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AVIATION SAFETY BULLETIN

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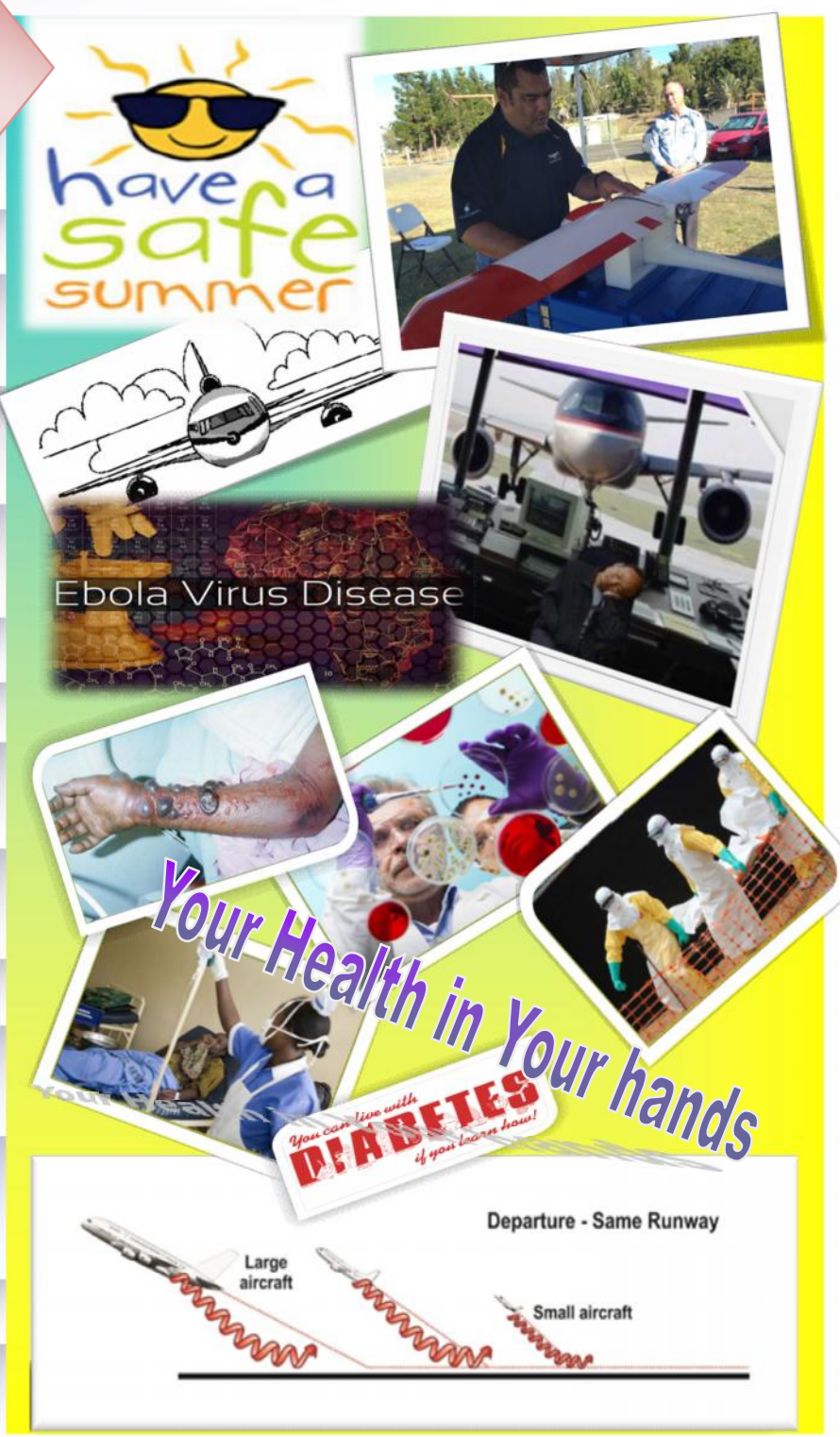
Civil Aviation Authority of Fiji
PRIVATE MAIL BAG, NAP 0354,
NADI AIRPORT,
REPUBLIC OF FIJI
Phone: (679) 672 1555, Fax: (679) 672

Inside this Issue:



CAAF STEPS UP REGULATORY OVERSIGHT OF RPAS ACTIVITY

The Civil Aviation Authority of Fiji is stepping up its regulatory oversight of RPAS (Remotely Piloted Aircraft Systems) activities in Fiji, following an influx of interest on the use of the technology. RPAS is more commonly known and referred to as Drones or UAVs.

CAAF Controller Air Safety Designate, George Tudreu and CAAF Flight Operations Inspector, Treasure Marshall recently returned from Ipswich, Queensland after completing formal training and certification with Australian Unmanned Systems Academy and CASA to operate and fly the technology. Government had earlier approved CAAF, the regulatory body in Fiji responsible for Civil Aviation activities, to send its two Inspectors abroad for training. In addition to the Commercial Pilot Licences they hold, they are now qualified to fly RPAS aircraft as well.

The ABC Australia News Article and 7pm Evening News clip that happened to feature the Inspectors training is linked for reference:

ABC Australia News Article
http://www.abc.net.au/news/2014-10-05/queensland-drone-research-could-help-emergency-response-efforts/5786620

ABC Australia 7pm News Piece
http://www.abc.net.au/news/2014-10-05/drones-could-become-new-tool-in-disaster-zones/5791636

CAAF is in its final stages of promulgating the National Standards Document for the operation of RPAS in Fiji. This is intended to give guidance to those interested in undertaking the activity in Fiji either recreationally or commercially.

The activity is on a rise worldwide and improvements in RPAS technology has led to a boom in the drone business. Australia for example has more than 150 commercial operators.

ABC Australia Photo
http://www.abc.net.au/news/2014-10-05/george-tudreu-from-fijian-civil-aviation-authority/5791490

George Tudreu from Fijian Civil Aviation Authority completes an unmanned aircraft training course version two of pic

The activity is also seeing an increase in Fiji with the import of RPAS and RC aircraft for recreation as well as for commercial purposes. The technology has found a wide range of use from aerial advertising and geographical surveying to the movie industry as well as sports e.g. the recent Hibiscus Festival in Suva and PGA Tournament at Natadola.

When queried by ABC on this level of RPAS activity in Fiji, CAAF Controller Air Safety in Training, George Tudreu stated that the activity needed to be policed hence the reason for being in Australia – "we need to know about it." The activity if not adequately controlled can pose a hazard to air transport in Fiji and so needs to be approved and certified by CAAF.

Please contact CAAF FOI Treasure Marshall relating to the operation of RPAS in Fiji on 6721555 extension 3368 or email treasure.marshall@caaf.org.fj ■

(Article By Air Safety Department)

FATIGUE MANAGEMENT

The management of fatigue plays a crucial role in aviation today. Fatigue, if not managed properly can affect ones decision making and performance, the consequences of which could be catastrophic.

The term "fatigue" is used interchangeably with "tiredness", but, what exactly does FATIGUE mean?

The CASA released booklet; titled "Fatigue – the rules are changing", issued in 2013 (http://www.casa.gov.au/wcmswr/assets/main/pilots/download/fatigue.pdf) defines fatigue as having several different origins:

- hard physical work;
- intense emotions;
- heightened concentration on a task;
- lack of sleep.

The booklet further describes fatigue as similar in nature to a toxin which accumulates in the body. If it is a small amount, then it is easier to rid it from one's system by catching up on a night's sleep, but a continuous accumulation of fatigue can lead to potentially dangerous effects.

As part of Air Traffic Management's annual license renewals, Fiji controllers were asked to research the topic of Fatigue Management and write about how they,as controllers, could incorporate Fatigue Management methods into their working life. There were many good write-ups submitted and we have taken excerpts from a few and featured them in this article.

Koresi Toaisi, an Air Traffic Controller at Nausori International Airport defines fatigue as "*more than just feeling tired or drowsy; it is the increasing difficulty in performing mental and physical activities as a consequence of inadequate restorative rest. Fatigue is caused by prolonged periods of physical and/or mental exertion without enough time to recover.*"

Rajneel Mishra, Team Leader Nausori Control Tower wrote that "Fatigue Management" is recognizing fatigue as a *safety hazard* and taking steps to better manage it.

To better manage fatigue, the sources of fatigue must be identifiable. Some common causes of fatigue include:-

- Stress; professional or personal
- Overwork; sustained mental or physical exertion
- Inadequate rest breaks; varies with the task
- Health and emotional issues; poor diet, illness, medication, depression, grief, anxiety, excess weight
- Burnout
- Social life, alcohol and other drugs
- Disruption to circadian rhythms (internal biological clock), Shift work
- Sleep deficiency/difficulties; long periods awake, insomnia
- Age
- Water intake
- Pain

Furthermore, we must also be aware of the physical signs that could indicate that one is fatigued:-

- Yawning, heavy eyelids, eye-rubbing, head drooping
- inappropriate or unintentional sleep onset—falling asleep while performing a safety-critical tasks
- poor coordination—slowed reaction times
- headache or light headedness

In most organisations, fatigue is viewed as part and parcel of the job and something that the individual should be able to control by putting in a greater effort to ensure that they perform their jobs effectively. But, whilst concentration might help for a little while, it cannot be expected to hold for a lengthy period of time when a person is fatigued.

A very obvious hazard of fatigue was highlighted in the February 2008 incident involving a Bombardier CL-600 aircraft that flew past its destination airport, General Lyman Field, Hilo, Hawaii, after both the captain and first officer fell asleep during the flight. The pilots awoke and returned to the airfield where all 3 crew members and 40 passengers onboard deplaned safely.

According to the National Transportation Safety Board (NTSB) report, the probable cause of this incident was the captain and first officer inadvertently falling asleep during the cruise phase of flight and contributing to the incident were the captain's undiagnosed obstructive sleep apnoea and the flight crew's recent work schedules, which included several consecutive days of early-morning start times.

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FATIGUE MANAGEMENT cont...

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A sleep deficit can impair the brains' effectiveness, with research showing it can produce effects very similar to alcohol consumption. Seventeen to 18 hours of wakefulness is usually considered to be equivalent to a blood alcohol concentration of about 0.05%, just 0.03% below the limit of blood alcohol content for driving in Fiji. In a safety-critical aviation environment, this could result in tragedy.

A person is normally a very poor judge of their own fatigue level. Asking a fatigued person if they are OK to continue working is akin to asking someone who is drunk if they are OK to drive.

Fatigue management involves the identification of potential fatigue risks and putting in place measures to address these risks. A fatigue management program can be implemented as part of an existing safety management system.

The management of fatigue is not just the responsibility of one person, i.e. the license holder, but rather a collective effort between the license holder and the organisation; it is a shared responsibility.

Organisations should:

- schedule work hours and time off to give employees sufficient opportunity for restorative sleep
- manage duty times and breaks
- ensure employees are educated on the risks associated with fatigue and how to participate in controlling these risks
- ensure working hours, shift rosters and shift cycles are structured and managed to avoid or minimise fatigue
- increase surveillance to ensure that exposure to workplace contaminants, such as noise and hazardous substances, are controlled to within acceptable limits
- If onsite accommodation is provided, provide conditions that are conducive to sleep where necessary
- If meals are provided, ensure employees are offered a balanced diet.

Employees should:

- manage their personal time to ensure they are rested and fit for duty
- inform their organisation of factors that may mean they are not fit for duty
- when reporting incidents, note whether fatigue was a factor. Fatigue management is not intended to control people's lives. Its goal is that employees understand that they need to arrive at work in a fit state for duty. This includes managing their time away from work so that they have adequate rest and sleep. If, for whatever reason, employees are not able to get sufficient rest, it is their responsibility to report this as a potential risk.

Below are some fatigue-fighting tips uplifted from the "Fatigue – the rules are changing" booklet:-

"Sleep baby, sleep"
Aim for at least seven hours each night. If you really think you can manage on less, do an experiment. Sleep for least seven hours a night for two weeks and compare how you feel and perform.

"Plan a power nap"
Napping is better than falling asleep on the job. A 10 to 15-minute nap has been shown to improve alertness for about an hour.

"Flex those pecs"
Aerobic exercise increases levels of the neurotransmitters dopamine, noradrenalin and serotonin, all of which are good for mood and energy levels.

"Water on the brain"
Your brain is about 80 per cent water – and it does not work as well if you become dehydrated. The recommended daily amount is around two litres per day; more if your work is physically demanding, or in hot conditions.

"Pigs can't fly"
Your diet can have a significant impact on how you feel. Large meals require energy to digest and a full stomach draws blood away from the brain, leaving you feeling tired. Smaller meals, more often, can avoid this effect.

"Begin with breakfast"
Breakfast acts as an energy booster that defends against fatigue throughout the day. A healthy breakfast should contain protein (from eggs, meat, or other sources) and complex carbohydrates (as opposed to sugars).

"Use caffeine strategically"
The caffeine in coffee, soft drinks and tea has been proved to be useful in increasing alertness, reaction speed and thinking ability for up to three hours, but it is not the ultimate solution to fatigue. Too much can cause restlessness and sleeping difficulties. If ingested near the end of the day or shift, caffeine can lead to sleeplessness – which increases fatigue.

"Sleep in the dark"
Sleeping in the day is unnatural – our bodies are designed to react to light. Therefore, try to limit your exposure to daylight after a night shift and keep your bedroom as dark and quiet as possible.

Last but not least; always ensure the right balance between work, rest and play and remember that fatigue cannot be overcome with coffee and willpower and you cannot train yourself to need less sleep nor can you store sleep.

For further reading on fatigue, access to a fatigue management toolkit, and links to an extensive number of fatigue resources from around the world visit http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_90315

Till next time, REST WELL and STAY SAFE ▮

(Article By Ground Safety Department Sourced from CASA)

AIRCRAFT WAKE TURBULENCE (PART 3)

VORTEX AVOIDANCE PROCEDURES

a. **Air Traffic Control (ATC) Responsibilities.** Air traffic controllers apply procedures for separating instrument flight rules (IFR) aircraft that include required wake turbulence separations. However, if a pilot accepts a clearance to visually follow a preceding aircraft, the pilot accepts responsibility for both separation and wake turbulence avoidance. The controllers will also provide a Wake Turbulence Cautionary Advisory to pilots of visual flight rules (VFR) aircraft, with whom they are in communication and on whom, in the controller's opinion, wake turbulence may have an adverse effect. This advisory includes the position, altitude and direction of flight of larger aircraft followed by the phrase "CAUTION–WAKE TURBULENCE." After issuing the caution for wake turbulence, the air traffic controllers generally do not provide additional information to the following aircraft.

NOTE: **Whether or not a warning or information has been given, the pilot is expected to adjust aircraft operations and flight path as necessary to preclude wake encounters.**

NOTE: **When any doubt exists about maintaining safe separation distances between aircraft to avoid wake turbulence, pilots should ask ATC for updates on separation distance and groundspeed.**

b. **Departing Behind a Larger Aircraft—Same Runway.** When departing behind a larger aircraft on the same runway, pilots should:

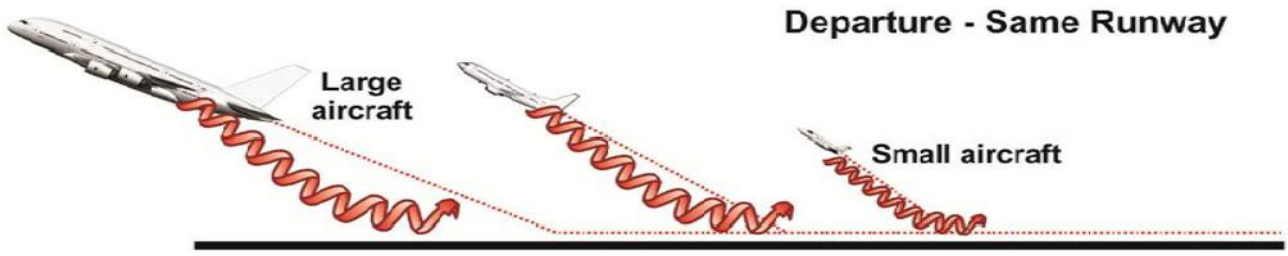
(1) Note the larger aircraft's rotation point and rotate prior to the larger aircraft's rotation point.

(2) Continue climb above the larger aircraft's climb path until turning clear of the wake (see Figure 9, Departing Same Runway Behind a Larger Aircraft).

(3) Avoid subsequent headings which will cross below and behind the larger aircraft (see Figure 10, Critical Takeoff Situation and Crossing Departure Courses).

(4) Be alert for any critical takeoff situation which could lead to a vortex encounter.

FIGURE 9. DEPARTING SAME RUNWAY BEHIND A LARGER AIRCRAFT



c. **Intersection Takeoffs.** When conducting intersection takeoffs, pilots should note the larger aircraft's rotation point and rotate prior to the larger aircraft's rotation point. Also, be alert to adjacent large aircraft operations, particularly upwind of your runway. If intersection takeoff clearance is received, avoid a flight path which will cross below a larger aircraft's flight path.

d. **Departing or Landing After a Larger Aircraft Executing a Low/Missed Approach or Touch-and-Go Landing.** Because vortices settle and move laterally near the ground, the vortex hazard may exist along the runway and in your flight path after a larger aircraft has executed a low/missed approach or a touch-and-go landing, particularly in light quartering wind conditions. You should ensure that an interval of at least 2 minutes has elapsed before your takeoff or landing (and at least 3 minutes when operating behind super aircraft).

e. **En Route VFR (500 Feet Separation).** Pilots should avoid flight below and behind a larger aircraft's flight path. If a larger aircraft is observed above on the same track (meeting or overtaking), adjust your position laterally, preferably upwind.

f. **Landing Behind a Larger Aircraft—Same Runway.** When landing behind a larger aircraft on the same runway stay at or above the larger aircraft's final approach flight path. Note the touchdown point and land beyond it (see Figure 11, Avoidance Procedures Landing Behind Larger Aircraft on the Same Runway). See paragraph 11 for special procedures applicable to large, heavy, and super aircraft.

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AIRCRAFT WAKE TURBULENCE (PART 3) cont...

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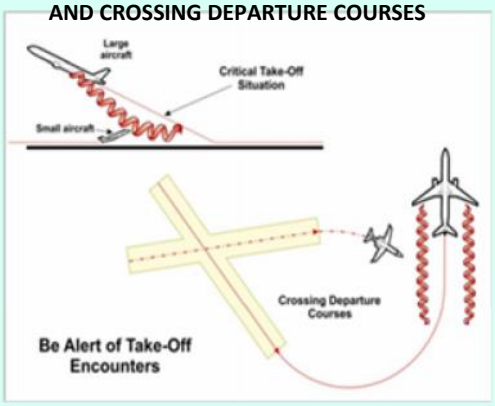
FIGURE10. CRITICAL TAKEOFF SITUATION AND CROSSING DEPARTURE COURSES



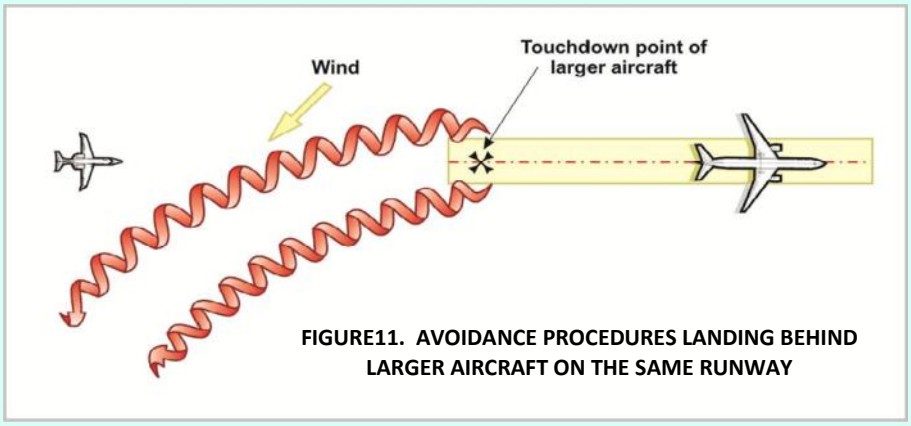
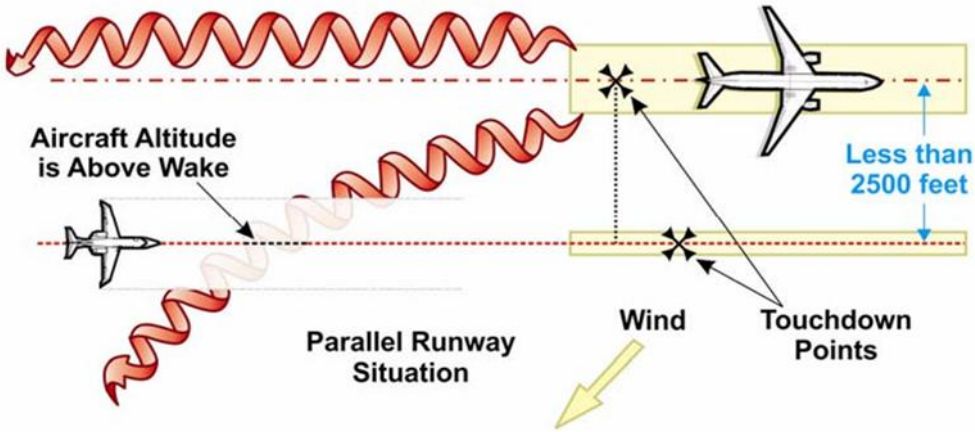
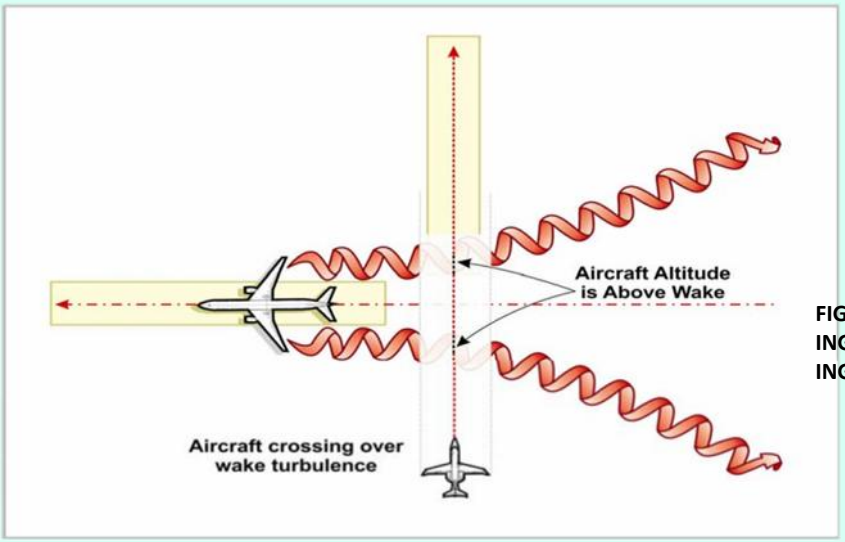


FIGURE11. AVOIDANCE PROCEDURES LANDING BEHIND LARGER AIRCRAFT ON THE SAME RUNWAY

g. **Landing Behind a Larger Aircraft—On a Parallel Runway Closer Than 2,500 Feet Apart.** When landing behind a larger aircraft on a parallel runway closer than 2,500 feet apart (Figure 12), pilots need to consider the relationship between the runway threshold locations, the relative GS descent paths/locations and possible vortex drift onto your runway (see paragraph 12 for aircraft classification definitions). If you have visual contact with the larger aircraft landing on the parallel runway, whenever possible, stay at or above the larger aircraft's final approach flight path. Note its touchdown point. Be aware that the aircraft descending to the more distant threshold will generally be slightly higher depending on the amount of threshold stagger. See Figure 12, Avoidance Procedure Landing on Parallel Runways Closer than 2,500 Feet.

FIGURE12. AVOIDANCE PROCEDURES LANDING ON PARALLEL RUNWAYS CLOSER THAN 2,500 FEET





h. **Landing Behind a Larger Aircraft—Crossing Runway.** When landing behind a larger aircraft on a crossing runway, pilots should cross above the larger aircraft's flight path (see Figure 13, Avoidance Procedure for Landing Behind Larger Aircraft That is Using a Crossing Runway (No Wind)). ■

FIGURE13. AVOIDANCE PROCEDURES LANDING BEHIND LARGER AIRCRAFT THAT IS USING A CROSSING RUNWAY (NO WIND)

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(Story uplifted from FAA AC.)

AIRCRAFT WAKE TURBULENCE (PART 3) cont...

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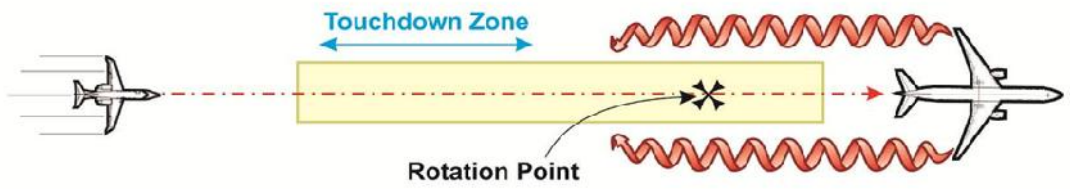
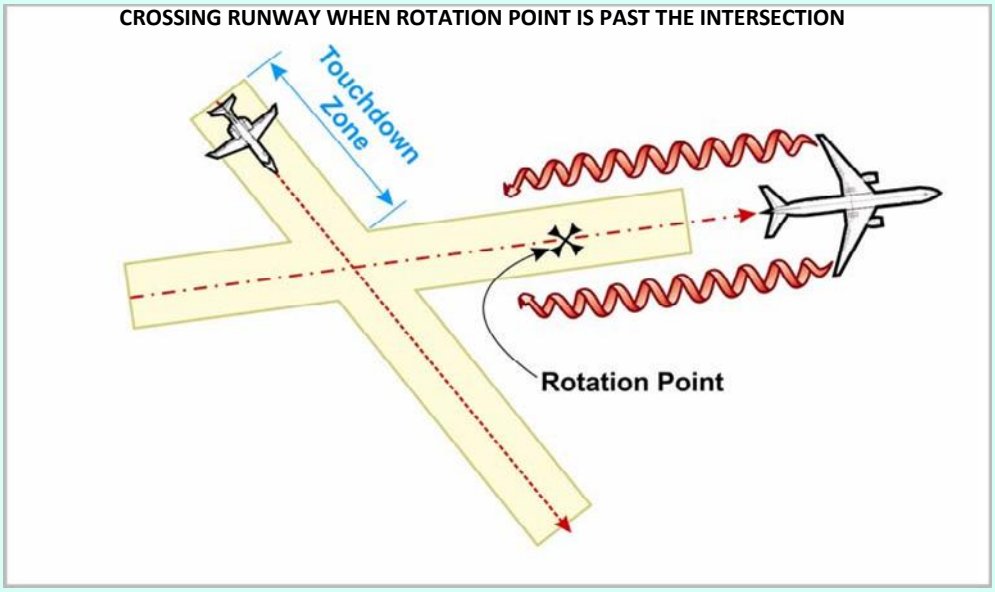
i. **Landing Behind a Departing Larger Aircraft—Same Runway.** When landing behind a departing larger aircraft on the same runway, pilots should note the larger aircraft's rotation point and land well before the rotation point (see Figure 14, Avoidance When Landing Behind a Departing Aircraft on the Same Runway).

FIGURE14. AVOIDANCE WHEN LANDING BEHIND A DEPARTING AIRCRAFT ON THE SAME RUNWAY



j. **Landing Behind a Departing Larger Aircraft—Crossing Runway.** When landing behind a departing larger aircraft on a crossing runway, pilots should note the larger aircraft's rotation point. If rotation is past the intersection, continue the approach and land before the intersection. If the larger aircraft rotates prior to the intersection, avoid flight below the larger aircraft's flight path. Abandon the approach unless a landing is ensured well before reaching the intersection (see Figure 15, Avoidance for Landing Behind Departing Larger Aircraft on a Crossing Runway When Rotation Point is Past the Intersection, and Figure 16, Avoidance for Landing When Larger Departing Aircraft Rotates Prior to the Intersection) ■

FIGURE15. AVOIDANCE FOR LANDING BEHIND DEPARTING LARGER AIRCRAFT ON A CROSSING RUNWAY WHEN ROTATION POINT IS PAST THE INTERSECTION



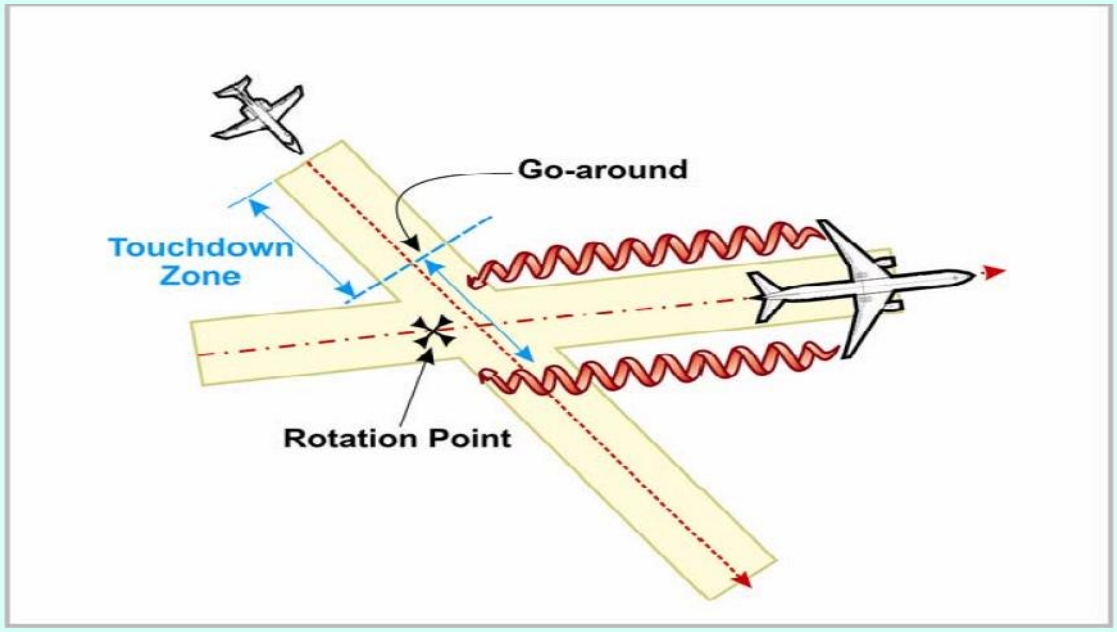


FIGURE16. AVOIDANCE FOR LANDING WHEN LARGER DEPARTING AIRCRAFT ROTATES PRIOR TO THE INTERSECTION

(Story uplifted from FAA AC.)

HURRICANE CONSIDERATIONS

The passage of Hurricane Evan over the Northern and Western areas of Fiji on the afternoon of the 17 December 2012 is a reminder to us all of the fury and forces of nature when it becomes disturbed.

Although much devastation has occurred with its passage, we can all be thankful of modern technology and the personnel who operate it, for the timely warnings that enabled the public to take the necessary safety precautions before its arrival.
Of concern to aircraft operators is the safety of their infrastructure and aircraft but primarily, the aircraft and in this regard, there are some basic considerations that may assist in minimizing the exposure to damage.

These considerations include relocating aircraft to another airport where the likely hood of damage occurring is reduced, securing aircraft inside a hangar or, securing aircraft to the ground in an "open" environment.

- **Relocating aircraft to another airport.** This is probably one of the easier considerations when a timely hurricane warning has been issued by the Meteorological organization. The further the distance that aircraft can be removed from the "eye" of the hurricane 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 hurricane 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 withstand. 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 the ground.** If this consideration is implemented operators should first of all determine the expected wind direction for the arrival and passage of the hurricane to assist with the directional positioning of their aircraft and in this regard, Buys Ballot's Law maybe of some help. This Law states that in the Southern Hemisphere, if you stand with your back to the wind the associated low pressure area will be to your right hand side.

- Therefore, if a hurricane tracks to the West of Nadi from the North initially the wind will blow from the Southeast and moving anticlockwise, or backing, to the North when the hurricane passes to the West.

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.

Although hurricanes may occur around the South Pacific at any time of the year the most likely time that they will occur is during the months from November to April. Prior to November Management and Safety Officers should carry out a review/update of company hurricane 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 hurricane 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 hurricane 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 ■

(Article by Air Safety Department)

SAFTEY REMINDER FOR SUMMER

TO ALL DOMESTIC OPERATORS

Summer and the hurricane season (November – April) will soon be 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.

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SAFETY REMINDER FOR SUMMER cont...

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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 raim.
- 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 outcome.
- 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.

In addition, Safety Officers should also ensure that safety material is readily available to pilots in areas where they relax between flights.

This is also the appropriate time for Management and Safety Officers to review/update company hurricane 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.

DAYLIGHT SAVING TIME

Associated with the start of the summer season is the introduction of daylight saving time whereby clocks are advanced by one hour.

The longer days will provide the public with more time to engage in activities outside of working hours.

Domestic operators, especially those who conduct VFR services, will probably take advantage of the longer days and offer flights to the travelling public later than what is normally done during the rest of the year however, the extended hours of business may come into conflict with the operator's CAAF approved flight and duty time scheme.

Under ANR 49 the introduction and on-going management of the approved flight and duty time scheme is an operator responsibility and Flight Operations Managers/Chief Pilots should, to confirm compliance with the scheme, increase their surveillance of company flight and duty time records to ensure pilots/cabin attendants do not exceed their duty and flight hours or minimum rest periods while daylight saving time is in place.

OPERATIONS INTO PRIVATE AIRPORTS

The CAAF Aeronautical Information Circular, number 03/12, lists the privately certified domestic airports in Fiji and 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 pro-active 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** ■

(Article by Air Safety Department)

EBOLA OUTBREAK

An Ebola virus disease (EVD) outbreak has been reported in Sierra Leone, Liberia and Guinea. The International Air Transport Association (IATA) is coordinating closely with the World Health Organization (WHO) and the International Civil Aviation Organisation

An Ebola virus disease (EVD) outbreak has been reported in Sierra Leone, Liberia and Guinea. The International Air Transport Association (IATA) is coordinating closely with the World Health Organization (WHO) and the International Civil Aviation Organization (ICAO) with respect to potential implications for air connectivity.

WHO's current risk assessment for travel and transport is not recommending any travel restrictions or the closure of borders at points of entry. Further, the WHO states that "The risk of a tourist or businessman/woman becoming infected with Ebola virus during a visit to the affected areas and developing disease after returning is extremely low, even if the visit included travel to the local areas from which primary cases have been reported. Transmission requires direct contact with blood, secretions, organs or other body fluids of infected living or dead persons or animal, all unlikely exposures for the average traveller. Tourists are in any event advised to avoid all such contacts."

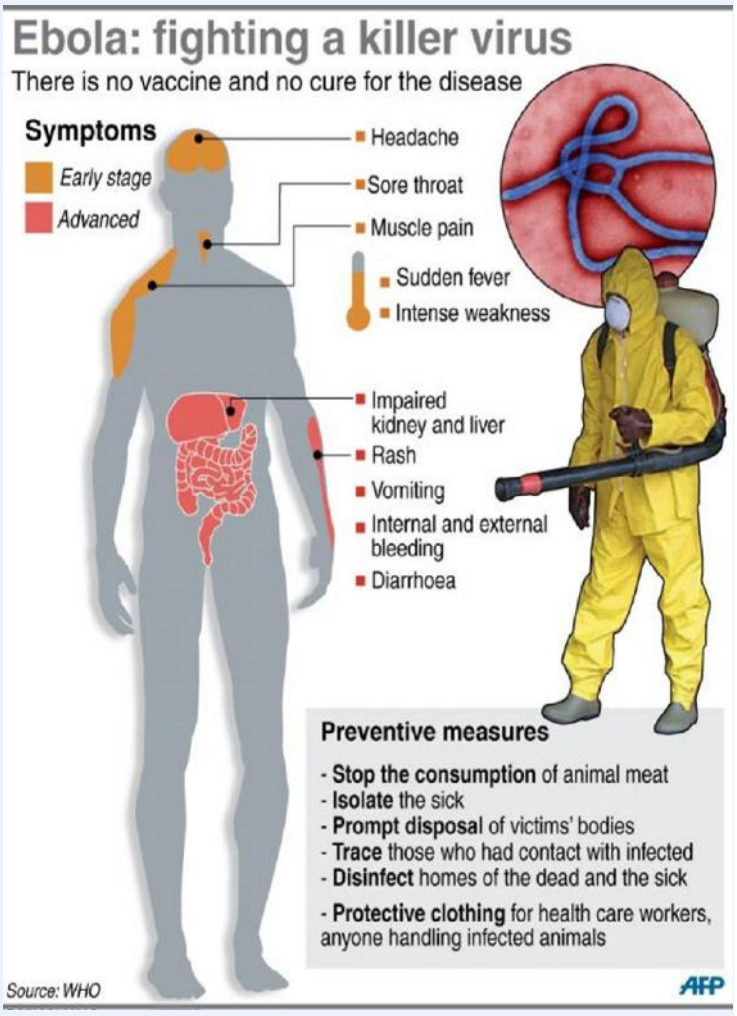
Similarly, WHO advises that transmission of the Ebola virus only occurs when patients are displaying symptoms of the disease which are severe. Symptoms of Ebola include fever, intense weakness, muscle pain, headache and sore throat; followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and at advanced stage, both internal and external bleeding. It is highly unlikely that someone suffering such symptoms would feel well enough to travel.

In the rare event that a person infected with the Ebola virus was unknowingly transported by air, WHO advises that the risks to other passengers are low. None-the-less, WHO does advise public health authorities to carry out contact tracing in such instances.

In line with WHO guidance, awareness-raising activities initiatives are being conducted for travellers to and from the affected region. As always, passengers are advised not to travel if they are unwell. And any traveller developing symptoms of the Ebola within three weeks of returning from an affected region is advised to seek rapid medical attention.

The air transport industry has dealt with several outbreaks of communicable diseases in recent years. The global response to communicable diseases is governed by the WHO's International Health Regulations. Airlines follow guidance material which has been developed by WHO, ICAO and IATA.

IATA will continue to monitor developments closely in the Ebola outbreak in close coordination with the WHO and ICAO ▌



(Source: IATA— 31/07/2014)

EBOLA VIRUS DISEASE

Ebola virus

- The Ebola virus causes an acute, serious illness which is often fatal if untreated.
- The most severely affected countries are: Guinea, Sierra Leone and Liberia. These country have very weak health systems, lacking human and infrastructural resources.
- However Ebola has now spread to other countries of the world like the US and Spain.

Death rate is up to 90%

This is a true picture of the Ebola Virus

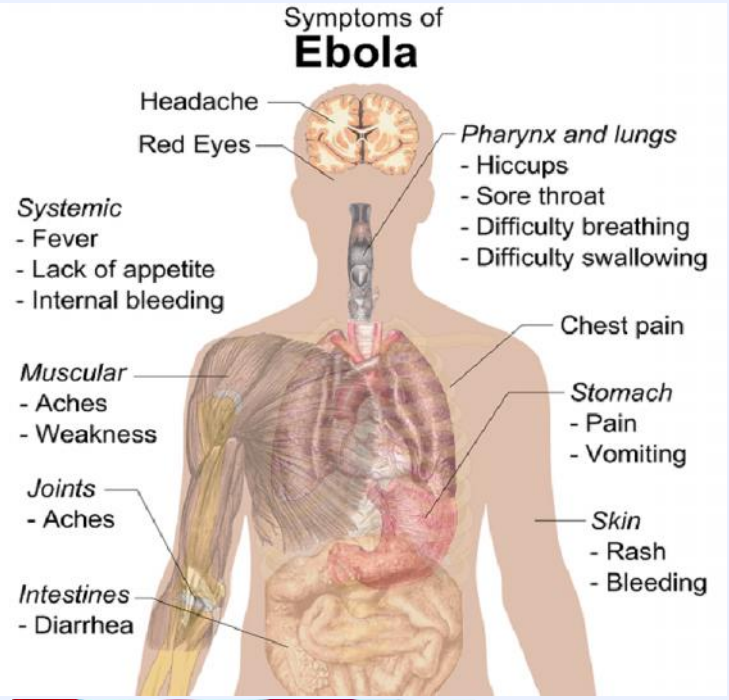
Antwerp Institute of Tropical Medicine in Antwerp, Belgium.

- Ebola belongs to the virus family Filoviridae ans includes 3 genera: Cuevavirus, Marburgvirus, and Ebolavirus. There are 5 species that have been identified: Zaire, Bundibugyo, Sudan, Reston and Taï Forest. The first 3, Bundibugyo ebolavirus, Zaire ebolavirus, and Sudan ebolavirus have been associated with large outbreaks in Africa. The virus causing the 2014 west African outbreak belongs to the Zaire species.

Transmission

- It is thought that fruit bats of the Pteropodidae family are natural Ebola virus hosts. Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals such as chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest.
- Ebola then spreads through human-to-human transmission via direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people, and with surfaces and materials (e.g. bedding, clothing) contaminated with these fluids.
- People remain infectious as long as their blood and body fluids, including semen and breast milk, contain the virus. Men who have recovered from the disease can still transmit the virus through their semen for up to 7 weeks after recovery from illness.

Symptoms of Ebola disease



Doctor studies live culture of Ebola virus in an effort to come up with a treatment strategy/ valid vaccination against this deadly viral disease .

EBOLA VIRUS DISEASE cont...

Symptoms of Ebola virus disease

- The incubation period, that is, the time interval from infection with the virus to onset of symptoms is 2 to 21 days.
- Humans are not infectious until they develop symptoms.
- First symptoms are the sudden onset of fever fatigue, muscle pain, headache and sore throat.
- This is followed by vomiting, diarrhoea, rash, symptoms of impaired kidney and liver function, and in some cases, both internal and external bleeding (e.g. oozing from the gums, blood in the stools).
- Laboratory findings include low white blood cell and platelet counts and elevated liver enzymes.


Bleeding into the skin

Diagnosis

- It can be difficult to distinguish ebola viral disease from other infectious diseases such as malaria, typhoid fever and meningitis. Confirmation that symptoms are caused by Ebola virus infection are made using the following investigations:
- antibody-capture enzyme-linked immunosorbent assay (ELISA)
- antigen-capture detection tests
- serum neutralization test
- reverse transcriptase polymerase chain reaction (RT-PCR) assay
- electron microscopy
- virus isolation by cell culture.


Man being treated through given fluids

Treatment and vaccines

- Supportive care-rehydration with oral or intravenous fluids- and treatment of specific symptoms, improves survival. There is as yet no proven treatment available for Ebola disease.
- However, a range of potential treatments including blood products, immune therapies and drug therapies are currently being evaluated.

- No vaccines are available yet.

Prevention and control – very important

Good outbreak control relies on applying a package of interventions:

- namely case management,
- surveillance and contact tracing,
- a good laboratory service,
- safe burials social mobilisation.
- Community engagement is key to successfully controlling outbreaks. Raising awareness of risk factors for Ebola infection and protective measures that individuals can take is an effective way to reduce human transmission.

Risk reduction messaging should focus on several factors:

- **Reducing the risk of wildlife-to-human transmission** from contact with infected fruit bats or monkeys/apes and the consumption of their raw meat. Animals should be handled with gloves and other appropriate protective clothing. Animal products (blood and meat) should be thoroughly cooked before consumption.
- **Reducing the risk of human-to-human transmission** from direct or close contact with people with Ebola symptoms, particularly with their bodily fluids. Gloves and appropriate personal protective equipment should be worn when taking care of ill patients at home. Regular hand washing is required after visiting patients in hospital, as well as after taking care of patients at home.
- **Outbreak containment measures** including prompt and safe burial of the dead, identifying people who may have been in contact with someone infected with Ebola, monitoring the health of contacts for 21 days, the importance of separating the healthy from the sick to prevent further spread, the importance of good hygiene and maintaining a clean environment. ▮

Produced by Adventist Health Ministries, South Pacific Division
(Dr Chester Kuma – Associate Director)

PBN DESIGN SESSION AND PBN OPERATIONS APPROVAL COURSE

PBN Design Session

The PBN Design Session was conducted on 16-17 October 2014 at the CAAF Training Centre and was attended by 17 participants and 5 observers from CAAF, Airports Fiji Limited and CAA PNG.

Mr. Noppadol Pringvanich, Chief Regional Sub-Office, ICAO led the design session.

During the first day of the design Session, a review of Fiji PBN Implementation Plan was conducted and noted that the PBN plan of Fiji developed in 2009 was ranked as 'robust' but due for a review. A noteworthy item on PBN was accessing feasibility of RNP-AR designs for consultation with airlines to ensure the holistic integration of RNP-AR into overall airspace usage for Nadi where needed this will be considered as part of the PBN implementation in 2015-2016.

Other short-term design and deployment targets agreed for Nadi in 2015-2016 were RNP APCH with Baro VNAV, PBN STAR to existing ILS, RNAV 1 SID's and for Labasa, an improved RNP APCH and RNAV 1 SID.

It was understood that the PBN initiatives has resulted in significant operational benefits and any improvements would positively impact the airline operators using new PBN procedures. The ANSP was encouraged to evaluate and communicate operational benefits to airlines and other stakeholders and this will also be recorded in the Fiji PBN Plan.

PBN Operations Approval Course

The ICAO/IATA PBN Operations Approval Course was conducted on 20-24 October 2014 again at the CAAF Training Centre and was attended by 36 participants from Fiji, Tonga, PNG, China and ROK. The course was conducted by Mr. Anthony Houston, IATA and Mr. Noppadol Pringvanich, ICAO APAC RSO.

In addition to the instructional activities planned the previous week, the Operations Approval participants recommended regional airlines should consider working with CAA to obtain the approvals for RNAV5, RNAV2 and RNAV1, RNP APCH, RNAV10 and RNP4 where applicable. CAA's were invited to adopt the ICAO LAM as its instrument to support the approval of PBN operations, including related airworthiness certifications.

All the participants were appreciative of the opportunity to attend and evaluate ICAO's PBN initiatives and to observe their impact on Safety, Efficiency and the Environment.

(Article By Ground Safety Department)

ICAO RUNWAY SAFETY TEAM HANDBOOK

1.1 Purpose of the Handbook

This *Handbook* is designed to:

A. describe the components of an effective Runway Safety Team (RST);

B. serve as a single reference for RST activities; and

C. promote the sharing and exchange of safety information between stakeholders.

1.2 Scope of the Handbook

A successful RST programme requires all key stakeholders to cooperate in a collaborative manner. This document, therefore, is intended to serve as a reference for aerodrome operators, air traffic services organizations, commercial air operators, organizations representing the general aviation community, the regulatory authority, meteorological services and other stakeholders interested in improving runway safety.

1.3 How to use the Handbook

Section 3 supports the development of a general understanding of the processes involved in operating an effective Runway Safety Team and offers guidance in developing a "Terms of Reference" document.

Section 4 contains guidance material in assisting the verification of minimum requirements for an operating Runway Safety Team.

Appendix E offers a comprehensive listing of literature and tools reflecting the multidisciplinary approach of Runway Safety Teams by incorporating documents and information material from a variety of stakeholders. To support this non-exhaustive listing, ICAO has developed an iKit containing available Runway Safety Products.

The following links contain: -

1. iKit – Runway Safety Products http://cfapp.icao.int/tools/RSP_ikit/story_html5.html; and
2. ICAO Runway Safety Handbook http://www.icao.int/safety/RunwaySafety/Pages/Documents%20and%20Toolkits.aspx

Note: *Copy links to browser.*

(Article By Ground Safety Department - Sourced from ICAO)

CONGRATS FIJI LINK—UPGRADE TO THE FLEET

(Pictures with compliments of Fiji Airways & Fiji Sun)

IATA LAUNCHES CYBER SECURITY TOOLKIT FOR AIR TRANSPORT

IATA has launched a set of tools that airlines, airports and air traffic management organizations can use to help identify, assess and reduce their chances of a cyber attack.

The Aviation Cyber Security Toolkit was announced Tuesday at the IATA AVSEC World Aviation Security Conference in Washington DC.

"The aviation industry depends on essential IT infrastructure functioning reliably. While the industry has put in place best practices to protect its IT infrastructure, the threat is ever-evolving. The Aviation Cyber Security Toolkit provides guidance to help airlines and their partners stay one step ahead of those with intent to do harm through cyber-attacks," IATA global director of aviation security Carolina Ramirez said.

The toolkit provides a detailed analysis of the current cyber threats and helps airlines and aviation security stakeholders identify ways to protect their critical IT Infrastructures. These includes:

- reservation systems;
- departure control;
- aircraft maintenance;
- crew planning;
- flight management; as well as
- technologies for electronic flight bags;
- e-enablement of aircraft; and
- air traffic management.

The toolkit also includes practical guidance materials and videos.

IATA has also joined with ICAO and others via the Industry High Level Group to coordinate cyber security activities and provide a common framework for the industry.

"We have not had the cyber equivalent of printer cartridge plot, but we are not waiting for one to occur before moving forward. Aviation relies on computer systems extensively in ground and flight operations and air traffic management, and we know we are a target," IATA CEO and DG Tony Tyler said.

"***It is vital that government and industry embrace collaboration to understand and identify any threats and devise strategies to combat them. We cannot afford information silos. Regulations should be outcome-focused, not prescriptive. This is a fast-evolving threat that simply cannot be addressed with static, one-size-fits-all solutions*** ■

(Source: CJ Security Consulting Group Singapore)

TEST YOUR AVIATION KNOWLEDGE

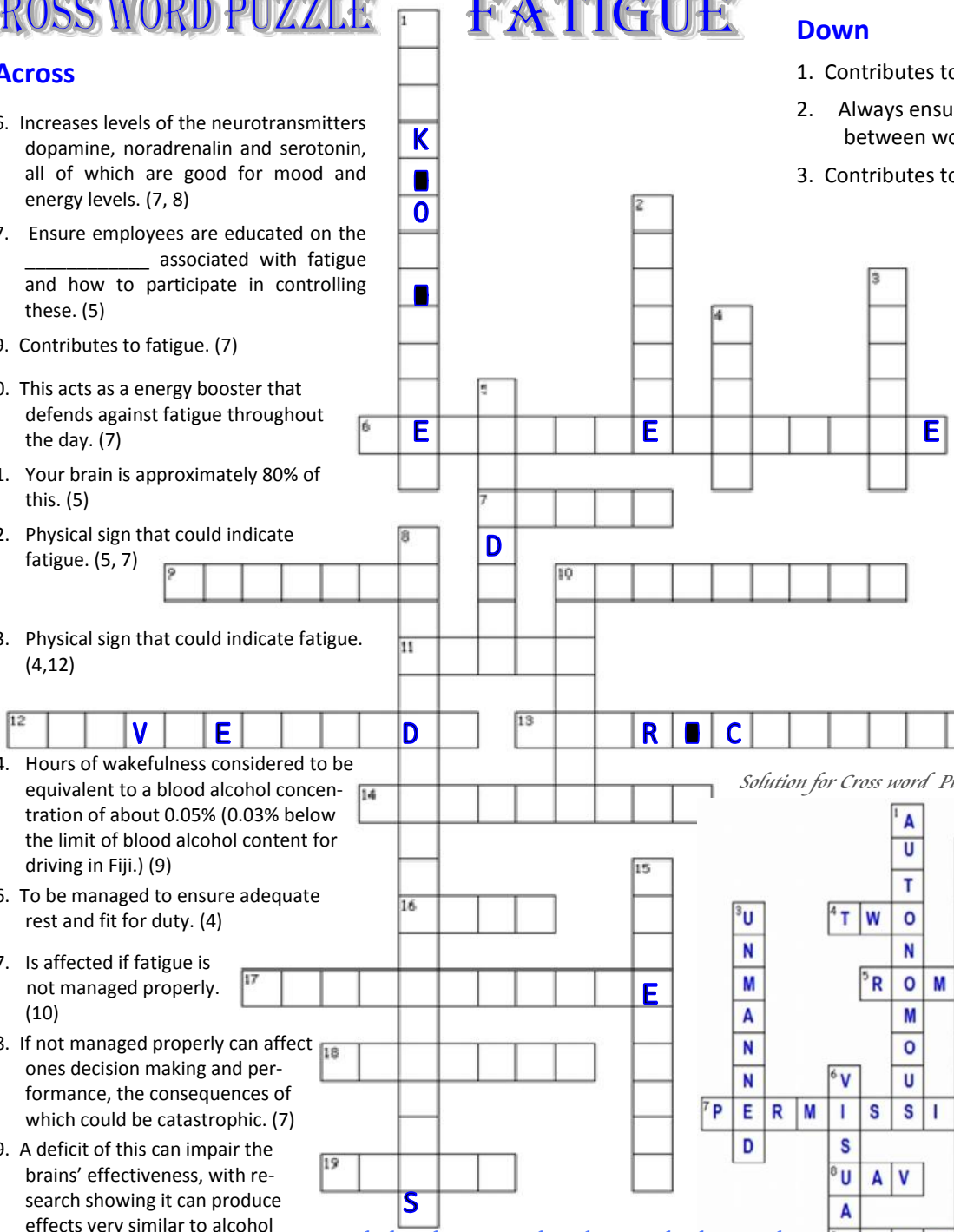
CROSS WORD PUZZLE — FATIGUE

Across

6. Increases levels of the neurotransmitters dopamine, noradrenalin and serotonin, all of which are good for mood and energy levels. (7, 8)
7. Ensure employees are educated on the _____ associated with fatigue and how to participate in controlling these. (5)
9. Contributes to fatigue. (7)
10. This acts as a energy booster that defends against fatigue throughout the day. (7)
11. Your brain is approximately 80% of this. (5)
12. Physical sign that could indicate fatigue. (5, 7)
13. Physical sign that could indicate fatigue. (4,12)
14. Hours of wakefulness considered to be equivalent to a blood alcohol concentration of about 0.05% (0.03% below the limit of blood alcohol content for driving in Fiji.) (9)
16. To be managed to ensure adequate rest and fit for duty. (4)
17. Is affected if fatigue is not managed properly. (10)
18. If not managed properly can affect ones decision making and performance, the consequences of which could be catastrophic. (7)
19. A deficit of this can impair the brains' effectiveness, with research showing it can produce effects very similar to alcohol consumption. (5)

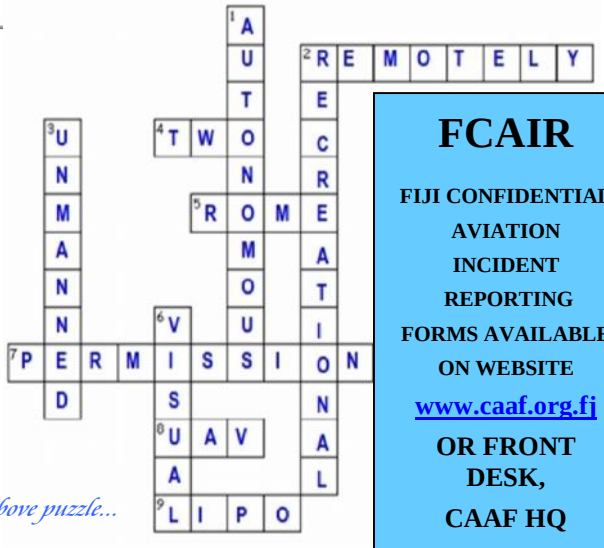
Down

1. Contributes to fatigue. (4,2,5)
2. Always ensure the right _____ between work, rest and play. (7)
3. Contributes to Fatigue. (6)
4. Recommended hours of sleeps each night. (5)
5. Contributes to fatigue.(4,4)
8. Physical sign that could indicate fatigue.(5,8,5)
10. Contributes to Fatigue.(9)
15. Term sometimes used to indicate fatigue. (9)



Check in the next issue for Solution to the above puzzle...

Solution for Cross word Puzzle Published in Issue 3'2014



FCAIR

FIJI CONFIDENTIAL AVIATION INCIDENT REPORTING FORMS AVAILABLE ON WEBSITE

www.caaf.org.fj

OR FRONT DESK, CAAF HQ

CAAF's Standards section 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 Quality Assurance Manager on 6727429, dropping it in the feedback box in the foyer of CAAF HQ, or emailing to standards@caaf.org.fj.

Your suggestions for improvements to this publication are also invited. CAAF also invites you to submit valuable information or articles that you would like to have published through this bulletin for the benefit of readers. Your name will be appropriately acknowledged. Please use the email address stated above.

HEALTH TIPS

1 Watch for symptoms of hypoglycaemia (low blood glucose)

- Sweating
- Paleness
- Trembling
- Hunger
- Weakness
- Changes in mood
- Weeping
- Irritability
- Inability to think straight
- Lack of coordination
- Drowsiness
- Nausea

2 Emergency Action

If the person is conscious, is able to swallow and has a blood glucose level less than 4 mmol/L, follow these steps. The person may require assistance or encouragement to eat and drink.

Never leave the person alone.

Step 1.

Give ONE serve of easily absorbed carbohydrate. For example:

- 5 – 8 Jelly beans

OR • Glucose tablets – equivalent to 15g

OR • 150mls of regular soft drink (1/3 of a regular can)

OR • 150mls of fruit juice (1/2 a cup)

OR • 3 tsp of honey, jam or sugar

Monitor blood glucose level in 10-15 minutes. If levels are not above 4 mmol/L repeat step 1, if they are above 4 mmol/L continue to step 2.

Step 2.

If the next meal is more than 20 minutes away, give the person some longer acting carbohydrate. This could be ONE of the following:

- A slice of multigrain or wholemeal bread

OR • 1 glass of milk or soy milk

OR • 1 piece of fruit

OR • 2–3 pieces of dried apricots, figs or other dried fruit

OR • 1 tub of low fat yoghurt

3 If the person has a fit, is drowsy, is unable to swallow or is unconscious, get emergency help!

LANDING OVER-RUN ACCIDENTS CAN BE AVOIDED