the position of Chief Executive Officer of Malta Air Traffic Services (MATS). Kenneth lives in the small village of Haż-Zebbug, a few minutes away from Malta International Airport, with his wife and their two children.

WHEN EVERYDAY WORK IS NOT SO EVERYDAY

How can we learn from everyday work in the context of an unprecedented pandemic? Using the themes of previous issues of *HindSight* magazine, **Anders Ellerstrand** takes a look at human adaptability at work in Sweden.

I work as a Watch Supervisor at the ATC Centre in Malmö, Sweden. Using the themes from the most recent issues of *HindSight*, I will give some personal reflections on how the pandemic has affected my everyday work.

The *HindSight* 25 theme was 'Work-as-Imagined & Work-as-Done'. Every ANSP has well-documented and comprehensive procedures; our 'work-as-prescribed' which might also be people's 'work-as-imagined'. When these procedures meet reality, there is usually some kind of gap, but operational staff adapt to make things work, and the result is 'work-as-done'. It is considered good if the gap between these is as small as possible, but it is also realised that there will always be a gap.



As the pandemic hit us, my centre saw traffic volumes drop dramatically. Within a few weeks, we had less traffic during the day than we used to have during nights. To find guidance for how to handle this situation, it seemed natural and made sense to use the procedures for night-time work even during the daytime. This included reducing the number of open sectors to a minimum and manning each sector with one instead of two controllers. While new

"The documented procedures, reflecting the 'work-as-imagined' of old, did not cover the new situation, so they had to be adapted to a new 'work-as-done'."

daytime operations resembled old night-time operations in traffic volumes, there were other factors. Unlike night-time operations, there were still military traffic and military activities in restricted areas, and there was VFR traffic, parachute jumping, etc. In fact, the situation was in many ways totally new. The documented procedures, reflecting the 'work-as-imagined' of old, did not cover the new situation, so they had to be adapted to a new 'work-as-done'.

The *HindSight* 26 theme was 'Safety at the Interfaces: Collaboration at Work'. Outside of the ANSP, at a state-level, I have seen extraordinarily little of this. In summary, each country has tried to navigate the pandemic on its own. Suddenly, Sweden found borders closed without any pre-notification. I did not notice any significant change of cooperation between my centre and the centres bordering to us. The bright shining exception here is EUROCONTROL. So far, the EUROCONTROL website has been my best source of professional information, with frequently updated and nicely presented statistics. In a crisis, people want information, to understand what is happening and to try and predict what is coming. Thanks to EUROCONTROL, I have been able to provide such information to my controllers in the ops room.

In *HindSight* 27, the theme was 'Competency and Expertise'. Controllers enjoy their work and the challenges they meet. For most controllers, the



main challenge is to handle a lot of traffic, but suddenly that challenge was gone. I believe a lot of controllers find this worrying; they wonder if they will be able to maintain their skill when they do not practise it. One way to handle this has been to close as many sectors as possible and to work one controller per sector instead of two. Controllers would rather work fewer hours in position but have some quality time when they work, to still meet a challenge every now and then. To maintain competency is still a problem and it will continue to be. The obvious solution is to use simulators to practise. I believe this will be done in many places.

Crises present problems but there are usually also opportunities. In this case, one opportunity can be found in relation to the many controllers that are not needed in the ops room. Some controllers that work part-time in offices have been able to spend more time in the office. It has been possible to take care of a lot of issues that would otherwise have been given lower priority. Other controllers that are not needed in the ops room have been given the possibility to stay home and increase their competency, e.g., through EUROCONTROL e-learning.

The *HindSight* 28 theme was 'Change'. I have been an air traffic controller for over 38 years. A lot of things have happened during these years. I have seen new technology being introduced, increasing traffic volumes, changes



in training and in organisation, but I have never experienced anything like the situation brought by the pandemic. It has been the quickest and most dramatic change I have ever seen.



"I have never experienced anything like the situation brought by the pandemic. It has been the quickest and most dramatic change I have ever seen."

Through the last two years, the recurrent theme for ATM in Europe has been 'the capacity crunch'. Everyone was looking for things that could help us increase capacity, of course while maintaining safety. Then, during March this year, everything changed. We went from a capacity problem almost everywhere to a capacity problem nowhere. Maintaining safety while increasing capacity is a well-known goal conflict that we are used to and that we can manage. But maintaining safety while reducing capacity? That is not a problem at all, is it?

We have a safety management system with different elements to manage safety. One element is the management of change. Whenever we are informed of a change to our functional system, we assess it to understand how it will affect us, if there are new hazards, and if we need to mitigate these hazards. With the pandemic, there was no incoming mail informing about a coming change. I don't know if there has been a formal safety assessment of the pandemic. As far as I have seen, it just happened, and everyone adapted to make things work.

The *HindSight 29* theme was 'Goal Conflicts and Trade-offs'. The classic goal conflict in aviation is that between 'production and protection'. The idea is that if you increase production you risk losing protection; that is safety. Of course, most if not all ANSPs say 'safety first', but I believe the



pandemic has further revealed this as a buzzword. As I mentioned earlier, the general understanding has been that increasing capacity could be a threat to safety but reducing capacity is not. During the pandemic, the apparent conflict between the production and protection has not been a conflict at all. This crisis has been about managing production and economy.


Handling goal conflicts is everyday work for the Watch Supervisor, and the pandemic did not reduce this task. Rather, the opposite emerged. While controllers have been mostly very relaxed with few aircraft to handle, supervisors have been rather busy. The staffing has usually been more than enough, which is good from a safety perspective. On the other hand, it is better if people stay at home, doing e-learning or taking a day off. And sometimes controllers are needed for other work, at an office somewhere. Managing staff has been a large part of the supervisors' work during the pandemic: deciding who can do what, informing everyone, updating paperwork, etc. As most of the normal work (handling airspace, coordinating with the military and so on) has still been there, the goal conflicts have been many and trade-offs sometimes difficult.

The *HindSight 30* theme was 'Wellbeing'. In the initial phase of the pandemic, people were worried for their own health and for their family and friends. In Sweden, the problems with infection mostly stayed in the areas around Stockholm. My ATC centre is in the far south of Sweden, where we had very few cases, so there were fewer worries for health after some time. Later came the worries for the economic effects: will people lose their jobs? The financial situation was and is particularly worrying. Recovery is slow, it is obvious that the money coming in is not enough, and the information about the future is not there. Still, the social systems in Sweden are helping us. Even if the worst comes to the worst, there is good financial back-up that will last for a



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rather long period. Overall, I believe that most of our staff have been doing OK.

As a summary, the pandemic has shown that people's ability to adapt and get the work done in unusual situations is particularly important. No procedures were written on how to handle this pandemic. Top management prioritised the economic situation and the effects of decisions made at higher levels were dropped to the ops room manager, the watch supervisor. In an extremely dramatic period, with a lack of guidance and information, people still find ways to manage their work in a safe and sensible way. And of course, no automation was there to do it for us. People made it happen. 



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LET'S WORK TOGETHER

An initiative to learn from everyday work before COVID-19 became even more important as the reality changed, but new questions about work had to be addressed, as **Sebastian Daeunert** reports.

KEY POINTS

- During the COVID pandemic, we have to consider how to help controllers and trainees maintain an acceptable level of wellbeing and performance.
- Maintaining proficiency is a challenge, especially for new controllers who are not getting the practice without a coach.
- Learning teams made up of different age groups and perspectives can discuss their wishes and fears, and find solutions for performance and wellbeing.
- We need to plan now for when traffic picks up to help manage short term peaks and longer-term increases.

"What do you do as a trainee when your runway has turned into an aircraft parking lot for abandoned aircraft?"

"What a sight, what a beautiful sight." I am looking out of my office window in the early morning.

And here comes NEO the A320 glistening in the morning sun. No, we are not back to the high traffic numbers that we used to have at our airport. But the short and medium rangers are coming back, one by one.

This view would have been nothing out of the ordinary during all those years – a common sight. But now, something makes me happy. Finally, my 'friends' are on the move again. And it makes me think about what has happened during the past few months. Not the news, but what has happened here and how we made it happen.

All of us in aviation have gone through rough times during the past months. We've seen our industry in crisis, shattered by an invisible enemy called 'COVID-19'. And we all carry the big question mark – a mixture of hope and fear – on our faces. Being the Safety Manager and Head of Training at our tower, I feel lucky to belong to a group that has no shortage of work.

How can this be? It is not the number of incidents. How could it be, with the low amount of traffic that we have? No, a different question has arisen: how to keep my controllers and trainees at an acceptable level of wellbeing? Sometime soon we will need them at their peak again. This is an interesting challenge, but a rewarding one.

Before Coronavirus

Let me explain the situation. Before coronavirus, due to a lack of controllers, we boosted the number of ATCO trainees up to what we could handle. Our training system, after the theoretical classes and the simulator training at the academy, comprises three phases of 'on-the-job training': start, middle, and final phases. Then there is a practical evaluation exam that finally results in the ATCO licence.

Due to the large number of trainees, some controllers complained that they would not be able to work enough time on their own (without a trainee), fearing for their proficiency. Young controllers who had just achieved their licence said that they were not getting the practice



to 'swim by themselves' without a coach, due to the number of trainees blocking the 'hot positions'.

I did some human factors interviews, trying to find those 'weak signals', asking the same questions but to different peer group members: young trainees, young ATCOs, experienced ATCOs, and ATCO coaches. A few examples:

- "If you were the king of this airport, what would you change and why?"
- "If you put production pressure on yourself, what is the motivation?"
- "How do you feel about training and coaching?"

The answers surprised me. I expected each interview to last for 15 minutes. Yet all exceeded one hour, as they had so much to say. Try it. It is really rewarding, and the information is valuable. However, I was unable to do interviews with all our people. It would have taken up too much time. So, I tried one person from each group. As

a result, some controllers who had not been interviewed appeared with a set of notes on several pages where they had written down what they thought was important. We gladly listened to what they told us. This was really something.

Now, we were not in a time of crisis. Things were working fine. This was simply a continuation of our interest in 'work-as-imagined and work-as-done' (see *HindSight* 25). "Never stop monitoring. Never stop improving," we thought.

Solutions were soon found and published. It was made clear and published by our local management that any controller – young or old – has the right to work on their own if required for as long as needed. This was not new, but the sense of duty towards our trainees had made some ATCOs forget this.

A learning team was formed, made up of different generations. How do we

integrate new age groups, different views, different needs, and different attitudes into our ATC family? What are the wishes, fears, and requests of controllers, coaches and trainees? What might we learn from 'new blood', perhaps in terms of ideas and attitudes?

All that was before COVID-19. Little did we know that our little workgroup would gain such meaningfulness.

After Coronavirus

Then a virus erupted all over the world. Traffic stopped, and then trickled. Suddenly, what we had started to think about became even more important. What do you do as a trainee when your runway has turned into an aircraft parking lot for abandoned aircraft? How do you keep proficient when you drop from 1,600 movements per day to 40? How do you feel when your dream appears to be dying? And what about fear, boredom, distraction, and even a feeling of uselessness?

And then private pilots saw the chance to finally fly from the airport with Cessnas, Catanas, Pipers, even glider parachutes. This may be a dream for many, but it is a nightmare for the sole A320 that sits on the runway while four hobby pilots are meandering around.

But most importantly, what happens when traffic picks up? How do we manage short term peaks and longer-term increases?

The important part in all of this is to keep people as motivated and as happy as possible as a team, despite the situation that COVID-19 causes.

Many things were done. One was a safety briefing, a video which was put into the e-learning programme. The subject? How to cope with boredom when there is no traffic, keeping up the level of attention and maintaining situational awareness.

An example we used was a train accident on a German railway line (Bad Aibling, 12 casualties, 55 injured). According to the accident report, the dispatcher had played a game on his mobile phone during a period with a lack of traffic on the short line, and

played a part in causing the accident where two trains were approaching each other head on, crashing at full speed on the single-track line.

How do you remain attentive when there is little to do? How do you react when suddenly there is a very serious situation that needs full attention? The safety briefing was appreciated by our controllers, who did not only accept the content, but also felt that their concerns were recognised. It also made them think.

"What happens when traffic picks up? How do we manage short term peaks and longer-term increases?"

We gave tasks to the trainees too. We made sure they knew that they are still important to us and members of our 'family'. I wrote a new training concept, changing the old system from doing one long checkout to gain all positions to one single licence – a 'one position = one licence' concept. It is currently under evaluation with the workers' council and the authorities for possible approval.

Other questions emerged. Can we substitute on-the-job training with

simulation, at least partly? When can we do a checkout, and at what traffic level? We do not just try to find ways of coping with the immediate situation. We involve those who are affected and give them a say in the decisions.

The Bottom Line: We Care

Most importantly, we let them know that we don't abandon them; we really care. Everyone knows the situation is a tough challenge. But 'my controllers' and 'my trainees' know that they are not on their own. They know that we are a family that is working together to keep this house safe and happy. The nightmare has become a collective task. This is productive and a major part of wellbeing: feeling safe, warm, needed, and wanted, during the scariest times that I have ever known. And maybe at the end of all this we will all come out stronger.

*Before when things go wrong, as they sometimes will
And the road you travel, it stays all uphill
Let's work together, come on, come on,
let's work together
You know together we will stand, every
boy, girl, woman and a man*

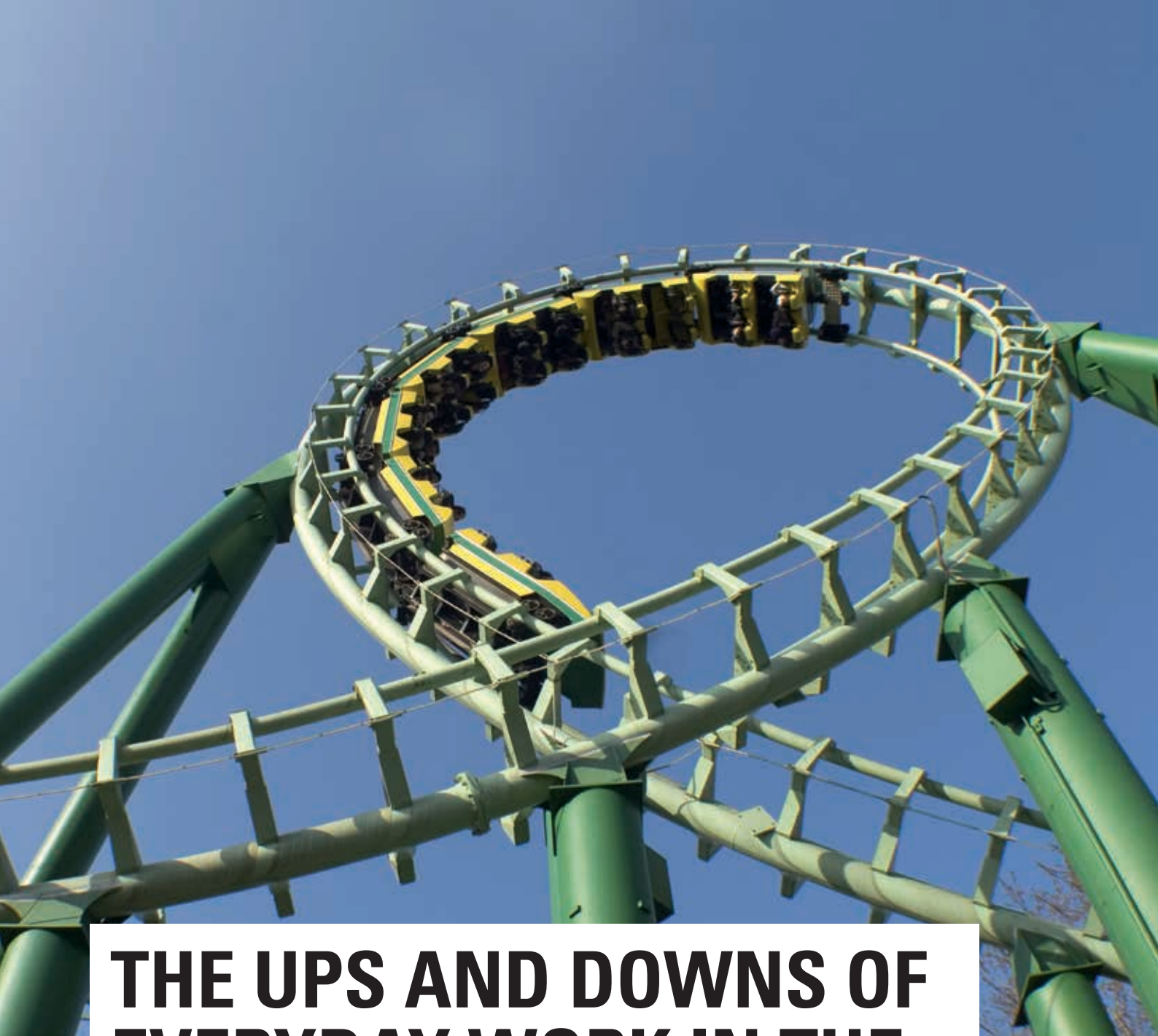
Let's Work Together, Canned Heat (1970)



Sebastian Daeunert is the incident investigator of Frankfurt Tower. He was an active TWR/APP controller for 15 years before getting into safety management and human factors. He participates in the EUROCONTROL/IFATCA prosecutor expert scheme and gives occasional lectures at EUROCONTROL Human Factors conferences.
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"Maybe at the end of all this we will all come out stronger."





THE UPS AND DOWNS OF EVERYDAY WORK IN THE TOWER DURING COVID-19

In this brief report, **Shaul Guthrie** reports on the effects of the COVID-19 pandemic on operations at Haifa Airport in Isreal.

During the first days of March, a pandemic was something that was happening somewhere else. It had no effect on traffic volume at Haifa International Airport. By mid-March, there was only a 20% decrease in traffic. On March 27th, a notice to airmen (NOTAM) was issued prohibiting non-

commercial flights. The effect was that traffic fell from 100-170 aircraft a day to 8-16 a day.

During this time, 30% of ATCOs in the unit were sent on unpaid leave. Some of the shifts were reduced from three or four ATCOs to two ATCOs per shift. The

work needed no more than one active ATCO. There was a protocol for how to operate in this 'slim shift', and capacity was declared so that the slim shift could safely operate.

On April 19th, the NOTAM was cancelled, and traffic returned. In the

first 2 days, it was in small bursts of traffic, but on April 21st, we were up to 90% of normal traffic. By April 25th we were at 100% normal summer traffic. To put it into numbers: in the month prior we were working with zero to one plane per hour in the control tower, and within three days we went back to working with 10-23 planes per hour for most of the day.

In response to the rise in traffic, the slim shifts protocol was immediately cancelled. Then, the ATCOs who were on unpaid leave from April 1st were brought back. We had to ascertain their ratings and only then fill the shifts. Luckily, it was 'only' one month that they had not worked at the tower, so four hours with a training officer on the first shift was all that was needed.

One of the things that we had to think about was that the ATCOs who had been on unpaid leave were relatively new, with two to five years of experience, including one ATCO who got their rating just a month prior to the COVID-19 crisis.

The way we coped with the sudden return of traffic was to avoid reaching our full capacity in the tower. We controlled that by calling for a coordinator as soon as it was thought that traffic could build up. In LLHA, most traffic is local flights and circuit training (pop-ups) and traffic tends to spike from two to seven in a matter of minutes. As far as workload is concerned, traffic is not the major issue, but rather the phone calls and coordination of incoming and outgoing traffic. So, to keep the workload in the tower manageable, we split the coordination to another ATCO. This is considered normal operation in Haifa, but due to the short period that we had minimum traffic, we tried to keep the workload well away from the ATCOs' full capacity for the first two months.

"We learned how to operate as a team at maximum capacity traffic for long periods of time, understanding the role of each team member."



From March until June, LLHA was open only during daylight, before that we were open for training during the night, three days a week. At the beginning of June, we reopened for two hours once a week for night training. This created a surge of traffic; in the first four weeks, we were operating at maximum capacity of the control tower and the runway for two hours straight. In these two hours, we had 70 counted aircraft movements. This is not something we practise in training, keeping maximum capacity for two hours. This required four ATCOs, which means having all the ATCOs in shift active. After the fourth week, traffic went back to normal operation.

In August 2020, traffic was at 110% of what it was before COVID-19 started in Israel.

So, what have we learned in the past five months? We learned how to operate as a team at maximum capacity traffic for long periods of time, understanding

"We wrote down what we should preserve as standard operating procedures so that we can use the collected experience in future training and operations."

the role of each team member. We gathered our data, including talking after the shifts, self-reflection and positive feedback from the team. We wrote down what we should preserve as standard operating procedures so that we can use the collected experience in future training and operations. **S**



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LEARNING FROM ONLINE TEAM RESOURCE MANAGEMENT

As much training has moved online, what might we learn from this for team resource management? **Emmanuelle Gravalon** reports on the French experience.

In France, team resource management (TRM) courses for ATCOs were introduced in 2000 as a form of experience sharing. The stated objectives were to:

- remain vigilant when it comes to the 'human factors' risks for ATC, in order to maintain safe individual and collective behaviours
- learn from experience (to better understand our own experiences and those of others) to develop and improve risk management on a local and national level, and

- foster safe individual and collective behaviour and to improve the culture of safety through feedback and experience sharing.

To achieve these objectives, the TRM facilitators provide theoretical contributions from cognitive science,

"Experience sharing enriches each controller's experience by exchanging information about situations and sharing the resolutions."

sociology and ergonomics in order to better understand individual and collective behaviours.

The courses are much appreciated by controllers. Experience sharing enriches each controller's experience by exchanging information about situations and sharing the resolutions. This helps to identify problematic situations earlier, and to generate a larger range of possible resolutions.

Virtual TRM Training

Due to the COVID-19 pandemic, at the beginning of March 2020, DSNA (the French ANSP) decided to stop all ATCO non-operational gatherings, and thus stopped all continuous training, including TRM courses. This was a problem but also an opportunity. It gave us the chance to use our 20 years of experience of TRM differently. We had to come up with new forms of training.

So, a team of eight TRM facilitators from various centres reviewed and organised 'stress and fatigue management' materials from different TRM courses into an e-learning course for small groups via Zoom. The plan was to have one HF facilitator and three ATCOs from different centres, with an expected duration of two and a half hours. The regulator agreed.

We started with a first group of 15 ATCOs (five groups of three). For each session, ATCOs from different airports and ACC were carefully mixed so that they could exchange their experiences. Test sessions were held beforehand to check connections and hardware used by trainees. The first virtual TRM course was provided by one HF facilitator while two other HF facilitators were there as support/observers.

We validated this new temporary and mandated way of TRM sessions. In total, 138 French ATCOs have attended 45 Zoom sessions between April and July 2020.

The positives

The feedback has been good, even very good. The HF facilitator team is unanimously praised for their enthusiasm and kindness. The trainees are happy to try something new (and useful for their licences).

More specifically, the first feedback we got from the trainees and the HF facilitators was that it is better to have

two facilitators. This proved pertinent when the first problem with the internet occurred. When one HF facilitator speaks, the other one can keep an eye on the trainees' reactions or can answer via the chat window. The second feedback was that three trainees was a good number. Each can speak without any problem. This is fewer trainees than would be the case in a course. The third and perhaps most important feedback is that it was good to meet people from others' centres, who wouldn't have met otherwise.

The TRM facilitators also appreciated working in a team with people from different centres, sharing different backgrounds and competences. They developed new facilitation skills.

Each time we had the chance to facilitate TRM sessions for ATCOs with different backgrounds (tower, approach and ACC) we could experience fruitful exchanges. This was helpful to get a comprehensive view of all the different aspects of the job.

This enriched vision of the ATC system facilitates cooperation and interaction between the various entities involved in air traffic safety, and was more difficult to achieve with in-person TRM.

The negatives


This COVID-forced experiment had several advantages, but few trainees wanted to keep this virtual method in the long term. Most missed the real meeting with discussions and various activities. Some HF facilitators noticed the difficulty in organising such events and the technical fragility of the system. The sharing of more varied experiences is counterbalanced by the small number of participants and covered subjects. The technical fragility of internet connections and the use of individual or private hardware is also a limitation for more intensive implementation.

The Future

We will need experience sharing again to quicken the safe building of the post-COVID ATC world, which promises new methodologies (free route for example), new rules, new traffic flows and new technical systems. We need to share our varied experiences as widely and quickly as possible to face all these simultaneous changes safely and build renewed competencies.

As the Head of the French TRM facilitators' network, my hope is to be able to retain some of the benefits of

"We need to share our varied experiences as widely and quickly as possible to face all these simultaneous changes safely and build renewed competencies."

virtual TRM. In particular, we need more experience sharing between ATCOs with various professional backgrounds and also between other stakeholders, ATSEP, managers and pilots, both in-person and virtually. 



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HANDLING SMALL PROBLEMS IN A BIG PANDEMIC

In the face of a global pandemic, previously small problems may take us by surprise. In this article, **Raluca Tilici** reminds of the unseen impacts of factors that affect our performance in a way that we have never seen before.

As experienced in many other ATC towers, this spring was not only atypical, it was unimaginable. The spring traffic forecast from December for our airport was a traffic increase of 15%. We were delighted. But then the world changed with the arrival of COVID-19. All traffic ceased (both international and national). For a period, we only had humanitarian and hospital flights, at a maximum of one or two flights a day. We are a small airport and we don't have problems with too much traffic, but we never have problems with monotony either.

We didn't know what to do with all this free time. It was stressful, and felt uncomfortable, like a bad dream. But besides the emotional aspect of a lack of traffic and the world situation, what impact does this have on our performance as ATCOs? I really didn't ask myself this question until I had to handle an unusual situation in these conditions. After four hours of no traffic during one shift, in a row of shifts with no IFR traffic at all, we received a flight plan for an IFR technical flight coming to land at our airport. It was a happy moment but not stressful at all. We are all experienced controllers and it was only one flight. We know our jobs by heart.

But things didn't work as imagined. An aircraft entered our area and did not respond to our calls. We presumed that there was a radio communication failure (RCF). We had military traffic in the area, everything was coordinated, and the aircraft followed the local RCF procedure. After a few minutes, we discovered that our station was the one with the problem. We switched to another station, and everything was resolved.

In normal times this would have been resolved in seconds. This time, it took two minutes. So what happened? Why did it take us so long to resolve the situation, and why did we focus only on one problem? These were the questions that I asked myself after the aircraft landed safely. Perhaps because I'm part of the training team in my unit, and also a Human Factors enthusiast, I had to dig deeper.

This was just a simple unusual situation in COVID-19 low traffic. It was resolved safely, and just required an extra time until the solution was implemented. With learning as our focus, not blaming, we have to understand how this pandemic is affecting us as the human part of the system.

Until this situation, it didn't occur to me that there could be a problem with staying vigilant as an ATCO during COVID-19 traffic. We always perceived that the problem with vigilance related

"With learning as our focus, not blaming, we have to understand how this pandemic is affecting us as the human part of the system."

to night shifts, where you have to stay awake. But we have never dealt with a pandemic before. Our brains had to

overcome this 'stand-by mode' and this took a few minutes for this situation. So, how to help ATCOs maintain focus and overcome boredom or lack of vigilance? To improve and better prepare ourselves, we have to develop programmes, in the form of online TRM sessions or online group discussion to address these issues.

When considering our own performance, and learning from the new reality of everyday work, we should not forget that this pandemic has had an unseen effect in us as human beings. We experience worries and stresses

"We should not forget that this pandemic has had an unseen effect in us as human beings."

without even perceiving them for what they are. And we are each in a different situation, even though we face the same pandemic. It is a period that may bring fear of us or our loved ones getting sick, or worries for our livelihood or income, or of boredom and isolation. And then there is the fatigue. While we usually think of human factors as most important for busy and stressful work, here it is especially important. Even when we are not busy in the usual way, work and life is particularly stressful. **S**



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CAPTAINING THROUGH COVID-19

As we cope with the new reality of work during COVID-19, how can captains, supervisors and other team leaders create the right environments for teams to perform well and stay well? **Captain Paul Reuter** offers some tips from experience.

During the COVID-19 pandemic, a strong message is being sent by the European Union Aviation Safety Authority (EASA) and other stakeholder organisations to operators to implement peer support and to give proper support to crew members. This aims to help crew members to deal with the uncertainties and impacts of this crisis. It is also heart-warming to see initiatives such as the European aviation mental wellbeing initiative (EAM-WELL), the European Aviation Wellbeing Committee, the European Pilot Peer Support Initiative (EPPSI), the European Association for Aviation Psychology (EAAP) and others that try to stress the importance of 'wellbeing' for safe and resilient crew performance.

What I feel is missing is a little support and advice to captains, team leaders as well as team members in general, on how to address and incorporate

"What I feel is missing is a little support and advice on how to address and incorporate the realities of the COVID crisis into teamwork."

the realities of the COVID crisis into teamwork. As I reflect upon this as a captain, I realise that in general, operators give us very little guidance on how to build a team. Our manuals are very prescriptive on what to brief but very short on the relationship side of team building. Often, apart from highlighting the occasional safety topic or mentioning the odd CRM theme, we do not thoroughly address anything related to team building at all.

There is no silver bullet for achieving this but – in trying to learn from my own work – here are five thoughts that might help.

1. Acknowledge the Current Exceptional Situation

The aviation sector, and society at large, faces the biggest challenge in a long time. As individuals, most of us have never had to face such uncertainties, concerning our livelihoods and our wellbeing. The aim of the crew- or team leader is to help create an environment where crew members feel psychologically safe while also clearly setting boundaries and focusing the team on the mission. A quick check-in with your crew or team on how everybody is doing will help your crew feel confident that their worries are taken seriously. Sharing that you, as senior members of the crew, are also impacted by the uncertain consequences might help junior crew members to open up about their worries.

2. Frame the Mission

In these times, rumours such as threats of redundancies and cuts to income will have spread among crews, both in person and via social media. This will affect everyone, but junior crew members may be more susceptible to be overwhelmed by the amount of bad news and rumours. If such a topic comes up during a briefing, acknowledge and address it. Try to put it into context but then refocus your crew on the mission, reminding them that we cannot let events over which we have no control affect the way we perform.

3. Consider the Challenges that the Cabin Crew Faces

While most operators allow us to leave the mask in the cockpit, cabin crews need to wear the mask both in the cabin and in the galleys. They have no respite regarding wearing a mask and may also be confronted with additional tense situations associated with compliance with the current hygiene rules.

Now, more than ever, it is important to stress to your cabin crew that any issue they face in the cabin is an issue that you will solve as crew, and that you as a commander and the cockpit crew will be actively involved in finding a solution.

Another issue you might want to consider is that some of your crew might be grateful for a little time out or a 'safe space' during the duty where they can relax and recuperate a little.

There is no need to chase the schedule and on turnaround it might be advisable to ensure that your crew gets a few minutes alone without cleaning personnel or passengers in the cabin to relax and refocus. This will help create trust and confidence within your crew and ensuring that you have a dedicated and fit crew to operate the next sector.

4. Have Each Other's Backs

A well-functioning and resilient team is a team where people are not afraid to voice concern or acknowledge vulnerabilities. A team leader needs to foster such an atmosphere.

Your team should understand that you 'have each other's back' – to look out for and support one another. To be able to do so, people need to feel psychologically safe to speak up and be honest about their feelings. That goes for the team leader as well. For your team to perform and have your back, you will need to be honest with them. Even as a leader, you are allowed to feel unsure, have doubts and voice them. No one expects you to have all the answers.

"Even as a leader, you are allowed to feel unsure, have doubts and voice them. No one expects you to have all the answers."

5. The Joker Card

In these strange times, some crew members (especially junior) might feel obliged to show up for duties when not fit to fly.

If you have any doubts about the fitness of one of your crew members, find a way to raise the topic gently. Refusing a crew member who is unfit for duty is in everyone's best interest. As a team leader, you should help the crew member come to a realistic assessment of their fitness and you make it clear that you will back up the crew member further down the line if you swap him or her out. Similarly, should your crew voice concerns concerning your own fitness, address it honestly and in a constructive way and if needed, step back from your duty.

"In these strange times, some crew members (especially junior) might feel obliged to show up for duties when not fit to fly."


In the company I work for, which is quite small, we have the advantage of knowing (almost) everybody, so it is easier to approach each other than in a company with thousands of crew members.

Similarly, we tend to brief together, providing many opportunities to incorporate these ideas in our preflight. With some operators you might meet your cabin crew only in the shuttle or at

the aircraft. Still, it is advisable to take two minutes to gather your crew and to briefly address the topics that you believe need addressing.

As a captain, you not only hold ultimate responsibility for your crew. You should also see yourself at the centre of that team, giving support and helping your team and your team members to learn and grow. A proper debrief after a flight or even an open discussion on the events of the day and how they were handled should be seen by everyone as an opportunity to learn and improve, yourself included.

While we may feel that sometimes the challenges and hurdles that this crisis is facing us are huge, we should acknowledge that there are opportunities as well. One opportunity might be to refocus our efforts on how, as a crew, we are a team, bigger than the sum of its parts and how important it is to foster relationships within the team.

Whether our team is a small crew of a regional airline or a department within a larger organisation, we might rediscover how empathy, mutual respect and support, as well as transparent communications, can make us, as individuals and our teams more resilient, better performing and ultimately bring back some fun and joy to our work. 



Paul Reuter is a Captain Boeing 737NG for Luxair, and President of the European Pilot Peer Support Initiative. He is a former president of Luxembourg's Airline Pilot Association, former Technical Director of the European Cockpit Association, and former Chairman of ECA's Safety Strategy Task Force. Paul is an IFALPA Accredited Accident Investigator. pr@eurocockpit.be

CONNECTING AVIATION AND HEALTHCARE: PROJECT WINGMAN

With many aviation staff losing their jobs or on furlough, a question arises for many: "How can I continue to offer what I have to give?" One answer is to connect aviation with healthcare staff. **Nick Carpenter** reports on Project Wingman.

I was one of many people to lose my job during the lockdown in the face of the coronavirus pandemic. As a professional pilot, how could I best utilise my experience? The answer for me, and many other unemployed and furloughed colleagues, was Project Wingman.

Project Wingman is a charity that helps airline crew come together to support the wellbeing of UK National Health Service (NHS) staff. It provides a haven for both medical and non-medical staff away from patients, where they can relax with a drink, snack, and an empathetic ear during the COVID-19 outbreak.

The success at the hospital where I volunteer has been absolute with staff enjoying the diversion from their exhausting days. My colleagues have been amazing. Many of those laid off and desperately seeking new careers, have wholeheartedly thrown themselves into their new voluntary roles. Turning up every day in their spotless uniforms, buying snacks out of incomes that they do not have, baking delicious treats and looking after their guests with a smile, they have been an example of the best of our industry.

Many of them have spent weeks waiting to hear what their companies will do with them and this is where the interesting daily difference has

occurred. One well-known company told their staff from the outset that they would no longer be employed. Another waited until the eleventh hour and then fired many, keeping some in work but on much-reduced terms and conditions. The difference between the two workforces was marked. Those who have known their fate all along have continued contributing to Project Wingman. Those fired at the last-minute have all stopped attending.

After my first simulator session, I remember being told to "make a decision, any decision, you can always change it later". Making such decisions is difficult to do and managers, fearing the resentment that redundancy announcements cause, can be particularly poor at making them. Having seen the selfless commitment, pride in the uniform and good-natured strength of character of the staff that they have fired, I can understand why. The terrible indecision has had a harmful effect on many of our colleagues with all of us able to see the inequity of those selected for work and those discarded.

"My admiration for cabin crew and pilots has grown watching them give so much when some of them have only unemployment in their future."

It also raises two rather interesting questions. First, why has the NHS never provided a haven for their staff before? Some of these individuals work 16-hour days with only short breaks. They have little respite from the patients that they treat and nowhere to relax. This is not a lot to ask for even in a world where accountants are kings. Second, who is going to be lucky enough to add these wonderful characters to their workforce in the coming months and weeks? My admiration for cabin crew and pilots has grown watching them give so much when some of them have only unemployment in their near future. These people are a credit to the airline industry and the UK workforce. Duty is not dead; it perhaps just goes unrecognised. **S**

Further information:
www.projectwingman.co.uk



Nick Carpenter is a military trained and commercially experienced airline pilot currently seeking a new career. His interest in occupational safety has inspired him to study for both a Bachelor's and a Master's degrees in Psychology. **nickc744@hotmail.com**

FATIGUE RISK AND THE COVID-19 PANDEMIC

The COVID-19 pandemic has a number of implications for human and organisational performance. One of these is fatigue, as **Philippe Cabon** and **Fabrice Drogoul** explain.

THE COVID-19 pandemic has deeply disturbed ways of working, in all industries but especially in aviation. For a few months, aircraft mostly stayed on the ground and aviation personnel saw an unprecedented slowdown of their activity. In the context of limited hours of work and partial operations, fatigue and associated risk have been largely underestimated.

High levels of fatigue impacts air traffic safety as well as the health and wellbeing of the staff. But more focus on information gathering and monitoring can support organisations in recognising the fatigue levels of their employees. Particular attention needs to be paid to this in the context of reduced job security and increased pressure to support the organisation's survival, even more when resuming operations.

The air transportation industry has paved the way with data collection regarding fatigue monitoring. Fatigue reports sent to Member States are recorded in the European Central Repository. The graphs to the right compare the number and rate of fatigue reports in 2020 with the average of the previous three years. The number of reports has decreased, as might be expected given the reduced air traffic. However, the rate of fatigue reports in April and May was higher than the three-year average.

The analysis of these fatigue reports allowed us to suggest a few reasons for this increased level of fatigue.

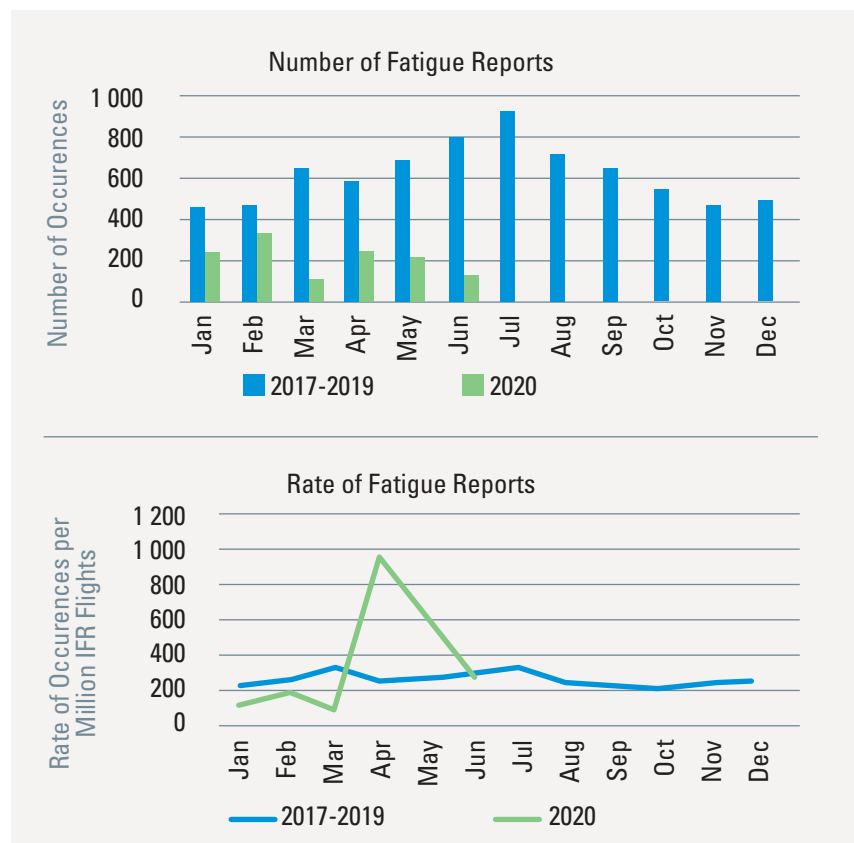
Planning schedulers may have insufficiently considered fatigue. Many organisations experienced a significant reduction in work from March to June

and as a result reduced their workforce, either through furlough or redundancy. The reduction in working staff has the potential to leave remaining staff working longer, more intense hours. Many organisations set up longer working hours, including increased work hours at night.

Reductions in staffing levels may lead to more tasks being accomplished per person. These tasks may be unfamiliar and are therefore more demanding of individuals, who may not be well suited, trained and qualified for the activities they are now performing.

COVID-19 impacts many aspects of personal life which may impact general physical and mental fitness for duty. It has undoubtedly increased uncertainty, anxiety and stress for people in general, impacting personnel's focus and quality of sleep. Increased use of smartphones and longer commute time (due to lack of public transport) perhaps also affected fatigue levels.

If most companies have partly resumed their operations, the COVID-19 pandemic continues to impact staffing levels and air transport organisations must improvise with a lot of uncertainty.



We have formed the following principles for managers to increase the focus on their employees' fatigue in this particular context:

- Foster your employees to acknowledge and communicate about their fatigue through fatigue reporting.
- Analyse fatigue reports to identify the main area of risk.
- Assess fatigue risks associated with duty rosters.
- Inform your employees about these increased risks (through normal communication channels and training), highlighting the difficulties imposed by the pandemic. **S**

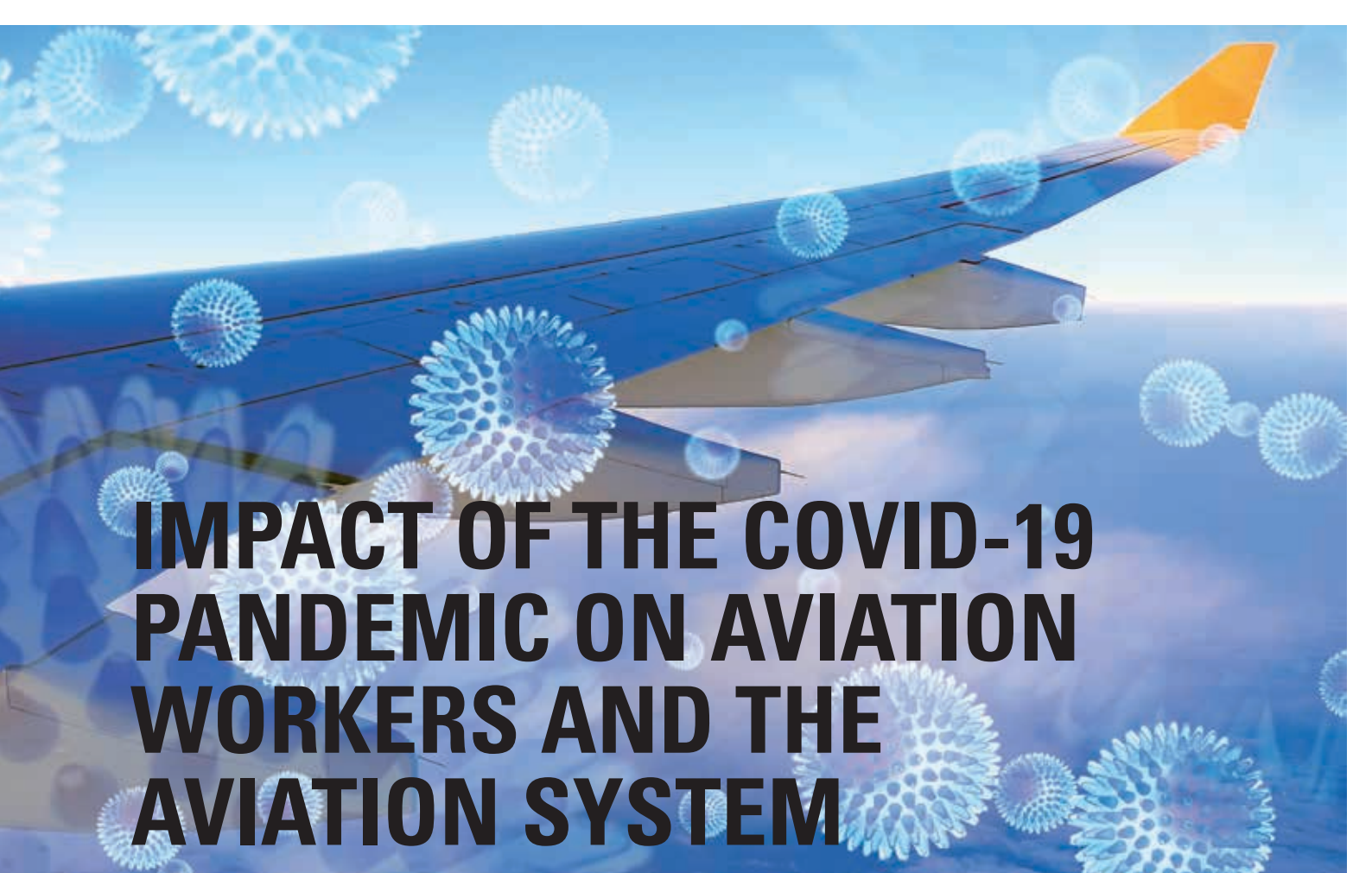


Philippe Cabon is a Human Factors expert, Associate Professor in Human Factors at Université de Paris, co-founder of Welbees, a company specialised in Fatigue Risk Management Systems.
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Fabrice Drogoul is a Human Factors expert from EUROCONTROL, course manager of the Stress and Fatigue management course and responsible of fatigue management in the OPS room initiative. Fabrice and Philippe started their collaboration in 1998 on fatigue research in ATM and work together on fatigue and stress training and assessment.
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IMPACT OF THE COVID-19 PANDEMIC ON AVIATION WORKERS AND THE AVIATION SYSTEM

THE COVID-19 pandemic has affected aviation workers and the aviation system more than most could imagine, with a significant impact on wellbeing. **Captain Paul Cullen** follows up his article in *HindSight* 30 with feedback on the results of a survey of over 2,000 safety-critical aviation workers.

Over a three-week period in August, an anonymous online survey was conducted, with the objectives of understanding and evaluating the impact of the COVID-19 pandemic on aviation workers and the aviation system, and to identify solutions in collaboration with stakeholders.

The key issues examined were

- the extent and speed of change
- the probable deterioration in morale and wellbeing of safety-critical staff, and
- the possible lack or delegation of safety oversight in the industry.

More than 2,000 safety-critical workers responded, with the largest number of responses from pilots (38%), cabin crew (19%), air traffic control (11%) and engineering (8%). The data are currently being analysed, but preliminary findings

have been published, with the following key indicators.

1. Those people who have lost their jobs or are experiencing mental health difficulties need immediate support.

High levels of anxiety were observed, with 36% of respondents indicating mild anxiety, 13% moderate and 11% severe. In fact, 18% of respondents met the threshold for moderate depression, with 7% moderately severe and 5% severe.

A clear correlation was found between suffering and age, with higher levels of suffering in younger participants. Over half of those working in the air traffic control sector reported that their wellbeing was negatively impacted by the pandemic, with 37% reporting a deterioration in their mental health.

When compared with data recorded in 2018 by this research group, an increase was observed in the number of pilots suffering with depression at all levels of severity, and this is in line with what is being observed in the general population.

2. Organisations and workers need to manage specific sources of stress and anxiety, and the specific impact of COVID-19.

Overall, 23% of respondents indicated that their company provided employee support to manage wellbeing since COVID, but less than a quarter of these respondents made use of the support.

Almost all respondents (97%) working in the ATC sector reported being financially affected by COVID-19, and 55% were worried about meeting financial obligations.

3. Roles and responsibilities of stakeholders in relation to managing wellbeing require rethinking and clarification.

We found that 78% of respondents indicated an unwillingness to disclose mental health issues to their employer. Extremely low numbers of respondents reported having ever discussed an issue with either peer support programmes (PSPs, 3%) or employee assistance programmes (EAPs, 2%). While 79% of ATC respondents would not disclose to their employer, 4% reported using Peer Support; this was the highest uptake of all staff groups.

4. Need for peer support programmes for all aviation workers.


Despite the low uptake of PSPs and EAPs, 68% of respondents indicated a willingness to seek help if needed. Furthermore, 70% were aware of a Peer Support Programme and 60% would use organisational support if provided. Encouragingly, 79% of ATC workers were aware of peer support programmes, while the responses suggest that such supports are almost non-existent in the engineering/maintenance sector.

5. Issues pertaining to wellbeing culture need to be addressed.

Wellbeing was not considered a priority for 80% of respondents.

6. There needs to be stronger regulatory pressure on the implementation of the currently deferred regulations in relation to the management of wellbeing and mental health of pilots, and also to extend this to cover all safety-critical workers.

A total of 69% of respondents felt that changes in morale were negatively impacting on worker engagement and 47% felt that motivation was deteriorating. Additionally, one in three respondents felt that safety oversight, both within their organisation and from the regulator had deteriorated during the pandemic. One in four respondents reported feeling that their competence to do their job safely had deteriorated.

The survey showed a variety of concerning impacts of the pandemic on mental wellbeing. In the coming weeks, a thorough analysis of all findings will be conducted and reported. The evidence will be disseminated to support: 1) a recovery roadmap and strategy; 2) organisational action; and, 3) a policy and regulatory approach. A further update will be published publicly in the future. 

"The survey showed a variety of concerning impacts of the pandemic on mental wellbeing."



Captain Paul Cullen has been an airline pilot for over 20 years, with over 13,000 hours flying A320, A330 and B737. He has a particular interest in the mental resilience of pilots and is an accident investigator and researcher with the School of Psychology, Trinity College, Dublin.

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The Lived Experience Wellbeing Project is an independent research group based at the Centre for Innovative Human Systems, School of Psychology, Trinity College Dublin. The research team led by Dr Joan Cahill & Captain Paul Cullen examine the effects of work-related stress (WRS) on aviation worker wellbeing and the associated impact on performance and flight safety. Further, the research addresses solutions to WRS both an organisational and employee/worker self-management level. This includes tools to promote stress coping, wellbeing awareness and management and risk assessment for WRS/wellbeing. This research group, although independent, actively collaborates with aviation stakeholders – including the regulator and industry wellbeing and safety working groups.



LEARNING FROM EVERYDAY WORK IN AVIATION: LESSONS IN A TIME OF COVID

Everyday work in aviation COVID-19 pandemic has been affected almost beyond recognition, and with it how we feel about work and the future. *HindSight* Editor-in-Chief **Steven Shorrock** asked air traffic controllers and professional pilots about their experiences.

“The current situation presents a ‘skills fade’ challenge for all controllers”

Without regular application, the high level of aerobic fitness achieved by athletes can evaporate in a fraction of the time that it took to attain. The same can be said of ATC competency. Those of us working in procedural and technical roles are acutely aware of the challenge of maintaining competency despite periods away from the operation. The current situation presents a ‘skills fade’ challenge for all controllers. When traffic levels increase, we must ensure that we avoid the ‘frog in the pan’ scenario, and we are working with our training, technical and competency teams to ensure we have robust strategies to get back to full ATC fitness.

Ady Dolan, ATM Procedures & Development Controller (Heathrow), UK

“The importance of building relationships and trust in good times”

I’ve learned that no matter how confident you are about the path you’re on, and how resilient you think you are, managing your resilience over time is quite challenging, especially if you are in a situation that has no clear outcome over time. As a leader, it has shown me the importance of empathy and compassionate leadership in navigating a team through an already challenging environment and on the importance of balancing emotional needs with mission objective within a team. Finally, it has shown me the importance of building relationships and trust in good times that will sustain the team in bad times.

Paul Reuter, Captain (Boeing 737NG), Luxembourg

“ATCOs were affected by isolation, loneliness and uncertainty”

During the COVID period, besides the disease anxiety, ATCOs were affected by isolation, loneliness and uncertainty. Isolated in our control centre, we barely had news or contact with anybody for days. We felt useless: no aim nor any working perspective during our duty. Used to being ‘in control’ and to anticipate, we experienced motivation loss, weaker commitment and passive behaviour, including disengagement on changes integration and on documents updating efforts. This wellbeing and safety drift may create new holes in the James Reason Swiss cheese model.

Sebastien Follet, ATCO (TWR/APP), France

"The sense of community has been heart-warming"

Prior to the pandemic, simple interactions at work were taken for granted. As humans we (mostly) thrive and depend on face-to-face contact. Needed for our mental health and wellbeing, it is this aspect which has impacted the way I view work in the current situation. With no clear idea of what the short-medium term future holds for the industry, I've found myself cherishing every opportunity to work and try to really interact with everyone I come into contact with during the course of my duties. The sense of community has been heart-warming in these difficult times. The professionalism demonstrated with an ever-present threat of redundancy has been nothing short of inspiring.

Pilot, Captain (A350), UK

"People are willing and capable to adapt and adjust their work"

The pandemic changed everything in a way I have never experienced during almost 40 years as an ATCO. During these last months, I have learned that even when conditions change dramatically and outside of the system's normal boundaries, people are willing and capable to adapt and adjust their work so that production can continue, and the work gets done while maintaining safety. And this was done without too much action from management.

Anders Ellerstrand, ATC Centre Watch Supervisor, Sweden

"Returning to flying after many months off was a daunting prospect"

Returning to flying after many months off was a daunting prospect. Would I remember everything I needed to? What elements of my skill set would return easily? It became apparent that motor skills – the actual flying of the aircraft returned very quickly – it was like I had never left. However, cognitive processes took a little more time. In

fact, a few flights in, small things were forgotten. I suppose I began to relax more. However, mitigations included keeping things 'SOP', taking things slowly, and ensuring the operation was kept as simple as possible.

Ben, Captain (A320), UK

"An extra dose of care and attention...has been necessary"

The COVID-19 pandemic has faced us with an unprecedented scenario. Some issues have come up strongly. 1) The importance of the team. It has become clear that it does not depend on an individual performance. An extra dose of care and attention to each other and to the operation has been necessary, and a strong stress reliever. 2) The uselessness of 'the super controller'. Today, the super controller is the one who knows his or her limits, accepts help, and asks for help. 3) This crisis has highlighted the enormous interference posed by 'the ego', and how it underlies many of the main operational problems.

David Garcia Hermosilla, ATCO (ACC), Spain

"My ex-colleagues showed little or no degradation in pure piloting skills"

Planning licence revalidations for my ex-colleagues after the bankruptcy of our previous employer, I was little nervous the evening before the first check. What to do, if your colleagues perform insufficiently? The worst would be if you have to fail them.

Surprisingly, my ex-colleagues showed little or no degradation in pure piloting skills. It perhaps took a minute longer to get used to the aircraft again after half a year on the ground but flying skills seem to be quite resilient. What definitely showed degradation was scanning skills and overview in general. These are the skills required in complex and unexpected multiple failure scenarios.

Wolfgang Starke, Dash8-Q400 Captain, Germany

"We have to take care of our mental wellbeing"

The lack of certainty and the scarcity of tasks let the mind run, while equilibrium is essential. I had never felt anxiety but there were different and opposite reactions (from panic to refusal). Although measures to protect airport workers from infection were taken immediately, the emotional impact caused by the pandemic was not taken in equal consideration. One morning during a break, I was walking in the airport and the only sound was ambulance sirens and bells announcing deaths. I have noted the immediate resilience (mental and logistic) of most of my colleagues. But this exceptional situation has confirmed that if we look for high performance at work, we have to take care of our mental wellbeing, as well as physical.

Marcello Scala, ATCO, Italy

"I learned about adaptive capacity"

Resilience is nothing new in the world of safety science. However, I learned the importance of extrapolating the concept to business strategy and operations. In fact, it can even be reduced to the level of household or individual resilience. While some organisations like Amazon had business models that were already aligned for success during COVID, I learned more about adaptive capacity watching my airline transform their passenger aircraft into freighters by utilising cargo netting, seats, and existing anchor points in a novel way. Innovation like this is driven by front-line field experts collaborating with managers, engineers, and regulators to drive change.

Brian Legge, Training Captain (Boeing 777), Hong Kong

"Problem-solving took place again during lockdowns"

One of the key factors to manage air traffic is problem-solving, and even when traffic decreased dramatically,

controllers have to face new challenges. Problem-solving took place again during lockdowns to keep teams working together, despite all limitations. It was incredible how the system worked because of the definition of the system itself: 'a group of interacting or interrelated entities that form a unified whole'. COVID-19 posed new way of interacting, but problem solving made it work again.

Oliviero Barsanti, ATCO, Italy

"COVID-19 has changed our lives as pilots utterly"

COVID-19 has changed our lives as pilots utterly, mainly for worse, although in other ways for better – sleeping in my own bed instead of spending two or three nights per week in hotel rooms. After the initial five weeks without flying, I've since flown almost weekly, enjoying quiet airports and airspace. In 20 years of flying into Heathrow, I had never before been given "Direct centre-fix and high speed approved. Let us know when you're slowing down!" from 80 miles out. Then back out early (what's a slot?) with pushback to airborne in four minutes. (Pity about the pay cut, though.)

Niall Downey, Airbus A320 Captain, Ireland

"I wasn't aware of how important wellbeing is"

Up until the beginning of the pandemic, I wasn't aware of how important wellbeing is to personal happiness and to those around me. Everyday work and family life unfurled in a routine way. Then air traffic stopped. Wellbeing is not something we think of every day, however, through anxiety over competency through lack of traffic, for the first time worry over job security and potential economic measures, it is something that has become important – much more than I could have imagined. It is omnipresent, something that we take home, even if we pretend that these things shouldn't affect us.

Jules, ATCO (Geneva TWR/APP), Switzerland

"ANSPs could study the system to be ready when the traffic resumes"


In the European ATM system of a few months ago, the only problem that seemed to exist was the lack of capacity and the lack of controllers. Then the black swan, COVID-19! Traffic suddenly dropped from one day to the next by 90%. So how does the ATM system react? ANSPs could study the system to be ready when the traffic resumes, or could dedicate this time to select new staff and train them to be available in

a couple of years (the time it takes to train a controller). Unless we do this, when traffic starts to grow, we will ask ourselves how to deal with the lack of controllers and the lack of capacity of the European ATM system, again.

Marcello Di Giulio, ATCO (ACS-RAD, Milano), Italy

"Our job as air traffic controllers is much more akin to that of athletes"

The current pandemic has reminded me and my colleagues how our job as air traffic controllers is much more akin to that of athletes and sports people than to that of office workers. Every day, we have to perform to the best of our ability, applying the skills acquired during our training and perfected through experience. The drastic reduction in air traffic has brought the problem of skill fading to the fore, whose effects we must minimise in preparation for when air traffic returns. In the same way that athletes practise competition scenarios during their training, it will be important for air traffic controllers to have access to simulators so they can hone their controller skills back to their peak level.

Luis Barbero, ATCO (Heathrow Approach), United Kingdom 

LEARNING FROM EVERYDAY WORK IN HEALTHCARE: LESSONS IN A TIME OF COVID

The COVID-19 pandemic has had one of the biggest effects on work-as-done in healthcare in recent memory. So what might we learn about work from the perspectives of frontline workers? *HindSight* editor-in-chief **Steven Shorrock** asked a variety of practitioners.



“Frontline workers are the solution to most problems”

During COVID19 I learned that the need for change is the only thing we can reliably predict about the future. Fortunately, frontline workers are the solution to most problems that will inevitably arise. They are the most valuable resource in healthcare, both for delivering the care and for designing how to do it. Locally, we have seen rapid, successful innovation of work practices through the marriage of simulation and human-centred design principles. Sadly, though the safety of our workforce is paramount, it has been threatened worldwide. We still haven't learned how to put humans at the centre of healthcare.

Chris Nickson, Intensivist, Australia
@precordialthump

“The pandemic has required groups to leave their silos”

High trust relationships are critical to safety. Strong bonds within groups develop organically over time. This social capital has many advantages particularly during a crisis, but can have the unintended consequence of excluding others. The pandemic has required groups to leave their silos and to collaborate rapidly on high-stakes issues. I have learned that we need to call on those who have not previously

routinely been included in healthcare teams – such as aerodynamic scientists and occupational hygienists – to keep workers and patients safe. Many of these experts are accessible on social media, primarily twitter, and have been generously sharing their expertise for the benefit of all.

Tanya Selak, Anaesthetist, Australia
@GongGasGirl

“Team learning is needed”

Individual adaptations are necessary to cope with goal conflicts, but team learning is needed to maximise the impact and ensure the safety of such adaptations. In my GP practice, daily ‘huddles’ (short meetings) were used to discuss how we implemented rapidly changing guidance while coping with varying conditions (e.g., demand and capacity) and competing goals (e.g., reducing hospital admissions while maintaining patient safety). Huddles encouraged sharing of innovative practice and increased understanding of why decisions were made and how decisions affected other parts of the system. It also supported those making difficult decisions and ensured people did not drift into unsafe practices.

Duncan McNab, General Practitioner, Scotland
@Duncansmcnab

“Diverse views were brought together”

The potential impacts of COVID-19 required a rapid reconfiguration of the intensive care unit. This required many different teams: ICU clinicians, infection control nurses, biomedical engineers, builders, ventilation engineers and quality improvement specialists. These diverse views were brought together for the complex, dynamic problems we faced. This work leaned heavily on the pre-existing relationships built up during a recent volcanic burns disaster. Additionally, the redesign of clinical work was based on four requirements: to be SAFE, SIMPLE, SUSTAINABLE and ADAPTABLE. The ability to anticipate potential challenges required imagination and a deep understanding of the realities of everyday work.

Carl Horsley, Intensivist, New Zealand
@HorsleyCarl

“It is critical that ‘work-as-prescribed’ reflects ‘work-as-done’”

Healthcare has a reputation for resistance to change, particularly top-down initiated change, with limited consultation with clinicians. During the pandemic, many frontline clinicians experienced change done ‘to’ them, instituted by administrators, particularly rationing personal protective



equipment. Other organisations have initiated clinician-led processes, resulting in durable models of care but uncovering ‘wicked problems’. COVID-19 has taught me that engaging clinicians doing the work increases short-term complexity, but doing otherwise risks failure in the long term, losing trust on the way. It is critical that ‘work-as-prescribed’ reflects ‘work-as-done’ to prevent depletion of the workforce through infection and exhaustion.

Kara Allen, Anaesthetist, Australia
@ergopropterdoc

“For the first time, work and its goals were shared”

“I know what I’m doing, I don’t need to be told how to do it” ... these are words I haven’t heard during these months of COVID19. This whole experience was new for everyone. For many professionals, it has created a touching sense of humility, both among frontline actors and managers. I believe that this humility has facilitated communication and the emergence of a shared governance between caregivers and administrators where I’ve been working. For the first time, work and its goals were shared and the gap between work-as-imagined and work-as-done was almost zero.

François Jaulin, Anesthesiologist-Intensivist, France @Francois_JAULIN

“Looking back, local practice is not ‘work-as-prescribed’”

Despite 25 years in the specialty, the COVID19 pandemic was my first introduction to Personal Protective Equipment (PPE) and a FFP3 mask. Fit testing achieved and training in PPE donning and doffing undertaken was great preparation to prevent catching a deadly viral disease. However, this was no preparation for the daily challenges of working in PPE exacerbated by concerns around PPE availability and changes in doffing station practice. The impact of heat, the need for good hydration, and the communication challenges became stressors – recognised and managed by great team working through adaptations in how we worked. Looking back, local practice is not ‘work-as-prescribed’.

Alastair Williamson, Anaesthetist, UK
@dr_alwilliamson

“Work-as-done can be close to work-as-imagined”

I have learned that some types of ambulance service work systems that would previously have been considered very difficult to change, can actually be reconfigured at pace and new ways of working can be introduced, which led to significantly different system performance. Work-as-done can be close to work-as-imagined with changes up to a certain size. With larger groups of workforce, it can be very difficult to influence multiple, often subtle, changes in work-as-done to match with the more easily changeable work-as-prescribed (and work-as-imagined). This was particularly evident in the early stages of the response phase when clinical, logistical and PPE criteria were becoming established.

Gary Rutherford, Ambulance Service Patient Safety Manager, Scotland
@garyrutherford2

“Let user-centred and data-driven design lead us in rebuilding”

COVID-19 has shone a light on our lack of insight into complex system design. Healthcare is a precarious thing, balancing on the backs individual and team resourcefulness and resilience. Emergency medicine, in particular, suffers from ‘ad hoc-itis’. Our ability to improvise solutions in the face of massive systemic limitations and inefficiencies is practically a professional badge of honour. But it doesn’t have to be this way. We can build systems that make sense. We can use simulation-informed design, prototype testing, multi-source feedback and hazard analysis to help manage complexity rather than compel us to work against it. The pandemic has compelled us to tear down and begin again, and therein lies a massive challenge and unprecedented opportunity: let user-centred and data-driven design lead us in rebuilding.

Christopher Hicks, Emergency Physician, Trauma Team Leader, and Simulation Educator, Canada
@HumanFact0rz

“By starting to address problems iteratively we could create a network of actions”

The biggest problem we faced at the start was the uncertainty and a stream of unfiltered information. We had tentative ideas of what needed to be done and what might happen. What we learned subsequently was that by starting to address problems iteratively we could create a network of actions that we could knit together. We rapidly developed a tolerance of failures, using them, with active feedback, to modify our processes and facilities adaptively, alongside the new information that became available. This made it much easier to try and keep pace with a rapidly evolving situation.

Alex Kazemi, Intensivist, New Zealand
@KazemiAlex

“A significant issue...has been effective communication”

A significant issue for health professionals during the coronavirus pandemic has been effective communication while wearing PPE, especially for aerosol generating procedures. Voices are muffled, hearing is compromised and implicit communication through facial expression is lost. This is especially a problem for resuscitation teams working under pressure. We provided our staff with 5 tools (PRESS) to improve communication using PPE:

- P – Pre-transmission pause – think before you speak
- R – Read back – close the loop
- E – Eye contact – ensure focussed attention
- S – Say again – repeat critical information.
- S – Shared team mental model with a team rally point

Stephen Hearns, Consultant in Emergency and Retrieval Medicine
@StephenHearns1

“We were finding solutions from the ground up”

During the start of the pandemic, the rules and guidance we had normally been following were gone. Sometimes, rules set out by people that don't 'do the work' are not the way that the work happens. These rules end up being a barrier to do the right thing. For example, filling a 35-page safety booklet about a newly admitted patient takes us away from practical tasks such as personal care or administering medication. Now, no-one knew the best way to do things. There was no evidence base to draw from, and no exemplars to follow. This led to a more collaborative approach. Everyone came up with ideas, and many more came from social media. We openly learned from each other. We were finding solutions from the ground up and the senior leadership team listened.

Claire Cox, Former Critical Care Outreach Nurse, England
@safetynurse999

“The ability of staff to innovate and adapt was remarkable”

Without timely clear guidance arriving down the traditional lines, the ability of staff to innovate and adapt was remarkable. The constraint of normal change bureaucracy was temporarily suspended and essential new ways of working arrived in a rapid and remarkably effective way, significantly prior to written SOPs. Front-line staff absorbed the principles and developed them in appropriate ways for their own local work, often utilising the skillset of their staff, e.g., military nurses who had significant experience with PPE and Ebola. Staff needed guidance in underlying principles, but then excelled at translating them into their own working environment.

Pip Fabb, Consultant Anaesthetist, England @PipCassford

“My colleagues and I could adapt rapidly to these new conditions”

Overnight, my job changed from in-person clinical care to online telemedicine. Our telemedicine urgent care started seeing hundreds of COVID patients a day, a disease and volume that were totally new to us. I learned that my colleagues and I could adapt rapidly to these new conditions. The tradeoffs between in-person care and online care were challenging for everyone, as patients feared contracting COVID at the hospital. Communicating clearly with one another and with our patients about uncertainty and risk were essential, as conditions changed rapidly.

Shannon McNamara, Emergency Physician, USA @ShannonOMac

“Design and processes affect the normal functioning of a team”

Preparing a new 'COVID operating theatre' has highlighted the importance of how design and processes affect the normal functioning of a team. To minimise risk, the negative air pressure of a dedicated COVID theatre needs maintaining and non-essential

equipment and personnel removed from the 'hot-zone'. Limiting opening of doors and wearing of masks and face shields results in markedly difficult communication – even when that communication is critical. Cameras, microphones, patching of monitors and hand signals are valuable but inadequate. There is certainly greater appreciation for shared mental models and planning for complications with pre-operative briefings than before the pandemic.

Stu Marshall, Anaesthesiologist, Australia @hypoxicchicken

“Where you draw the system boundary matters”

Where you draw the system boundary matters. I started chairing a theatre COVID preparedness group in March. We quickly transformed the theatre complex to handle a surge in patients with COVID, while keeping staff safe. We liaised with ED, ICU and the wards which are upstream/downstream of theatres. The teamwork, dynamism and psychological safety of the working group were excellent. There were times on the fringes of this system when we found other systems which benefitted from our input. Our system boundary did not include the whole hospital system and that was appropriate, other people were focusing on this. Looking back now I wonder about the care homes. They were not within my system and I didn't give them a second's thought within my planning. Whose system boundary included care homes? What were their working conditions, demands and constraints? How could we do better next time?

Michael Moneypenny, Anaesthetist, Scotland 

HindSight

Human and organisational factors in operations in air traffic management

The theme for HindSight 32 will be **THE NEW REALITY**

HindSight is a magazine for front-line and other practitioners in air traffic management on human and organisational factors in operations.

We welcome articles and short contributions, including good practice examples, by **Friday 2 April 2021**.

We especially welcome articles written by or with front-line operational staff on any aspect of adjusting and adapting to the new reality of work in the context of COVID-19, for example:

- preparation and planning
- new or changed risks
- managing and handling risk
- competency and expertise
- collaboration
- change
- wellbeing.

Articles may include, stories and lessons from operational experience, including what has worked for you, and what has not.

Draft articles (1500 words maximum, but may be around 1000 or 500 words) and short examples of experiences or good practice (that may be helpful to other readers) (200 words maximum) should:

- be relevant to human and organisational factors in operations
- be presented in 'light language' keeping in mind that most readers are front-line staff in ATM
- be useful and practical.

Please contact
steven.shorrock@eurocontrol.int
if you intend to submit an article,
to facilitate the process.

If you are interested in downloading back issues of the **HindSight** collection
http://www.skybrary.aero/index.php/HindSight_-_EUROCONTROL



In the next issue of HindSight:
"THE NEW REALITY"



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