AVIATION SAFETY BULLETIN

ISSUE 1 | 2022

An official publication of the Civil Aviation Authority of Fiji

CLIMATE CHANGE

ITS IMPACT ON AVIATION

THE TIME TO PLAN IS NOW

'Promoting Effective Aviation Safety and Security in Fiji and the Region.'

POTENTIAL 5G INTERFERENCE ON RADIO ALTIMETERS

CLIMATE CHANGE-IT'S IMPACT ON AVIATION

FLIGHT INSPECTION

CONSIDERATION OF AVIATION MEDICAL CERTIFICATES

WHAT IS WELLBEING WHY SHOULD I CARE

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Civil Aviation Authority of Fiji (CAAF)
Private Mail Bag, NAP 0354,
Nadi International Airport, Fiji.
Tel: (679) 8923 155 | Fax: (679) 6721 500
Email: info@caaf.org.fj

Editor - *Roshni Deo*

Committee - *Alisi Namoro, Asif Khan, Navaulioni Ravai, Edward Dass and Meeral Kumar*

Design : *ASB Committee*

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Aviation Safety Bulletin Editor, CAA Fiji, Private Mail Bag
NAP 0354, Nadi International Airport, Fiji *or*
email: info@caaf.org.fj.

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From the Acting Chief Executive

Bula Vinaka and welcome to the Civil Aviation Authority of Fiji's first edition of its Aviation Safety Bulletin for 2022.

The opening of Fiji's international borders in December last year heralded a good start for the aviation and tourism industries which depend on each other for sustainable growth. The leadup to the restart and recovery of aviation was well coordinated and stakeholders have adapted to the new norm, looking optimistically at onward movement towards 'business as usual'.

The first quarter of this year saw CAAF appoint a new Controller Air Safety, Mr. Jim Samson. He is no stranger to the aviation industry and brings to the role, a plethora of experience, both locally and regionally. As Controller Air Safety, he is responsible for the strategic leadership of CAAF's Air Safety Department, which includes the Flight Operations and Airworthiness sections. He will be reconvening the Aviation Stakeholders – AOC Operators Forum and I urge those operators in this area to attend and assist us in addressing pertinent safety issues, growing your understanding of what CAAF's expectations are of you and helping us to understand what your expectations are of us.

This edition addresses a subject that has been in the spotlight of late; 5G and the potential interference it could have on flight safety. The article on pages 4-5 looks at several countries and the impact 5G installation has had on its aviation activity and, provides information on 5G in Fiji and what CAAF is doing in this area.

We take a look at climate change, but from a different perspective. Most articles report on the impact aviation has on climate change but in the article on pages 6-7, we reverse the lenses and look at how climate change is impacting aviation.

Flight Inspection is an important component of the aviation system as it ensures that the communication, navigation and surveillance facilities used by aircraft and air navigation service providers meet the required standards for safe and efficient flight. The flight inspection article on pages 8-11 provides an insight into this activity and highlights the changes brought about by the COVID-19 pandemic in this area.

The Industry Consultation Process has been reviewed in light of the changes that have occurred over the last two (2) years and past experience with this process. The revamped CAAF website and its subscription and notification service that became operational in 2021, has made the notification and feedback processes simpler and provides for a wider reach. This revised process is set out in pages 18-19.

CAAF's focus for 2022 is to continue to effectively discharge our responsibilities under the Civil Aviation Act 1979 (as amended) and align ourselves to achieve our goals and objectives as set out in CAAF's Corporate Plan 2021-2023. We will engage and consult more and seek your feedback and solutions accordingly.

We hope that the articles in this Issue 1 of 2022 which will keep you in good stead with what is happening in the aviation industry and that you find them interesting and informative. We are open to suggestions on the types of articles you wish to see published in the future and we welcome your feedback■

Stay Safe.

Vinaka,

Ms Theresa Levestam
Acting Chief Executive

Potential 5G Interference on Radio Altimeters

Many travelers had raised concerns about the potential interference effects of 5G on flight safety following a flurry of headlines with the rollout of high-speed 5G internet in the US.

U.S. airlines and aircraft manufacturers raised concerns some time ago that a segment of the airwaves to be used by American telecommunications companies for 5G is too close to that utilised by radio altimeters that measure an aircraft's clearance height over terrain.

Measurements by the altimeters are used by other aircraft safety systems and there are concerns the rollout of 5G near U.S. airports would affect aircraft systems such as those used for automatic landings, wind shear prediction and terrain warnings. And if not properly mitigated, harmful interference to the function of the radio altimeter during any phase of flight may pose a serious safety risk to passengers, crew and people on the ground.

RADIO ALTIMETERS OPERATE IN 4.2-4.4GHZ RANGE AND THE 5G TRANSMISSIONS SUBJECT TO THE INTERFERENCE DEBATE ARE IN THE ADJACENT 3.7-4.2GHZ SPECTRUM.

RADIO ALTIMETERS

Do other countries have 5G installation? Yes – Australia, France, Japan, South Korea, Thailand to name a few and the EU.

Have all these countries experienced 5G interference on radio altimeters? No.

AUSTRALIA

Australia have not experienced any interference of 5G network. While CASA and the Australian Transport Safety Bureau (ATSB) have urged pilots to report any anomalies with radio altimeters near 5G towers, they have yet to see any. In fact, the ATSB says there have been no reports of radio altimeter incidents linked to 5G since the telecommunications technology rolled out 2 years ago. One reason for this is that Australian 5G transmissions currently do not extend into the part of the spectrum worrying the U.S. aviation industry.

Australian 5G transmissions currently top out at **3.7GHz,** well below the radio altimeter frequencies. CASA Australia has issued and Airworthiness Bulletin AWB 32-020 (Issue 6-17 January 2022) on the potential 5G interference of Radio Altimeter Systems.

EUROPEAN UNION

The European Union in 2019 set standards for mid-range 5G frequencies in a **3.4-3.8 GHz range**, a lower frequency than the service set to be rolled out in the US. The bandwidth has been auctioned in Europe and is in use in many of the bloc's 27 member states so far without issue.

The European Union Aviation Safety Agency (EASA), which oversees 31 states, said on December 17m the issue was specific to US airspace. "At this stage, no risk of unsafe interference has been identified in Europe," it stated.

FRANCE

FAA officials have noted the spectrum used by France **(3.6-3.8 GHz)** sits further away from the spectrum (4.2-4.4 GHz) used for altimeters in the US and France's **power level** for 5G is much lower than what is authorized in the US.

SOUTH KOREA

In South Korea, the 5G mobile communication frequency is **3.42-3.7 GHz band** and there has been no report of interference with radio wave since commercialization of 5G in April 2019.

Where interference have been experienced, what mitigating actions have been introduced by these affected countries?

The US has issued FAA Airworthiness Directives (AD) and associated NOTAMS. These include:
FAA AD 2022-02-16, FAA AD-2021-23-12 and FAA AD-2021-23-13

Refer **FAA AD 2022-02-16** – This AD revises the limitations and operating procedures sections of the existing AFM to incorporate limitations prohibiting certain landings and the use of certain MEL items, and to incorporate operating procedures for calculating required landing field lengths, when in the presence of 5G C-Band interference as identified by NOTAMs.

Operators flying into United States Airspace should review and consider the impacts of SAFO 21007, FAA AD 2021-23-12, FAA AD 2021-23-13 , FAA AD 2022-02-16 and SAIB AIR 21-18 on their operations.

There are also Alternative Means of Compliance (AMOC), which allow flights to continue as long as it can be assured that there will be no harmful interference with radio altimeters around specific airports or runways. AMOCs have an important role in the short term but they are very specific to aircraft type, radio altimeter models, and even particular airports or runways. Moreover, each AMOC approval will last no longer than three months.

Refer FAA website link *https://www.faa.gov/5g* for information on the 87 airports where low visibility approaches where 5G is deployed and the aircraft types for which AMOCs have been issued by the FAA.

Is 5G operating in Fiji?

No. The Telecommunication Authority of Fiji (TAF) have confirmed that they have not received any radio frequency licence application for 5G operation**.**

What is the role of the Telecommunication Authority of Fiji (TAF) and the Ministry of Communications (MoC) in the allocation of the radio frequency spectrum?

The Ministry of Communication (MoC) is responsible for the management of the radio frequency spectrum in Fiji and ensures the Radio Regulations of the ITU(International Telecommunication Union) are adopted and mandated in Fiji. The allocation of the radio frequencies by the MoC are done in collaboration with other government agencies such as the Civil Aviation Authority of Fiji (CAAF). The radio frequency licences are issued by TAF for the State. For radio licence applications that fall within the reserved aeronautical spectrum, this application will require CAAF's endorsement for approval before the radio frequency licence can be issued by TAF.

How does the Civil Aviation Authority of Fiji (CAAF)plan to mitigate the potential risks of harmful interference of 5G, when it is rolled out in Fiji?

CAAF is working in collaboration with TAF and the Ministry of Communications to ensure that every frequency allocation/ assignment is comprehensively studied and is well proven not to adversely impact aviation safety and efficiency.

CAAF is considering precautionary measures adopted by other States should 5G be rolled out in Fiji. These measures include the restriction of 5G towers along the approach path into Fiji's international airports from at least 400m and declaring no-go zones in the vicinity of the airports. The limitation of power level transmissions and the angle of antennas for a downward-looking radiation pattern for 5G transmitting station masts, to be adopted. And finally, CAAF in collaboration with TAF intends to adopt the approach undertaken by CASA Australia in assigning the lower adjacent frequency band for 5G operations.

The aviation industry will be notified when 5G operations is introduced into Fiji and pilots will be urged to report any anomalies with radio altimeters near 5G towers to the CAAF.

Airworthiness bulletins and NOTAMs will be issued should interference be experienced during critical phases of flight, if the altimeter is unable to sufficiently reject those signals.

CAAF is committed to working closely with the MoC, TAF and other relevant organizations and international airworthiness authorities to monitor and manage potential interference of radio altimeters systems when 5G operations is rolled out in Fiji■

If you have any enquiries, please email: info@caaf.org.fj

Climate Change
Its Impact on Aviation
The Time to Plan Is Now

Image: Flight Global.com

Analysis

There is justifiably a good deal of analysis and media coverage of aviation's impact on climate change. Fewer columns have been given to the impact of climate change on aviation.

The main expected impacts of climate change on aviation result from changes in temperature, precipitation (rain and snow), storm patterns, sea level and wind patterns. In addition, climate change is expected to lead to increased drought, impacts on the supply of water and energy, and changes in wildlife patterns and biodiversity. Consequences for aviation include reduced aircraft performance, changing demand patterns, potential damage to infrastructure, loss of capacity and schedule disruption.

Summary

- Changes in temperature, precipitation, storm patterns, sea level and wind patterns are the five main ways climate change is expected to affect aviation.
- Temperature change affects aircraft performance, infrastructure and demand patterns. Changed precipitation patterns could increase delays and cancellations.
- More strong storms are expected, with increased schedule disruption. Rising sea levels could reduce airport capacity and cause network disruption.
- Changing wind patterns could increase turbulence, affect journey times and cause disruption.

Temperature change affects infrastructure, aircraft performance and demand pattern

In addition to average temperature increases, climate change is leading to a greater range of extreme temperatures. Increased temperatures have an impact on aircraft performance, for example reducing lift, and this has a knock-on effect on runway length requirements. Aircraft payload and range will also be affected. Temperature change will have further impacts on infrastructure, such as heating and cooling requirements and heat damage to runways and taxiways. Change in temperature can also be expected to change demand patterns, both seasonally and geographically.

Changed rain and snowfall patterns could increase delays and cancellations

These changed precipitation patterns will lead to delays and cancellations of flights. There are also likely to be increased incidences of flooding of airports and surface access. Unusual extended slow moving low pressure period in January and early February this year caused extensive flooding in most of the Fiji Group. Changes to snow clearance and de-icing requirements could be a positive if there are fewer occurrences, but this could be offset if those occurrences are more severe.

More strong storms are expected, with increased disruption

The South Pacific (Fiji Group) saw its strongest Cyclone on record in TC Winston. This will lead to delays, capacity reductions and cancellations, the rerouting of flights and a consequent increase in fuel burn, damage to infrastructure, and an increase in lightning strikes (with possible consequences for aircraft maintenance needs and costs).

Rising sea levels could reduce airport capacity and cause network disruption

As a result of climate change, sea levels in most of the Pacific are predicted to rise broadly in line with the global average over the longer term. A rise of 1 metre would put 96 European airports at risk of inundation, according to the European Union Joint Research Centre. In addition, there could be surges in sea levels resulting from severe storm events, although this is an area of significant uncertainty and regional differences. Rising sea levels could lead to the loss of airport capacity, either permanently or temporarily, and consequent network disruption. Surface transport links to airports could also be affected. Prevention of these impacts, such as via enhanced sea defenses, airport relocation and the development of secondary airports, will mean increased costs. However, the longer timescales involved with expected rising sea levels allow more time to plan for the necessary actions.

Changing wind patterns could increase turbulence, affect journey times and cause disruption

There is some evidence to indicate that climate change is increasing the variability in the strength, position and shape of the jet stream. The jet stream is a strong westerly wind (i.e. blowing from the west) of up to 320km/h at an altitude of 5 to 7 miles above the earth's surface – a similar height to that of aircraft crossing the Trans-Atlantic and the South Pacific. The jet stream is important for flight planning, since it provides a tailwind for aircraft flying from Australia to Fiji in the Pacific and a headwind for those flying the other way. In addition, changes in the speed and pathway of the jet stream result in air turbulence for aircraft (changes in the jet stream also affect weather patterns below it). A climate change-induced strengthening of the South Pacific jet stream is expected to increase both the frequency and strength of clear air turbulence roughly twofold. It is also expected to reduce eastbound journey times, but to increase westbound trips by a greater amount. This means a lengthening of the average round-trip journey time, a consequent increase in flight time, fuel burn, emissions and costs and challenges in terms of schedule planning, slot management and aircraft holding patterns. Other expected wind-related changes resulting from climate change are shifts in the direction of prevailing winds and increased vertical wind shear. In addition to increased clear air turbulence and greater variability in flight times and routing, the potential effects of changing wind patterns on aviation include crosswind impacts on airport capacity and operational disruption if winds are too strong.

The aviation industry needs to take actions to adapt to climate change

Clearly, participants will need to train staff in the use of meteorological data and in how to react during disruptions, and will need to increase the sharing of such data with other organisations. This will include greater use of onboard weather detection technology. The industry needs to adapt schedules, both on a seasonal basis (to cope with changes in demand) and within each day (for example to ensure that larger aircraft can depart at cooler times). Cooling and heating requirements need to be considered in airport terminal design and surface material specifications need to be considered in runway and apron design. In addition to actions that can be taken now, in all areas where climate change may adversely affect aviation more research is required. This is particularly so in the areas of changing prevailing wind patterns and technologies for the detection of clear air turbulence. The details of the impacts of climate change on aviation are still fraught with uncertainties. However, it is accepted that the world's climate is changing, and this will undoubtedly pose significant challenges for the entire aviation industry.The industry has a strategy to mitigate its impact on climate change, although more could be done. However, it currently has a less coordinated approach to mitigating the impact of climate change on aviation. Solutions will require the involvement and collaboration of all industry participants, including aircraft operators, airports, air navigation service providers, aircraft manufacturers and regulators■

Flight Inspection

Flight navigation systems are an essential part of the overall aviation system required to support and sustain the continuous growth in global air traffic.

These systems assist Air Navigation Service Providers in their objective of ensuring safe, orderly and efficient flow of air traffic so passengers and freight are able to reach their destination in due time safely, despite the continuous increase in traffic density. Around the world, pilots rely on a myriad of communications, navigation and surveillance systems to fly safely. To ensure operational readiness, flight calibration service operators routinely measure and calibrate the airways using flight calibration aircraft equipped with sophisticated flight inspection technology. The combination provides a nimble, reliable, cost-effective platform for certifying airport navigational aids to incredibly precise tolerances.

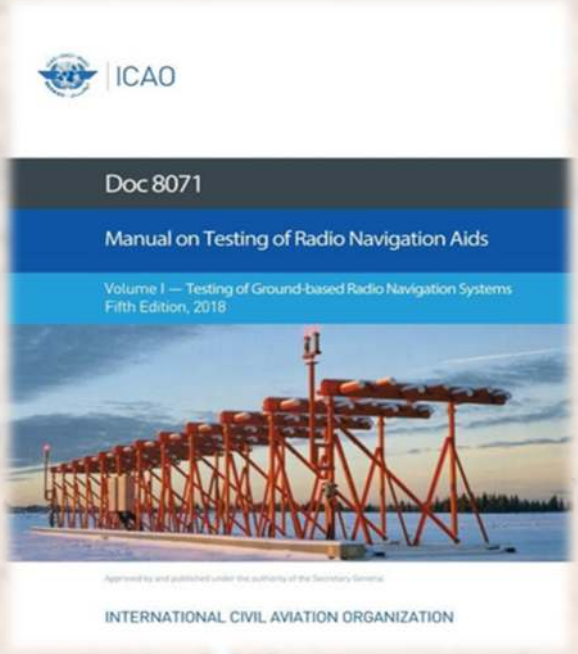
The mandatory ICAO requirements for regular calibration, inspections and periodic maintenance of these flight navigation systems has been implemented to ensure that all essential navigation aids for pilots are working correctly. This means that these systems must be tuned and maintained to radiate the correct signals in the airspace, at any given time. To achieve this, a combination of ground and air inspections is necessary.

The ICAO Doc 8071 provides guidance on the extent of testing and inspections to ensure that radio navigation systems meet the Standards and Recommended Practices in Annex 10.

The Flight Inspection Service must determine the best profile for each facility.

Flight precision, with specific responsibilities for tasking, choice, and variation of individual runs, can lead to interpreting operational issues and the results of an inspection in different ways.

The Civil Aviation Authority of Fiji (CAAF) has published the ***Guidance Material on Flight Inspection.*** This document is applicable to the Air Navigation Services Provider and CAAF staff and provides guidance information on flight inspection, recommendations on key activities and milestones in planning, execution, delivery and reporting of flight inspections. It is not intended to replace the relevant flight inspection requirements stipulated in Annex 10 and Doc 8071.



CAAF's Aeronautical Information Circular 01/22 ***"Catalogue of APAC Flight Inspection and Flight Validation Service Providers"*** provides information on flight inspection and flight validation service providers available in the Asia Pacific region.

Fiji does not have its own Flight Inspection Service Provider and as such the Air Navigation Services Provider, Fiji Airports, engages the services of an external provider, **Radiola Limited**, to conduct flight inspections for the calibration of its ground navigational aids.

Flight Inspection Crew with Radiola Ltd's Flight Inspection Group Manager, Carole Thompson

Calibration Equipment

Radiola Aerospace operate flight inspection systems obtained from Airfield Technology of Kanvas, USA. These systems represent the latest technology and provide customers with reduced operating expenses by allowing the complete flight inspection mission to be more efficient.

The systems are fully automatic allowing simple analysis of results. A portable computer serves as the data recording system providing fast data acquisition and analysis. High resolution colour graphics are displayed and all data is saved to a hard disk with an external backup. WinFIS™ software is the first dedicated flight inspection software designed specifically for the Windows™ operating system. This software provides an easy user interface with online help.

Flight Inspection *cont...*

Flight Inspection Reports

Flight inspection during the COVID-19 pandemic

Due to the unprecedented challenges brought by the Covid-19 pandemic, CAAF adopted the ICAO considerations to ensure flight inspection were maintained for the safe operation of navigational aids during the pandemic and to avoid a critical path to aviation recovery after the pandemic. This included the considerations for the extension of flight inspection periodicity for radio navigation aids during the C-19 pandemic and related recovery phase. There was a need for maintaining regular ground and flight checks of Navaids to ensure that they are available during the pandemic.

Ground testing was carried out as required and in accordance with the local COVID-related health precautions and more specifically to the ground maintenance staff. In order to sustain the flight inspection schedule, notwithstanding the pandemic-related difficulties, Fiji adopted special health safety procedures and operational measures to enable safe delivery of flight inspections.

UAV flight inspection

ICAO published a guidance material for the use of emerging technology such as the UAV system to supplement flight Inspection, that may improve and streamline inspection processes to mitigate airport operations on costs, noisy and environmental unfriendly impact due to large fuel consumption by flight inspection aircraft.

The UAV system is mainly composed of three parts, mainly including the UAV, the UAV ground control station, a data communication system, mission load, support, and the maintenance system. The UAV flight inspection system mainly includes two parts, air, and ground. The air part includes UAVs, multi-mode receivers and processing systems capable of receiving navigation signals such as GPS\ILS\VOR\DME\NDB\MB, transmission system, the ground part mainly has a UAV control station, flight check data analysis and processing system, GPS precise positioning system station, data transmission system

The ordinary airborne flight inspection navigation evaluation system needs to collect and process the spatial signals to be evaluated and generate an evaluation report. The basic inspection principle of the flight inspection system requires the precise positioning of the inspection aircraft itself and compares the collected navigation signals with the ideal signals that should be provided at the position to obtain flight inspection data and errors. After flight inspection, ground navigation equipment could be adjusted to allow the spatial signal to ultimately meet operational specifications.

Once construction of the UAV flight inspection platform is completed, the next step will be to carry out a flight inspection. There are two modes of doing this. One is an automatic autonomous flight that collects air data. This requires pre-setting the calibration subjects and flight lines of the UAV according to the flight procedure. The second is where the UAV transmits the collected data back to the ground data processing center in real-time and determines whether to adjust the ground equipment according to the air parameters.

UAV Calibration

Currently, the biggest difficulty in implementing UAV flight inspection is that States have not yet issued relevant regulations and technical standards to support it. There is also no calibration equipment specially designed for UAV calibration and the existing calibration equipment is too large in size.

As UAV technology and the establishment of relevant legislation and standards continues to develop, the use of UAV inspection will greatly reduce the cost of flight inspection. As a result, the trend will continue to use UAVs for flight inspection in the future.

Flight-testing will be important in the proof of facility performance because it represents in-flight evaluation and provides a sampling of the radiated signals in the operating environment. Additionally, flight Inspection will provide more than just a need to satisfy the mandated requirements of Annex 10. The role a calibration unit plays may vary between countries, the basic service is essential for ensuring that facilities provide a safe service to users. In the increasingly demanding environment we work in, efforts were made to reduce the impact of flight inspection without reducing the safety role that the service provides.

Flight Inspection Service Providers may need to provide more data to help support the regulatory standards for the use of UAV■

Considerations For Aviation Medical Certificates

LONG TERM HEALTH IMPACT

Most people who were infected with COVID-19 recover completely within days to weeks. Some individuals even those who had mild versions of the disease continue to have persistent signs or symptoms after recovery. Those with severe symptoms may develop complications and require rehabilitation after hospitalization.

According to a WHO scientific brief, Post COVID-19 condition occurs in individuals with a history of probable or confirmed SARS -CoV-2 infection usually 3 months from the onset of the infection with symptoms that last for at least 2 months and cannot be explained by an alternative diagnosis.

Symptoms may be a new onset following initial recovery from an acute COVID-19 episode or persist from the initial illness. Symptoms may also fluctuate or relapse over time. Common symptoms include fatigue, shortness of breath and “brain fog” or other cognitive dysfunction that could have an impact on everyday functioning. Other COVID-19 related long-term symptoms include cough, muscle/joint pain, chest pain, fast or pounding heartbeat and dizziness. These symptoms may worsen following physical or mental activities. Long-term neurological consequences include headache, problems with smell or taste, cognitive impairment, memory problems, confusion, fatigue, difficulty concentrating, sleep disturbances and neuropsychiatric symptoms such as depression or anxiety.

MENTAL HEALTH IMPACT

Psychological reactions such as stress, anxiety and depression are common responses to the COVID-19 pandemic. In aircrew, circumstantial factors such as the fear of infection, fear of job loss, layover conditions, last minute flight roster changes, rapidly changing flight restrictions, different requirements for aircrew in different countries and unruly passenger behavior add to the stress experienced.

The pandemic with all its associated consequences has had a significant impact on overall mental health including emotional, psychological, and social well-being of both passengers and aviation personnel which could impact operational safety.

Specifically, in the interest of flight safety, Aviation Medical Examiners (AMEs) should discuss mental health effects with aviation license holders and remind them that it is normal to be affected or feel anxious when having to cope with an abnormal event such as the COVID-19 pandemic. AMEs should encourage crew and controllers to reach out to a trusted peer support colleague or a medical professional when finding that the pressure of work or life could affect their performance. Self-awareness and early intervention are very effective mitigation measures to ensure safe performance, prevent license holders from being removed from duty and assist aviation personnel in managing any potential long-term health effects.

Image: Aviation Medicine

RETURN TO DUTY AFTER COVID-19 INFECTION

Currently, there is not sufficient data available regarding the exact incidence of COVID-19 in aviation personnel and the prevalence of symptoms and sequelae post infection. Both the acute and long-term effects of the disease could interfere with the safe performance of duties in terms of functional performance and the risk of incapacitation.

Aviation license holders with symptoms consistent with COVID-19 should stop flying or controlling air traffic until the diagnosis has been confirmed or excluded. Once the diagnosis has been confirmed or excluded, they should be assessed in accordance with national risk-based criteria to determine fitness for return to duty which may include an additional assessment by an aviation medical examiner if indicated and need not be a routine requirement.

The national aviation authorities should provide appropriate guidance to support the safe return of aviation personnel to their duties once they are no longer infectious and have recovered from COVID- 19 infection. It is essential to continue to monitor the scientific evidence regarding infectiousness and the effects of COVID infection and update the relevant guidance material accordingly.

Clinical presentation course of the infection treatment provided development of complications or sequelae and existing comorbidity factors should be considered and clearly documented when assessing fitness to resume duties.

Individuals with asymptomatic or mild initial COVID-19 illness may return to normal duties after self-assessment or assessment by their treating doctor within the minimum time as recommended by the national public health authorities and aviation authorities under the following circumstances:

a) Asymptomatic infection confirmed by a laboratory and the individual is no longer considered to be infectious;

b) Having completed a period of isolation or quarantine as required by the public health authorities; or

c) Symptomatic infection (with an uncomplicated course of illness for example no hospitalization and full recovery) after resolution of symptoms that might reduce functional ability or increase incapacity risk.

Under the following circumstances the assessment should be conducted by an aviation medical examiner prior to resumption of duties:

a) Incomplete recovery such as individuals with ongoing residual symptoms or requiring ongoing treatment

b) A complicated course of illness (e.g., hospitalization and/or where treatment require oxygen administration and/or ventilation);

c) Development of complications/ sequelae; or

d) Presence of complicated or chronic co-existing medical conditions.

If there are continuing symptoms that might impair cognitive performance and/or the physical operation of flight controls or present an increased acute incapacity risk, additional information, specialist referral and/or secondary assessment by a medical assessor might be required prior to issuance of a “fit for duty” medical certificate for return to duty■

Source: ICAO EB 2022-08

What is Wellbeing?

Why Should I care?

Image: Dreams photo

Introduction

The World Health Organisation defines wellbeing as "a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity". We are all familiar with the idea of mental wellbeing, but it is only one pillar of our overall wellbeing and does not exist independently of our physical and social health.

This 'BioPsychoSocial model of Health' allows us to think of our health as a three-legged stool, in which each of the legs represents one of the pillars: biological, psychological and social. The physical, mental and social aspects of our health are interdependent and a holistic approach is needed to look after them.

Lifestyle has a direct and well-understood influence on each of the pillars. We know physical health is very much affected by ***diet***, ***physical activity*** and ***sleep***. Our behaviours, attitudes, stress management and coping techniques have a profound impact on mental health, and social health is linked to our support networks: those around us, our family, our friends, our colleagues.

Factors within a single pillar will influence the other pillars too. For example, sleep has an influence and effects across factors in psychological and social pillars; physical activity has a profound impact on our mental health, and if taken in the company of others can enhance our social health.

For simplicity, from this point onwards we will refer to these pillars as 'Body' (biological), 'Mind' (psychological) and 'Social'.

Why Should I Care?

Your wellbeing has an impact on others (family/friends), on your work/performance and on safety.

Our wellbeing influences the nature and quality of our relationships with others (i.e. family, friends, work colleagues and community) and it impacts directly on human performance – on our awareness, decision making, and concentration. Finally, our performance as aviation professionals, under-pinned by our wellbeing, impacts directly on safety.

This diagram shows how you can think of yourself (your body, mind and social aspects) existing within connected family, community and work environments.

Our bodies might not always operate as expected in that we can experience stress, be it physical or emotional, and we can display signs of distress but then bounce back. Our resilience allows us to adapt to our environment but just like a wing or an engine, we can only sustain stress to a point beyond which our performance progressively deteriorates until eventually we break. In the same way that we improve structural resilience through better engineering, through better wellbeing we can improve our own physical and mental resilience.

Most sources of work-related stress are common to all aviation workers, especially shift-workers, the lifestyle factors and coping strategies adopted by the most resilient group and in many cases it offer substantial wellbeing benefits for all. These insights form the foundation of this plan.

The most significant lifestyle factors found to influence the psychological resilience of aviation professionals are:

- Stress
- Sleep
- Diet
- Exercise
- Activities
- Relationships

Wellbeing and COVID-19

In aviation we work in one of the world's safest and most heavily regulated industries. The current COVID -19 pandemic poses potentially one of the greatest occupational health and safety threats to face our industry in recent times. We are trained to manage risk, to look for hazards and report them. But how can we manage something that we can't measure or even see?

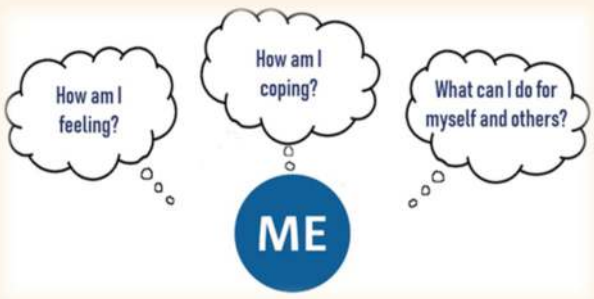
The COVID-19 hazard is not just work-related, it is everywhere we go, and for many of us this is unnerving. We have constant reminders of the need for hand hygiene, and rightly so, but we also need mental hygiene, to flush our heads of the non-stop worry, stresses and fear of the unknown. COVID-19 is not just a biological virus, it is also a psychological contagion.

The pandemic is having a physical and economic impact on individuals and is also disrupting society and sense of community. Many of us are either working reduced hours or not working at all, which can affect our sense of purpose, not to mention our financial security. People who are still working are doing so in a very different environment and with the additional stress of the virus.

The current restrictions on physical distancing and working conditions are impacting all three pillars of our health, but possibly none more so than our social wellbeing. We can still exercise, sleep, and eat, we may finally manage to get long-delayed tasks finished, but our social lives have been impacted enormously. Wellbeing has never been more important in allowing us to adapt to this unfamiliar landscape in a positive manner.

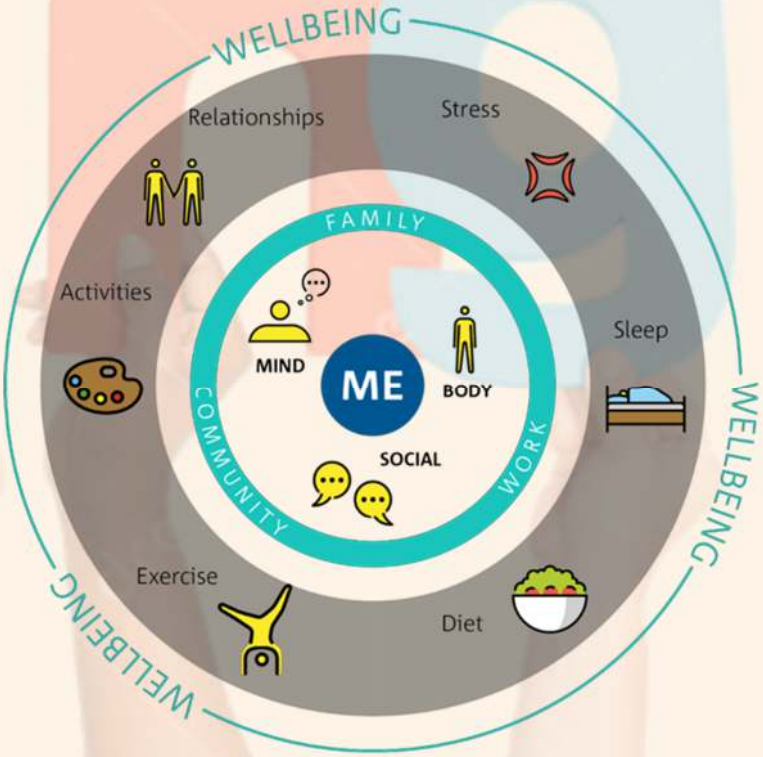
Wellbeing Questions and Behaviours

Remember these three questions?



The first two questions might be harder to answer than the last. If you are not feeling well, or in control, or you think you are not coping, congratulations, you are normal!. These are perfectly normaly responses to the very challenging circumstances in which we find ourselves.

The Wheel of Wellbeing



Now, think of the key factors acting to support and enhance your wellbeing — the more time and energy you invest in the behaviours associated with each factor, the stronger this enhancement will be. The more you reinforce your overall wellbeing, the more resilient you will become■

CASA PEXO EXAM SYSTEM

1 Exam Application and Payment

Ensure that the PL101A form is correctly filled out—details such as DOB, ARN, Signatures and e-mails. Application forms can be obtained from https://caaf.org.fj or collected from the PEL Office. Forms must be submitted with fees made before the deadline.

Exam Booking and Timetable

Once complete forms have been received, the PEL Office books each candidates for exams and sends out the exam timetable.

2

3 Exam Day

Candidates are only allowed to take with them the materials which are permitted—a list of permitted materials and tagging limits can be obtained from the PEL Office or on CASA's website. All other exam rules must be strictly adhered to.

Exam Results

Pass marks for PEXO exams are 70%.
Candidates that pass their exams may collect their KDR's after 3 working Days.
Failed KDR's can be collected from the main office straight after exams.

4

A minimum re-training period of 3 months applies after **3rd failure** of that same subject examination.

After the **4th and subsequent failures** of that same subject, candidates must provide the following to the PEL Office:

1. Attendance from school; **2.** Failed KDR's; **3.** Exam and Revision Paperwork; **4.** Letter from CFI.

Exams are conducted every Friday within the period of 8.00am to 5.00pm local time except those Fridays that fall on promulgated Fiji public holidays. If Friday is a public holiday, the exam will be conducted same week on a Wednesday. Deadlines for submission are no later than 1pm on Wednesday if exams fall on Friday and no later than Monday 1pm for Wednesday exams■

Civil Aviation Authority of Fiji

Contact CAAF
Office Number: (679) 892 3155
E-mail: info@caaf.org.fj
Website: www.caaf.org.fj

Aviation Security Screener Certification License Initial Process

1

APPLICATION — Submit SF 106A form with supporting documents (2 passport size photos, ASTP 123 Training Records, OJT Records, Police Clearance ,Proficiency Test Records) with relevant fees paid ($54.50.)

2

EVALUATION — Form is checked by the Licensing Officer for completeness, accuracy and payments.

3

ENDORSEMENT — Application is forwarded to the Aviation Security Inspectors for endorsement.

4

EXAM DATES — Licensing Officer checks for the available dates of the exams and schedules the applicants accordingly.

5

LICENSE— If the applicants pass their exams they are issued with their letters to perform their roles and their licenses issued after the results are processed■

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Industry Consultation Process

BACKGROUND

In January 2010, CAAF reviewed its Consultation Process to promote a robust consultative system where all industry representatives are engaged and participates in the introduction or amendments of the Acts, Regulations and Standard Document on aviation safety issues, resulting in the CAAF Regulatory Development Manual (CRDM).

Whilst the intention was to structure such a system, there was a lack of industry response and participation in the Air Safety Committee (ASC) and the Ground Safety Committee (GSC) – the principal consultative bodies established to provide advice and recommendations to CAAF on regulatory issues, proposals and associated documentation. In addition, the ASC and the GSC Chairman's position became vacant in the latter part of 2011 with a call for nominees by CAAF. No response had been received.

Given the lack of response to take on the position of ASC and GSC Chairman and participation during the consultation process pertaining to State Letters, ANR Parts and the Educational Briefing on the ANR Parts and as CAAF is going onto the next phase of the Harmonization Project, it proposed the amendment of the CRDM by removing the ASC and GSC Committee and reverting to the initial consultation system whereby Industry is notified of any amendments to the Act, Regulations and Standard Documents, comments are sought within a specified time and upon Industry requests or CAAF initiation, CAAF will conduct educational briefing/discussions on the same.

This is the overview of CAAF's processes and mechanisms for industry consultation.

The Civil Aviation Authority of Fiji - Responsibility to Consult

The Civil Aviation Authority of Fiji (The Authority) is obligated under *Sections 14 (2) (b)* and *3 (b)* of the *Civil Aviation Authority Act 1979* to promote full and effective consultation and communication with all interested parties on aviation safety issues. This includes consultation on Aviation Security.

When conducting regulatory development activities, the Authority's method in conducting consultation is to seek early and ongoing input and comments from interested parties regarding aviation safety issues and proposals to introduce new or to amend Acts, Regulations (hereinafter referred to as the "Legislation") and Standards.

Where the change or amendment in the Legislation results in a difference from an ICAO Standard, whether more or less restrictive, then actions must be initiated under a separate procedure for the Filing of a Difference by the Authority.

Effective Consultation is Fundamental

The Authority has made a commitment to improve consultation mechanisms and support consultation as required with all relevant stakeholders. Consultation ensures that both the regulator and the regulated parties have a good understanding of the proposal, alternative options to address it, possible administrative and compliance mechanisms and associated benefits, costs and risks.

However, consultation may be by-passed if there is a need to publish changes to standards that may be necessary to alleviate or minimise any risk of the death of or a serious injury to any person, or of damage to any property.

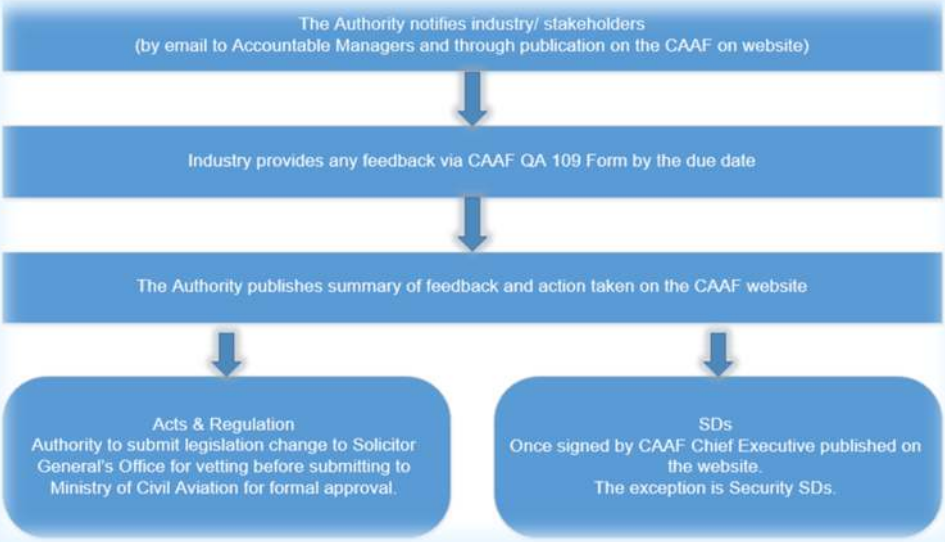
How CAAF Consults on Regulatory Development Activities

There are 5 triggers that would result in the consultation process to be convened.

1. Proposals for Amendment (PfA) to an ICAO Annex or PANS document;
2. Proposed change to aviation legislation or CAAF SD arising from:
    a. an audit or an investigation (internal or external)
    b. a review of existing legislation/ SDs;
    c. areas identified as requiring clarification and/or additional information and
    d. the need to align to international best practice.
3. Heightened threat level to global aviation arising out of terrorist activity;
4. A proposed change originating from the aviation industry (operators) as a result in a change to operating conditions into foreign countries.

All Legislation drafts are coordinated/ consulted with the Solicitor General's Legislative Drafting Department.

Consultations on regulatory and non-regulatory proposals are commensurate with the extent and scope of the change, its impact on affected parties, and the degree of acceptance with the change. For example, regulatory changes of a minor, editorial nature are not subject to the full consultation process, but will involve less formal consultations, and notifications by the Authority.



Consultation Communications and Vehicles

Internet – All proposals for amendment (PfAs) are featured on the Authority's web page www.caaf.org.fj

Email – The Authority will notify industry/ stakeholders

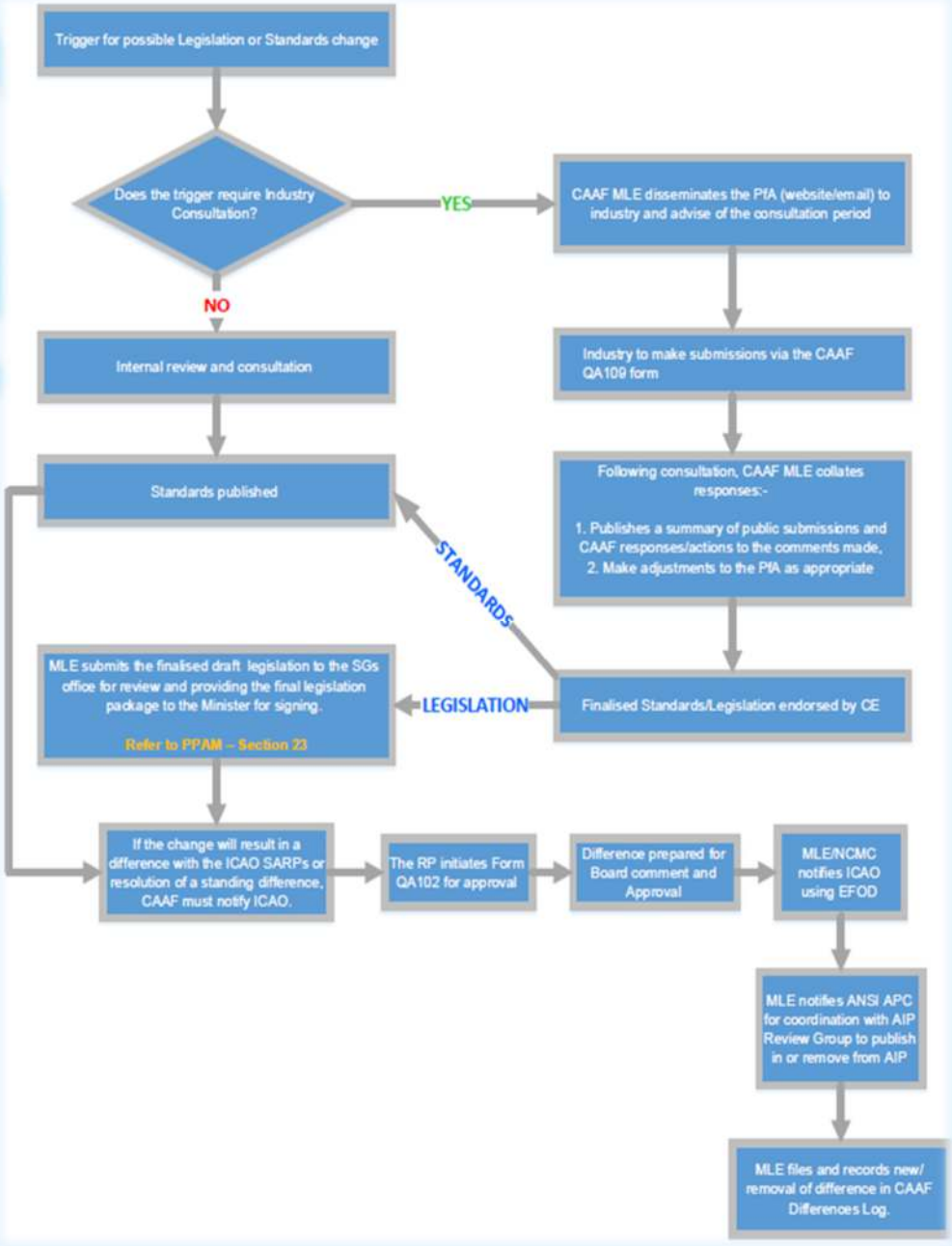
The consultation notification will:

1. Declare the Authority's intention to seek comment;
2. Describe the manner in which copies/information of the consultative document can be obtained;
3. Provide advice as to the period and method which responses may be made and lodged in relation to the proposal.

Generally, the Authority provides up to four weeks for comments to be received on any PfAs.

In cases where the proposal is easy to understand, minor or non-controversial, it may be subject to comment for shorter periods as determined by the Authority. The Authority's Chief Executive may extend the response period for large and complex proposals ■

LEGISLATION OR STANDARDS CHANGE PROCESS



"A woman working in a man's world"

Gender Equality today for a sustainable tomorrow emphasizes clearly that the world over, recognizes that women play a pivotal role in our society for a sustainable future.

It was clear from the start that the journey in the aviation world would be a challenging one for Mrs. Sereima Tuiketei-Bolanavatu. Being the sole female in a male-dominated workforce for a span over a decade has proven that women are as equally capable and can thrive in a man's world.

Sereima started her aviation journey way back in 1992 as a Telecommunication cadet for Civil Aviation Authority of Fiji. She began her career at the age of 18, by firstly pursuing a Diploma of Telecommunication Engineering at the Fiji Institute of Technology. Throughout the years of training and personal development, she established her mark as the first female licensed aeronautical engineer with the role of providing technical support to the air navigation services and facilities. Her responsibilities were to conduct maintenance on the ground Navigational Aids facilities, located either at the airports and at remote sites. She was also required to be on stand by during off-work hours to facilitate for any failures on the Ground Navigational Aids facilities, Air to Ground Voice Communication system and the ADS-B Surveillance systems. Later she was responsible for quality assurance, safety, standards and training for the department.

From 1992 to 2005, she was the only female working among her peers, and the experiences enabled her be strong and resilient, assertive and empathetic. As she emphasized in her speech during the International Women's Day (IWD) celebration at CAAF "*women in a male dominated workforce need to possess the will and determination to keep pursuing despite the odds against you.*"

"women in a male dominated workforce need to possess the will and determination ...."

Sereima shared her own experiences and spoke of the challenges encountered:

- With all these prejudices and gender bias, stereotyping it was very challenging trying to fit in. At first it was very uncomfortable. I was always self-conscious of my behavior, my dressing, and how I had to conduct myself around these men-folk. Having to work around these biases throughout, uses quite a lot of mental energy, and I needed to be focused. I had to toughen up in order to survive. Take the jokes, and the crap, and just do in Rome.
- I found that I had to work harder to prove that I am an equal. Though the work involved physical activity, I had to prove I could perform the same tasks, or even better than men. Of course, they would make me carry my own tool box, and heavy equipment.
- I discovered the work environment does not facilitate the basic needs of a woman. Up until today, there are no female washrooms, in the remote stations. You know, Women can be very particular when it comes to hygiene especially for washrooms. Whenever this issue is raised with management, there is always the excuse, it's not economical to build additional washrooms for one lady, just use the men's.
- My personal account, on relationships. Having a relationship and settling down was a challenge especially when your work colleagues are only men-folk so it was important to find someone who was to understand and support the nature of my work. And becoming a mother came with all its responsibilities for me was the greatest challenge. There were no work policies that facilitated nursing moms, and I didn't have an understanding boss who would empathize when my son got sick, or when my nanny wouldn't turn up for work. I would like to encourage organizations to review their policies to make it more work-friendly for young mothers starting their families.

In Conclusion, What can we do as a society to address bias and inequality?

1. *A lot needs to be done at a professional level. Women need to be visible at all levels, and especially in leadership roles so our voices can be heard and change can happen to remove these biases to ensure gender equality in the workforce.*
2. *More opportunities need to be created for women so that gender parity is no longer seen in a workforce. Policies need to be reviewed so that there is a proportionate representation of men and women at work.*
3. *Mentoring is an excellent means of developing and coaching younger women in our organization, villages and communities. Having a mentor for younger aspiring women in all disciplines will guide and motivate them along their journey, in personal and professional advancement.*

It takes everyone to make a change, to remove bias and gender inequality. Let's all make a change for a better sustainable tomorrow■

CAAF appoints Controller Air Safety

CAAF appointed Mr. Jim Samson as its Controller Air Safety (CAS) with effect from 28th February 2022. The CAS leads the CAAF's Air Safety Department, which includes the Flight Operations and Airworthiness sections.


Mr Jim Samson

Mr. Samson brings a wealth of aviation experience to the role having worked in the aviation industry, both locally and regionally, for over 45 years. He was an aircraft engineer by trade, holding an aircraft maintenance engineer's licence with ratings on various aircraft types including the EMB-110 Bandeirainte, DHC-6 Twin Otter, ATR-42/300, B737, B767 and B747 aircraft.

Mr. Samson has held senior management and executive positions in the airline industry, with the national and domestic airlines in Fiji, Papua New Guinea, Solomon Islands and Vanuatu.

In October 2017 Mr. Samson joined CAAF as its Senior Airworthiness Maintenance & Engineering Inspector, a position he held until his appointment as CAS.

Mr. Samson will be looking to engage industry more often, with the first industry meeting scheduled for the end of March 2022. This forum is a good platform to address any significant safety issues with the objective of ensuring continuous safety improvement of the aviation industry in Fiji.

Safety is everyone's responsibility and Mr. Samson is calling on all in the aviation industry to support and work in collaboration with CAAF to achieve high levels of safety in all we do■

CAA Fiji is keen to hear from you regarding our levels of service. If you believe you have constructive ideas on how we can improve our services, or would like to report instances where we have failed to meet your expectations, please send your feedback to CAAF, preferably using the QA 108 form that can be accessed from our website. This can be sent to CAAF by faxing it to the Executive Office on 672 1500, or dropping it in the feedback box in the foyer of CAAF HQ, or emailing to :

info@caaf.org.fj

FCAIR

FIJI CONFIDENTIAL AVIATION INCIDENT REPORTING

FORMS AVAILABLE ON WEBSITE

www.caaf.org.fj

***OR* FRONT DESK, CAAF HQ.**

Be Proactive About Your Cardiovascular Risk Score

Introduction

Fiji has one of the highest rates of deaths from Ischaemic Heart Disease or Heart Attack and it's one of the reasons for premature deaths in adult males. In the USA it is estimated that one person has a heart attack every 40 seconds.

According to the latest WHO data published in 2018, Coronary Heart Disease Deaths in Fiji reached 1418 or 24% of total deaths. The age adjusted death rate is 217/100,000 of population and ranks Fiji #25 in the world.

In our local aviation community, sadly we are all too aware of premature deaths in our pilots from heart attacks. It is my observation as a DAME that many pilots are unaware or ignorant of the fact that they can push their doctors to carry out tertiary level cardiovascular tests if they want eg. Exercise Stress Test (Treadmill), CT Angiogram and Conventional Angiogram (Coronary Artery Catheterisation).

These tests are available at Heart International, Namaka and Oceania Hospital, Suva.

It is imperative that you know how to calculate your cardiovascular risk score which will guide you as to when you really need those extra tests.

Limitations Of The Resting ECG test

(All DAMEs have this in office)

Do note that a Resting ECG test can be normal despite the presence of a serious underlying heart condition (false negative). In the same token the ECG can be overly sensitive and point toward a heart problem that is not really present (false positive).

So for those pilots with risk factors, do not settle for a normal Resting ECG as the all clear.

Coronary Heart Disease /Coronary Artery Disease

These interchangeable terms mean the build-up of plaque in the heart's arteries that could lead to a heart attack.

The traditional risk factors for coronary artery disease are ;

- High LDL Cholesterol
- Low HDL Cholesterol
- High Blood Pressure
- Diabetes Mellitus
- Smoking
- Family History
- Obesity
- Sedentary Lifestyle
- Post-Menopausal for women
- Older then 45 for men
- Gout
- Metabolic Syndrome

Calculating Cardiovascular Risk Score

There are many charts used to calculate your risk score and from what score you need to carry out further tests.

The chart below is from CASA website

Coronary Heart Disease Risk Factor Prediction Chart (CRI)

1 *Find Points for each Risk Factor*

Age (if Female)		Age (if Male)		HDL Cholesterol		Total Cholesterol		Systolic BP		Other	
Age	Pts	Age	Pts	HDL-C	Pts	Total-C	Pts	SBP	Pts	Others	Pts
30	-12	30	-2	0.65-0.68	7	3.60-3.99	-3	98-104	-2	Cigarettes	4
31	-11	31	-1	0.69-0.76	6	4.00-4.30	-2	105-112	-1	Diabetic (M)	3
32	-10	32-33	0	0.77-0.84	5	4.31-4.69	-1	113-120	0	Diabetic (F)	6
33	-8	34	1	0.85-0.90	4	4.70-5.19	0	121-129	1	ECG-LVH	9
34	-6	35-36	2	0.91-0.99	3	5.20-5.69	1	130-139	2	(0 points assigned for each negative answer)	
35	-5	37-38	3	1.00-1.09	2	5.70-619	2	140-149	3		
36	-4	39	4	1.10-1.19	1	6.20-6.79	3	150-160	4		
37	-3	40-41	5	1.20-1.30	0	6.80-7.49	4	161-172	5		
38	-2	42-43	6	1.31-1.43	-1	7.50-8.19	5	173-185	6		
39	-1	44-45	7	1.44-1.56	-2	8.20-8.55	6				
40	0	46-47	8	1.57-1.70	-3						
41	1	48-49	9	1.71-1.89	-4						
42-43	2	50-51	10	1.90-2.07	-5						
44	3	52-54	11	2.08-2.25	-6						
45-46	4	55-56	12	2.26-2.49	-7						
47-48	5	57-59	13								
49-50	6	60-61	14								
51-52	7	62-64	15								
53-55	8	65-67	16								
56-60	9	68-70	17								
61-67	10	71-73	18								
68-74	11	74	19								

Use this profile for professional pilots 5 yearly (or private pilots, if clinically indicated) and every year for pilots over 60 years of age

2 *Sum Points for all Risk Factors*

Age ( ) + (HDL-C ( ) + Total-C ( ) + SBP ( ) + Smoker ( ) + Diabetes ( ) + ECG-VVH ( ) = Point Total

NOTE: Minus points subtract from total

3 *For Stress ECG if > 14 Pts*

4 *If LBBB needs stress Echo or Perfusion Scan*

Note if the total score is > 14 points, a Stress ECG/ Exercise Stress Tests /Treadmill is required. Also note that an adult male aged 60 is already scoring 14 points by age alone.

Once an Exercise Stress Test (EST) is positive an Angiogram test is mandated to locate the Coronary Artery Blockage that is likely to be present and the subsequent treatments required, whether it be Stenting or Coronary Artery Bypass Surgery.

Every pilot who have the above risk factors for Coronary Artery Disease should have and hold a high index of suspicion that a heart problem may exist and push for these tests to be performed to clinch an early diagnosis and save a life■

Author: Dr Isireli Biumaitotoya

Civil Aviation Authority of Fiji

Safety in the air is engineered from the ground.

more info @ www.caaf.org.fj