SMALL STEPS TO DEVELOPING A ROBUST SECURITY CULTURE IN AVIATION

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

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AVIATION SAFETY BULLETIN

PUBLICATION CONTENT Unless expressly stated as CAAF policy, the views expressed in this *Aviation Safety Bulletin* do not necessarily reflect the policy of the Civil Aviation Authority of Fiji. Articles are intended to stimulate discussion, and nothing in this *Aviation Safety Bulletin* is to be taken as overriding any Fiji Civil Aviation Legislation, or any statements issued by the Chief Executive or the Civil Aviation Authority of Fiji.

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From the Acting Chief Executive

Bula Vinaka and welcome to the Civil Aviation Authority of Fiji's (CAAF) fourth and final edition of the Aviation Safety Bulletin (ASB) for 2021. The ASB is one means to improve the safety culture and awareness in our aviation community and I hope you find this issue interesting and informative.

The year began on a positive note with much optimism that the aviation sector would return to some normalcy in the early part of 2021 and bring with it much-needed growth in the aviation and other related sectors of our economy. The second wave of the COVID-19 pandemic in Fiji as a result of the Delta variant caused a set-back to our plans. The country went back into lockdowns and new workplace protocols were introduced to stem the spread of the virus. Better mitigation strategies and greater coordination and collaboration has never been more important.

CAAF's work plans and work modes were adjusted to meet the fast-paced changes that were occurring around us and at the same time allow us to continue to successfully deliver on the eight (8) critical elements of our safety and security oversight system. Remote audits and surveillance activities as well as meetings and trainings via virtual platforms became the norm, requiring a large behavioural shift in our people.

CAAF's focus for 2021 and beyond is to discharge our responsibilities under the Civil Aviation Authority of Fiji Act 1979 more effectively, with a greater focus on improving our processes and procedures. As Fiji's borders open, our commitment to ensuring continued compliance with the aviation standards is critical for the safe and secure recovery of aviation.

The commemoration of the International Day of the Air Traffic Controller (ATC) on the 20 October and the Air Traffic Safety Electronics Personnel (ATSEP) Day on the 12 November, recognises the important contribution that ATC and ATSEP make to safe air transport; to the men and women in these areas, we salute you.

International Civil Aviation Day, celebrated on the 07 December, served to acknowledge the importance of aviation for safe and efficient transport around the world and reinforces the importance of international civil aviation to the social and economic development of all countries. The International Civil Aviation Organisation in a special Joint Statement with the UN World Tourism Organization to commemorate International Civil Aviation Day, has called for accelerated global efforts to reconnect the world.

As we close out the year, we take this opportunity to thank the Fiji aviation community for your support and collaboration throughout a tumultuous 2020-2021 and acknowledge the role you play in ensuring safe skies for all.

We wish you a happy holiday season and look forward to your continued partnership in 2022.

Stay Safe ∎

Vinaka,

MS THERESA LEVESTAM
ACTING CHIEF EXECUTIVE

Civil Aviation Authority of Fiji

Thank you for your collaboration in 2021 towards a safer and secure air transport system.
Wishing you and your loved ones a very

MERRY CHRISTMAS

and a

Healthy and Prosperous New Year.

Vinaka,
The Board, Management & Staff

For urgent matters / emergencies contact:
(679) 9995-201

Happy Holidays
Safe Travels

October 20th.

Honor An

Air Traffic Controller

Air traffic controllers may at times talk faster than an auctioneer, but we depend on their quick wits and sharp eyes to keep us safe. They do this job every day of the year, and one date, October 20, has been designated to express our appreciation.

Every year on October 20, the International Day of the Air Traffic Controller is celebrated to honour the

Air Traffic Controllers .

Every year on the 20th of October, to honour the professionals who work as Air Traffic Controllers, the International Day of the Air Traffic Controller is commemorated. These "commemorative" day it's not a holiday because ATC never gets a holiday; they work 24/7.

It's also a day to learn more about an Air Traffic Controller's career and profession. Air Traffic Controllers aid commercial flying and looks into everything from safety to efficiency. Experts in this specialised profession raise awareness on the occasion of the International Day of the Air Traffic Controller so that others can honour their behind-the-curtain efforts.

Every day, over 100,000 planes take off and land all around the world, according to the National Day Calendar. Over 4 billion passengers fly by air in a single year. Air traffic controllers are significantly responsible for the safety of air travel. On the ground at airport runways, these specialists direct air traffic. The movement of planes through airspace is also monitored and directed by air traffic controllers. Pilots are also given landing and takeoff commands by the Air Traffic Controllers.

History of International Day of the Air Traffic Controller

Jacob Wachtel, who founded the Israel Air Traffic Controllers Association, advocated and founded the International Federation of Air Traffic Controllers' Association (IFATCA) on October 20, 1961, with delegates from 12 different countries. Since then, every year, the International Federation of Air Traffic Controllers Associations commemorates the IFATCA anniversary. The same organisation now represents over 50,000 air traffic controllers in 126 countries across the world. The International Federation of Air Traffic Controllers (IFATCA) is an organisation comprising air traffic controllers from throughout the world. It is the world's largest and most representative organisation for air traffic control.

Significance of International Day of the Air Traffic Controller

The Air Traffic Controller are trained to keep an eye on and control aeroplanes during the flight. They are responsible for the safety of roughly one billion individuals per year, or about two million passengers per day. Pilots are safely directed to land and take off by air traffic controllers who use their expertise and judgement. The air traffic controller is one of the most demanding jobs because it necessitates a high level of concentration and attention. These professionals serve a critical role in guiding flights through adverse weather and emergency circumstances.

For everyone who flies, whether by airliner or general aviation aircraft, this is the day when we should recognize the work of the 14,000 ground-based aviation professionals who have helped make air travel as safe as it is today ■

Small Steps To Developing A Robust Security Culture In Aviation

Fiji's Experience

Fiji has established a relatively robust aviation security culture which governs the modus operandi of its operators and the aviation community and ensures that security risks are mitigated in a timely manner to prevent acts of unlawful interference against aviation. Unlike safety culture which is more mature and which has been in existence for a longer period of time, aviation security culture has become more prominent lately, following the aftermath of the fateful terrorist attacks of September 11 2001. While the implementation of; and compliance to, aviation security culture varies from operator to operator across the aviation spectrum, it is safe to conclude that Fiji's aviation industry is developing a mature security culture which is relevant to our context, can only get better over time, and remain, fit for purpose. Fiji is relatively secure from acts of unlawful interference. This is due to a number of important factors namely; a low risk factor, an unattractive terrorist target, a robust safety culture, isolation from main global supply routes and the existence of an increasingly mature security culture. Security awareness training, security specific training and collaboration amongst stakeholders have provided a firm foundation for security culture to thrive. However, there are numerous challenges brought about by advancements in digital technology in the form of cyber security and remotely piloted aircraft systems (RPAS) which require appropriate security responses.

Regulation 17A of the Civil Aviation (Security) (Amendment) Regulations 2006 establishes the need for mandatory occurrence reporting (MORs) to the Authority of specific security incidents or breaches within ninety-six (96) hours of their occurrence. This regulation highlights the importance of developing a good security reporting culture with the objective of not apportioning blame, but to ensure gaps are sealed in a timely manner. Over time it was noted that some reportable security incidents or breaches were not reported out of fear of punitive action or ignorance. In some cases, some operators did not know what type of offences to report. The Authority has sought to address this issue through greater awareness training on why it is critical to develop a robust and just reporting culture. Furthermore, each operator has an internal reporting system to address security incidents or breaches but this reporting system does not guarantee that all reportable security incidents or breaches will be reported to the Authority. Nevertheless, more operators know the value of reporting and now appreciate the need to report without fear or favor, thus more reports are being received. This reporting culture has now become the norm.

Operators are encouraged to report incidents that involve, according to law, the safety of civil aviation, including serious injury or death arising from aviation activity and acts of unlawful interference. Apart from these circumstances, operators also report suspicious activities, happenings, persons, including unattended baggage, unattended cargo, unsealed meal carts, unserviceable equipment, insufficient lighting, shortage of manpower, improper screening of persons, no searching of consignments from unknown consignors, amongst a host of issues. There is still a tendency to under report or not report at all.

To be effective, security culture must be part of organizational culture and must be driven by senior management who need to set the example by outlining the organization's security policy, the means to achieve it and by following the security policy. This security policy has to be communicated clearly to all staff so that they understand management expectations and the rationale behind the policy. Staff input and buy in is equally important if the policy is to receive widespread support. There is improvement in the development and documentation of security policy in security programmes.

ulture In Aviation

The Authority conducts aviation security specific training for the aviation industry based on the ICAO Aviation Security Training Packages (ASTP) and other ICAO training material namely airlines, cargo, supervisors, management, risk management, risk context statement, quality control and behavioral assessment based on the TSA training model. Fiji Airports, which is the airport operator also conducts security awareness training for airport stakeholders.   The Authority identified the need to extend its security awareness training on a national scale to create greater public awareness. Prior to the resurgence of COVID-19 in April 2021, the Authority was in the process of developing pamphlets and other aviation security material to distribute to the Ministry of Education seeking approval for onward distribution to primary and secondary schools and tertiary institutions. This initiative has been shelved but the Authority intends to share what it has done in its website and in its interactions with the different operators.

The Authority conducts aviation security audits, inspections, tests and surveys of the different operators within the aviation industry as part of its yearly oversight and continuous monitoring approach. It also conducts investigations and is part of industry organized exercises from time to time. These different quality control activities provide opportunities for the Authority to exchange information with operators and reinforce the importance of having a robust security culture which ensures that established procedures are followed and standards implemented consistently. These quality control activities provide valuable platforms to strengthen security culture.

The primary safety and security legislations for civil aviation are being reviewed and amended to seal gaps, incorporate new ICAO and State requirements and international best practices. Once the draft legislations have been released to the Authority, consultations will begin with the aviation industry and feedback included in the final submission to the Solicitor General's office before finalizing the legislations. It is envisaged that these amended legislations will be robust, fit for purpose and address many of the existing challenges.

In the absence of advanced screening equipment for the certification of screeners, Fiji innovatively developed a manual system for certification modelled on the type and core principles of screening. The certification process is divided into two parts; a theory and a practical examination. All screeners have to successfully pass the theory examination first before they can do the practical examination. If they fail the theory examination, they have to return at a fixed date and time to reseat the examination. If they pass the theory examination, they proceed to the practical examination where they have to successfully complete four (4) critical aspects of the screening process manually. If they fail the practical examination, they have to reseat the examination at a date and time confirmed

by the Authority. Through the interactive manual certification of screeners, the Authority is able to reinforce some of the finer points of security culture through screening.

A robust security programme is a direct result of an equally good security culture and a good security culture is the product of continuous practice and improvement. The content of operator security programmes in Fiji has improved and evolved with a strong focus on the principle, 'document what you do and do what you document'. Operators now have a better understanding of what constitutes a good security programme and good security culture.

Apart from formal aviation security training courses provided by ICAO, TSA, IATA the Authority and other stakeholders, the Authority exchanges security information with the aviation industry on a need to know basis. This ensures that information is shared only with those that have an operational need to know. It also highlights an important aspect of security culture; there is a limit to what one can share and not all security information can, or should be shared. ICAO, IATA, ACI and other stakeholders like TSA, NZ CAA and other international agencies have assisted Fiji develop a security culture that is acceptable and recognized internationally. This is appreciated.

While Fiji has a relatively robust security culture, there are still many challenges to overcome. A more collaborative approach is required to ensure operators do not work in silos. With frequent changes in senior management positions across the different organisations within the aviation industry, it is critical that the new incumbents receive aviation security awareness training at the earliest opportunity so that they too understand the significance of having a robust security culture, but more importantly, translate this knowledge to practice. There is a need for more practical applications of security culture best practices on the ground by both senior management and staff. There is no better way than that of a good example where staff see senior management actually 'practicing what they preach'. Leading by example sets the right platform, creates confidence and buy in and gives credibility to existing security measures.

Improved coordination and communication are areas that require fine tuning so that security information is received, understood and communicated in a timely manner. There are also plans to reach out more often to members of the public with security awareness programmes. The Authority is working closely with all stakeholders to improve coordination and communication and is optimistic that with more security awareness training, more people will become security conscious, in the process strengthening security culture in every sphere of life.∎

Aviation English Language

GENERAL INTEREST   SAFETY

You've heard alfa, bravo, Charlie...but do you know where it came from?

When a pilot communicates with air traffic control, static and other interferences often lead to confu.sion with English language letters. ICAO developed the International Radiotelephony Spelling Alphabet to ease communication via telephone or radio and avoid misunderstandings when parts of a message containing letters and numbers are spelled out. Also referred to as the ICAO Phonetic Alphabet and the NATO Alphabet (with some modifications), this universal spelling alphabet is a set of words used to clarify messages, no matter the spoken language. Members of the military, police, airline pilots and others working in the aviation and travel industry commonly use it.

The ICAO phonetic alphabet has assigned the 26 code words to the 26 letters of the English alphabet in alphabetical order: *Alfa, Bravo, Charlie, Delta, Echo, Foxtrot, Golf, Hotel, India, Juliet, Kilo, Lima, Mike, November, Oscar, Papa, Quebec, Romeo, Sierra, Tango, Uniform, Victor, Whiskey, X-ray, Yankee, Zulu.*

With short and simple words, ICAO's phonetic alphabet lowers the chance of misunderstandings and increases operational safety for passengers and crew. Because some letters sound similar (M and N or G and J), it can generate confusion between two people communicating with different accents or when the communication lines are poor. The phonetic alphabet helps limit confusion between the cockpit and the tower.

Not only are the letters in the ICAO phonetic alphabet assigned, but so are the numbers. Similar to the letters, the aim is to avoid confusion with other similar numbers. Therefore, a few of them are pronounced differently from their standard English pronunciation. Those include the number three, pronounced as *tree* (tri), five as *fife* and

nine as *niner*. Consider an aircraft tail number such as M345N. Over the radio, this would be said as "Mike, tree, four, fife, November."

ICAO adopted its phonetic alphabet 70 years ago, on 1st November 1951, as a universal standard for communicating English letters over a phone or radio. Dissatisfaction with the existing internationally recognized phonetic alphabet submitted to ICAO for consideration led to the first draft of a proposed single universal alphabet. Through 1948 and 1949, Jean-Paul Vinay, professor of linguistics at the Université de Montréal in Canada, collaborated with ICAO's language sector to develop a new spelling alphabet. The minimum requirements for the words were to have similar spelling in English, French, and Spanish and to be live words in each of these languages.

After those studies and following consultations with communications experts and comments from all ICAO Member States, a new ICAO alphabet was adopted and incorporated in the Aeronautical Telecommunications Annex 10 for implementation in civil aviation. The words that represented the letters C, M, N, U and X were replaced, and the Organization completed its final version on 1st March 1956, which is still in use today worldwide. You can learn more about the development and implementation of this alphabet in the ICAO Museum, which is situated inside ICAO's Montréal Headquarters.

In 1997 ICAO recognized the importance of improving communication between pilots and air traffic controllers in order to avoid accidents.

The Air Navigation Commission (ANC) reviewed the existing provisions for air-ground and ground-ground voice communication in the international civil aviation context. The ANC made changes to strengthen ICAO Annexes 1, 6, 10, 11 about language proficiency requirements for pilots and air traffic controllers.

Annex 1 describes the language proficiency and testing requirements. Annex 1 also contains a language proficiency rating scale with six proficiency levels. Finally, Annex 1 describes how language proficiency will affect personnel licensing.

Annexes 6 and 11 establish that all pilots and air traffic controllers must comply with the ICAO language proficiency requirements outlined in Annex 1. Thus pilots and air traffic personnel must be proficient in both ICAO phraseology and plain English.

All speakers of English must demonstrate a minimum English language proficiency at ICAO Level 4 (Operational) in order to be fully licensed internationally.

Air traffic personnel will be required to take a test to determine their English language proficiency according to the ICAO proficiency scale. Personnel will need to demonstrate ability to use the language specific to all aspects of radio telephony communication.

Personnel who demonstrate English language proficiency at :

- ICAO Level 6 (Expert) will not be required to demonstrate English language proficiency in the future.

- ICAO Level 5 (Extended) will need to be retested every six years.

- ICAO Level 4 (Operational) will need to be retested every three years.

- ICAO Level 3 or below will need specific Aviation English language training to reach the minimum ICAO Operational Level.

Member states that do not comply with the new licensing requirements will be required to notify ICAO. Non-compliance may limit the international recognition of the licenses of aviation personnel.

The new ICAO standards became applicable in November 2003. ICAO member states have until March 2011 to train their personnel to meet the testing and licensing standards. ***All member states need to ensure that their aviation personnel achieve the minimum ICAO Level 4 (Operational) proficiency in English by March 2011***■

Montréal – 4 July 2013 – The International Civil Aviation Organization (ICAO) has announced the launch of a new and improved Aviation English Language Test Service (AELTS) website (www.icao.int/aelts).

INTERNATIONAL CIVIL AVIATION DAY
— DECEMBER 7 —

On the 07th of December each year, we celebrate the 1944 Convention on international civil aviation. The Convention, also known as the Chicago Convention, mandates the International Civil Aviation Organisation (ICAO), as a United Nations (UN) specialized agency, to foster the development of aviation.

This day is recognized around the world as **International Civil Aviation Day**.

It is a day to acknowledge the importance of aviation in respect of safe and efficient transport around the world and to generate and reinforce worldwide awareness of the importance of international civil aviation to the social and economic development of all countries as well as the unique role of ICAO in helping States to cooperate and realise a truly global rapid transit network at the service of all mankind.

The ICAO Council establishes a special anniversary theme every five (5) years for International Civil Aviation Day.

For the period 2019-2023, the theme for **International Civil Aviation Day** is:

"ADVANCING INNOVATION FOR GLOBAL AVIATION DEVELOPMENT"

This International Civil Aviation Day, we recognize how ICAO's Strategic Objectives are strongly linked to 15 of the 17 UN Sustainable Development Goals.

SDG 1   Reconnecting the world; aviation's unique and critical role as a catalyst for sustainable development, helping alleviate poverty as aircraft return to the sky.

SDG 2   Flight is crucial to food supply chains, at the community and global levels alike. Whether done by drone or jumbo jet, we salute aviation's continuing and vital role in ensuring food security.

SDG 3   Recognizing the crucial cooperation between ICAO and the World Health Organisation that is enabling aviation to restart safely and restore its contributions to global health and sustainable development.

SDG 4   Promoting STEM education for children everywhere, giving everyone a chance to be prepared for the next generation of air transport professionals and highly rewarding careers they will offer.

SDG 5   The recovery of global aviation means an opportunity to achieve rapid growth towards gender equality in this sector and beyond, provided barriers to women's participation are removed.

SDG 7   ICAO's work on sustainable aviation fuels is supporting the broader UN effort to transition toward sustainable energy. We celebrate the tremendous progress that's already been achieved and work towards green solutions.

SDG 8   Careers in aviation are almost unlimited in diversity, and the pandemic recovery holds the promise of highly rewarding employment opportunities everywhere. We celebrate flight's contributions to sustainable development and full and productive employment for all.

SDG 9   Investment in innovation is crucial to the safety, security, sustainability of flight and its unique role to act as a catalyst for sustainable development. We highlight ICAO's work to encourage this, helping to ensure that reconnecting the world means building back better.

SDG 10   Air connectivity is a catalyst for sustainable development. This means that international flights can help reduce inequality each time an aircraft departs.

SDG 11   Accelerating air travel will restore prosperity and provide important sustainable development opportunities to communities everywhere, especially in least developed States and small island countries.

SDG 12   We recognize the role aviation has played in keeping critical global supply chains functioning throughout the pandemic, shielding all societies from more systemic pandemic impacts.

SDG 13   As an integral part of the UN system, ICAO is taking urgent action to combat climate change and help ensure that reconnecting the world means improving sustainability.

SDG 15   Whilst land use may change as we rapidly transition to sustainable aviation fuels, ICAO is helping States to guard eco systems and biodiversity. We celebrate the sustainability of flight.

SDG 16   ICAO fosters the development of aviation as flight promotes friendship and peace among peoples and nations.

SDG 17   Strengthening implementation and revitalizing the global partnerships through aviation to ensure sustainable development.

This International Civil Aviation Day, the Civil Aviation Authority of Fiji's Board and Staff, takes this opportunity to thank all our industry partners and stakeholders for your contribution and continued commitment to ensuring a safe and secure civil aviation system∎

HAPPY #FLYDAY.

Significance of Security Culture Awareness

Security Culture is a significant element of daily aviation operations.

Awareness and education must be prioritized to ensure an effective and robust security culture is established and maintained.

A Security conscious workforce and a well informed population will benefit our Aviation Operations for years to come, thus the significance of Security Culture awareness

2021 | THE YEAR OF SECURITY CULTURE

View Posters

2021
YEAR OF SECURITY CULTURE

Security is Everyone's Responsibility

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.

Fundamental Human Factors Concepts

Introduction

Flight safety is the major objective of the International Civil Aviation Organization. Considerable progress has been made, but additional improvements are needed and can be achieved. It has long been known that some three out of four accidents result from less than optimum human pperformance, indicating that any advance in this field can be expected to have a significant impact on the improvement of flight safety. Human behaviour and performance are cited as causal factors in the majority of aircraft accidents. If the accident rate is to be decreased, Human Factors must be better understood and the knowledge more broadly applied. The expansion of Human Factors awareness presents the international aviation community with the single most significant opportunity to make aviation both safer and more efficient. " To improve safety in aviation by making States more aware and responsive to the importance of human factors in civil aviation operations through the provision of practical human factors material and measures developed on the basis of experience in States."
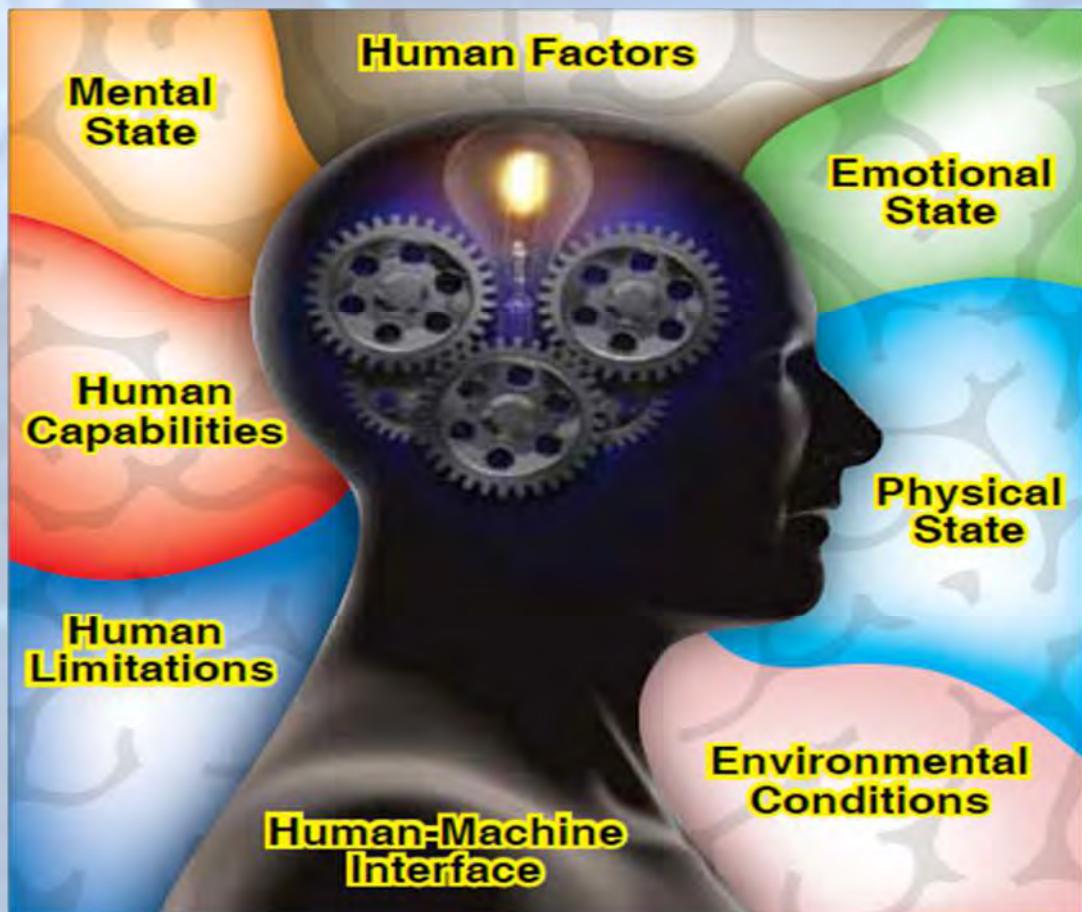
A Conceptual Model of Human Factors

It is helpful to use a model to aid in the understanding of Human Factors, as this allows a gradual approach to comprehension. One practical diagram to illustrate this conceptual model uses blocks to represent the different components of Human Factors. The model can then be built up one block at a time, with a pictorial impression being given of the need for matching the components. The SHEL concept (the name being derived from the initial letters of its components, Software, Hardware, Environment, Liveware) was first developed by Edwards in 1972, with a modified diagram to illustrate the model developed by Hawkins in 1975. For those familiar with the long-established concept of" man-machine-environment" (now referred to as" human-machine-environment"), the following interpretations are suggested: liveware (human), hardware (machine) and software (procedures, symbology, etc.), environment (the situation in which the L-H-S system must function). This building block diagram does not cover the interfaces which are outside Human Factors (hardware-hardware; hardware-environment; software-hardware) and is only intended as a basic aid to understanding Human Factors.

S = Software (procedures,
      symbology, etc.)
H = Hardware (machine)
E = Environment
L = Liveware (human)

In this model the match or
mismatch of the blocks (interface)
is just as important as the
characteristics of the blocks
themselves. A mismatch can be
a source of human error.
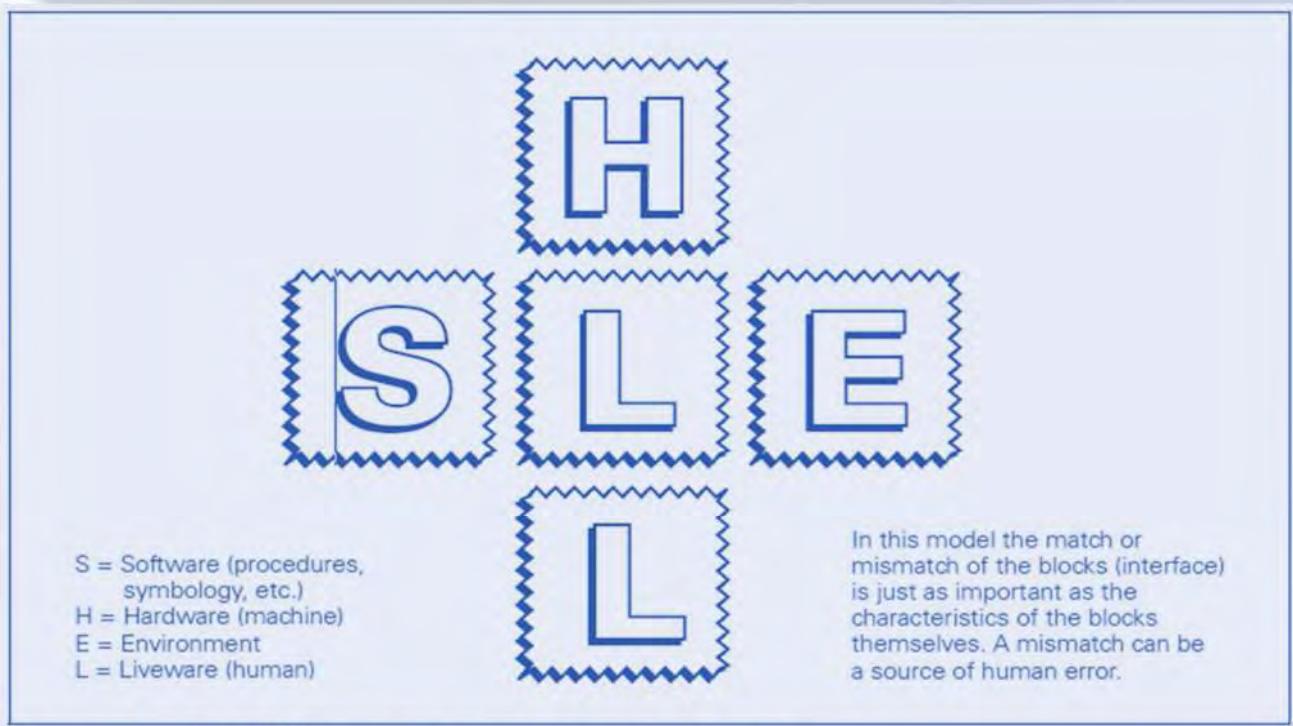
Figure 1   The SHEL model as modified by Hawkins

The "Dirty Dozen"

Due to a large number of maintenance
-related aviation accidents and inci-
dents that occurred in the late 1980s
and early 1990s, Transport Canada
identified twelve human factors that
degrade people's ability to perform
effectively and safely, which could lead
to maintenance errors. These twelve
factors, known as the "dirty dozen,"
were eventually adopted by the avia-
tion industry as a straight forward
means to discuss human error in
maintenance. It is important to know
the dirty dozen, how to recognize their
symptoms, and most importantly,
know how to avoid or contain errors
produced by the dirty dozen. Under-
standing the interaction between or-
ganizational, work group, and individu-
al factors that may lead to errors and
accidents, AMTs can learn to prevent
or manage them proactively in the
future■

Source:

1. *CAP 719 (Previously ICAO Digest No.1)*
2. *AMT Handbook Addendum Human Factors*
3. *Integrated Human Factors (IHF.co.uk)*

heat stress
Hydration

Drinking enough fluids is one of the most important things you can do to prevent heat illness. Water is generally sufficient for hydration.

Urine Color Test

WELL HYDRATED

HYDRATED

DEHYDRATED Drink Water!

SEVERELY DEHYDRATED Drink Water Immediately!

Hydrate *Before* Work

- Being hydrated when you start work makes it easier to stay hydrated through the day.

- If you are dehydrated when you start work, you may not be able to drink enough to catch up with your body's need for water.

Hydrate *During* Work

- Drink before feeling thirsty. By the time you feel thirsty, you are already behind in fluid replacement. Dehydration is a primary contributor to heat exhaustion.

- Your work performance may suffer when you are dehydrated, even if you don't notice.

- When working in the heat, drink 1 cup (8 ounces) of water every 15–20 minutes.
  - This translates to ¾–1 quart (24–32 ounces) per hour.
  - Drinking at shorter intervals is more effective than drinking large amounts infrequently.

- Do not drink more than 48 oz (1½ quarts) per hour! Drinking too much water or other fluids (sports drinks, energy drinks, etc.) can cause a medical emergency because the concentration of salt in the blood becomes too low.

How much water is that? 1 quart = 1/4 gallon (32 oz) = 1 L approx
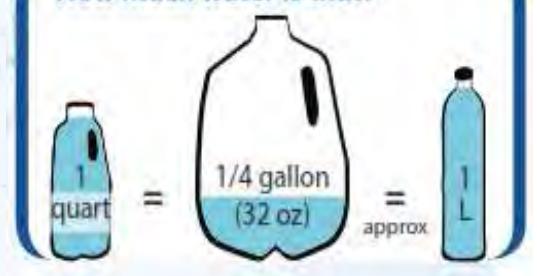
Hydrate *After* Work

- Most people need several hours to drink enough fluids to replace what they have lost through sweat. The sooner you get started, the less strain you place on your body from dehydration.

- Hydrating after work is even more important if you work in the heat on a regular basis. Chronic dehydration increases the risk for a number of medical conditions, such as kidney stones
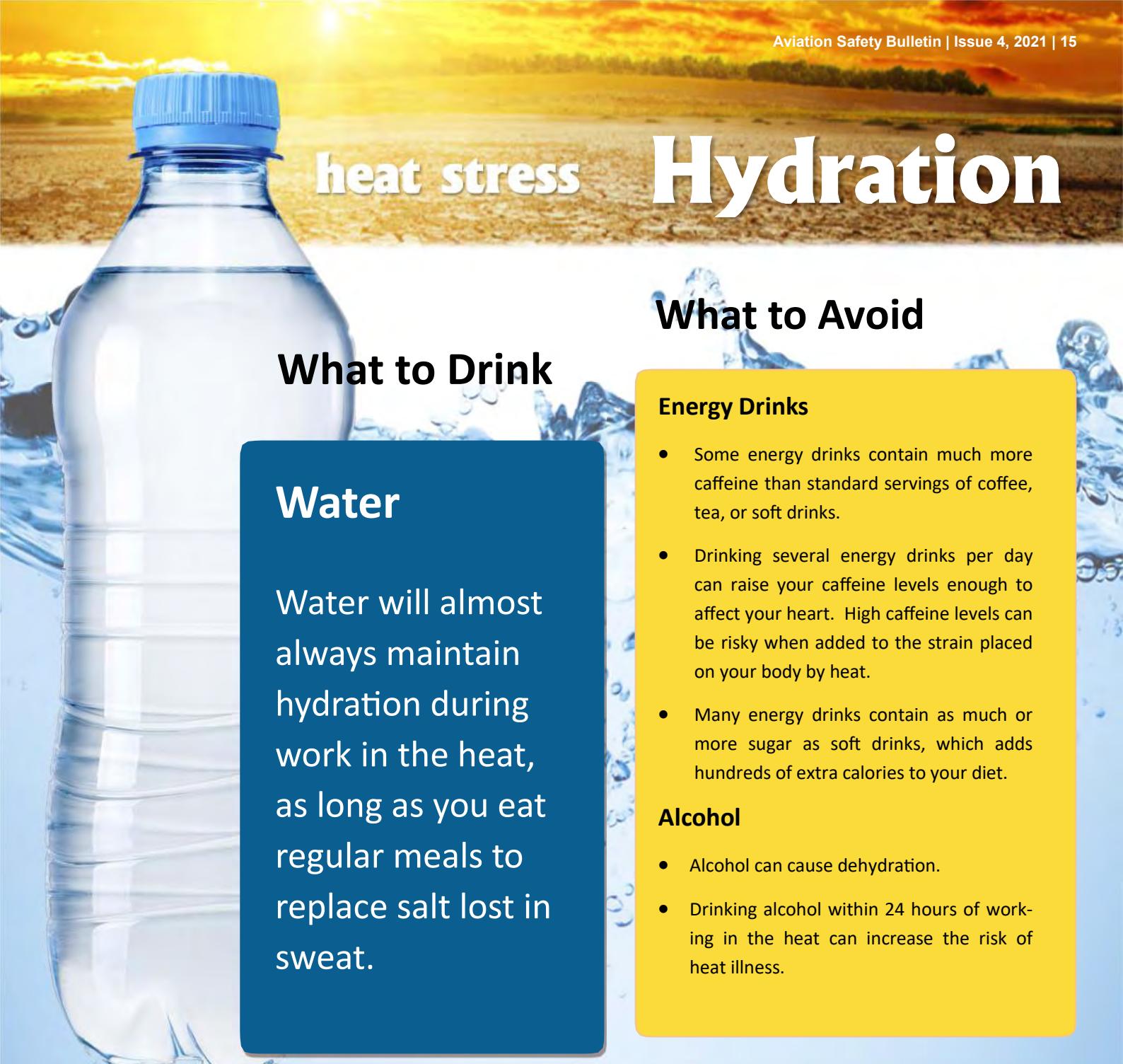
heat stress Hydration

What to Drink

Water

Water will almost always maintain hydration during work in the heat, as long as you eat regular meals to replace salt lost in sweat.

What to Avoid

Energy Drinks

- Some energy drinks contain much more caffeine than standard servings of coffee, tea, or soft drinks.

- Drinking several energy drinks per day can raise your caffeine levels enough to affect your heart. High caffeine levels can be risky when added to the strain placed on your body by heat.

- Many energy drinks contain as much or more sugar as soft drinks, which adds hundreds of extra calories to your diet.

Alcohol

- Alcohol can cause dehydration.

- Drinking alcohol within 24 hours of working in the heat can increase the risk of heat illness.

What about salt tablets?

CDC and National Institute for Occupational Safety and Health (NIOSH) does not recommend taking salt tablets.

In most cases, salt can be replaced by eating normal meals and snacks throughout the day.

Do not skip meals.

What about caffeine?

The amount of caffeine in tea, coffee, and soft drinks probably will not have an effect on overall hydration .

Do I need sports drinks?

In general, eating regular meals with adequate water intake is sufficient to maintain water and electrolyte balance.

For prolonged sweating lasting several hours, sports drinks with balanced electrolytes are another option to replace salt lost in sweat.

Heavy consumption of sports drinks will add unnecessary calories to your diet due to the added sugar.■

Source: CDC NIOSH

Air Traffic Safety Electronics

Personnel Day

The ATSEP Day is a day set aside by International Federation of Air Traffic Safety Electronics Associations (IFATSEA) in recognition of the efforts of ATSEPs towards ensuring the safety of air transportation all over the world.

In 2015, the International Federation of Air Traffic Safety Electronics Association (IFATSEA) declared the 12th of November as the International ATSEP day, as the day Air Traffic Safety Electronics Personnel (ATSEP) are

Picture of the ATSEPs during the ILS installation

acknowledged for their contribution for safer skies worldwide.

ATSEPs play a critical role in the aviation safety chain.

ATSEP are responsible for duties that pertain to the use of ground electronic systems that are used to help control aircraft movements, including operational, maintenance, installation and management activities. The tasks performed by ATSEP may be on a wide variety of CNS/ATM/ATS systems or equipment. This requires a wide range of competencies, expertise, knowledge and skills in the areas of electronics, computer science and computer networking. ATSEP activities range from technician-level to high-level engineering tasks.

ATSEPs are also required to perform management activities related to safety management, network security management, quality management, teaching, training and assessment.

The ICAO has developed the training manual ICAO Doc 10057 for competency-based training and assessment.
EUROCONTROL has published safety regulatory requirements to be implemented by EU member states in ESARR 5 pertaining to ATM Personnel and Requirements for Engineering and Technical Personnel Undertaking Operational Safety Related Tasks that are directed to ATSEPS.

Although there is currently no provision under ICAO Annex 1 (Personnel Licensing) for licensing ATSEPs, Fiji has included this requirement under the SD-PEL for the licensing of technical staff who provide support services for the licensed aeronautical facilities and services.

This year's theme was "***Enabling Global Aviation Recovery by ensuring CNS/ATM systems' Service Continuity, and a Cyber-secure Ground ANS ecosystem***".

This year's celebration appropriately placed ATSEPs and its role at the heart of the safety of the aviation industry.

The CAAF's ANS Inspector (CNS), Sereima Bolanavatu was invited to be the guest speaker at the International Day of Air Traffic Safety Electronics Personnel (ATSEP) which was hosted by Fiji's Air Navigation Services Provider, Fiji Airports■

ATSEP Day – 12 November 2021

AERONAUTICAL STATION OPERATORS LICENCE (ASOL)

RENEWAL PROCESS

Submission of Exam and Licence renewal applications

Exam Timetable issued by the PEL Office

Allow 10 working days for processing of renewals

Licence for collection

Application forms for ASOL renewal must be submitted no later than 14 days prior to exam dates. **PL110C** (ASOL Renewal) and **PL101L** (Exams) must be given in with relevant fees made.

Information regarding the ASOL exams such as dates, time, venue, etc. can be found in the AIC.

Once finalized, the exam timetable is e-mailed to the candidates 2-4 working days prior to exam dates.

A candidate electing to transfer an exam siting from one date to another must advise the Authority in writing at least two (2) days prior to sitting date. Failure to do this will disqualify candidate from sitting exams for at least two weeks and will see the forfeiture of examination fees.

Licence holders must personally collect their licences or provide the authority in writing if a third party will be collecting the licence on their behalf.

Special sittings are available in special circumstances, such as illness or being out of country during the allocated licence renewal examination session, however, timely notification and proof of illness or out of country status is required. **A special sitting fee** will apply for dates requested outside of the CAAF scheduled dates.

As of 25th March 2021, the PEL Office no longer conducts the re-fresher training course

The maximum period of validity for an Aeronautical Station Licence (ASOL) is 12 months.

The minimum language proficiency to be achieved by qualified personnel for the provision air navigation services should be Operational Level 4 . The evaluation of English language proficiency of the holder of an ASOL holder below the Expert level (level 6) should be formally evaluated at intervals in accordance with the individual's demonstrated proficiency level as follows:

(i)   Those demonstrating English language proficiency level at the Operational Level (level 4) should be evaluated at least once every 3 years;

(ii)   Those demonstrating English language proficiency level at the Extended Level (level 5) should be evaluated at least once every 6 years; and

(iii)   Formal evaluation is not required for those demonstrating English language proficiency levels at the Expert Level (level 6).

Please use the PL111B form for the endorsement of ELP

Quality Management System (QMS) in Aviation

Standards set up a foundation for all aspects of life via bringing order, sustainability, satisfaction and management of mistakes and errors. Management of quality is also determined by standards. Aviation and related operations are no different. QMS in aviation along with SMS (A safety management system) in aviation commonly refers to a set of processes and tools to formally manage a structured quality and safety program.

A Quality Management System (QMS) is a means of ensuring that an organization is meeting requirements and continuously improving its processes. In aviation QMS is focused on safety. Backed up by laws, regulations and internal codes.

Quality Management's most recent and widespread version is **ISO 9001:2015**. Though it started as a military standard focused on error detection and quality assurance it evolved to a management style inclusive of all steps of processes, risks and decision making.

First ISO 9001 is published by the International Organization for Standardization (ISO), an international agency composed of the national standards bodies of more than 160 countries, in 1987 as a derivative of from British Military Standard under the name BS5750.

Since then, 2 major revisions were made:

■ In 2000, Process Management was introduced and standard evolved from Quality Assurance/Control to Quality Management and expanded to a whole.

■ In 2015, Risk Management and Leadership was introduced as well as arrangement of headlines for uniformity with other standards and every aspect of bodies within an organization are included for responsibility and become a solid method for management.

Principles & Contents of the Standard:

The principles of the quality management are:

● Customer focus;

● Leadership;

● Engagement of people;

● Process approach;

● Improvement;

● Evidence-based decision making;

● Relationship management.

The contents of the quality management are:

1. Scope;
2. Normative references;
3. Terms and definitions;
4. Context of the organization;
5. Leadership;
6. Planning;
7. Support;
8. Operation;
9. Performance evaluation;
10. Improvement.

Contents are defined around Plan-Do-Check-Act (PDCA) cycle. The PDCA cycle can be applied to all processes and to the quality management system as a whole. Every content mentioned above has a place in the cycle ■

Civil Aviation Authority of Fiji

Payment Methods

The existing Covid-19 situation has made it difficult for some of us to go out of our safe zones and come in contact with people outside our bubbles fearing the spread of the virus. However, with CAAF's various methodology payment options available, we encourage stakeholders/customers to take the opportunity and make payments using these platforms.

Apparently, we would prefer customers/stakeholders to utilize the M Paisa and Electronic Funds Transfer (EFT) platforms to minimize physical contact■

Electronic Funds Transfer at Point of Sale (EFTPOS)

1. *M-Paisa QR Payment*
2. *M-Paisa Payment via USSD *181# , or*
3. *M-Paisa App*

Electronic Funds Transfer (EFT)
ANZ Bank Account No: 3662665
Swift Code: ANZBFJFX
BSB No: 010 890

Cash or Cheque Payment

**For further details call 8923155 or 9992127
or Email : accounts@caaf.org.fj**

Are You Prepared ?

Cyclone Season Safety Reminder

The Cyclone season (November to April) is upon us and all domestic operators are encouraged to issue a reminder notice to company pilots that constant vigilance should be exercised with regard to the sudden changes in weather that take place during this season.

✈ ***Relocating aircraft to another airport.*** This is probably one of the easier considerations when a timely Cyclone warning has been issued by the Meteorological organization. The further the distance that aircraft can be removed from the "eye" of the Cyclone then the safer they will be. Fiji, with its topographical features provides a number of havens that will offer a measure of safety. For example, airports to the East of Nadi should be considered if a Cyclone is expected to pass Nadi from the North.

✈ ***Securing aircraft inside a hangar.*** This consideration has merit but operators should determine from a structural engineer what wind velocity their hangar(s) can with - stand. Most modern hangars constructed with a frame of steel beams can withstand a wind velocity of 130 knots. The problem with this consideration is the strength of the hangar doors. Due to the wind velocity on the exterior surface of the hangar doors, they will bend inwards or "concave" with the result that they may detach from the hangar floor or upper railing and be blown into the hangar which will damage aircraft that have been placed inside. Thought should also be given to the wisdom of placing all the aircraft into a hangar. It may be prudent to place some aircraft in a hangar and some elsewhere thereby reducing the risk of loosing the fleet should the hangar collapse.

✈ ***Securing aircraft to Ground.*** If this consideration is implemented operators should first of all determine the expected wind direction for the arrival and passage of the Cyclone.

Additional safety measures, apart from securing the aircraft to the ground, could include placing chokes around the wheels, applying the parking brake, filling the fuel tanks and placing objects on top of the wings to reduce the lift generated by the airflow.

Management and Safety Officers should carry out a review/update of company Cyclone procedures to ensure the safe securing of their aircraft, inspect the area surrounding their hangar facilities and dispose of any rubbish/unwanted items which may be found. For example, sheets of unused tin or aluminum, pieces of wood or boarding, empty fuel drums etc.

These items may become airborne in high winds associated with convective clouds and are a hazard as they can cause considerable damage to buildings, parked aircraft and of course, cause injuries/fatalities if persons are struck by them Operators may also consider compiling a Cyclone procedures manual which will provide ideas and assistance to staff on the necessary safety actions they can take to secure company aircraft following the issuing of a Cyclone alert. This will also provide some historical information and lessons learnt from previous events which remains with the operator irrespective of staff changes that occur over time.

Information on the CAAF Mandatory Occurrence Reporting (MOR) data base shows that during the previous years, this is the most likely time that aircraft accidents/serious incidents occur in Fiji.

Key points that pilots should be reminded of include but are not limited to:

- ✈ The dangers of taking off and landing when CB activity is in close proximity to the airport.

- ✈ The meaning of a micro-burst and the dangers associated with it.

- ✈ When flying in IMC conditions monitor the onboard GNSS navigational aid to ensure that it is receiving continuous rain.

- ✈ Taking off and landing in marginal weather conditions at airports that do not have letdown aids ie, low visibility and cloud base.

- ✈ Early decision making when executing a visual approach into an airport where a go-around is not possible immediately prior to landing due to rising terrain.

- ✈ Teamwork among crew members to ensure a safe out- come.

- ✈ Identifying possible safety hazards when assessing weather reports.

- ✈ Crew members be vigilant that they are not placed into a situation that is beyond their or the aircraft's capability.

- ✈ The importance of having a back-up plan or escape route in the event of a sudden mechanical failure at a critical time or when operating in marginal weather conditions.

- ✈ The probability of soft or slippery grass surfaces at airports following heavy or prolonged rainfall. These conditions may also have a detrimental effect on aircraft performance, especially during takeoff.

Company Safety Officers should be encouraged by management to adopt a higher visible profile during this period by actively carrying out their duties as stated in the company Operations Manual. This is also the appropriate time for Management and Safety Officers to review/update company Cyclone procedures to ensure the safe securing of their aircraft and to carry out an inspection of the area surrounding their hangar facilities and disposing of any rubbish/unwanted items which may be found. For example, sheets of unused tin or aluminum, pieces of wood or boarding, empty fuel drums etc.

These items may become airborne in high winds associated with convective clouds and are a hazard as they can cause considerable damage to buildings, parked aircraft and of course, cause injuries/fatalities if persons are struck by them.

OPERATIONS INTO PRIVATE AIRPORTS

Operators intending to use these airports at any time must seek and obtain, the prior written permission of the certificate holder beforehand. Although operators may have private airports included in their AOC this does not automatically permit flights to be conducted into private airports without the certificate holders' consent.

By taking a proactive approach to safety, especially at this time of the year, management will be making a major contribution in ensuring that accidents/serious incidents are kept to a minimum which is **EVERYONE'S RESPONSIBILITY**■

Pilots with Diabetes

The Dangers of Hypoglycemia in the cockpit

Diabetes Mellitus is a fairly common ailment all over the world and many diabetic pilots are currently flying safely with their condition controlled and stringently monitored by their doctors.

Fiji Statistics :

- Recent raw data ~ 30% of the Population have Diabetes .

- 1in 3 according to Minister for Health in 2013 .

- In 2009 , 4 out of every 10 people in Fiji have diabetes, putting it amongst the highest in the world.

- The Fred Hollows Foundation has just completed a survey showing the diabetic rate is four times more than in New Zealand.

- The survey across 34 communities in Fiji has found 40% of the people have diabetes.

Diagnosing Diabetes : ICAO follows the WHO guidelines using the Oral Glucose Tolerance Test (OGTT)

Fasting blood glucose:
7.0 mmol/L (126 mg/dL) and above
or
2 hours after glucose load:
11.1 mmol/L (200 mg/dL) and above.

Normal Tests:

FAA Blood Glucose range : 80 mg/dl (4mmol/L) - 130 mg/dL (7mmol/L).

Normal HbA1c < 5.7%

FAA allows HbA1c to 8.9% , above which is poor control and result in grounding.

Targets of Satisfactory Control for Aviation Duty:

- HbA1c < 7 %   (CASA <7.5%)
- Fasting Glucose < 6.7 mmol/L

Intrinsic Concerns of Diabetes Management :

- Impact of the Disease to the Overall Health of the Pilot.

- Microvascular Complications – Retinopathy , Nephropathy , Neuropathy.

- Macrovascular Complications- Coronary Artery Disease.

Extrinsic Concerns of Diabetes Management :

The side-effects of the Treatment to the Pilot .

HYPOGLYCEMIA = Sudden Incapacitation Risk .

In this article I would like to focus on Hypoglycemia (precariously low blood glucose levels , < 4mmol/L) . All diabetics who are taking oral medications or insulin are at risk of Hypoglycemia and as Aviation Doctors , avoiding hypoglycaemia is our top priority , often at the expense of slight hyperglycemia . This is because hypoglycemic effects on the brain and autonomic neural stimulation are rapid and may degrade pilot performance.

A study carried out (Holmes, 1986) in Type 1 patients subjected to modest hypoglycemia of 3.1 mmol/L showed a decrement in performance which increased with the complexity of the task performed. In this and other studies researchers have shown that reaction times do not return to normal until some 20–30 minutes after euglycaemia (normal glucose level) has been restored. The implications in the aviation environment are self-evident.

Hypoglycemia

- Sudden or Insidious Incapacitation.
- 36% do not have warning symptoms.
- Performance degradation with task complexity.
- Reaction Times do not return to normal 20-30 minutes after restoration of euglycemia.

Symptoms Of Hypoglycemia :

Initially as blood glucose falls < 4mmol/L : feeling faint , dizzy , weak , tremulousness , sweaty intense hunger , abdominal pain , headaches , combativeness.

If restoration isn't instituted , loss of consciousness and coma proceeds very quickly .

Common Causes Of Hypoglycemia :

1) Doses of medications too high

2) Missing meals , or wrong timing of meals while on medications .

3) Wrong combinations of oral hypo-glycemic drugs (seek advise of DAME).

Miscellaneous Causes of Hypoglycemia :

Fiji is rich in traditional herbal medi-cines and more recently a wide array of bottled drinks and concoctions are being peddled locally as a cure-all type of remedy . It is very difficult to pre-dict the effects of these concoctions , alone or in combination with hypogly-cemic medications and its wise for every diabetic pilot to stay away from these.

As an old rule of aviation any new medication consumed or recent chang-es in dosages to current medications should warrant a stand down period to monitor the side-effects . It is most unwise to go flying immediately after such medication changes.

Treatment of Hypoglycemia :

Consume any sweet drink or juice , sugar , chocolates or lollies to raise the blood glucose level . Improvement of symptoms is almost immediate.

All episodes of Hypoglycemia should be immediately reported to the Medi-cal Board of the CAAFI via your Desig-nated Aviation Medical Examiner ■

Acceptable Combinations of Diabetes Medications

Use: no more than one medication from each group (A-E) below. Up to 3 medications total are considered acceptable for routine treatment according to generally accepted standards of care for diabetes (American Diabetes Association; American Association of Clinical Endocrinologists). For applicants receiving complex care (e.g., 4-drug therapy), refer the case to AMCD.

- Initial certification of all applicants with diabetes melitus (DM) requires FAA decision
- For applicants on AASI for DM, follow the AASI
- Consult with FAA for any medications not on this chart
- Fixed-dose combination medications *count as 2 medications*

Biguanide
- Metformin (e.g. Glucophage, Fortamet, Glutetza, Riomet) → **Group A**

Thiazolidinediones (TZD)
- pioglitazone (Actos)
- rosiglitazone (Avandia) → **Group B**

GLP-1 mimetics
- exenatide (Byetta)
- exenatide-ED (Bydureon)
- liraglutide (Victoza)

DPP-4 inhibitors
- sitagliptin (Januvia)
- saxagliptin (Onglyza)
- linagliptin (Tradjenta)
- alogliptin (Nesina)

→ **Group C** → Group C not allowed with Meglitinides

Alpha-glucosidase inhibitors
- acarbose (Precose)
- miglitol (Glyset) → **Group D**

Sulfonylureas (SFU)
- chlorpropamide (Diabenase)
- glyburide (Diabeta)
- glimepiride (Amaryl)
- glipizide (Glucotrol)
- tolbutamide (Orinase)
- tolazamide (Tolinase)

→ **Group E**

Meglitinides
- repaglinide (Prandin)
- nateglinide (Starlix) → Meglitinides not allowed with Group C

Insulin
- All forms
- Initial certification requires FAA decision

PRECAUTIONS

Note: Amylinomimetics (e.g., pramlintide (Symlin) are not considered acceptable for medical certification.

Author: Dr Isireli Biumaitotoya

Civil Aviation Authority of Fiji

SECURITY & FACILITATION COMPLEMENT EACH OTHER AT THE AIRPORT

Neither Is More Important than the other

More info @ www.caaf.org.fj