

## THE DIRTY DOZEN OF HUMAN FACTORS

### AND RETURN TO FLYING WITH COVID

Dear Pilots,

As we get ready to begin flying with Covid, and the new ways of living, working and flying, we must be vigilant that this additional stress does not increase our tendency of making human errors.

The Dirty Dozen refers to twelve of the most common human error preconditions to accidents or incidents. The concept was developed by Gordon Dupont, in 1993, whilst he was working for Transport Canada, and formed part of an elementary training programme for Human Performance in Maintenance. It has since become a cornerstone of Human Factors in Maintenance training courses worldwide, as exemplified in UK CAA CAP715<sup>[1]</sup>. Though not a comprehensive list of human error accident precursors; since 1993, the dirty dozen have been useful to discuss human error in pilots, cabin crew, air traffic controllers and ramp workers.

The aim of this document is to create awareness about how the stress caused by the a) lockdown, b) change in procedures and c) flying in the era of Covid could affect your performance and suggested are some simple mitigating strategies.

#### 1. LACK OF COMMUNICATION



New Risks

- Inadequate/ ineffective communication of **new** rules, SOPs from regulator or airline management or the operators
- Habit interference - interferes with actions taken eg automatically shaking hands, touching controls etc.

Mitigation

- Have written, clear and relevant information from top down and department wise
- Rehearse, revise and re-inforce **new** information at home and at work
- Maintain constant communication with self and colleagues without letting ego come in the way
- Use checklists

## 2. COMPLACENCY



### New Risks

- Lockdown had changed the way we lived since few weeks
- Time management and priorities had shifted and a refocus could take time
- Over confidence and under confidence both need to be avoided

### Mitigation

- Do sim checks, read your stuff, get into the work mode, adapt to the new (once old) time frames and activity patterns
- Do not take yourself for granted, whatever your experience
- Communicate when in doubt

## 3. LACK OF KNOWLEDGE



### New Risks

- A lot has changed with Covid still around. Airport procedures, passenger screening, first aid and CPR guidelines, cockpit disinfection, checklists, management of passenger illness on board, international rules etc. – it's a lot of **unlearning and new learning**. It takes a while to become habituated to the new information and procedures. While fear it not required, **awareness and alertness** is a must.

### Mitigation

- Information overload must be avoided, have clear checklists
- Revise the checklists and clarify when in doubt
- Videos can re-inforce training

## 4. DISTRACTIONS



### New Risks

- Change of living patterns in recent weeks, a sick or unattended family member, increased procedures, new protocols and return to flying after a gap are all distractors. Since new systems take time to be seamlessly established; and the dynamics of the problems may call for further changes, one needs to be mindful, agile and focused.

## Mitigation

- Follow SOPs and checklist

## 5. LACK OF TEAM WORK



### New Risks

- The dynamics of the situation are such that everyone is still learning and coping.

## Mitigation

- Maintain contact with your seniors and colleagues
- Have clarity on your role
- Trust your teammates
- Discuss and make sure everyone understands and agrees

## 6. FATIGUE



### New Risks

- Readjusting to time zone and flying schedules after such a break could be difficult initially. Obesity, lack of exercise, alcohol and relearning of tasks can also lead to easy physical and mental fatigue.

## Mitigation

- Start getting into flight schedule patterns, read and study daily, workout, learn new and stimulating tasks and improve your physical, mental and social well being
- Look for and address signs of fatigue in yourself and others.

## 7. LACK OF RESOURCES



### New Risks

- The financial trough may leave fewer people to do more work. Social distancing may allow less personal interactions. Constant screening, protection and disinfection measures may burden existing resources thus leading to some gaps in the system.

## Mitigation

- These are challenging time for everyone – operations, finance, management and crew.
- Co-ordination, co-operation, team work and pro-activeness are useful resources.
- Have a stand by plan in place.

## 8. PRESSURE



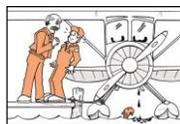
### New Risks

- Relief flights, flying only specific routes, fear of contracting the virus, restricted movements during layovers, reduced number of crew, CRM, having a potential carrier or Covid patient on-board are all additional pressures while flying.

## Mitigation

- Increase motivation to fly
- Be willing to do what it takes
- Increase your tenacity and physical immunity
- Have procedures in place and follow SOPs
- Have CRM sessions to discuss the new rules of the game (some old, some new)

## 9. LACK OF ASSERTIVENESS



### New Risks

- Each one is dealing with the new physical and mental situation. Some procedures are longer, some digital and some with more restrictions. It may take time to familiarize and adapt

## Mitigation

- Improve your skills of learning, communicating and expressing concerns
- Approach a peer or a confidant who can understand and assist you
- Resolve one issue at a time

## 10. STRESS



### New Risks

- Financial losses, anxiety of going back to family after a flight, anger, lack of control, frustration, resentment, lack of confidence, uncertainty of the future and return to 'normalcy', illness or death of a loved one, a child who has yet to resume schooling or exams, the need to earn, living your passion of flying during such trying times and safety of self and others – all add to stress
- New ways of living at home, at work and in society
- Wearing PPE suits while flying, required Covid tests, hotel stays pre and post-flights and layover, restricted activities during hotel stay including food
- Social distancing is the new norm and has caused a distance between us and our happiness.

### Mitigation

- Any stress is an opportunity to evolve and grow stronger and resilient. A healthy body with adequate nutrition and hydration helps cope with challenges better.
- A positive and strong persona helps build confidence and better control over our reactions.
- Exercises, yoga, meditation, prayer, faith, motivational books, videos and people energise our mind, body and spirit. It may not change our situations but improves us for the situation.

## 11. LACK OF AWARENESS



### New Risks

- Guidelines are changing often, your employer may have to change protocols as per national and international requirements and lessons learnt after resuming operations. It is imperative to be aware of the risks and what is expected of you.

### Mitigation

- Be open to change, while sticking to SOPs
- Be in communication
- Assist one another
- Stay calm and in control

## 12. NORMS



### New Risks

- In the Covid era, safety has an enhanced definition. The goal is Flight safety, while maintaining personal safety.

### Mitigation

- Follow SOPs
- Wash your worries as often as you wash your hands
- Keep your mind and body strong and immune to unnecessary stress

### OTHER MITIGATION RESOURCES

1. Safety Nets - help prevent imminent or actual hazardous situations from developing into major incidents or even accidents.
2. Peer Support or Mentor's Support – for open discussions and guidance.
3. Federation of Indian Pilots / Airline Pilot Association – India/ IFALPA
4. Aviation Medicine Examiners – for health, wellbeing and counselling.

## SAFETY AND WELL BEING DURING COVID-19<sup>[2]</sup>

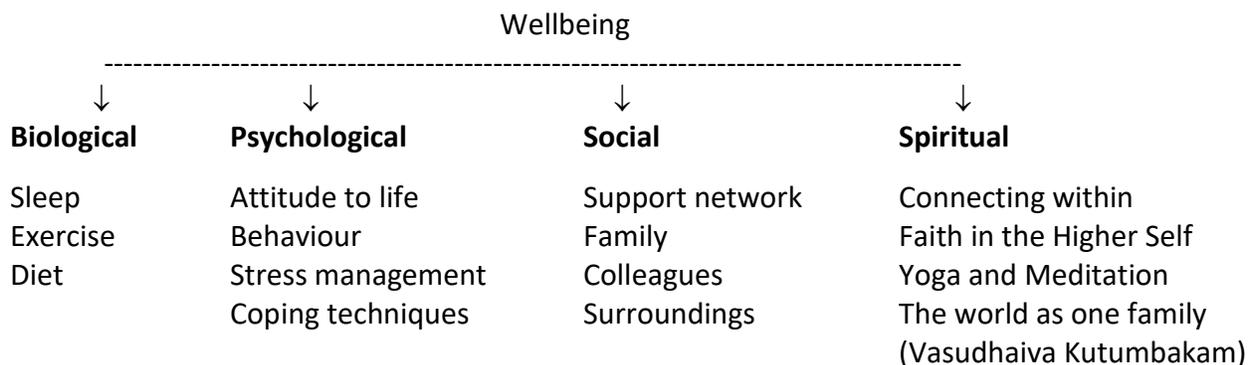
Safety performance in aviation is directly related to the performance of each individual in their respective professional roles and overall performance relies on individual and collective states of wellbeing.

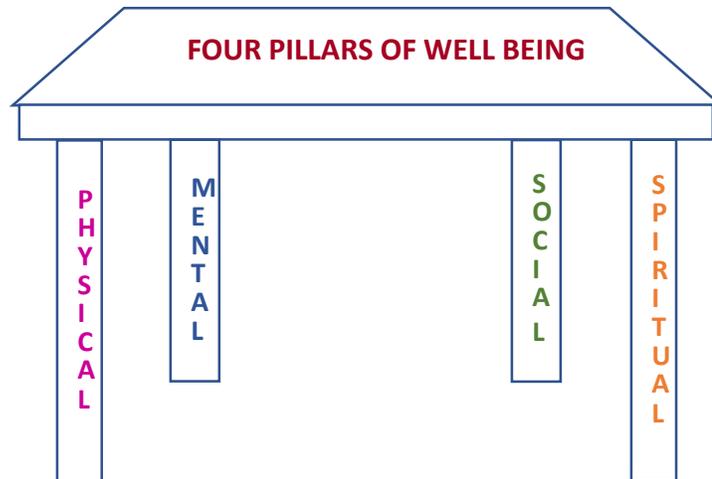
In the current scenario of COVID-19, we are all required to think about our own wellbeing and that of others. COVID-19 is not only a virus but also a psychological contagion. It has impacted our physical, mental, social and financial wellbeing; and at individual, social and global level.

Our mindset plays a key role in deciding how we feel about and deal with the situation. Having lived the lockdown, doing relief and cargo flights and now the staggered return of revenue flights all come with challenges that have and may continue to affect us.

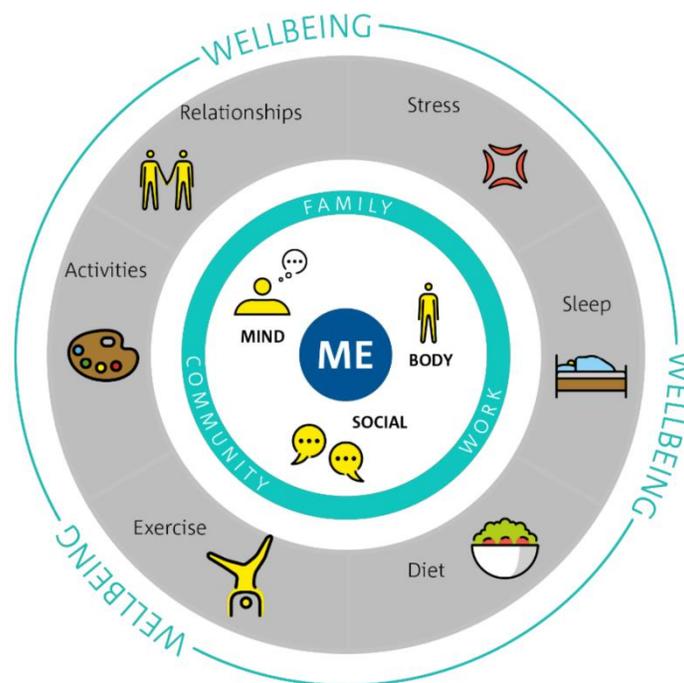
The purpose of this document is to help you recognise factors that affect your personal wellbeing and some measures on how to improve and maintain it. You can in turn positively impact those you socialise and work with and it helps build collective wellbeing and safety.

Wellbeing is considered by the World Health Organisation as “a state of complete physical, mental, social and spiritual wellbeing, and not merely the absence of disease or infirmity<sup>[3]</sup>”. This ‘BioPsychoSocial–Spiritual model’ of health has four pillars – **Biological** (physical or **body**), **Psychological** (mental or **mind**), **Social** and **Spiritual**<sup>[4]</sup>. These four pillars are largely interdependent and we need a holistic approach addressing each of these in order to maintain our health and wellbeing.





Lifestyle has a direct impact on these pillars. Factors within one pillar can affect other pillars too. For example, sleep affects psychological and social factors, exercise has a profound impact on mental health and if done with others can enhance social health. A positive attitude and good stress management improves physical and social wellbeing. Spiritual attitude strengthens the positive attitude, increases faith, encourages better (balanced) habits while reducing fear and ill health.





Our resilience allows us to adapt to our environment and determines our ability to handle stress. An improved well being at physical, mental, social and spiritual level improves our resilience as well as our immunity. Hence it is essential for crew to have their BioPsychoSocial-Spiritual wellbeing as an essential part of their flight preparedness.

The table below illustrates measures for improving wellbeing and may be used as a reminder/ checklist for crew.

<b>Focus On</b>	<b>By</b>	<b>Biological Health</b>	<b>Psychological Health</b>	<b>Social Health</b>	<b>Spiritual Health</b>
Improving Resilience	Sleep	Sleep	Attitudes to life	Increased social support	Aspiring higher goals in life
Improving Immunity	Exercise	Exercise	Behaviour	Decreased social pressure	Yoga
Improving Well Being	Diet	Diet	Stress Management	Support network	Meditation
			Coping Techniques		Reading
			Personal Reflection		Prayer
					Music

## References:

1. UK CAA Civil Aviation Publication 715 – An Introduction to Aircraft Maintenance Engineering Human Factors for JAR 66
2. An Aviation Professional's Guide to Wellbeing, Flight Safety Foundation
3. The World Health Organisation's Definition of Health: Social versus Spiritual Health, James S Larson, Social Indicators Research, Vol. 38, No. (Jun., 1996), pp. 181-192
4. Are we ready for a True Biopsychosocial-Spiritual Model? The many meanings of "Spiritual". Marcelo Saad et al, Medicines 2017, 4,79
5. Pictures: <https://www.slideserve.com/honorato-valenzuela/why-do-good-people-like-you>

## About the author:

Dr. Punita Masrani is an Aviation Medicine Specialist and a Medical Review Officer in India. She is an Aviation Medical Examiner for DGCA India, Airports Authority of India, FAA, EASA, Transport Canada, CASA Australia, CAA NZ, Qatar CAA, UAE GCAA, South African CAA and CAAF Fiji. With over 20 years of experience as an AME and Consultant, she is the only doctor in India who is an Academician of the International Academy of Aviation and Space Medicine as well as Fellow of the Aerospace Medical Association USA, Aeronautical Society of India and Indian Society of Aerospace Medicine. She can be contacted via [punitamasrani@gmail.com](mailto:punitamasrani@gmail.com), [www.onestopmedicals.in](http://www.onestopmedicals.in)