ASAGOL Safety News 11
Flight Safety Magazine of the Gol Air Crew Association
November/2020

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The impact of the pandemic on the psychosocial wellbeing of pilots

By **Márcia Molinari**

Are you or do you wish to be an instructor? Maybe this content is useful for you!

By **Eduardo Morteo Bastos**

Ops, wrong runway!!! Understanding and preventing Runway Confusions

By **Alexander Coelho Simão**

editorial

Dear reader,

In this issue we begin an honorable partnership with the Brazilian Association of Aviation Psychology – ABRAPAV, sure that it will bring enriching topics to allow exchanging knowledge and experiences. The debut article, on the cover of this issue, addresses the impact of the pandemic on the psychosocial wellbeing of pilots. The author emphasizes that each person reacts differently to crises, but when facing something like the Coronavirus pandemic, some responses are common and provide good practice tips while these challenges last.

In the GOL Lounge, the author brings an important warning regarding operational discipline during the pandemic. He reinforces the need to remain vigilant in our own operational actions during this atypical scenario, in order to ensure faithful compliance of the procedures. He also provides tips on how to maintain operational discipline.

In the CENIPA Lounge, FAB (Brazilian Air Force) Aviation Colonel Alexander Coelho Simão addresses a very important operational safety subject: Runway Confusion. The author explains the concept of this hazard, its consequences, and some contributing factors published by EASA. He also illustrates the issue with two events of this nature that took place in Brazil. Additionally, he shows some preventive measures published by CENIPA (Brazilian Investigation Authority) to reduce the risk of Runway Confusion.

In the ASAGOL Lounge, our friend Eduardo Morteo brings the first of a series of articles that addresses a topic that is extremely relevant for those who are or wish to become instructors. The author shows that the instructional activity does not depend only on the knowledge acquired on the discipline, but also on the knowledge and understanding of some conditioning factors that enable this teaching and learning process.

The IFALPA Lounge brings an important article that addresses sleep apnea, with information on the definition, symptoms, complications, and treatments. Sleep apnea does not allow crewmembers to have restful sleep, causing drowsiness, fatigue, and irritability.
We hope you have nice flights!

Captain Mário Sérgio Amato Júnior
ASAGOL President

Highlights of this issue

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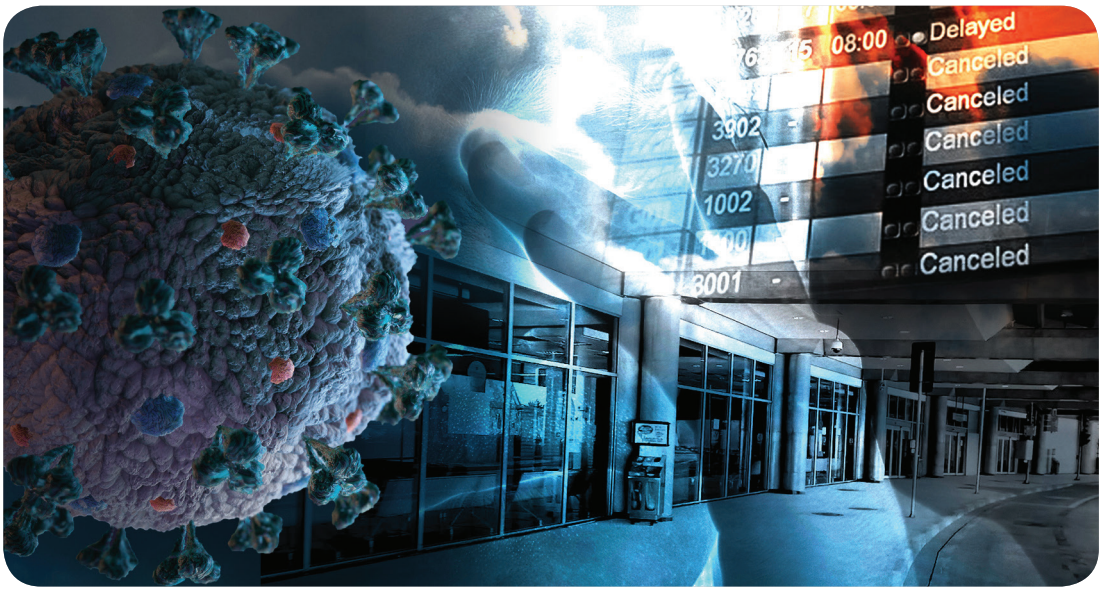
The impact of the Covid-19 pandemic on the psychosocial wellbeing of pilots: some considerations

By Márcia Molinari*



The crisis unraveled by Covid-19 brought new demands to our personal and professional lives, and we lived ruptures and losses at many different levels.

The need to adopt new hygiene habits and behaviors, with physical distancing from family, friends, and coworkers; balancing new home office realities; temporary unemployment; managing the fear of contracting the virus and concern with close loved ones demand considerable adaptation efforts and generate emotional discomfort. We experience feelings of fear, anxiety, sadness, impotence, irritability, among others, in a context of uncertainty.

The aviation industry, in all of its segments, was severely affected by the coronavirus pandemic and, besides the fear resulting from the risk of potential own and family infection; increased workload related to additional workflows and processes; and temporary reduction of salaries, many employees also face significant emotional distress regarding their jobs and uncertainty of their professional and financial future. This combination of stress factors makes the current crisis not only a threat to the physical health, but also to mental health and wellbeing.

Covid-19 is a threat of the environment resulting from circumstances out of our control that we need to face with the resources available, including human, social, and organizational resources. This article reflects on some combat measures within our reach and that may help us to go through this period of turbulence in an adaptive and resilient way.

The factors that influence the psychosocial impact of Covid-19 are related to the magnitude of the pandemic and the level of vulnerability of the person at the moment. However, it is natural that, in this

context, individuals feel vulnerable and concerned, and experience high levels of stress.

Each person reacts differently in crisis situations, but some common responses to an abnormal situation, such as the situation triggered by the Covid-19, may include: fear (of being infected, getting sick, dying, losing relatives, transmitting the virus to other people), anxiety, feelings of helplessness and impotence in face of the developments, boredom, loneliness, sadness, anger, irritability, sleep alterations (insomnia or excessive sleep, recurring nightmares), appetite changes, among others. It is important to emphasize that these are normal reactions in face of an abnormal situation.

Facing the current challenges may not be an easy task and we may feel overloaded. Fortunately, science shows ways to deal with such difficult conditions.

In aviation, in case of cabin depressurization, the passengers are instructed to first put on their oxygen masks and then help those who are not able to do it. This also applied to the crisis triggered by Covid-19 and we must first care for our own physical and mental wellbeing, so that we are able to help our relatives and friends to deal with the stress of the situation.

In this regard, we highlight a few good practices that may be useful while the Covid-19 pandemic lasts.

Focus on what is under your control

Focus on the present, on what you can do, and accept things you cannot change. Assess your concerns, recognize and welcome your fears, and try to be realistic and objective in your assessment. Avoid catastrophic thoughts. Remember the strategies and skills you already used in other difficult situations and that brought a feeling of greater emotional stability.

Keep informed

Choose reliable sources of information. Access official sites, such as the World Health Organization (WHO), Ministry of Health, and Universities.

Limit the consumption of news from reliable sources

Avoid checking social media, reading newspapers, or listening to the news all the time to prevent an overload of information. This will make you more stressed and anxious.

Maintain a routine

- Wake up and go to bed at similar hours every day;
- Eat healthy meals at regular times;
- Practice self-care measures regularly;
- Set aside time for work, leisure, and family interaction.

Keep connected to others

Keep regular contact with people close to you over the phone and online channels. Talk to people who you trust about your concerns and how you feel. Maintaining a support network is essential to help you not feel alone during this phase of challenges and in the process of overcoming stress.

In aviation, we learn that the team and communication are essential for successful management of critical and emergency situations.

For those with children

It is important to talk to the kids about the pandemic with a language that is appropriate to their age group and about the need to maintain routines and schedules. Help them express their feelings. Sometimes, starting creative activities, such as playing or drawing, may ease this process.

Listen to their concerns and reassure them. This helps relieving their emotional discomfort.

Children usually follow the emotional clues of their parents. Therefore, it is important that the parents manage their own emotions in face of the crisis.

Refocus life plans and strategies

For many pilots, the crisis triggered by Covid-19 has resulted in significant changes in their work situations, which includes reduced work time and wages; unpaid leave and, for some, retirement.

Temporary or permanent retirement from work is a process with a series of losses: life rhythm, routine, coexistence with colleagues, and professional identity, which may trigger mourning feelings.

Mourning is a natural response to the rupture of a bond, either when we lose someone or a significant situation in our lives. Mourning affects all people in different ways, and the person probably feels intensive emotions that include sadness, shock, disorientation, and anger. It is important to accept the feelings triggered by this moment of important changes to make sense out of what happened, and not to forget the memories from the past by attributing significance and retake self-control in face of the present situation.

Avoid the use of tobacco, alcohol, or other drugs to deal with negative feelings and emotions

If you realize that the strategies used are not sufficient to deal with the demands imposed by the pandemic in your daily activities and you are experiencing intensive psychic suffering (anxiety, panic, sadness, anger); constant sleeping difficulties; frequent conflicts in your relationships; or increased consumption of alcohol or other chemical substances, it is important to seek specialized professional help to find ways to deal with the adversities of the moment in a constructive way.

The World Health Organization defines health as “a complete state of physical, mental, and social wellbeing, not only the absence of diseases”. Managing your stress and mental wellbeing during this period of pandemic is as important as managing your physical health. Crises do not last forever, and when the storm clears it is important that you are well, physically and mentally, to move forward to new flights.

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Operational discipline during the pandemic

By Gabriel Casella*

We know that the challenges continue and that the fears and uncertainties will still haunt us for some time. This public health, socioeconomic and social isolation crisis has acted as an aggressor to our physical and mental health, which directly affects our personal lives and professional activities.

Similarly to when you return from vacations or even longer periods without flying, pilots who are returning to work after leave, removal, contract suspension, scales with expanded recess, or any combination of such, may be more susceptible to mistakes, errors, and faults. Besides resulting in technical unsuitability, the long period without flying may result in a series of cognitive imbalances that directly affect the situational awareness of the pilot, interfering with the ability to perceive and identify stimuli (threats), understanding their elements and defining the operational risks.

Therefore, this atypical moment requires, more than even, an extreme doctrine of rules and reliable compliance of procedures, in order to monitor our own operational actions. Thus, have operational discipline!

- **Conduct briefings. Briefing is an essential tool to elevate situational awareness;**
- **Go through all checklists. The checklists allow to identify possible faults, errors, and lapses;**
- **Read the NOTAMS: due to the pandemic scenario, several locations are undergoing infrastructure works and have constant changes in operational characteristics.**
- **Do not underestimate your ability to make mistakes; therefore, DO NOT lower you defenses: the essential network adopted by the company can also imply in the false perception of operation with a reduced workload, decreasing the motivation felt in a normal operational routine (with fast and compressed dynamics). In other words, the new scenario may induce relaxed and monotonous operations.**

Finally, these simple attitudes but that depend on your operational discipline, contribute significantly to mitigate errors and keep us alert and, consequently, our situational awareness as well.

Nice flights!

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Ops, wrong runway!!! Understanding and preventing Runway Confusions

By Alexander Coelho Simão*

On the morning of August 27th, 2006, a Bombardier CL-600-2B19. operating flight Comair 5191 crashed after takeoff from the Blue Grass Airport (KLEX), killing 47 passengers and 2 crewmembers. The Final Report, issued by the National Transportation Safety Board (NTSB), concluded that the aircraft was authorized to take off from runway 22, but inadvertently used runway 26, which was only 1,067 meters long: a classic case of runway confusion.

Among the factors that contributed to this accident, the NTSB concluded that the pilots failed to identify the correct position of the aircraft on the surface of the airdrome, mainly because they did not observe the sterile cockpit procedure during taxi (NTSB, 2007).

What does runway confusion mean?

Runway confusion is a subcategory of runway incursions, which is characterized by undue and unintentional use of runways – or taxiways to perform landing and takeoff operations.

Runway confusion may lead to collisions between aircrafts or between aircrafts and ground vehicles/equipment used in runway maintenance. In addition, they may lead to serious aviation accidents if the landing or takeoff operation is performed on a shorter runway (FAA, 2017).

A few cases

On February 21, 2006, an Airbus A340-400, operating flight TAP 97, was authorized to land on runway 27R of the Guarulhos Airport (SBGR), but leveled for landing on taxiway 2B, located 150 meters to the right. When the aircraft was close to the ground, the Sun lit the runway – which was wet due to recent rainfall – and reflected the light on the cockpit. With poor visibility, the pilots ended up confusing runway 27R with taxiway B. The controller, who was

communicating with TAP in Portuguese, decided to call the go-around in English. Therefore, the Portuguese pilots believed that the warning was not addressed at them. In addition, the controller used the incorrect term "pull-up" – which is normally a cockpit warning to avoid collision with the ground – instead of the correct term "go around". Fortunately, there were no other aircrafts on that particular runway. Later, the pilots were informed of the error and denied it at first, until the inspection of taxiway B identified the traces of the aircraft's tires on the points where the landing gear touched the ground (Brazil, 2010).

On July 2th, 2017, an Airbus A320-211, operating Air Canada flight 759, was cleated for landing on runway 28R of the San Francisco Airport (KSFO), but leveled 500 meters to the right, over taxiway C. When the Airbus was 400 meters from the ground, the crew of Philippine Airlines 114, one of the four aircrafts that were on taxiway C, turned on the landing lights to warn the imminent collision. Then, the pilot of United Airlines 001, the first in line for takeoff, interrupted the messages transmitted on the TWR frequency and asked: "What is this guy doing? He is going to the taxiway!" The controller immediately requested the Airbus to go around. The frame of the Air Canada aircraft passed at a distance of 4.3 meters from the tail of the Philippine Airlines aircraft. The excessive TWR workload (which had only one controller at the moment), the fatigue of the pilots, and the non-compliance with NOTAM were the main contributing factors of this event. There were 1,000 passengers aboard the five aircrafts involved in this incident, which was considered by the NTSB the worst commercial aviation error of the decade (NTSB, 2018).

On August 19, 2019, an Airbus A319, operated by Latam Linhas Aéreas, was cleared for takeoff from runway 14 of the Florianópolis Airport (SBFL). However, the aircraft started the takeoff run from runway 21, which is only 1,300 meters long. When the aircraft was at approximately 70 knots, the pilots were warned by the TWR that they were at the wrong runway and the takeoff was aborted (Figure). The aircraft was not damaged and the 139 passengers and 5 crewmembers aboard flight 4522 were not harmed (Brazil, 2019).

According to EASA (2018), the investigations of several runway confusion always identify the following contributing factors:

1. **Visual illusions:** the light intensity of the runway, texture and color of the asphalt and concrete layers, ramps or slopes near the airport, and the black hole effect may affect the situational awareness of the pilots, mainly during the final approach;

2. **Fatigue:** degraded psychophysiological condition may reduce the level of attention of crewmembers and affect the decision-making process. This occurs especially during night shifts and at the end of long flight periods;

3. **Human factors:** lack of attention caused by non-operational chat, little experience of crewmembers in large airports, incorrect use of airdrome charts, and excessive attention to the cockpit contribute to distract pilots and may lead to landing on or taking off from the incorrect runway.

Best practices

According to CENIPA (BRASIL, 2016), the pilots can take some preventive measures to reduce the risk of runway confusion:

1. Always know where you are and where you are going. Double the attention in case of poor visibility;
2. Familiarize with the signaling and report deficient signs or incorrect airdrome charts to the controller. Remember that the colors of runway light beacons are different from taxiway light beacons;
3. Maintain the concept of sterile cockpit during taxi, take off, and landing operations;
4. Taxi carefully at slow speed in jammed airports and airports you are not familiarized with.
5. Think before all transmissions and make them as clear and concise as possible, according to the standard phraseology. Never assume information. Always make sure that the communication was understood;
6. Beware of traffic authorization copies, in order to ensure that all information was clearly understood;
7. Crosscheck all instructions received, including the call sign The similarity between call sign may cause confusion. In case of doubt, do not hesitate to request confirmation;
8. Perform takeoff and landing briefings, and always use the airdrome chart before starting taxi and before landing, even with good visibility;
9. If you are lost, notify the controller immediately. Request progressive taxi if you are not familiarized with the airdrome;
10. Carefully read the NOTAM of the departure, arrival, and alternative airports;
11. Use all visual and electronic resources available to ensure that the aircraft is positioned correctly on the tarmac.

Finally, remember the old saying: **IN DOUBT, GO AROUND!**

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Are you or do you wish to be an instructor? Maybe this content is useful for you!

By Eduardo Morteo Bastos*

The activity of an instructor is a complex process that demands not only full knowledge about the subject, procedure, or object presented, but also knowing the conditional factors that enable the teaching-learning process. In this issue of the ASAGOL Lounge, we will present in a basic way one of these factors: the creation of learning conditioned to human nature.

A good way to start this subject is to define the concept of learning, which may be presented based on the understanding of the several areas that study this process. Neurology has a way of defining it, as do pedagogy, psychology, and other fields. Being pragmatic, learning is a process that allows the change or construction of a behavior obtained by means of lived experience.

Let us take the lived experience of the reader to explore this concept. Before becoming a flight attendant or airline pilot, at some moment you took the company's equipment qualification course.

So, based on previous knowledge obtained in aviation schools or university, a new load of information is introduced in order to stimulate certain behaviors onboard. That is, all the theoretical knowledge memorized and understood received a meaning for a practical outcome. That is the moment of training in mockups and synthetic flight simulators, where certain skills such opening a door safely without triggering the raft inadvertently or introducing a procedure in the aircraft's FMC start to become solid. The training follows in route, when situations rehearsed at the training center now become real. However, where does human nature fits in this context?

It is natural to expect excellent performance of students in the classroom, simulator, mockup, or aircraft itself. It is part of human nature to have reduced performance when something is wrong with the mind and/or body. Since we are not robots, be prepared to work with the possibility of students with difficulties, lack of interest, or even cases of failure. The following are some conditioning elements within this process:

- **Emotional state;**
- **Relational ability;**
- **Adaptability to the environment;**
- **Health conditions.**

The emotional state of a person says a lot about their ability to focus or motivation, for example: the world scenario and organizational pressure may create stress and anxiety, due to the fear of losing one's job.

The relational ability goes beyond the trivial that we learn about interpersonal relations, participation, and teamwork. We can observe how a person related to new information and situations. Since this is a matter that involves personality traits, we believe that pilots and flight attendants do not have problems with new information and scenarios. However, personality is not something immutable.

Adaptability to the environment plays an important role in the teaching-learning process. Have you ever asked yourself how your students interact with physical resources available? Does the organization

teaching culture meet the needs of such activity? Aviation is an industry that encompasses a great cultural diversity. We have colleagues from several regions in the country, beliefs, and social classes. Will all students adapt to these differences? Does any student run the risk of becoming isolated due to such differences? Will all students adapt to the regional culture of the location where the course is taking place? (e.g.: pilots may be scheduled to take periodical courses in a training center in China due to the lack of slots in simulators installed in Brazil. There are significant differences between the national and teaching cultures of these countries).

The health state of the student and instructor is also extremely important. For aviation, this issue is under more control due to the periodical tests and CMA (Medical Certificate) revalidation required. If there is any health issue that can affect performance, look for the company's medical department or you physician.

Easy money?

The work of an instructor goes beyond teaching. The instructor must overcome triggers that prevent learning. Imagine the following scenario and develop a strategy to overcome the problem.

In a mockup full of students, the instructor asks a student to demonstrate how to open the door according to the evacuation callouts. The student is reluctant to take on the instruction, is sweating, and is clearly blushing. When she tries to open the door, she cannot operate the opening lever and, looking at the instructors, breaks into tears. She drops the door lever and exits the mockup. The other students reported that this colleague said she always felt pressure in classroom environments since she was a kid and was concerned that this would undermine her training.

Contrary to what seems obvious, it is not uncommon that in corporate environments some managers do not guide their team of instructors to try to understand the reasons why some employees experience performance drops during training and qualification programs. Some organizations do not even have a strategy and infrastructure in place. There are negative consequences for this reality:

The employee may not grow professionally or even lose his job.

The company runs the risk of having a less qualified team, which is discouraging and consequently causes drops in performance and productivity. There is also financial loss, because layoffs are very costly in Brazil.

Knowing your students is essential. This allows seeking strategies to increase their performance over their graduation.

In addition, try to understand the needs of the students and what motivates them to learn:

The way you teach not always meets the learning style of the student. Is it possible that you can adapt to their style?

The student does not understand the information transmitted. Are there other ways to offer more effective communication?

Do the corporate policies allow an appropriate learning environment?

In the next issue of the magazine, we will discuss the chain of human needs and their relationship with the teaching-learning process. If you have any doubts or want to comment on any subject discussed in this article, write an email to the ASAGOL operational safety team. The address is **safetyasagol@asagol.com.br**.

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Sleep Apnea Information for Pilots

By Captain Jack Netskar*

Introduction

The prevalence of sleep apnea in adults is estimated to be seven percent. In contrast, the US Federal Aviation Administration (FAA) records the prevalence of sleep apnea in Class I medical certified pilots is only 0.5 percent. Thus, sleep apnea seems to be badly underdiagnosed within the pilot community. As sleep apnea results in daytime sleepiness, undiagnosed cases could pose a significant safety risk in aviation.

Definition

Sleep apnea is a sleep disorder characterized by pauses in breathing during sleep. The standard definition of an apneic event includes a minimum 10second interval between breaths, with either a neurological arousal (a 3-second or greater shift in EEG frequency, measured at C3, C4, O1, or O2), a blood oxygen desaturation of 3-4% or greater, or both arousal and desaturation. The Apnea-Hypopnea Index (AHI) is expressed as the number of apneas and hypopneas per hour of sleep.

Symptoms

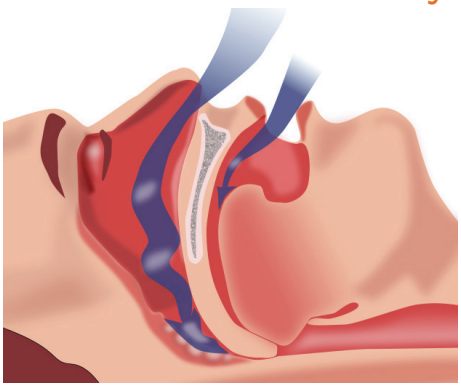
Snoring is a nearly universal symptom in individuals with sleep apnea, but it does not mean that everyone who snores has sleep apnea. The loudness of the snoring is not indicative of the severity of obstruction. If the upper airways are extremely obstructed, there may not be enough air movement to make much sound. The sign that is most suggestive of sleep apnea occurs if snoring stops. The sleep is often restless and of poor quality and, as a result, patients can suffer from daytime sleepiness.

COMPLICATIONS

Daytime fatigue

The apneas make normal, restorative sleep impossible, resulting in daytime drowsiness, fatigue, and irritability. People with sleep apnea have an increased risk of motor vehicle and workplace accidents.

People with sleep apnea have pauses in breathing sometimes caused by obstruction of the airway.



High blood pressure or heart problems

High blood pressure is a common finding in sleep apnea patients. It is believed that the drops in blood oxygen levels increase blood pressure. Obstructive sleep apnea might also increase risk of heart attack, stroke and arrythmia.

Type 2 diabetes

Sleep apnea increases risk of developing insulin resistance and type 2 diabetes.

Liver problems

There is growing evidence that sleep apnea is associated with abnormal results on liver function tests and nonalcoholic fatty liver disease.

Sleep-deprived partners

Loud snoring disturbs anyone sleeping near sleep apnea patient.

DIAGNOSIS

Diagnosis is done by home oximetry or polysomnography in a sleep clinic. Pulse oximetry is a non-invasive method allowing

the monitoring of the oxygenation of a patient's hemoglobin. Polysomnography (PSG), also known as a sleep study, is a multi-parametric test used in the study of sleep and as a diagnostic tool in sleep medicine.

The test result is called a polysomnogram, also abbreviated PSG. Polysomnography is a comprehensive recording of the biophysiological changes that occur during sleep. It is usually performed at night, when most people sleep, though some labs can accommodate shift workers and people with circadian rhythm sleep disorders and do the test at other times of day. The PSG monitors many body functions including brain (EEG), eye movements (EOG), muscle activity or skeletal muscle activation (EMG) and heart rhythm (ECG) during sleep.

TREATMENT

In mild cases of obstructive sleep apnea, the use of a specially shaped pillow or shirt may reduce sleep apnea episodes, usually by causing users to sleep on the side instead of on the back or in a reclining position instead of flat. Lifestyle changes, such as avoiding alcohol or muscle relaxants, losing weight, and quitting smoking might be beneficial. However, sleep apnea usually needs a more advanced treatment such as a continuous positive airway pressure (CPAP) device, Oral Appliance Therapy (OAT) or surgery.

The CPAP device keeps the patient's airway open during sleep by means of a flow of pressurized air into the throat. The CPAP mask is similar to the cockpit oxygen mask and the devices are light-weight and quiet. Therefore, CPAP is the most commonly used treatment for sleep apnea. Dentists specializing in sleep disorders can prescribe Oral Appliance Therapy (OAT). The oral appliance is a custom-made mouthpiece that shifts the lower jaw forward which opens up the airway. OAT is usually successful in patients with mild to moderate obstructive sleep apnea. For patients who do not tolerate or do not respond to non-surgical measures, there are several surgical treatments to anatomically alter the airway. The surgical treatment needs to be individualized in order to address all anatomical areas of obstruction.

The CPAP device, which keeps the patient's airway open during sleep by means of a flow of pressurized air into the throat, along with OAT, is one of the common treatments for sleep apnea, and an alternative to surgery.

SLEEP APNEA AND AVIATION

Pilots with sleep apnea syndrome are generally allowed to continue flying if the disease is treated. As sleep apnea increases the risk of cardiovascular diseases, medical certification often requires satisfactory cardiological evaluation. ICAO provisions do not mention sleep apnea, but it is included, for example, in the EASA regulation (MED.B.015.(d)(5) and AMC1.MED.B.015 (h).

Pilots who suspect that they might be suffering from sleep apnea should consult their doctor for diagnosis and treatment.

Discover the ASAGOL Mutual Assistance (PIT/PPCM)

The ONLY Mutual Assistance created and maintained exclusively for the GOL flight group. The PIT/PPCM is another safety resource offered by ASAGOL to its associates.

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The **ONLY** with down payment of Deaths/ Portfolio Losses

Plans starting at:
- Flight Attendants (up to 50 years): R$ **16,00***
- Co-pilots (up to 50 years): R$ **43,35***
- Commanders (up to 50 years): R$ **70,83***

The **ONLY** with funds separated by function: Commanders, Co-pilots, and Flight Attendants

The **ONLY** with daily rates that are not deducted from Deaths/Portfolio Loss compensations

The Mutual Assistance with the best value for money

More than R$ 23 million paid in benefits!

No grace period for daily rates in case of accident and compensation in case of accidental death (according to the exclusions of Article 54 of the Plan Regulation)

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* Cost-plus monthly fee. Values valid for the months of October to December 2020, when they are reassessed based on the balance of the funds that support the PIT.