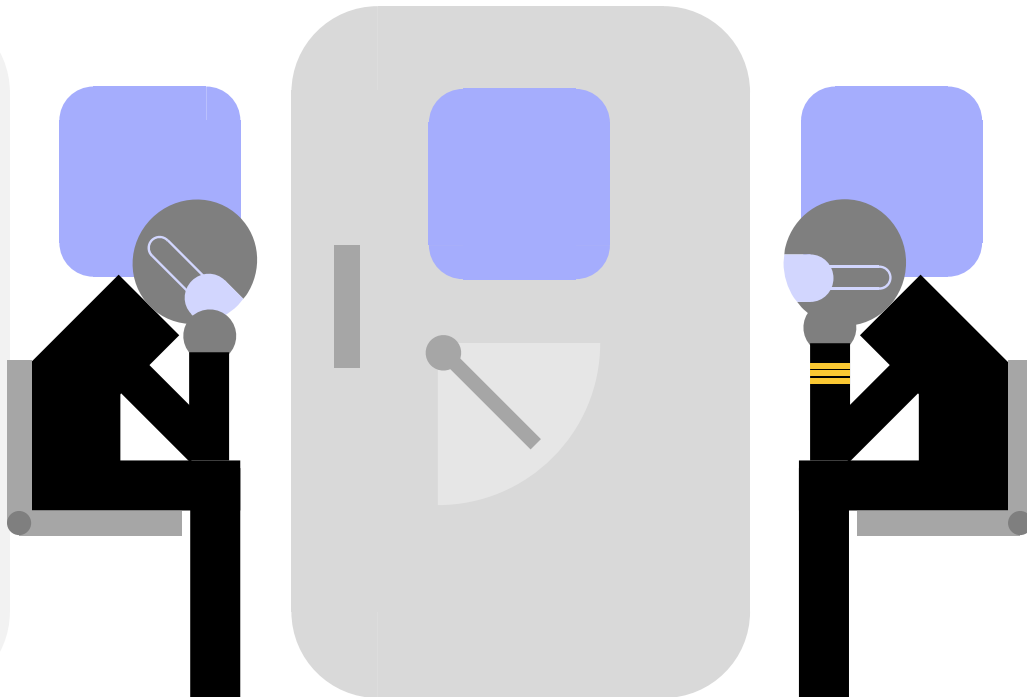




Guidance for managing crew fatigue during a crisis

Edition 1 – 16 October 2020



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All IATA Covid19 related guidance materials can be found at

<https://www.iata.org/en/programs/covid-19-resources-guidelines/>

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Revision record

Symbol	Meaning
□	Insertion
△	Amendment
⊗	Deletion

Revised text is shown in red.

Revision table

Revision	Date	Section	Significant changes
Edition 1	05 Oct 2020	N/A	New issue

1 Introduction

The COVID-19 pandemic has significantly disrupted the airline business and resulted in a crisis for the entire aviation industry. Airlines around the world have cancelled flights, temporarily suspended operations and/or are continuing with limited resources. To help the airlines deal with the restrictions implemented as a result of COVID-19, States are granting temporary alleviations to extend medical or training currency, Flight and Duty Time Limitations, and other regulatory requirements based on a supporting safety risk analysis and advocating rationale.

Today, Governments together with all aviation stakeholders are joining forces to come up with a common plan for a progressive restart of the operations.

There are many challenges we are facing in terms of fatigue management during, and as a result of, this unprecedented COVID-19 crisis. This includes a shift in where our fatigue hazards may be coming from, how we can effectively identify these hazards and recognize changing safety behaviors. As a result, the effective and flexible monitoring and management of fatigue carry significant importance.

This document provides considerations to airlines on how to effectively manage fatigue during the COVID-19 crisis. The recommendations provided herein are to be considered as a baseline for best practices. All airlines should follow applicable regulations and guidance issued by their respective authorities. IATA will continuously improve and update this guidance as more information becomes available.

2 Changing Fatigue Risks

With many airlines having reduced operations fatigue isn't a risk that immediately comes to mind, with crews working reduced hours and extended periods of time off between operational duties. However, airlines may find during COVID-19 operations, and the return to operations, there are fatigue risks arising from previously unidentified areas.

New areas of potential fatigue risks may include:

- Reduction in staffing levels having the potential for remaining staff to be working longer, more intense or condensed hours.
- COVID-19 health and safety measures may cause a more fatiguing working day.
- COVID-19 influencing many aspects of personal life, affecting crews general physical and mental fitness.

Some non-roster related fatigue considerations airlines may need to assess with a return to operations could include:

- Crews having taken up alternative or secondary employment during reduced working hours, impacting their time free of duty and sleep opportunities.
- Changes to home living circumstances, such as home schooling of children, loss of income across households and displacement from previous housing.
- Increased commute times potentially caused by reduction in public transport access, reduction in flight schedules for positioning crews, or crews who have relocated due to displacement from previous housing.
- Changes in crews' physical and mental fitness caused by COVID stressors, (such as changing financial status of households), concerns over health of themselves or family members, uncertainty over employment stability, and reduced social activities (such as support structures and fitness facilities).

3 Changing Safety Behaviors

During COVID-19 operations airlines and crews have identified shifts in attitudes and perceptions around safety and subsequent safety behaviors. When faced with competing priorities around personal and operational considerations it is not unusual for individuals to downplay or reduce attention on hazards that in an uncertain and complex environment seem to be less of an immediate threat.

Airlines and crews may find that their perception of fatigue hazards becoming under-appreciated as a result in less roster related fatigue factors being in play. Unfortunately, regardless of the cause of fatigue impairment, roster related or not, the safety implications are still present. With reduced staffing levels faced by many airlines the layers of defences in place to minimize hazards resulting in unsafe outcomes is likely to be reduced. Considering fatigue impairment of individuals within an operating environment with reduced layers of defence, this becomes more critical as it is more likely that we are relying on final layer of defence within operations of front-line crews identifying a hazard and acting accordingly.

Changing safety behaviors to be aware of may include:

- Reduced safety and fatigue reporting by crews
- Increased likelihood of crews not identifying when impaired by fatigue
- A higher acceptance of reduced safety margins within operations
- Rushing or reduced time allocated for safety checks and procedures.

4 Changing Fatigue Management Strategies

With the changes in fatigue risks and safety behaviors airlines need to consider the effectiveness of the fatigue management strategies within this new environment. Some areas for consideration may include:

- Increasing or changing training/education on Fatigue and Fatigue Management, especially in the area of personal fatigue management to assist crews to manage additional stressors impacting sleep health and alertness.
- Identifying potential new fatigue data sources to mitigate possible reductions in safety and fatigue reporting. These could include:
 - Crew fatigue related surveys,
 - Top of Descent (ToD) reporting on specific routes/city pairs,
 - Flight Data Monitoring and Analysis,
 - Greater reviewing of planned versus actual duty times and operational delays,
 - Reviewing transport times and commute logistics.
- Recognizing that changes to operations will have an impact on bio-mathematical modelling. With reduced flying rosters and the emergence of more non-roster related fatigue hazard the use and interpretation of bio-mathematical modelling needs to be reassessed under COVID-19 operations. Previously set acceptable thresholds may need to be made more conservative to allow for fatigue causing factors not identified by modelling.
- Increased management commitment and communications to crews around the recognition and support of fatigue management, with the recognition that operations within COVID-19 create unique fatigue hazards that need to be identified and reported by crews for the effective mitigation of them by the organization.

5 COVID-19 Fatigue Related Webinars

5.1 Webcast - Extending Flight and Duty Limits for COVID-19 "Special Ops".

What is in the reference?

[A webcast of fatigue experts representing ICAO, the CAAUK and Delta Air Lines, discussing the risks and possible mitigating strategies of flight duty extensions](#)

Why is it important?

The COVID-19 pandemic has resulted in some circumstances where there may be a need for operators to move outside existing flight and duty limits and related requirements to enable essential or emergency services. As some of these extended operations are beyond current operational experience with little or no evidence as to their safety implications, it is particularly important for States to ensure the fatigue risk linked to extended operations, is managed in a way that supports adequate crew performance and recovery.

This webcast provides up to date and tailored advice to airlines who may wish to apply for extensions and regulators who approve these applications.

5.2 Webcast - Managing Fatigue in COVID-19 "Normal Operations".

What is in the reference?

[A webcast of fatigue experts representing ICAO, Qantas Group and Avialytics, discussing fatigue mitigating strategies for operations during COVID-19, within existing flight duty limitations.](#)

Why is it important?

Some operations during COVID-19 are beyond the current operational experience, and there is little to no evidence as to their safety implications. During this challenging time, it is particularly important for States and Operators to ensure that fatigue risk is managed in a way that supports adequate crew performance and recovery.

This webcast provides insight in managing fatigue risks introduced by the operational changes during COVID-19 conducted under normal flight duty limitations, and how data-driven decisions are a key component of overall flight safety.

6 Q&A

6.1 Current Environment

What would be your message to airline executives regarding fatigue risk management and the New Normal?

The COVID-19 pandemic changed aviation overnight, and those changes enhanced the risk of fatigue. The continuous changes driving new operational realities compounded with stresses, alleviations, and personal wellbeing has highlighted the need for Operators to provide tools and information that will assist crew to utilize new personal fatigue risk mitigations to address the challenges with operating during this time.

Post-COVID-19 operations will also bring with it, new risks. As such, it is more important than ever to use Fatigue Risk Management to systematically identify, risk assess, mitigate and manage these new fatigue related safety risks. Failure to do so can result in unmitigated risks resulting in errors, incidents and accidents with the associated losses, including that of public confidence in aviation safety.

Would it be possible to dwell on the challenges faced in terms of Fatigue Management when operating in this new normal environment?

There are many challenges we are facing in terms of fatigue management in this changing environment. These include a shift in where our fatigue hazards may be coming from, how we can effectively identify these hazards and recognizing changing safety behaviors.

People are more likely to be fatigued for reasons other than just impaired sleep. Furthermore, these may be both work and non-work-related causes. Movement and socializing restrictions will affect physical and psychological recovery, whether at home or on layover. The manifestations may be different and displayed as decreased alertness rather than overt sleepiness. This makes it difficult for operators to manage as they cannot identify when this is occurring, instead having to rely on crew to be open and forthcoming when they are experiencing non-work-related fatigue.

Operators need to assist crew by raising awareness around this increased risk of personal fatigue factors. Crew Resource Management (CRM) training can be used to provide more focus on human performance in the context of fatigue, to improve crew alertness and use of effective personal fatigue management techniques. Additionally, internal awareness campaigns utilizing proven delivery mechanisms (e.g. videos, notices, email), can facilitate the delivery and understanding of this message.

Lastly, the continued promotion for the need of crew to identify and report fatigue events or issues is essential in detecting problems early and relies upon a safety culture in which crew feel comfortable to do so.

How will mental health disturbances derived from the COVID-19 pandemic be considered with regards to sleep physiology, hygiene and behavior?

Stress caused by COVID-19 and the changes in our lives at this time are highly likely to impact on our sleep health. It is well known that stress impacts on both sleep quality and duration. But also, that poor sleep impacts on our ability to regulate our emotions and our ability to manage stress too.

We all need to recognize that as human beings we will be impacted by stress and sleep loss – so we need to identify personal stress and sleep management techniques that work for us.

We also need to recognize that as individuals, not everyone is going to be impacted or affected in the same way. We need to find what works for us specifically and recognize that organizations cannot identify who may need more support and assistance than others. The availability of Employee Assistance / Peer Support programs as well as airlines' medical staff are all resources that employees can use to privately seek additional support. It is important for operators to continue promoting their use and availability.

So, we need to work together as teams to manage this new reality.

How do you suggest empowering personnel to increase sleep hygiene and habits and manage emotions to improve Human Performance during this new normal?

Increasing awareness on the impacts that COVID-19 can have on our sleep and fatigue is the first step. This involves letting people know that it is not unusual to be experiencing these issues and providing information on good sleep hygiene practices especially around stress.

Operators should also bear in mind that not just crew, but everyone in the organization will potentially be experiencing these effects, including managers and non-operational staff.

We can all work to create not only a healthy, just culture but also a culture that recognizes that as human beings we have performance limitations and will sometimes be impacted by factors outside of our control.

IFALPA has documented "Fatigue Mitigation for Flights Affected by COVID-19 Restrictions" that provides recommendations for both operators and crews to consider when managing fatigue risk during these operations.

I worry about operators pushing the limits of FTLs now, perhaps with fewer crew having to fly to limits, combined with the added non work-related factors. A just culture is important now, and would be important to stress when crew return to work

This is very true about a just culture. Also, not only a healthy just culture but a safety culture that recognizes that as human beings we have performance limitations and will sometimes be impacted by factors outside of our control.

It is important that both crew and operators recognize that the stress and uncertainty around COVID-19 is causing unprecedented hazards to the aviation system. But it is not all negative. There are operational benefits to be realized by monitoring fatigue data in a proactive way, and the operational challenges that COVID-19 has introduced have stressed this more than ever.

Hello, I operate as crew in an airline with a prescriptive approach to fatigue management, but there is no feedback process, and the overall culture is one where boxes are simply ticked for regulator purposes but rosters are still built with fatigue, and crews often work to limits. How can management be convinced to place even more emphasis on fatigue during COVID-19, when they haven't done so during normal operations?

During this time of uncertainty in our industry, we must get operators to understand that being aware of and managing fatigue is important to a successful return to operations. By highlighting this specific hazard through guidance such as this, we hope to do so.

Even operators that haven't had a great focus on fatigue previously can look at ways to build up on basic dual responsibility fatigue management elements. These could include at a minimum:

- Awareness training on managing personal fatigue for safety critical staff – with additional focus on stress and fatigue during COVID-19
- Taking into consideration basic scientific principles within roster design around time awake, minimum sleep opportunities and circadian rhythms
- Providing a reporting mechanism for staff to report when fatigue hazards do occur and result in the inability to perform safety critical duties

It must also be understood that prescriptive FTLs were built for "normal operations". The operational environment has changed so much, some of the assumptions around those FTLs may no longer be valid. It is an opportunity to gather and use the critical information necessary, including scientific studies, to gain insight and determine any essential change.

This is a critical time for our industry as even one wrong move regarding safety could have long lasting effects on our ability to successfully restart and rebuild.

Regarding business survival mode and the new normal, I've observed that crew are more lenient with safety compliance to protect the commercial viability of the operator. Can the panellist talk on this point please? (Crew may be a risk to consider without realising it).

Yes, this is a particular concern and a point made several times in the webinar.

Raising the awareness of regulators, operators and crew regarding the changing risk tolerance and the trade-offs between safety and efficiency that crew are faced with daily, is essential.

And the organizational safety culture is key here. It is important for crew who observe unsafe acts to report them confidentially, providing the Safety Department with information to review procedures and communicate to the pilots as a whole to prevent such conduct.

Additionally, the monitoring of FDM can objectively identify any changes in decision-making by crew in the flight deck.

In addition to the effect of fatigue on flight safety, how do you consider the potential effect of fatigue on complacency in biosecurity measures? Can it not relax crews and put them at higher risk of COVID-19 infection?

That's a good point. Recognizing this increased risk tolerance as a hazard, informing crews, and providing them with strategies to avoid such complacency is something that should be considered in the guidance being developed to support the new CART Take-Off protocols.

How will mental health disturbances derived from the COVID-19 pandemic be factored, in regards to sleep physiology, hygiene and behavior?

Fatigue Management approaches do not aim to manage mental health - they aim to address the risks posed by fatigue-related performance decrements, regardless of the cause of sleep loss.

However, from a Safety Management System perspective, it is important that individuals understand their responsibilities to report when they are unfit for duty for any reason, and for Operators / Service Providers to have an identified non-punitive process for managing non-fitness for duty (and return to duty), regardless of whether the cause of non-fitness is lack of sleep or a mental health issue.

6.2 Reporting

Operators are seeing a marked decrease in the amount of safety reports being submitted, including fatigue. This can be due to a number of circumstances, such as:

- decreased flying for some crew (no fatigue to report);
- increased flying for other crew (too busy to report);
- crew uncomfortable reporting due to concerns regarding job security;
- a 'get the job done and don't complain' attitude;
- a belief that the current rostering is the only way to get the job done in the current climate;
- a belief that complaints will fall on deaf ears.

How do you recommend airlines proactively seek for more information on possible hazards to compensate for the reduction in voluntary reports?

Firstly, establish and promote a Just Culture and provide evidence that the findings from the reports will not only benefit the airline but also the crew members. Having said that, those findings and the actions derived from them should be communicated to the crew members. Secondly, make it very easy for them to report, by using other data sources and solicit information from crew members that can only be obtained from them.

Other strategies that are proving effective are focusing on "fitness reports", and/or initiating employee wellness programs that can provide the organization a gauge on employees' perceptions of potential hazards.

6.2.1 Other Data Sources

The major limitation of proven models is that they do not consider workload except for number of sectors. Should the approach not be based by SME on each type of operation?

It is very much agreed that there are limitations to models, one of which is that they may not fully consider specific workload. Some may use the number of sectors as a workload proxy. Consideration should be given to which data may exist within a model that is applicable to what an operator is asking for it to predict. Checking with the model vendor may provide context when trying to establish predictions.

However, as noted, it is not the only limitation of models. That's why ICAO, IATA and most other experts, recognize that models are only one tool to be used by experienced SMEs. Their output needs to be viewed with an informed operational lens and not followed blindly.

For more on models, refer to the IATA Fatigue Management Technical Group paper [IATA FMTF White Paper on Uses and Limitations of Biomathematical Fatigue Models](#)



What is ToD reporting?

Top of Descent Reporting (ToD). A crew member reports their subjectively experienced fatigue level on a scale (e.g. Samn-Pirelli or KSS) at a certain point(s) in flight, often just prior to Top of Descent.

For more information on data collection refer to the IATA Fatigue Management Technical Group paper [Common Protocol for Minimum Data Collection Variables in Aviation Ops](#)

Which apps do you recommend for Top of Descent (ToD) surveys?

There are some individual solutions that utilize the Crew Journey Log or ACARS messages and there are also a couple of commercial solutions that have a ToD survey as a feature.

As part of the IATA Fatigue Aware initiative we have developed a service to integrate into existing EFB-solutions as well as an app for iOS and Android devices that allows to file an intuitive ToD report within a few seconds.

Currently the app is only available to participating airlines, but a version that can be downloaded and used by any pilot or cabin crew is awaiting public release. More information can be found at the [Fatigue Aware web site](#)

For the Survey, do you think we should limit the number of questions, when pilots usually have trouble responding?

A staged approach is best. It should not take the crew member more than a few seconds to provide the most important information (e.g. ToD Fatigue self-observation). However, any survey tool should provide the crew member in the same context (e.g. Fatigue App) with the opportunity to optionally share additional structured information (e.g. Sleep, Duty, Call from Standby etc.)

For more information on data collection refer to the IATA Fatigue Management Technical Group paper [Common Protocol for Minimum Data Collection Variables in Aviation Ops](#)

Since the fatigue evaluation is critical, is there a specific scale recommended for subjective evaluation? They are all a bit different, and measure some slightly different aspects of fatigue, even between KSS or SP scales.

IATA does not recommend one tool over another. The Samn-Perelli Scale is very common in aviation, and the Karolinska Sleepiness Scale seems to be preferred by scientists. There are many available publications regarding the differences and the pros and cons.

If an airline has already used a certain scale for surveying their crew members in the past, we encourage them to stick with this scale.

Within the Fatigue Aware Initiative, we offer various scales for reporting and transform the results to a linear analogue scale. However, there is still research needed regarding the validity of this approach.

For more information on data collection refer to the IATA Fatigue Management Technical Group paper [Common Protocol for Minimum Data Collection Variables in Aviation Ops](#)

Which FDM events do you find correlate to fatigue? We tried this with heavy landings, flap exceedances, go-arounds and other landing events but found pretty much no correlation between events and bio-mathematical modelling scores.

The use of FDM parameters to indicate the presence of fatigue is in its infancy. We are optimistic that more information on this will be out very soon.

Are there any particular Flight Data Monitoring parameters or procedural non-compliance that are good indicators of fatigue risk? What should safety offices look for as money is in short supply so new apps or IT systems are unlikely in the short term.

Please see above re: FDM parameters.

Regarding the costs. Since much of the information is already available somewhere in the Airline or can be retrieved at little to no cost (weather), the biggest challenge is data. This is true when speaking to the reliability of subjective data such as the measure of sleep / wakefulness, as well as integrating the data from various sources.

Can we use smart watches that can relay real time or monitor (download later) of crew fatigue?

These devices are typically not used for scientific studies however they can provide crew members a helpful tool to monitor activity and provide valuable information on their sleep / rest / wake patterns, making them more aware of their potential fatigue.

Are there any monitoring devices that staff could wear to measure certain vitals that might correlate with fatigue? Would that make it more practical to measure fatigue?

There are devices (Smart/Acti watches, even smartphones) that have the potential to provide valuable information regarding sleep and the management of fatigue, but they need to be used correctly for the output to be valid. If considering the use of these devices, Operators must be familiar with their operation and limitations, or work with a third party who is.

Additionally, privacy / data protection issues have to be considered as those devices should monitor not only duty but also off-duty periods to be really meaningful. But their usage needs to be voluntary and considerations beyond fatigue management have to be made.

For more information on devices to record sleep and performance refer to the IATA Fatigue Management Technical Group paper [Common Protocol for Minimum Data Collection Variables in Aviation Ops](#)

Has there been consideration of acquiring data from operators that are using extended FDTLs in accordance with the ICAO FDTL QRG?

Bringing learnings together would be a good idea but we do also need to consider that not all extended FDTLs that have been approved by States will be the same. Additionally, the conditions being used may mean that data collected may not be representative of the wider industry and will most certainly not be representative of pre-COVID-19 Operations. Additional factors to consider would be the crew complement, the timing and direction of the respective flight(s), the WOCL, availability of sleep facilities, just to name a few.

Can those new results be used as a data base, or you should have to start from the beginning, because the scenarios have changed?

While any data or learnings made regarding fatigue management during this time will improve our overall knowledge going forward, we do need to recognize that some aspects may not be as applicable as life and operations move into a more stable environment.

There may be fatigue management strategies that were effective before that are not during COVID-19 but that doesn't mean in the future these strategies won't become effective again. The same can be said for new strategies we have adopted during COVID-19, such as utilizing first-class or business class seats as rest facilities or augmenting every flight. These will not be feasible solutions once we return to more stable and consistent passenger operations.

This underscores the need for continuous improvement and learning from our experiences, which is a critical aspect of standard fatigue management and safety management methodologies.

6.3 Personal Protective Equipment (PPE)

Should crew carry a towel and bed linen on a layover?

If individuals feel more comfortable having their own linens when away from home this could be something they want to do to if it makes them feel it helps them to relax and sleep better.

But overall, this is not a strategy that would be needed for everyone as it is more a personal comfort issue.

Does PPE, which is being incorporated into crew uniform add to fatigue in any way? And if so, what are the mitigation actions that can be taken to prevent fatigue

The N95 masks increase the work of breathing so there is undeniable physical fatigue if they are being used, however the widely used masks do not have this impact, nor is there an impact on oxygen levels. Although there may be a potential for discomfort in wearing PPE, this does not necessarily cause fatigue. The workload and additional stressors experienced while on duty that do cause fatigue, are however very specific to each individual

6.4 Planning and Scheduling

Added new procedures need more time to be addressed, if operators are not properly planning reporting times and turnaround times, all flights are being conducted behind schedule, are you thinking about this issue?

Yes, it is very important that actual vs. scheduled flight times are monitored, and that operators adjust their scheduling accordingly.

Studies on minimum turn-around times are being conducted to account for additional time required for aircraft cleaning / sanitization, screening and boarding of passengers, social distancing on the ramp, and other changes to procedures due to COVID-19.

ICAO's Doc 9966 highlights that regulators should be ensuring that operators do this.

During and post COVID-19 operations, crews are facing more demanding procedures and increase of workload to comply with COVID-19 risk mitigation measures. Do we have to work on alleviations to extend FDPs and reduce rest, or to introduce mechanisms to compensate for the added workload, stress and sleep downgrade?

The [first webinar of the series](#) focused on using an extended FDP alleviation. There, it was made clear that using such an alleviation was for COVID-19 "special ops" only: i.e. extended ops in extraordinary circumstances, when all other options were considered less safe.

It is important for operators and crew to recognize the increased fatigue related safety risk and mitigate appropriately.

Guidance such as this is aimed to emphasize this importance and assist with identifying and implementing effective mitigation strategies.

Can CRFD (Controlled rest in flight deck) be used as a tool to mitigate any future fatigue that the crew might experience. Can it be used as a proactive tool rather than using it as a reactive one? Particularly during these extended duty periods, and also at times flying through the WOCL.

CRFD as one tool of fatigue mitigation is very effective, however since it is a decision made “in the flight deck” it should never be pre-planned as part of the scheduling for a required crew member. If a crew member is planning on using controlled rest prior to their flight, based on how they feel, removing themselves from duty should be a consideration.

Nonetheless, strategically planning various forms of crew rest together with education and training regarding fatigue mitigation options would definitely be of value.

Do we see sooner or later that Regulators will have to make new regulations with regards to FDTL, Medicals, Training, and other requirements post COVID-19?

It is not believed that generally regulators will have to identify new FDTLs post-COVID-19. However, any regulations, including those related to FDTLs, medicals, training and other requirements, should be reviewed to check continued effectiveness.

Our new normal may present us with emerging risks, as such regulators will have to enhance their surveillance of how operators manage their fatigue-related risks within the FDTLs.

Additionally, it will become even more important that regulators are able to appropriately evaluate any safety case provided by an operator to support any request for a variation outside of the FDTLs.

When a long list of exemptions and extensions are being given for Pilots, such as extension of license validity, medical extended validity, FDTL extension and so on, are we adding to fatigue or preventing it?

Multiple exemptions introduce increased complexity and risk and therefore need to be managed carefully. Extended operations can be challenging for anyone, but when the crew also have extensions to licence or recency testing, the risks to human performance accumulate.

It is not believed that extensions to license validity, recency checks or medical checks adds to or prevents fatigue per se (unless there is an emerging medical condition that goes undetected and results in sleep loss).

How can we handle long periods of non-scheduled duty time with short periods of a full workload?

When you are off work, try to keep a routine as much as possible, that has you active and doing things during the day and a routine sleep pattern around activities.

Get out where possible to exposure yourself to daylight during the day to keep your circadian rhythm in line.

Keep up with healthy sleep hygiene practises.

Eat healthily and try to exercise to keep your body and mind feeling overall fit and well.

When returning to work, especially if shift work, remember what sleep routines you previously had around different start times. Rebuild these and work back into your shift work sleep/wake patterns.

Remember to check how you feel both physically and mentally each day before starting work and if you need to reach out for assistance do so. Even if it is to a family member or friend for advice.

When back at work remember to work together as a team – if you have found the return to work difficult, so may have others, or even find out what strategies others have used and see if they may also work for you – we are all learning in this new environment.

I am interested in the "new normal" potentially contributing to accidents and incidents during this Pandemic era. Do you think one can become fatigued more easily due to not flying for a long period of time?

At this point we can only speculate. However, there will most likely be some very valuable research done in this area.

Not flying + new procedures + possibly new routes, can add to fatigue and lack of sleep.

6.5 Beyond Crew

Is stress due to the actual situation going to be considered in fatigue management? For example, the stress and fatigue in air traffic controllers?

Stress caused by COVID-19 and the changes in our lives at this time are highly likely to impact on our sleep health. It is well known that stress impacts on both sleep quality and duration. But also, that poor sleep impacts on our ability to regulate our emotions and our ability to manage stress too.

We all need to recognize that as human beings we will be impacted by stress and sleep loss – so we need to identify personal stress and sleep management techniques that work for us.

We also need to recognize that as individuals, not everyone is going to be impacted or affected in the same way. We need to work out what works for us specifically and recognize that organizations cannot identify who may need more support and assistance than others. So, we need to work together as teams to manage this new reality.

Additionally, it is important to note that it doesn't matter what role we are performing be it operational such as a pilot, cabin crew, air traffic control or engineering, or non-operational, such as human resources, commercial or administration, we are all susceptible to stress and sleep loss that will impact our alertness and performance.

Are there any tools for administrative personnel to help them deal with the existing stressors of COVID-19 operations?

Please see above

What are the main precautionary measures that should be implemented in maintenance areas?

When it comes to managing fatigue in any safety critical role most of the basic fatigue management strategies will be very similar.

For personal fatigue management it doesn't matter what safety critical role you perform, the development of personal sleep and alertness techniques will be the same.

Even if we are looking at more tactical mitigations that can be implemented around the work being performed, these too will be similar. Things such as cross-checking and readbacks are techniques similar in both flying and maintenance. The ability to take naps/controlled rest and even workload management in the rotating of tasks are also applicable strategies.

It is important to note that we are all susceptible to stress and sleep loss that will impact our alertness and performance, despite what work we perform.



7 Additional Resources

Additional Fatigue Management resources can be found on the [IATA Fatigue Risk Management site](#) including:

- [Fatigue Management Guide for Airline Operations](#)
- [Common Protocol for Minimum Data Collection Variables in Aviation Ops](#)
- [IATA FMTF White Paper on Uses and Limitations of Biomathematical Fatigue Models](#)
- [Fatigue SPLs: A Key Component of Proactive Fatigue Hazard Identification](#)

8 Training

To learn more about fatigue management and how to develop a program at your airline, IATA Safety and Flight Ops Training has introductory to advanced courses in the domain.

Classroom

- [Fatigue Risk Management Systems \(FRMS\) \(Classroom, 3 days\)](#)
- [Fatigue Risk Management Systems \(FRMS\) for ANS Providers \(Classroom, 3 days\)](#)

Virtual Classroom

- [Fatigue Risk Management Systems \(FRMS\) \(Virtual Classroom\)](#)
- [Fatigue Risk Management Systems \(FRMS\) for ANS Providers \(Virtual Classroom\)](#)
- [Crew Resource Management \(CRM\) Implementation \(Virtual Classroom\)](#)
- [Crew Resources Management for Instructors \(CRMI\) \(Virtual Classroom\)](#)

Self-study e-learning

- Fatigue Management Fundamentals
Launch date 12 October 2020.
To get the course outline and receive updates, visit <https://go.updates.iata.org/TALS-72>