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AVIATION SAFETY BULLETIN

A Publication of:

Civil Aviation Authority of the Fiji Islands
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Opening Address By PS for the ICAO SIP Workshop

The Workshop was Opened by The Permanent Secretary for Ministry of Public Enterprises, Communications, Civil Aviation & Tourism, Ms Elizabeth A. Powell

On behalf of the Fijian Government and the Attorney General and Minister of Civil Aviation, the Honourable Aiyaz Saiyed-Khaiyum, Ms Powell had the pleasure to warmly welcome all the participants to Fiji and to the ICAO Special Implementation Programme Workshop, on the *Development of National Performance Framework for Air Navigation System*.

Ms Powell thanked the PASO member States and Management for selecting Fiji as the venue of this workshop for this demonstration of their support. Fiji would be pleased to reciprocate this support to PASO by hosting additional similar events and to develop this partnership wherever possible into the future.

She further mentioned that the air transport industry was a major driver of economic development globally and remained one of the fastest growing sectors of the world economy. In the South Pacific, this reality took on added significance.

She further stated "our islands and nations are separated by ocean and often involve significant distances. Air services are crucial for our important visitor industries, perishable imports, communications and access for our people to international locations for business, health, education and leisure purposes."

With the assistance and guidance of ICAO, and the conducting of training sessions such as this one, everyone could look forward to the provision of a safe, secure, efficient and sustainable air navigation system that benefited our people, economies and visitors while minimizing the impact on our fragile island environments.

She added that it was sure that the framework for this system, which will be reviewed by participants this week, will help implement an interoperable national and international air traffic management system for all users during all phases of flight, that:

- met the highest possible levels of safety;
- provided for optimum economic operations;
- is environmentally sustainable; and meets national security requirements.

Importantly it needs to answer our needs of tomorrow and consider operating environments and priorities specific to our region which could include modernizing facilities, introduction of new systems, improvement of infrastructure and capacity, and the possible restructuring of airspace etc. She recommended that we needed to transition from the air traffic control environment of the 20th century to a performance-based, integrated and collaborative air traffic management system, in order to meet aviation's needs in the 21st century.

Safety in the provision of air transport was paramount, and for countries such as ours in the South Pacific, for which tourism was a key industry, it was equally important, to implement

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measures that ensure environmental sustainability if we were to grow our economy and improve the quality of life for our people.

Ms Powell mentioned further that inorder to achieve these objectives, we must work together locally, regionally and internationally. "The South Pacific member-states commitment to work in partnership with ICAO to improve the management air transport in this region was demonstrated by the presence today of participants from New Zealand, Nauru, Samoa, Solomon Islands, Papua New Guinea, Vanuatu, and from AFL, CAAF and MET in Fiji".

During the next few days, as you address ways in which the quality, of the air transportation system and services in our region may be improved, you will identify how we may increase the sharing of our learning's across the region so that we may continuously improve our systems and processes in a cohesive and integrated way.

Following collaboration and consultation between CAAFI and AFL, Fiji recently completed the development of its *National Performance Framework* based on ICAO's Regional Performance Objectives and Framework forms. This document will be revised at the completion of this workshop and will be expanded to include issues unique to Fiji's domestic operating environment.

Fiji would be pleased to share its experience with this process and assist any state in whatever way possible in this regard. Please make your interest known, in this case, to any of the CAAFI or AFL representatives and participants, and they will set up further discussions.

We applaud ICAO and PASO for organizing this event, and the participating member States for their appreciation of

the importance of this workshop. We also hope that we may look forward to greater ICAO participation in the development of the South Pacific region's aviation systems, and are ready to support such initiatives.

We look forward to seeing the outcome of the workshops, and wish you interesting and enthusiastic discussions this week. On behalf of the ICAO regional office and Fiji as a contracting State of ICAO, it is my pleasure to now declare these sessions open.

Vinaka.

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The Workshop closed on Friday 01st April 2011 with a closing address by the CAAFI Chief Executive, Mr. N. Waqa.

ICAO Special Implementation Programme Workshop

28th March - 01st April 2011

Sitting L-R:- A Sofield (AFL), H Sudarshan (ICAO), A Tuala (PASO), S Silva (ICAO), N Waqa (CAAFI)
Standing L-R:- I Tabakaucoro (CAAFI), K Dainaki (AFL), A Tanuvasa (CA Samoa), S Prakash (MET), M Wakos (PNG CASA), M Laliqavoka (CAAFI), H Pratap (MET), K Sagar (MET), M Bishwa (AFL), I Tudreu (CAAFI),
Standing on stairs right:- M Ratucicivi (CAAFI), K Szczepaniak (AFL), M Elaisa (AFL), A Solvalu (AFL)
Standing on stairs middle:- E Raiwalui (AFL), T Levestam (CAAFI), M Murphy (AFL), V Seru (AFL)
Standing on stairs left:- J Niel (CAA Vanuatu), E Naivalu (AFL), L Liew (AFL), D McDonald (CAAFI), I Navula (AFL), M Haines (CAA NZ), P Lennis (CAA Vanuatu)
stairs middle:- E Raiwalui (AFL), T Levestam (CAAFI), M Murphy (AFL), V Seru (AFL)
Standing on stairs left:- J Niel (CAA Vanuatu), E Naivalu (AFL), L Liew (AFL), D McDonald (CAAFI), I Navula (AFL), M Haines (CAA NZ), P Lennis (CAA Vanuatu)

ICAO SIP Workshop

Thirty one Civil Aviation officials from New Zealand, Nauru, Samoa, Solomons, PNG, Vanuatu and Fiji attended the week long workshop on the Development of National Performance Framework for Air Navigation Systems. The main goal for this workshop was to enhance the knowledge base of civil aviation professionals of Pacific States of the ICAO Asia/Pacific Region in the planning and implementation of safety and efficiency performance framework for Air Navigation System (ANS). Due to the need for proper planning and implementation of safety and efficiency for air navigation system a need for this workshop developed in 2008 and since then it has been an ongoing workshop. Every time this workshop was conducted it tailored new changes and implementation.

This workshop was conducted for five days and was hosted in Nadi by the Authority from 28th March – 01st April 2011. The two presenter's namely Mr. Saulo J. Da Silva & Mr. H. V. Sudarshan from the Air Navigation Bureau, ICAO Head Quarters and supported by professionals of the ICAO APAC Regional Office conducted the workshop.

This workshop was developed:

- to adopt the changing phase from technology to be tailored;
- to show where we are going in the future;
- how to make small steps in the future;
- how to start and build pillars

The workshop was comprised of three modules:

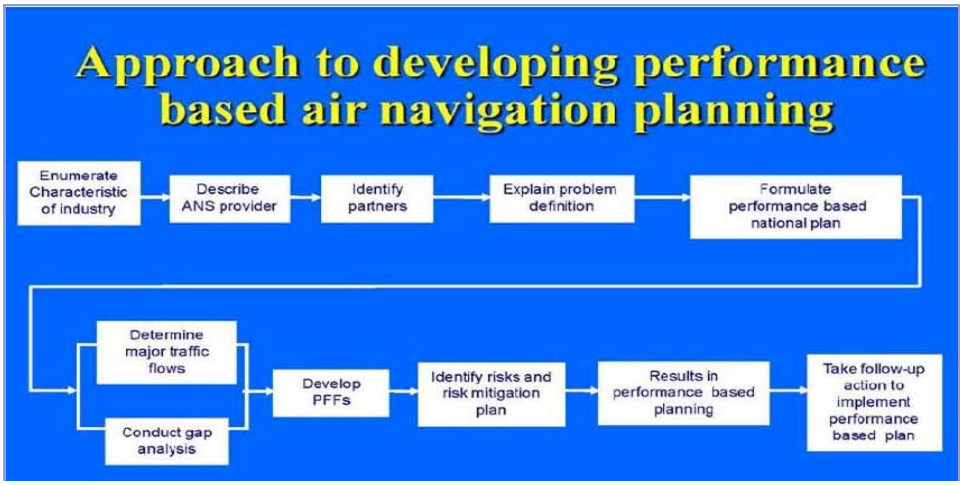
- Global Air Navigation System – Concept and Framework;
- Performance Framework for efficiency and Safety; and
- Hands-on exercise for the development of National Performance framework.

Saulo De Silva spoke on airspace organisation, flexible use of airspace principles and structure and civil military cooperation needs & approach. He mentioned the present airspace organisation was founded on fixed and largely static airspace divisions and boundaries. It is a general practice to set aside portions of the airspace on a permanent or semi-permanent basis for military activities.

He said overall the airspace organisation was inflexible and led to an inefficient use of the available airspace resources and also concept of airspace desegregation encompassing the dynamics and flexible use of airspace within a state needed to be considered.

Speaking to Saulo he mentioned "in terms of flexible use of airspace principles, airspaces should no longer be designated as either purely, rather civil or military airspace, rather, airspaces should be considered as one continuum and allocated according to user requirements".

"Any necessary airspace's segregation will be temporary based on real-time usage," he said. He further mentioned that flexible use of airspace comes in three levels, the strategic level, pre-tactical level and tactical level.



ICAO SIP Workshop

'The Strategic level was the establishment of pre-determined airspaces' structure and agreement on priorities and negotiation procedures, the pre-tactical level was a day-to-day allocation of airspaces according to user requirements and communications of airspaces allocation data to all concerned. And the tactical level was the real time use of airspaces and activation, deactivation of real location.

"The main objectives that was discussed there was to basically create awareness among participants on the need to improve civil military cooperation on airspace use and identify areas in the world where improvements in civil military cooperation were needed". he said. Focusing on the vision Professor Saulo states, *"A Vision without Action is a Day dream", "An Action without a vision is a nightmare".*

The participants gained an improved understanding of the ICAO performance framework processes for safety and efficiency and were able to successfully apply, through hands-on exercise, the processes learned in developing performance framework and completing performance framework forms.

The processes learned will be applicable and useful to the ongoing work of the States and APANPIRG to enhance safety and efficiency of the aircraft operations at national and regional level and thus leading to a seamless Global ATM System.

Fiji (CAAFI, AFL & MET) took this opportunity to review its National Plan Objective framework that had been communicated to the ICAO. This will be continuously monitored and updated through our ANS/AGA meetings which would eventually contribute to our National Civil Aviation Plan.

The ICAO facilitators were very appreciative of the outcome of the workshop and shared their gratitude to CAAFI/ Fiji for facilitating this event. The report on the workshop has been published on the ICAO website

Fiji is strategically positioned to facilitate ICAO initiatives, such as this workshop, for the Pacific island States.

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CAAFI's Quality Assurance 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 CAAFI, preferably using the QA 108 form that can be accessed from our website. This can be sent to CAAFI by faxing it to Quality Assurance Manager on 6727429, dropping it in the feedback box in the foyer of CAAFI HQ, or emailing to standards@caafi.org.fj.

Your suggestions for improvements to this publication are also invited. CAAFI 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.

Seat Belt Use…….
Passenger Injuries in Turbulence…….

This InFO works to increase public awareness about the increased risk of injury to passengers and cabin crewmembers when passengers ignore the seat belt sign. This InFO calls attention to the importance of adherence to established operating procedures and strategies to reduce in-flight injuries.

Recent research by the Flight Standards Service Analysis and Information Staff (AFS-20) confirms that turbulence is the leading cause of in-flight injuries. Government and industry partners in the Commercial Aviation Safety Team are looking forward to minimize the risk of passenger and cabin crewmember injuries during turbulence. The recent turbulence incidents on air carriers have renewed interest in reviewing strategies to improve communication .

Crewmember preflight planning, in-flight situational awareness, post flight debriefing, and safety system reporting are essential elements to reduce the likelihood of in-flight injury. Further, there is a regulatory requirement for seatbelt compliance and adherence to crewmember instructions.

Following are actions that air carriers, pilots, and cabin crewmembers may use to improve passengers' seat belt use:

- Develop business size warning cards with "Turbulence Happens – Click it, don't risk it" to issue a written warning to passengers that ignore crewmember instructions.
- Develop turbulence scenarios for crewmember initial and recurrent training to practice quick response in-flight turbulence procedures. Discuss what to do with service carts. Evaluate communication and commands to protect passengers. (Turbulence! Tighten seat belts) .
- Dispatchers proactively provide "ride reports" to flights and pilots share "ride reports" with crewmembers and passengers related to any adjustments in service based on forecast turbulence.
- Crewmembers should follow standard operating procedures (SOP) regarding announcements on night flights and remind passengers to keep seatbelts visible.
- Crewmembers personalize seat belt sign announcements with anticipated turbulence severity and the approximate time and that the seatbelt sign will stay illuminated.
- Pilots, if severe turbulence is encountered signal crewmembers to follow up after the turbulence incident with cabin checks
- Caution passengers that they should not attempt to open overhead bins when the seat belt sign is illuminated.
- Cabin crewmembers should be aware that passenger risk is increased when long lines form around the lavatory.
- Cabin crewmembers should consider alternate methods to alert special passengers such as; the elderly, passengers that do not speak English, deaf or hearing impaired, passengers with limited mobility, passengers traveling with small children. Encourage the use of visual aids such as seat belt extenders or briefing cards and pointing to seatbelt signs combined with oral announcements during seatbelt compliance checks.
- Remind passengers that regulations require compliance with the seatbelt sign and crewmember instructions.
- Share information through company safety reporting system to analyze and continuously improve procedures and strategies for seat belt compliance.

It is recommended that all Directors of Safety and Directors of Operations, training managers and crewmembers, should ensure that their carriers have a proactive program encouraging passenger seat belt use and that crew members are aware of the information in this InFO.

Turbulence

Many passengers do not understand the effects of turbulence, or that an encounter with turbulence may occur without warning.

What is turbulence?

Turbulence is air movement that normally cannot be seen. It may occur when the sky appears to be clear and can happen unexpectedly. It can be created by any number of different conditions, including atmospheric pressures, jet streams, mountain waves, cold or warm fronts, or thunderstorms.

Different intensities of turbulence

- **Light turbulence** - briefly causes slight, erratic changes in altitude and/or attitude.
- **Light chop** - slight, rapid and somewhat rhythmic bumpiness without noticeable changes in altitude or attitude.
- **Moderate turbulence** - similar to light turbulence, but greater intensity. Changes in altitude/ attitude occur. Aircraft remains in control at all times. Variations in indicated air speed.
- **Moderate chop** - similar to light chop, but greater intensity. Rapid bumps or jolts without obvious changes in altitude or attitude.
- **Severe turbulence** - large, abrupt changes in altitude/ attitude. Large variation in indicated airspeed. Aircraft may be temporarily out of control.
- **Extreme turbulence** - aircraft is violently tossed about and is impossible to control. May cause structural damage.

The reactions inside aircraft vary from occupants feeling slight strain against their seat belts and unsecured items being slightly displaced, through to occupants being forced violently against seat-belts, and unsecured items being being tossed about. (Imagine what it would be like if you were not wearing a seat belt!) .

Clear air turbulence

There are several notable problems with clear air turbulence:

- It cannot always be foreseen so there is no warning.
- It is usually felt at its mildest in the flight deck and is generally more severe in the aft section.
- It can occur when no clouds are visible.
- Aircraft radars can't detect it.
- It is common at high altitudes, where cruising airline suddenly enter turbulent areas.

Turbulence is the leading cause of in-flight injuries. There are countless reports of occupants who were seriously injured while moving about the passenger cabin when clear air turbulence is encountered.

The Causes

1. **Thermals** - Heat from the sun makes warm air masses rise and cold ones sink.
2. **Jet streams** - Fast, high-altitude air currents shift, disturbing the air nearby.
3. **Mountains** - Air passes over mountains and causes turbulence as it flows above the air on the other side.
4. **Wake turbulence** - Near the ground a passing plane or helicopter sets up small, chaotic air currents, or

Microbursts - A storm or a passing aircraft stirs up a strong downdraft close to the ground.

Injury prevention

In-flight turbulence is the leading cause of injuries to passengers and crew. Occupants injured during turbulence are usually not wearing seatbelts, ignoring recommendations to keep seatbelts fastened even when the signs are not illuminated. It is recognised that passengers need to move around the cabin to use restroom facilities or to exercise on long flights. However you should keep your seatbelt fastened at all times when seated.

From past researches there have been reports of turbulence affecting many air carriers. And from these research passengers have died, some were not wearing their seat belt while the sign was on. Some suffered serious injuries and so. Out of these most of these passengers were also not wearing their seat belts.

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FREE CALL SAFETY MESSAGE LINE
Phone your safety concerns to CAAFI – 0800 6725 799

Causes of Turbulence

Wind flowing over obstacles such as mountains can cause turbulence. It is kind of like water flowing in a river with small eddies. A common winter time turbulence occurrence is called "mountain wave". This is produced downwind from a mountain range when the winter jet stream is at a lower altitude. The air mass in the mountain wave will flow up and down a little bit like sea swells (no, it doesn't make you "seasick"!). This can cause turbulence and is typical east of the Rocky Mountains. Weather forecasters are very good at predicting this type of turbulence because it is easy to track the location of the jet stream. Airliners may change the cruising altitude to minimize its annoying affects.

Turbulence can also be caused by shifting wind currents in the sky. When you transition from one wind current to another, such as crossing a warm or cold front, the air can get stirred up. Planes flying through these transition areas will normally experience some turbulence.

One of the more common types of turbulence is caused by "convective" heating. As the sun warms the ground, the hot air rises and makes the air have a "bumpy" feeling. You may see evidence of this by small puffy shaped clouds. This type of turbulence is normally limited to the lower altitudes.

You might feel "convective" turbulence for a short while after takeoff or before landing on hot sunny afternoons. It poses no danger and is rarely classified as anything but light or mild turbulence. Birds such as hawks and eagles use this rising energy of hot air to soar above fields. This way, they avoid having to flap their wings while searching for prey.

There are many sources of information about turbulence available to pilots. They get information from the National Weather Service, company Dispatchers, from ATC, other aircraft, and from their own observations of sky and cloud formations.

Car vs. Airplane Turbulence

Have you ever driven fast over a bump in the road which caused you to come up off of your seat an inch or two? It feels fairly violent and the jolt would certainly spill any drinks you were holding. How large of a bump does it take to do this? Maybe a one or two foot bumps in the road. But it feels pretty bad.

Airplane turbulence bad enough to spill drinks and cause you to come up off of your seat is very rare. But even if you do experience it, remember that the plane is not "falling" hundreds of feet. It just hit a bump a couple of feet high. The altimeters in the cockpit would barely register the bump. So try not to let your imagination get out of hand.

Next time you are driving on a bumpy road, imagine you were a passenger on a plane and how you would consider it to be "bad" turbulence. Now take a look at the road. How big are the bumps on the roadway to create the rough ride? The air is usually very smooth. But sometimes some small ripples can make it feel like "bad" turbulence!

So do like the pilots do - always keep your seat belt fastened while seated. Injuries can result from unexpected turbulence if you don't keep your seat belts fastened. Unfortunately, some flight attendants and passengers have been injured while standing during unexpected encounters with turbulence. It probably doesn't feel too good to have your head bang the ceiling of the airplane!

How to Protect Yourself from Airplane Turbulence..

Keep your seat belt on, listen to the pilot, and remember to breathe when the ride gets rocky.

Air turbulence is the leading cause of airplane injuries. And stronger storms triggered by global warming may make turbulence worse:

The International Panel on Climate Change has suggested that global warming cause's water temperatures to warm and the rising heat from those waters can lead to more disturbances in the upper atmosphere. It's those upper-air disturbances that cause in-flight turbulence.

Air is constantly moving across the surface of the earth and anything from thunderstorms to mountains or uneven terrain can interrupt that flow and cause turbulence. Since turbulence can't always be seen makes it difficult to predict as pilots might encounter "clear-air" turbulence, which means the phenomenon is not in the vicinity of storms or mountains, it has been a nagging problem the industry.

Stay belted in and do what the captain says, and in-flight turbulence won't be such a headache.

Child Safety on Airplanes..

Did you know the safest place for your little one during turbulence or an emergency is in an approved child restraint system (CRS) or device, not on your lap?

A CRS is a hard-backed child safety seat that is approved by the government for use in both motor vehicles and aircraft.

This type of device provides an alternative to using a hard-backed seat and is approved only for use on aircraft. It is **not** approved for use in motor vehicles.

Keeping a child in a CRS or device during the flight is the smart and right thing to do.

Cleared For Take-off

- Make sure your CRS is approved and has "This restraint is certified for use in motor vehicles and aircraft" printed on it. Otherwise, you may be asked to check the CRS as baggage.
- Measure the width of your CRS. It should fit in most airplane seats if it is no wider than 16 inches.
- Ask your airline for a discounted fare. Buying a ticket for your child is the only way to guarantee that you will be able to use a CRS.
- Reserve adjoining seats. A CRS should be placed in a window seat so it will not block the escape path in an emergency. Do not place a CRS in an exit row.
- If you do not buy a ticket for your child, ask if your airline will allow you to use an empty seat. If your airline's policy allows this, avoid the busiest days and times to increase the likelihood of finding an empty seat next to you.
- Ask your airline if they can provide a CRS for your child. If so, you may not be permitted to bring your own CRS on board, and may need to check it as baggage.
- Arrange for your airline to help you if you need help making a connecting flight. Carrying a CRS, a child, and luggage through a busy airport can be challenging.
- Pack a bag of toys and snacks to keep your child occupied during the flight.

Keep Your Little One Safe When You're in the Air

Be sure the shoulder straps are properly adjusted and fasten the airplane seat belt around the CRS.
Always follow the manufacturer's instructions when using a CRS. The instruction on CRS would recommend that a child weighing:

- Less than 20 pounds use a rear-facing CRS
- From 20 to 40 pounds use a forward-facing CRS
- More than 40 pounds use an airplane seat belt

A child may also use an alternative, such as a a harness-type restraint, if it is approved This type of restraint is **not safe for use in motor vehicles**.

While booster seats and harness vests enhance safety in vehicles, the aviation industry may prohibits passengers from bringing these types of restraints on airplanes for use during taxi, take-off and landing. These restraints should be checked as baggage.

If there's turbulence, even the most loving arms can't hold him

You make sure your carry-on bag fits overhead. You tuck your purse under the seat in front of you. You secure your seat back and tray table in their upright positions. Doesn't your child deserve the same protection? If there's turbulence during a flight, a **child safety seat** is the safest, most secure place for your little one.

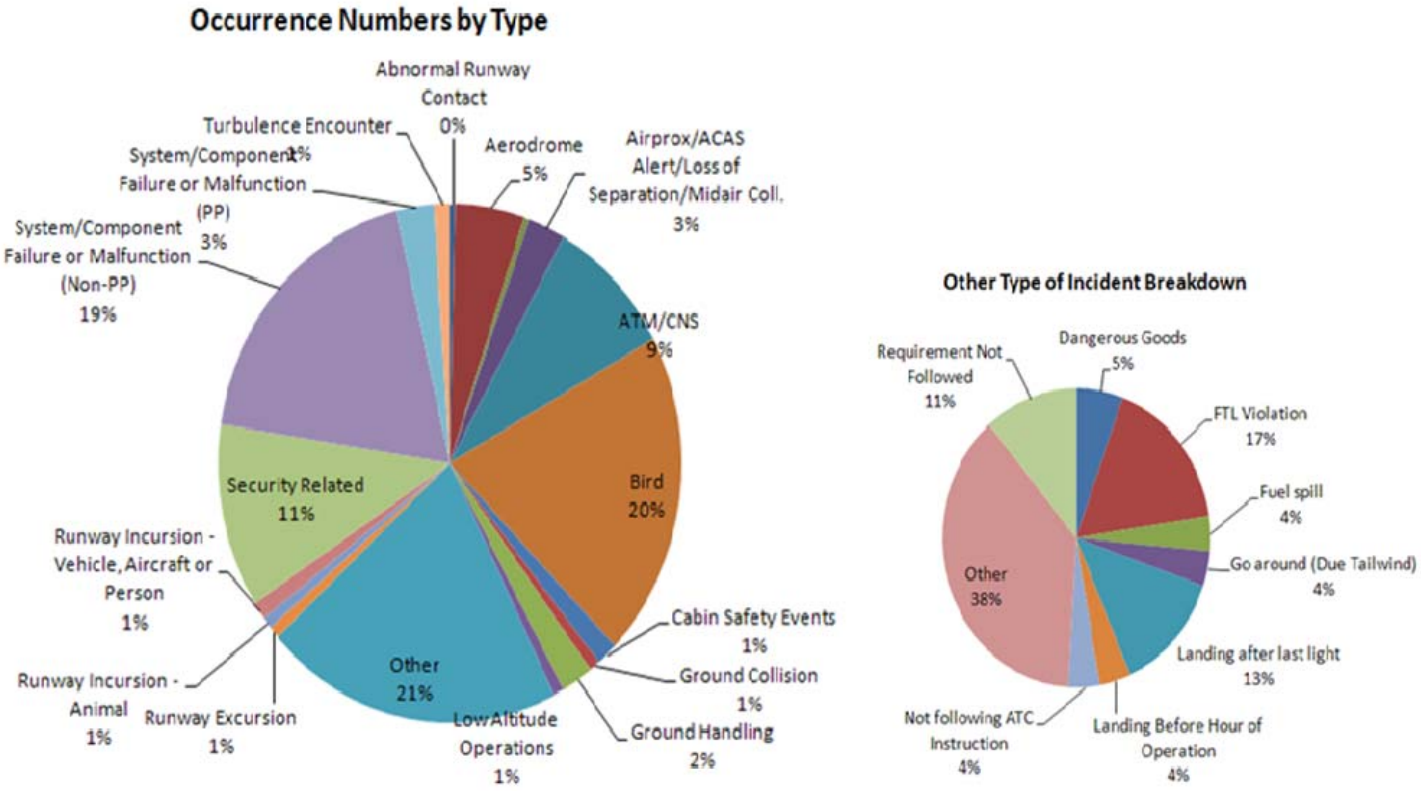
FCAIR
FIJI CONFIDENTIAL AVIATION INCIDENT REPORTING
FORMS AVAILABLE ON WEBSITE
www.caafi.org.fj
OR FRONT DESK, CAAFI HQ

***Report may be sent through the following*:**

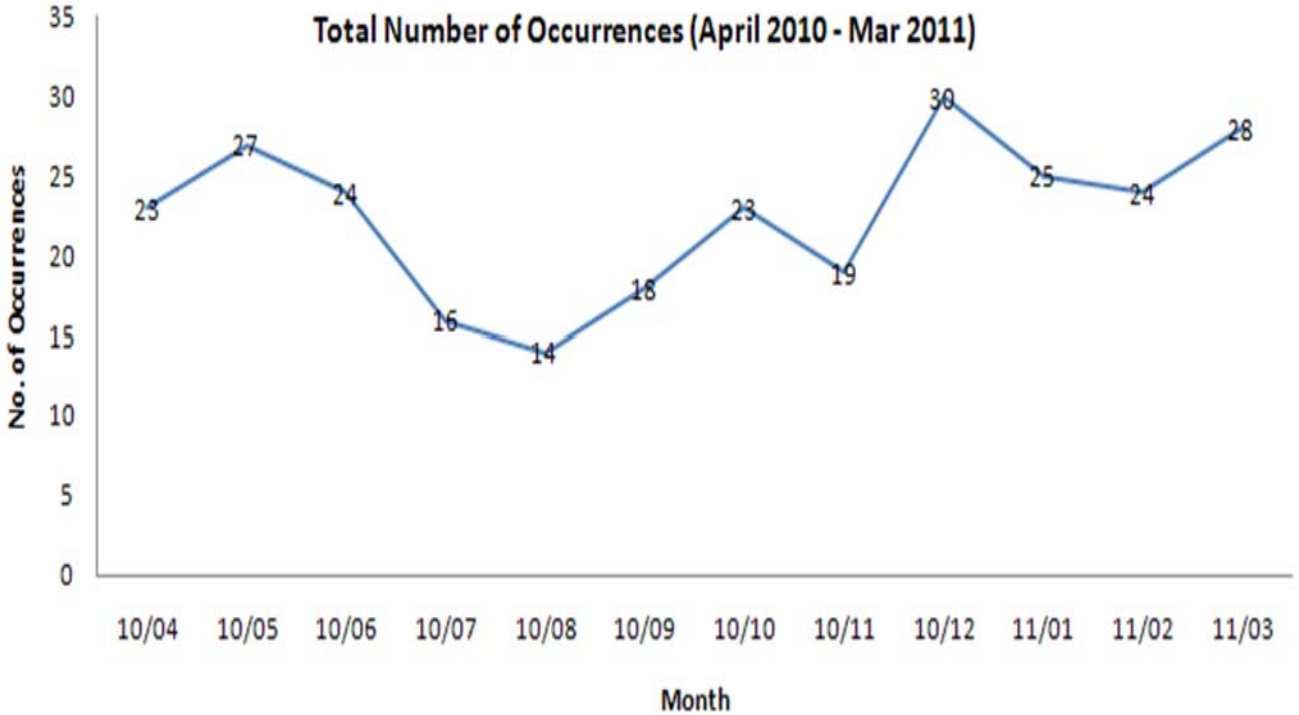
Technical Officer (Records & Standards),
CAAFI,
Private Mail Bag (NAP 0354),
Nadi Airport.
Email: tors@caafi.org.fj
and/or standards@caafi.org.fj
Fax: (679) 672 7429

Occurrence Stats for the last 12 months (April 2010 – March 2011)

The following pie chart shows the occurrence proportion by type over the last 12 months.



Following graph shows the occurrence trend over the last 12 months.



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