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AVIATION SAFETY BULLETIN

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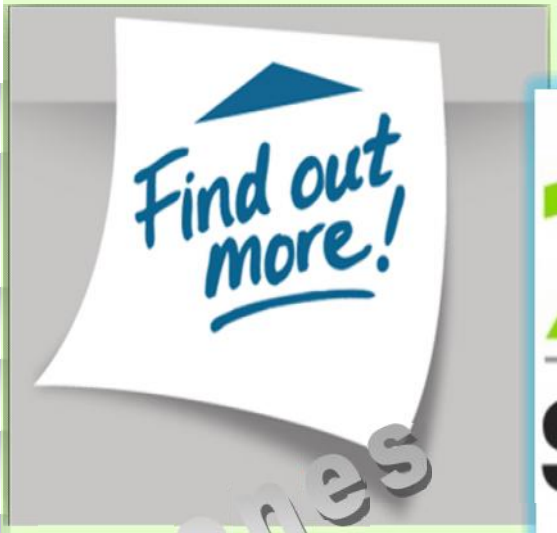
Inside this Issue:



The Beaufort Scale

CHIEF EXECUTIVE'S MESSAGE TO INDUSTRY

Mr Netava Waqa

We have gone past the first quarter of 2015 by the time this article is released and you will already have your business plans for this year finalised. In this regard it is important that this ASB edition share with you some of the work and initiatives being pursued at global, regional and national levels which may need to be considered in your business plans.

At the global level, the ICAO has progressed its work in improving its public accountability through transparency and sharing of safety information. This effort has led it to publicise States safety compliance rating on the ICAO public website. The ratings are based on States compliance with international standards in areas categorised as the eight critical elements of safety by ICAO.

The ratings are monitored real time by ICAO based on the feedback from States in response to ICAO requirements and resolutions communicated via ICAO State letters. States have the ability to update State's compliance online to improve their ratings. CAAF will conduct a full review of the national civil aviation systems against the ICAO standards this year. A good Fijian safety rating would positively impact Fijian aviation businesses directly.

MITRE and Flight Safety foundation together with States in the region are also working on a governance document to provide the framework that would facilitate the sharing of safety information in the region. This has been agreed by the States through the Regional Aviation Safety Group (RASG), and its working specialist/technical arm Asia Pacific Regional Aviation Safety Teams (APRAST). Currently, the programme is voluntary to States, Airlines (IATA member or not) and Air Navigation Service Providers (ANSP). The government is considering participating in the programme and you will be advised of the government decision.

The recent high level safety conference approved that ICAO progress its work on developing the concept of operation (CONOPS) for global flight tracking known as the Global Aeronautical Distress and Safety System (GADSS). The concept is not technology specific and further details will be shared with you once available.

At the regional level, Fiji through Airports Fiji Limited has joined other states in supporting the establishment of a Common Regional Virtual Private Network (CR VPN) multinational service. This system will replace the current means of handling aeronautical communication.

AFL is progressing with the various CNS/ATM infrastructure upgrades under the Global Aviation Navigation Plan (GANP) Aviation System Block Upgrade (ASBU) modules to meet the ICAO requirements for seamless ATM. Currently AFL is pursuing PBN implementation and other CNS/ATM improvements to achieve efficiency of operation in the Fijian airspace and may result in airspace restructure. Environment friendly improvements and efficiency gains will be included in the Environment Action plan which will be submitted to ICAO this year.

At national level, the process of ratifying the Montreal Convention 1999 is near completion and appears to be taking a smooth passage through Parliament. This convention offers significant improvements in compensation relating to accident victims and incidents to passengers and their baggage. Indirectly, CAAF considers this as a safety enhancement tool that could be jointly leveraged by airlines, ground handlers and airport operators to improve systems and processes for managing checking-in, loading and deplaning of passengers, their bags and cargo to prevent accidents, incidents that cause injury to passengers and damages to bags.

We have been talking about the Operator/Service Provider Safety Management Systems (SMS) for a number of years now and its State counterpart the State Safety Programme (SSP). The aim is to mature these two systems across the industry through the development of a "just culture" that encourages the free sharing of safety data and information exchange between the SMS and SSP. The outcomes of information sharing and analysis should become the basis of safety decisions, plans and actions at all levels of national civil aviation systems.

This year CAAF plans to begin reviewing the types of data and information that would be required to be shared and formalised the same through agreed framework and agreement. CAAF also plan to improve relationships and create environment for objective dialogue when discussing safety data and information. Safety information shared under this system would be used to develop national safety targets and reward industry stakeholders based on performance.

Finally the current review and risk assessment by the Authority identified the following as the top three incidents for the last 12 months:

1) Bird Strikes
2) System/Component Failure or Malfunction (Non-PP)
3) ATM/CNS

These areas are currently the focus of the Authority safety oversight programme. In item two, the authority conducted further risk assessment and noted that there is a significantly high average age of aircraft in the Fiji fleet and the following were observed:

1) All aircraft average age including helicopters is 26.6 years.
2) International fleet average age is 8 years.
3) Domestic fleet average age is 29.29 years.
4) Helicopter fleet average age 26 years.

The Authority's current policy does not limit the age of aircraft to be registered in Fiji but emphasise the need for operators to revise and update their maintenance program in a timely manner and maintain their aircraft IAW manufacturer and TC Holder maintenance standards. Operators, aircraft owners and maintenance organisations are urged to ensure that continuing airworthiness documents remain current to the latest revision of the OEM documents and maintenance carried out accordingly including structural and corrosion maintenance inspections.

The Authority looks forward to working with you again this year to improve Fiji's international safety rating and image as well as the Fijian aviation environment and operations safe. ■

SAFETY CULTURE — A STRATEGIC ASSET IN THE AVIATION INDUSTRY

Despite the series of international incidents that befell the aviation industry in 2014, aviation is still considered a very safe industry – both in terms of quantitative measures such as incident and accident rates, and qualitative measures such as the perceptions of the travelling public.

In this 21st century, a time of constant innovation and change, one of the biggest challenges that the aviation industry faces is the identification of the vital ingredients for an effective safety management system, and the measures that should be adopted to maintain safety performance above par.

Safety Culture is seen as fundamental for safety performance in a number of industries and aviation is no exception.

The term Safety Culture has been in use over the past several years, but it is not always clear what is meant by this term; How exactly does it relate to the aviation industry? And how is it measured and improved?

This article aims to explain why Safety Culture is still very important even though a good SMS may be in place.

What does SAFETY CULTURE mean, in practical terms?

First, there is *usually no intention* to cause unnecessary risk. Rather, safety can be temporarily eroded because people are trying to get the job done. Here are a few examples of Safety Culture 'scenarios':

1. A controller trying to optimise heavy air traffic, and respond to pilot requests for higher levels, may encounter more difficult tactical control later on when the aircraft needs to descend;
2. Engineers need to keep working on essential maintenance, although they are aware they may be degrading the controller's air situation display of traffic;
3. A supervisor notices two controllers are looking tired, but there is only twenty minutes before they are relieved, and the traffic is slow, so he waits;
4. An aerodrome safety assessment team reaches a borderline safety conclusion concerning a new, key operation that will secure company jobs for the next ten years. Operations people involved believe they can handle all the safety scenarios assessed with ease, but one of the safety assessors is convinced there are genuine risks. The other members of the safety team involved think he is being over-cautious;
5. During a temporary staff resource shortage, the Board has to decide whether to limit capacity or not, until the shortage is resolved.

These examples are in the 'grey areas', which occur frequently, where there are no hard and fast rules, and where what we believe about safety and its importance will strongly influence our decisions.

Our individual judgements and beliefs about safety come from two main sources, aside from the official rules; our experience, and our peers, most of the time we learn from watching and listening to others.

Think of it this way – imagine you are driving your car and approach a red light at night, and it stays red for a long time. Eventually other cars start driving through it, and the ones behind you start honking their horns at you to go through it too. What would you do? The lesson is that our peers, as well as our bosses, can determine how we think about safety at work – others can lead us to 'bend' the rules when we know deep down they should not be bent. The only way to prevent this is to have all people in the organisation concerned with safety – what has been called '**safety mindfulness'**. This is Safety Culture.

The term Safety Culture came into popular use after being mentioned in the report by the International Nuclear Safety Advisory Group (INSAG) as one of the causes of the Chernobyl nuclear power accident in the Ukraine (IAEA, 1986). The IAEA (International Atomic Energy Agency) report introduced the concept to explain the organisational errors and operator violations that laid the conditions for the disaster. Since that time, 'poor Safety Culture' has been identified among the causes of numerous high-profile accidents in other industries, such as the sinking of the Herald of Free Enterprise passenger ferry (Sheen, 1987), the passenger train crash at Clapham Junction (Hidden, 1989) and the Überlingen mid-air collision accident (Ruitenberg, 2005).

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SAFETY CULTURE — A STRATEGIC ASSET IN THE AVIATION INDUSTRY cont….

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To understand Safety Culture, one must first understand organisational culture. Employee awareness, understanding, motivation, attitudes, perceptions and beliefs are all wrapped-up within this concept of 'organisational culture'. The influence of culture is something that is often taken for granted by those working in the organisation, but it has an implicit and strong influence on the safe behaviour of staff and contractors, including not just front-line operational staff/contractors but also managers and support staff.

Put simply, organisational culture means 'the way things are done around here'. Wherever we work, we are in an organisational culture and 'get used to it'; it is usually only when someone new arrives that they really notice the culture, and how it affects the way people work.

Safety Culture is therefore a sub-dimension of organisational culture, simply put, it is *"the way safety is done around here– emphasising that it is concerned with the realities of safety, and not necessarily what people say should be done"*(EUROCONTROL, 2007).

An organisation's Safety Culture is not only made up of the individuals' attitudes but also reflects individual, group and organisational attitudes, norms and behaviours and the value, priority and commitment given to air navigation safety.

A strong and positive Safety Culture should be at the forefront of people's minds, whether they are pilots, engineers, controllers on duty, maintenance staff supporting essential systems, or managers allocating resources and planning the future strategies for their organisations. In this way, the small problems and weaknesses that can grow to become accidents can be identified and stopped at their source, enhancing the 'resilience' of the aviation industry.

A simple model of Safety Culture is depicted in this diagram (Gordon et al, 2007). This figure highlights the potential disparity between what may be said about safety, and what is actually done. This conflict is underpinned by people's real beliefs about how their organisation values safety, and so affects their own behaviour and, hence, safety outcomes. Therefore, when examining Safety Culture, it is important not to rely solely on official documents such as the Safety Management System (SMS), and even observation of behaviour may not be sufficient. It is necessary to probe people's real beliefs about safety, including their values and perceptions of others' values too, especially their peers and superiors.

This can be achieved by a mixture of carefully worded anonymous questionnaires, as well as focus groups where people discuss safety issues they are concerned about, usually animated by a facilitator.

Safety Culture aims to keep the collective mind of the organisation continually focused on safety and begins with leadership commitment to making safety a priority in every decision. Steps forward can still be made, and must be made, but they must be safe ones. If people believe that safety is not the priority, or, for example, not today's priority, this will influence their actions and decisions, allowing unsafe conditions, then actions, and ultimately accidents, to occur.

The 'belief' part of safety must therefore be addressed, understood, and corrected if necessary – and this is the domain of Safety Culture.

The real challenge lies in the transition from a Safety Culture measurement stage to an improvement stage; having Safety Culture improvement driven by industry themselves and sustaining this improvement throughout the future changes facing aviation. The benefit will be a successful and highly safe industry ■

Uplifted by GSD from the Eurocontrol/FAA White Paper published in 2008, titled "Safety Culture in Air Traffic Management".

THE BEAUFORT SCALE

The Beaufort scale is a practical measure that relates wind speed to observed conditions at sea or on land.

The scale we all know – the one that bears Beaufort's name – was formulated at the start of the 19th century, however, accounts from 1704 show that a similar type of scale was in use a century earlier.

In the early 19th century, naval officers made regular weather observations, but there was no standard scale and so they could be very subjective – one man's "stiff breeze" might be another's "soft breeze". Francis Beaufort succeeded in standardizing the scale in 1805, when serving aboard HMS Woolwich.

A century later, in 1906, George Simpson devised a scale for land-based observers and it has been altered very little since. This scale for observers on land is a useful and reasonably accurate tool for estimating wind strength.

In modern times, wind speed is now provided by air traffic management personnel in Control Towers and Flight Service units by reading off anemometers provided at the station. Despite having this modern invention at hand it is beneficial that Aviators and Air Traffic Controllers be able to approximate wind speed by "reading" their environment.

Below is a table depicting the Beaufort Scale.

FORCE	SPEED KNOTS	NAME	CONDITIONS AT SEA	CONDITIONS ON LAND	ILLUSTRATIONS
0	< 1	Calm	Sea like a mirror.	Smoke rises vertically.	
1	1-3	Light air	Ripples only.	Smoke drifts and leaves rustle.	
2	4-6	Light breeze	Small wavelets (0.2 m). Crests have a glassy appearance.	Wind felt on face.	
3	7-10	Gentle breeze	Large wavelets (0.6 m), crests begin to break.	Flags extended, leaves move.	
4	11-16	Moderate breeze	Small waves (1 m), some whitecaps.	Dust and small branches move.	
5	17-21	Fresh breeze	Moderate waves (1.8 m), many whitecaps.	Small trees begin to sway.	

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THE BEAUFORT SCALE cont...

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FORCE	SPEED KNOTS	NAME	CONDITIONS AT SEA	CONDITIONS ON LAND	ILLUSTRATIONS
6	22-27	Strong breeze	Large waves (3 m), probably some spray.	Large branches move, wires whistle, umbrellas are difficult to control.	
7	28-33	Near gale	Mounting sea (4 m) with foam blown in streaks downwind.	Whole trees in motion, inconvenience in walking.	
8	34-40	Gale	Moderately high waves (5.5 m), crests break into spindrift.	Difficult to walk against wind. Twigs and small branches blown off trees.	
9	41-47	Strong gale	High waves (7 m), dense foam, visibility affected.	Minor structural damage may occur (shingles blown off roofs).	
10	48-55	Storm	Very high waves (9 m), heavy sea roll, visibility impaired. Surface generally white.	Trees uprooted, structural damage likely.	
11	56-63	Violent storm	Exceptionally high waves (11 m), visibility poor.	Widespread damage to structures.	
12	64+	Hurricane	14 m waves, air filled with foam and spray, visibility bad.	Severe structural damage to buildings, wide spread devastation.	

This article has been compiled by GSD with reference to the following:-

1. National Meteorological Library
2. COADS Project Report: Early Data Digitization and United States Code History, by Joe D. Elms, 1995, National Climatic Data Center, NOAA, USA.
3. The Origin of Wind, HKO e-Bulletin on Educational Resources, Issue No.2 (July 2004).

AVIATION HUMOUR

Pilot: "Good morning, Nadi Tower, FJA123, Gate 8, request start up and push back, please."
Tower: "FJA123 due traffic, expect start up in 30mins."
Pilot: "Please confirm 30mins delay?"
Tower: "Affirmative"
Pilot: "In that case, cancel the good morning!"

USE OF AIRCRAFT LIGHTS

In a 'see and be seen' environment, many pilots have a very effective aid that they may not have considered using – the aircraft landing lights. Most of us will have seen that they are used to good effect by aircraft – and there's nothing to stop us following suit.

Although practices may vary between operators, aircraft will typically show landing lights when below 10,000 feet. Approach and departure are normally the only reasons for flying below this altitude.

Conversely, it is unusual for a light aircraft to be above 10,000 feet, but for the light aircraft pilot, the landing light (and taxi light where fitted) can be a huge help to others (including aerodrome controllers) at lower levels.

Being visible to other traffic is extremely important in the vicinity of an aerodrome, along a narrow corridor such as the Dessert Road, and in busy training areas. The landing light is generally visible well beyond the range at which an aircraft can be perceived, and gives pilots plenty of time to plan avoiding action.

Using the landing lights when joining at a controlled aerodrome will greatly assist controllers in sighting you and helping them sequence you into the traffic pattern.

Not Just For Other Pilots

Landing lights may also help birds to see your aircraft earlier and get out of your way. The Landing lights (in each wing leading wing leading edge) pulse alternately attracting attention more readily than a steady light.

The pulsing lights convey movement more effectively than a head-on view of an approaching aircraft with steady lights. This gives birds more time to decide where to go – infinitely preferable to a last-minute panic dive, which may even be into the path of the aircraft.

Other Lights

Anti-collision beacons and position lights are fitted to aircraft intended to be operated at night, and the rules require these to be activated during the hours of darkness.

The (red) anti-collision beacons are commonly mounted on the top of the tail fin, or in some cases to the upper and lower fuselage. Older types were normally mechanical rotating beacons, but flashing strobes are now more commonplace, having weight, cost, and reliability advantages.

White wingtip strobes have been standard on many light aircraft for several decades now, and during the day are most effective against a dull background.

Common Practice

- **Anti-collision beacon**: ON before start; leave on until shutdown. This is not in the rules, but is international practice, warning other pilots and ground crew that the engines/rotors are running or about to start.
- **Position lights**: as desired, but must be ON before the aircraft moves at night.
- **Taxi Light**: as required during taxi, generally only at night. Use in conjunction with landing lights on takeoff and on approach, day or night.
- **White strobes**: normally ON at line-up, OFF vacating the **runway**.
- **Landing Lights**: ON at line-up, along **with** taxi light if it's not already in use.

During night flight in cloud, anti-collision beacons and strobes can be switched off if they cause distracting reflections. On the ground, white strobes should be switched off if they are likely to dazzle other pilots. ■

(Article uplifted from Vector Jan/Feb. 2014)

AIRLINES ARE FINALLY CRACKING DOWN ON DRUNK, UNRULY PASSENGERS

At a recent aviation conference, airline executives look into ways to address a serious and common problem; Drunk and Unruly passenger, which are costing them a lot of money.

Between 2010 and 2013, airlines reported 20,000 unruly passenger incidents, including 8,000 in 2013 alone. In -air offenses range from "physical assault" to "failing to follow lawful crew instructions," which we imagine includes things refusing to raise one's seat back and tray table during takeoff and landing. Also mentioned: "consumption of illegal narcotics, sexual harassment, and physical or verbal confrontation or threats."

Airlines like to err on the side of caution, so it doesn't take much to convince them to divert a flight and make an emergency landing. That's a pain for the passengers who suffer through flying in considerate silence, and it's expensive for the airlines.

More often than not, alcohol is behind bad behavior. In a 2011 report, the International Air Transport Association said "two intoxicated business executives" physically and verbally abused the crew and passengers so severely that the plane had to be rerouted off its transpacific flight path. The airline estimated the incident cost about $200,000. (The Association doesn't provide the cumulative price of these incidents, but says each can cost hundreds of thousands of dollars.)

The global airline industry is expected to clear a net profit margin of just 2.4 percent (worth $18 billion) in 2014, so any way to cut costs piques interest. That's the impetus for a set of proposed policy changes that will make it easier to keep passengers from getting out of hand, and to prosecute them when they do. The fact that the Association titled its latest report "The Devil in our Midst" indicates they're taking this pretty seriously.

The current protocols for dealing with the problem are frustratingly vague. One guideline says "it is important to distinguish behavior that may simply be a person's personality trait from behavior that might be a result of cultural background rather than unruly behavior." That's a good point, but it doesn't help a flight attendant decide when to cut off the booze.

The proposed policy changes are formally known as the Montreal Protocol 2014 and were announced at the International Air Transport Association's General Meeting in Doha, Qatar last year. The Association represents 240 airlines, and says they have "unanimously adopted a resolution that calls on governments and industry" to cooperate.

The plan's focus is to have airport staff monitor passengers for intoxication and/or volatility from check-in to security and give wait staff more power to refuse service. It wants to extend the right to prosecute offenses to the flight's destination country. The current, outdated rules assign jurisdiction to the country where the aircraft is registered. These days, airlines commonly lease planes, so an aircraft may be registered in a country it never flies to. That creates a gaping loophole for badly behaved travelers. Tony Tyler, the Association's CEO, said, "There are so many cases where people do egregious things. Police might come and detain them when they arrive, but in most cases they go (free)."

In one spectacular example, a passenger on an Iceland air flight got so drunk and out of control, the flight crew used duct tape to keep him in his seat. He allegedly grabbed women, choked other passengers, and spat on people, but was not prosecuted.

The next step for the Montreal Protocol 2014 is ratification by government representatives, airlines, and airports.

Source: http://www.wired.com/2014/06/airlines-unruly-drunk-passengers by Alexander George

WHAT CAN I DO WITH MY DRONE

1. I've just bought a drone, do I need a license or certificate to fly it?

No, providing the drone is less than 20 kg and it is only flown for recreation or as a hobby. If your aircraft is over 20 kg, another set of rules applies. Contact CAAF for more info.

Fiji does not yet have an organization certificate for RPAS operations, but rule development is under way for this.

2. Can I fly it in my own backyard or at the local park?

You can fly it in daylight up to 65meters (200 feet), provided you are in uncontrolled airspace and not within 5 km of an international aerodrome or 3 km of a domestic aerodrome. The key thing to keep in mind is that the rules say you must fly the aircraft so it isn't a hazard to other aircraft, people, or property. This means you should not fly over people where the aircraft could be a hazard if the motors or control systems failed.

3. What about over my neighbor's backyard?

The same rules apply, but you might want to consider your relationship with your neighbor. Beware that people are often sensitive about noise and privacy.

4. How do I find out about this airspace stuff?

Airspace has specially designated areas to keep everyone safe. For example, the airspace around an aerodrome is protected so aircraft can approach and leave safely. If you fly a drone, you need to understand airspace.

If you're new to the aviation scene, this can seem a bit complicated at first, so we recommend you to contact the Authority and the AIS Section of Airports Fiji Limited to learn more about it.

5. Is there any airspace specially for flying models or drones?

Not at this stage, but this is being considered.

6. What if I specially wanted to fly at night?

As long as your drone is equipped with navigation lights and within line of sight and away from any persons, structures and 5 km from any aerodrome, you may fly at night and you must remain below 200 feet.

7. Can I fly my drone using goggles for a virtual view of where the aircraft is?

This is often called FPV (First Person View) and may use goggles or a monitor such as an i-pad or any android device for a view from a camera on the aircraft. If you fly using this, then you will need an observer to maintain line of sight with the drone.

8. Can I take photos or movies anywhere?

The Civil Aviation Regulations do not cover photography, but many people are concerned about their privacy if they see a drone flying. Seek permission from the people that you wish to photograph or you may face legal action. Contact your nearest police station or legal aide office for any clarification.

9. Can I take some photos and charge people for them?

For drones, the Aeronautical Information Circular sets guidelines on their uses. To charge people for photos from a drone is a commercial activity which will require licensing and a written permission from the Authority. You may charge people, but you will need a commercial/business license with other requirements set by the Authority.

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WHAT CAN I DO WITH MY DRONE cont...

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10. I'm a farmer; can I use a drone for farm work?

All the rules about flying drones apply, but if you were planning on applying any product or chemical, there's a whole bunch of other requirements that come into play. Contact the Authority for more info.

11. Do drones need a warrant of fitness or something like that?

The manufacturer's instructions should be followed, including updating software. It is best practice to use standard preflight checklists, and carry out post flight inspections for preventative maintenance.

Any drone above that flies beyond line of sight and/or weighs more than 150 kg will require a Certificate of Airworthiness from the Authority. ■

(Article By Air Safety Department)

PUBLIC NOTICE

ISO 9001/2008 CERTIFIED

CIVIL AVIATION AUTHORITY OF FIJI

It has been brought to the attention of the Civil Aviation Authority of Fiji (CAAF) of illegal operations of Remotely Piloted Aircraft (RPA) and aerial devices.

The public, operators and owners are advised that there are certain restrictions imposed on the use of these equipment as they may endanger aircraft operations and the public at large.

Any person operating an RPA recklessly for recreation (within airport boundary, i.e. in the approach and take-off areas of active runways and helipads and/or over a crowded area or public gathering and/or without an appropriate permission from the Civil Aviation Authority and Air Traffic Control Unit for commercial operations could be in breach of Fiji's Air Navigation Regulations and could be charged under Criminal Law and be liable for prosecution.

The public is requested, in the interest of aviation safety to:-

- Contact the Civil Aviation Authority of Fiji for information on the use of RPA and aerial devices
- Report any sightings of any RPA to the Authority or nearest Police Station immediately.
- The contact for the Authority is ***Captain T Marshall*** on ***phone 6721555 Ext 3368*** (during office hours 0800 to 1700) or ***Mobile 9995207*** or call on the Authority's Safety toll free line 0800 6725799 and leave a message.

FCAIR

FIJI CONFIDENTIAL AVIATION INCIDENT REPORTING FORMS

AVAILABLE ON WEBSITE

www.caaf.org.fj

OR FRONT DESK, CAAF HQ

AIRCRAFT WAKE TURBULENCE (PART 4)

VORTEX ENCOUNTER GUIDENCE

a. **Probability of Hazard.** A wake encounter is not necessarily hazardous. It can be one or more jolts with varying severity depending upon the direction of the encounter (intercept angle), weight and configuration of the generating aircraft, size of the encountering aircraft, distance from the generating aircraft, and point of vortex encounter. The probability of induced roll increases when the encountering aircraft's heading is generally aligned or parallel with the flightpath of the generating aircraft. Avoid the area below and behind the generating aircraft, especially at low altitude where even a momentary wake encounter could be hazardous. Pilots should be particularly alert in calm wind conditions and manoeuvring situations in the vicinity of the airport where the vortices could:

1. Remain in the touchdown area;
2. Drift from aircraft operating on a nearby runway;
3. Sink into takeoff or landing path from a crossing runway; or
4. Sink into the traffic patterns from other airport operations.

b. **Visualize the Vortex Trail.** Pilots of all aircraft should visualize the location of the vortex trail behind larger aircraft and use proper vortex avoidance procedures to achieve safe operation. It is also important that pilots of larger aircraft fly on the GS, not above it, whenever possible, to minimize vortex exposure to other aircraft.

c. **Control Inputs.** There is a history of wake vortex encounter incidents in which pilot inputs exacerbated the unusual attitude situation caused by the wake vortex encounter. Upsets caused by wake vortex encounters may involve rapid roll reversals as the aircraft transitions across the wake. Pilots should exercise caution with pilot control inputs, especially avoiding abrupt reversal of aileron and rudder control inputs. If altitude and conditions permit, it may be better to allow the aircraft to transition through the wake and then recover from any resultant unusual attitude, rather than aggressively trying to control the aircraft during the wake encounter. If the autopilot is engaged and remains engaged, it may be better to allow the autopilot to recover from the wake vortex encounter rather than disconnecting the autopilot and using manual control inputs. However, be prepared to assume manual control of the aircraft if the autopilot disengages.

D. **Rudder Inputs.** Prior experience or training that emphasizes use of rudder input as a means to maneuver in roll may not apply to all aircraft operations. Using the rudder to counter roll rate during a roll upset may lead to an undesirable aircraft response. Large, aggressive control reversals can lead to loads that can exceed the structural design limits. Refer to your specific Aircraft Flight Manual (AFM) guidance.

HELICOPTERS

A hovering helicopter generates a downwash from its main rotor(s). Pilots should avoid taxiing or flying within a distance of three rotor diameters of a helicopter hovering or in a slow hover taxi, as the downwash can contain high wind speeds. However, in forward flight, this energy is `transformed into a pair of strong, high-speed, trailing vortices similar to wing-tip vortices of larger fixed-wing aircraft. Pilots should avoid helicopter vortices since helicopter forward flight airspeeds are often very low, which generate strong wake turbulence (see Figure 17-next page, Helicopter Vortices).

PILOT RESPONSIBILITY

a. **Vortex Avoidance.** Government and industry groups are making concerted efforts to minimize or eliminate the hazards of trailing vortices. However, the pilot must exercise the flight awareness necessary to ensure vortex avoidance during visual meteorological conditions (VMC).

The pilot should exercise vortex visualization and avoidance procedures using the same degree of awareness as in collision avoidance.

b. **ATC Instructions.** Pilots should remember that, in operations conducted behind all aircraft, acceptance of instructions from ATC in the following situations is an acknowledgment that they will ensure safe takeoff and landing intervals, and accept the responsibility for providing wake turbulence separation:

(1) Traffic information;

(2) Instructions to follow an aircraft, and

(3) Acceptance of a visual approach clearance.

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AIRCRAFT WAKE TURBULENCE (PART 4) cont...

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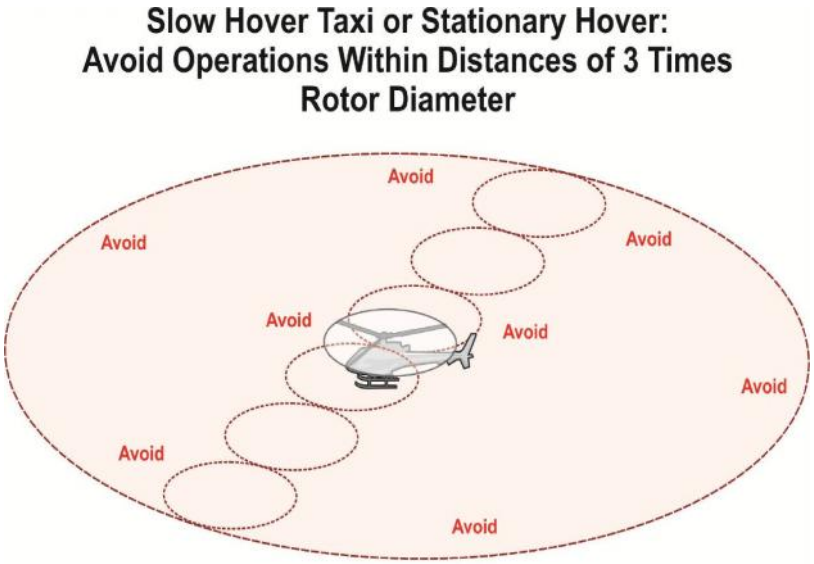
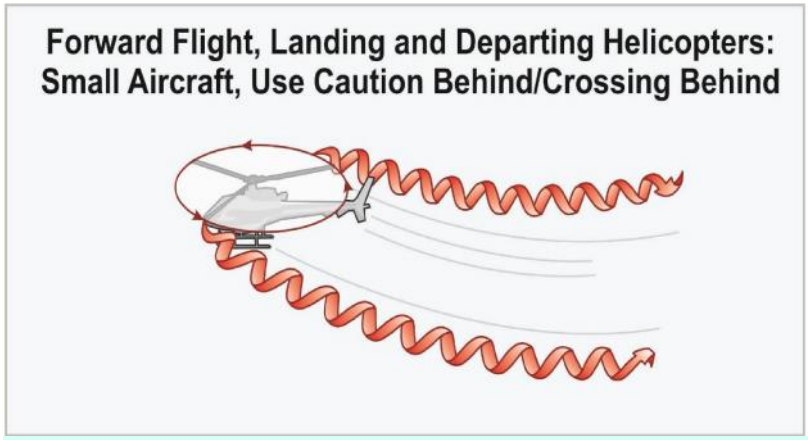


FIGURE 17. HELICOPTER VORTICES



c. **Identify Heavy or Super Aircraft.** For operations conducted behind Heavy or Super aircraft, ATC will specify the word "Heavy" or "Super" when this information is known. Pilots of these aircraft should always use the appropriately designated weight identifying term in radio communication within the terminal area.

d. **Flying on the Glidepath.** Larger aircraft operators should make every attempt to fly on the glidepath, not above it, whenever possible, to minimize vortex exposure to other aircraft. These procedures establish a dependable baseline from which pilots of in-trail, lighter aircraft may reasonably expect to make effective flightpath adjustments to avoid serious wake vortex turbulence. At airports without GS indication, pilots should use a "300 ft to 1 mile" glidepath.

EXAMPLE: Fly 3,000 feet at 10 miles from touchdown, 1,500 feet at 5 miles, 1,200 feet at 4 miles, and so on, to touchdown.

e. Techniques for Lighter Aircraft. Pilots operating lighter aircraft behind aircraft producing strong wake vortices should consider the following techniques to assist in avoiding wake turbulence and should be aware of the wind direction and speed along the final approach path:

(1) If the pilot of the smaller following aircraft has visual contact with the preceding, larger aircraft and also with the runway, the pilot may further adjust the flightpath to avoid possible wake vortex turbulence by:

(a) Flying slightly above the glidepath and maintain that glidepath to a touchdown point beyond the touchdown point of the larger preceding aircraft.

(b) Establishing a line of sight to a touchdown point that is above and beyond the larger preceding aircraft.

(c) When possible, noting the touchdown point of the larger preceding aircraft and adjusting your touchdown point as necessary.

EXAMPLE: A puff of smoke may appear at the touchdown point of the lead aircraft; adjust your touchdown point to approximately 500 feet beyond. Be aware that some Large, Heavy, or Super aircraft may require a longer touchdown point to ensure adequate clearance over the landing threshold.

(d) Landing beyond the point of landing of the preceding larger aircraft.

(2) During visual approaches, pilots may ask ATC for updates on separation and groundspeed with respect to larger preceding aircraft, especially when there is any question of safe separation from a wake turbulence perspective, and to enable the pilot to adjust the flightpath ■

(Story uplifted from FAA AC.)

BLOCKED RUNAWAY

Although the Air Safety Department originally circulated a Safety Reminder to Industry about the pilot considerations applicable to a blocked runway on the 22nd May 2009 it is timely that, in the interests of safety and recent events, this item be raised again.

The only airport in Fiji that has dual runways is Nadi, all other airports only have a single runway and this can present a challenge for pilots should the runway become blocked by a disabled aircraft or vehicle. Airports such as Labasa, Matei, Lakeba, Vanuabalavu for example, may not be considered critical as there will be sufficient fuel on board the aircraft to enable a diversion to another airport.

However, airports that may become critical are Nausori and Savusavu as they both have refueling facilities available and this could lure pilots into thinking it is safe to land with only a fixed reserve of 45 minutes fuel on board. This line of thinking could be problematic should the only runway available at these airports subsequently become blocked or, weather conditions prevent a landing from taking place.

Nausori Airport hosts a wide range of aircraft starting from the Cessna 150 up to the ATR 42 and Boeing 737. Should a large aircraft block the runway it maybe a number of days before the runway would be re-opened so it is important that factors such as this are taken into consideration.

Air Navigation Regulation (ANR) 31 (2) (a) and (e) states the pilot in command's responsibilities with regard to ensuring an alternative course of action in case the flight cannot be completed as planned and, that a safe margin of fuel has been allowed for contingencies.

Although the ANRs provide the pilot in command with the ability to take whatever action is deemed necessary to safeguard passengers and the aircraft for example, landing on the clear portion of a blocked runway or, on the grass adjacent to the runway providing it has the ability to support the weight of the aircraft, although these actions should only be considered as a last resort.

Domestic aircraft operating into Nadi Airport have alternate airports in close proximity by way of Malololailai or Mana islands however, the nearest alternate airport to Nausori is Nanuku Resort Airport and pilots should consider their suitability in the event that Nadi or Nausori Airport runways become blocked. This consideration should also apply to other domestic airports.

This is not a critical factor for amphibian aircraft as they have the ability to land on the water at Nadi Bay, Suva or Pacific Harbor

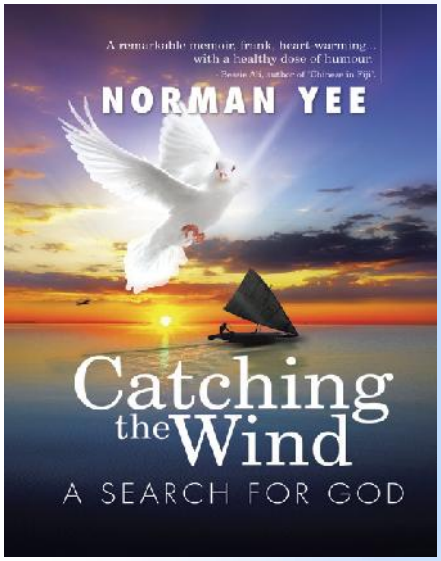
It costs fuel to carry fuel as the saying goes but pilots should also balance this against the regulatory requirements and Murphy's Law which states that if anything can go wrong, it will.

Don't be a victim and remember safety is **EVERYONE'S RESPONSIBILITY** ■

(Article by Air Safety Department)

CATCHING THE WIND BY NORMAN YEE

A MUST READ by FORMER CE CAAF



A book to inspire you to 'Catch the Wind' of your dream of a successful life.

Some Reviews

Four decades of civil aviation history, recording moments, events, and decisions that shaped Fiji's civil aviation. Filled with people who made it happen.

Netava Waqa, CE, CAAF

Gentle, humorous, unpretentious. An insightful story about a period of unimaginable aviation development, in Fiji and abroad ...

Robert Kruger
Deputy Regional Director (retired)
International Civil Aviation Organisation

This book is very entertaining, is often amusing and very readable. It captures history as it was ...

Dixon Seeto,
former chair, Civil Aviation Authority of Fiji
President, Fiji Hotel & Tourism Association

Powerful and funny, this book captures your imagination with its stories of supernatural realities and homely anecdotes'

Conan Hatch, Pastor
Living Way Pentecostal Church, Nadi
Chairman, Evangelism Explosion, Fiji

About the Author

From an early age, Norman's ready acceptance of new challenges and his application of self-help concepts set him on the road to worldly success. Unfulfilled until his encounter with God, he then became involved in the Catholic Charismatic Renewal, the FGBMFI and later the Pentecostal Church.

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CROSS WORD PUZZLE

DRONE

Across

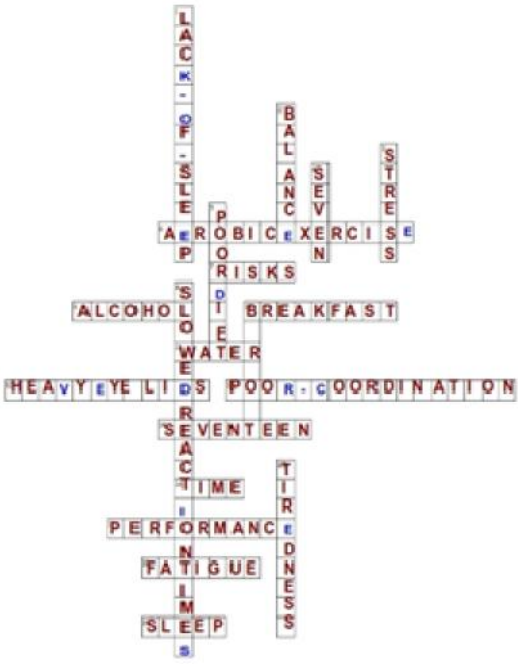
1. The five letter word also known as unmanned aircraft. (5)
4. This can be taken after seeking permission. (6)
6. Above this weight Certificate of Airworthiness is required. (5)
7. Describes acronym FPV. (5)(6)(4)
8. FPV can use this for a view from camera. (7)
9. Can be contacted for any clarification. (6)
12. This can be taken after seeking permission. (6)
15. This is a designated area to keep everyone safe. (8)
17. Can't fly within 3km of these aerodromes. (8)
18. FPV can use this for a view from camera. (7)
19. This should be kept in mind that rules do apply when flying unmanned aircraft. (8)

Down

2. Has to be equipped with this if flying at night. (10)(6)
3. This should be kept in mind that rules do apply when flying unmanned aircraft. (6)
5. This is not a must to fly unmanned aircraft. (11)
10. Can't fly within 5km of these Aerodromes. (13)
11. This is same as 65 metres. (3)(4)
13. Flying at night this is the distance required to remaining below 65 metres. (3).
14. This should be kept in mind that rules do apply when flying unmanned aircraft.(10).
15. Can be contacted for any info. (9)
16. This should be kept in mind that rules do apply when flying unmanned aircraft. (8)

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

Solution for Cross word Puzzle Published in Issue 4'2014



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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—HIGH CHOLESTEROL AND STROKE

What is a stroke ?

A stroke is not a heart attack. A stroke happens when the supply of blood to the brain is suddenly interrupted. Blood is carried to the brain by blood vessels called arteries. Blood may stop moving through an artery because the artery is blocked by a clot or plaque, or because the artery breaks or bursts.

When blood stops flowing, the brain does not receive the oxygen it needs, and therefore brain cells in the area die and permanent damage may be done. Some strokes are fatal while others may cause permanent or temporary disability.

What is cholesterol?

Cholesterol is a type of fat our bodies produce, however we also absorb it when we eat animal food products such as meat and dairy.

Our arteries carry blood through our body and too much cholesterol in the blood can cause a build up of fat in the walls of the arteries. This build up narrows or blocks the arteries which, in turn, can stop the flow of blood or cause blood clots.

There are two types of cholesterol which make up our total cholesterol. Low density lipoprotein (LDL) is the 'bab' cholesterol that builds on the artery walls. High density lipprotein (HDL) is the 'good' cholesterol that takes cholesterol from the cells in our body to the liver where it is broken down and removed safely from our body.

Stroke is the second single greatest killer and one of the leading causes of disability amongst adults in Australia.

Lower your Cholesterol, lower your risk of stroke.

What causes high cholesterol?

The main cause of high cholesterol is a diet in saturated fats (fat from animal foods). High cholesterol may also be hereditary.

The link between high cholesterol and stroke

Blood is carried to the brain through a series of large arteries in the neck and then by smaller arteries inside the head. Stroke is usually caused by a sudden blockage to the arteries carrying blood to parts of the brain.

Stroke can cause damage to the brain which can then lead to death or long term disability. When there is an excess of cholesterol in the artery walls, arteries can narrow or a complete blockage can occur in the artery. This disease is the arteriesis known as atherosclerosis.

High cholesterol is a risk factor for stroke, however you need to be aware that it is one of many risk factors including diabetes, irregular heart beat and lifestyle choices.

At narrow points in the arteries, blood clots can form and either block the arteries or break off, travelling in the blood to lodge in smaller arteries. A stroke caused by the process of a clot breaking off and travelling in the blood to block smaller arteries is called an embolic stroke.

While high cholesterol is commonly associated with blockages in the arteries in the heart causing a heart attack, high cholesterol can also narrow the brain arteries and lead to a stroke. There is evidence that a person can lower their risk of stroke by lowering their cholesterol.

You can control cholesterol with a combination of diet, exercise and medication:

- **Maintain a healthy diet** which is low in animal fats and high in fruit and vegetables. Choose vegetables oils and spreads like margarine or olive oil. Eat fish (fresh or canned) regularly and select lean meat. Limit takeaway food and foods high in cholesterol (e.g. full fat dairy products, fatty meats, egg yolks and offal).
- **Be physically active.** Try to do at least 30 minutes of moderate physical activity most days of the week. Talk to your doctor about an exercise program..
- **Don't Smoke.**
- **Maintain a healthy weight.**
- **Limit alcohol intake.** A moderate amount of alcohol (one to two glasses per day) may lower your risk of stroke. However large amounts of alcohol increase your risk of stroke.
- **Keep your blood pressure low.** with a low salt diet, physical activity and, if required, medication.

Your doctor may prescribe some medication to lower your cholesterol. These are several lipid-lowering medications on the market and each lowers cholesterol in a different way. Additionally, each of these medications target different aspects of your lipid profile. For instance, some may only be effective in lowering LDL ('bad' cholesterol) levels, where others may target every aspect of your lipid profile.

Statins are the most common type of medication prescribed to lower cholesterol . Your doctor can advise the most appropriate medication for you. You should not stop taking your medication or change the amount you take without talking to your doctor. ■

CHECK YOUR LICENCE VALIDITY