

A Publication of:

Civil Aviation Authority of Fiji PRIVATE MAIL BAG, NAP 0354, NADI AIRPORT, REPUBLIC OF FIJI Phone: (679) 672 1555, Fax: (679) 672 1500

## **MESSAGE FROM ACTING CHIEF EXECUTIVE**



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The workshop focussing on the development of State Action Plans for the reduction of aircraft  $CO_2$  emissions was opened by the Attorney General and Minister for Justice, Anti-corruption, Public Enterprise, Communications, Civil Aviation, Tourism, Industry and Trade and Minister responsible for Elections at the Civil Aviation Authority of Fiji's Training centre on the 14<sup>th</sup> of August 2013.

The workshop was facilitated by the Civil Aviation Authority of Singapore and Fiji was grateful to Singapore for providing the expertise and having confidence in Fiji to host the workshop. The 2 day workshop is but part of a greater plan by the International Civil Aviation Organisation (ICAO) to encourage States to minimise the adverse environmental effects of civil aviation activities.

This is but one of the strategic objectives that ICAO has envisaged for the civil aviation system which includes the enhancement of safety, security and facilitation, increasing capacity and improving efficiency and enhancing and fostering the development of a sound and economical air transport system.

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## **MESSAGE FROM ACTING CE CONT...**



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Air transport plays a major role in driving economic sustainability and social development in hundreds of nations. It directly and indirectly supports the employment of 56.6 million people, contributing over \$2 trillion dollars to the global Gross Domestic Product (GDP) and moves over 2.5 billion passengers and \$5.3 trillion worth of cargo.

## safety risks and herein is aviations core challenge as we progress into the future. In this regard ICAO has developed strategic systems, of which, environmental protection is a part of, which will allow States and stakeholders to realise the safe and sustained growth, increased efficiency and responsible environmental stewardship that societies

This scenario leads to increased

and economies now require.

Fiji looks forward to the outcome of the 38<sup>th</sup> ICAO Assembly for the approval of the Global Aviation Safety Plan and the Global Air Navigation Plan, which will provide the blueprint to ensure a safe and globally harmonised planning framework for the aviation system for the years ahead ■

# FCAIR

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**OR FRONT DESK, CAAF HQ** 

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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.

## SAFETY MANAGEMENT SYSTEM—PART 1

As inspectors become more familiar with a formalized approach to safety, and are able to have access to the carriers safety information, they will be able to see if the carrier's decision making processes includes appropriate hazard identication and risk assessment that the results of those decisions are being carried out. So, the inspector will need to develop risk management skills and apply those skills to their oversight duties.

### Service Provider Role

The service provider, with an SMS will increase their Safety Assurance role and responsibility by managing their own risk and monitoring their own risk controls.

So, what happens to the traditional oversight of an operator with a functioning SMS?

Under SMS, the CAAF will provide oversight of the operators' SMS, to assure the CAAF (as the Fiji's Civil Aviation Authority) that the operator is managing their own risk and monitoring their own controls. The CAAF will still perform direct inspections of operational processes, (the "trust, but verify" axiom), but just not as much as was traditionally accomplished in the past. This is a significant difference from traditional programs and regulatory obligations that the CAAF has historically used, and changes the "relationship" between the CAAF and certificate holders. One of the principal roles of the oversight system is to establish risk controls in the form of regulations, standards, and policies. It follows that regulatory compliance that accomplishes the regulations' safety objectives, is part of the certificate also

holder's role in safety management. The SMS concept is to combine system safety based oversight systems and the operator's SMS into a cooperative, professional relationship, within the context of those roles. With an SMS, the operator will increase their direct responsibility for managing and monitoring risk when using SMS and its Safety Assurance component.

The service provider is responsible and liable for <u>ensuring</u> the safety of its service. This begins with the accountable executive. The service providers directly control their operations, and, therefore, bear the direct responsibility (and liability) for its decisions and actions taken within their company. So, it makes natural sense that senior leadership understands and takes ownership of that responsibility and directs it throughout the organization.

As previously mentioned, the regulators have traditionally acted in the role of Safety Assurance for the service providers. For the service provider's to ensure the safety of their services, they will have to manage their own safety quality assurance. A safety management system is the vehicle that will naturally facilitate that.

For a safety management system to work, the service provider and inspectors must share information and work together to mitigate risk and hazards. Information is one of the key factors in addressing the threat to aviation safety. A sound safety management system will build trust between the service provider and regulator. Utilizing formal methods found in SMS, the service provider will be able to demonstrate that they are appropriately capable and the turnaround time for those requests for approvals will likely be more timely and efficient. Quite simply, there is less background and investigative work conducted from the regulator – it's being disclosed up front from the certificate holder.

## Responsibilities and Relationships...*before and after SMS*

#### **Oversight Organization's Role.**

The CAAF office, that normally provides regulatory oversight of the certificate holder will continue all of its normal over-sight and certificate management duties. As organizations develop their SMS, a cooperative relationship between the oversight organization and the certificate holder should develop. This relationship can leverage the efforts of both parties to provide a more effective, efficient, and proactive approach to meeting safety requirements while at the same time increasing the organization's flexibility to tailor the safety management efforts to their unique business model.

The Operator Management should be fully engaged in the SMS development and implementation. The Management should participate in process meetings, gap analyses, and implementation plan development. During SMS development, the certificate holder may discover non-compliance or potential noncompliance or potential noncompliance with the regulations. If a noncompliance is discovered, it can be reported to the Management as a voluntary self disclosure. ■

## EAR TRAVEL

All aviators will be familiar with the 'popping' sensation in the ears during climb and the necessity for 'clearing' the ears during descent. For most of us, the routines will be second nature, but for the uninitiated, severe pain and actual physical harm are real possibilities if preventative actions are not taken.

#### How It All Works

In a constant-pressure environment, the atmospheric pressure on both sides of the eardrum (or tympanic membrane) will be the same, as the middle ear cavities are connected to atmosphere by the Eustachian tubes, which open out into the nasopharynx (ie, high up on either side of the throat).

As atmospheric pressure decreases during a climb, the air in the middle-ear cavity will expand, creating a pressure differential across the eardrum. You will feel this as a 'full' sensation in the ear shortly after takeoff, but this increased pressure will progressively equalise, because the air can escape from the middle ear via the Eustachian tube. Without any conscious effort required by you, the air will vent every 500 to 1000 feet of altitude change, and this is sensed as the familiar 'popping' sensation.

The tissue surrounding the Eustachian tube is not rigid, and in an equalised pressure state, the tube be closed. It does not take may much of a pressure differential for the trapped air to escape, thus a climb to altitude will seldom cause a problem. Exceptions can occur when the tissue is inflamed or swollen as a result of infection (including the common cold), making it harder for air to escape. It usually will, but at a higher pressure differential, and this may be uncomfortable until the pressure equalises.

Generally, once cruise altitude is reached, any remaining pressure difference will equalise after a short time, and the ears will feel normal again.

#### **On Descent**

During the descent is when most ear problems occur in flight, regardless of whether the aircraft is pressurised or unpressurised. An unpressurised aircraft will normally not operate above 10,000 feet except on short-term cycles such as parachute dropping, or when supplementary

oxygen is provided for crew and passengers. A pressurised aeroplane, although operating at higher altitudes, will typically maintain an equivalent cabin pressure in the range 6000 to 8000 feet, depending on the airframe limitations and actual altitude flown.

As the aircraft descends. increasing atmospheric pressure will impinge on the outside of the eardrum, forcing it inwards. Unless the pressure in the middle ear cavity can be equalised, the eardrum will Ear bulge further inward with Canal increasing pressure, and this is felt as increasing 'fullness' and apparent deafness in the affected ear.

The nature of the tissue surrounding the Eustachian tube can cause it to act as a 'one-way valve', in that air will not flow

readily from the nasopharynx to the middle ear without some positive action on your part. This varies between individuals; some having no problem without having to do anything, and others having to actively work at it from top of descent to landing.

### **Clearing the Ears**

In the best case, all that is required to open the Eustachian tube is a slight forward movement of the jaw, as if you are starting a yawn. Even practising this at ground level, you will be able to feel the effect.

If, however, you have even a slight cold, or normally have difficulty clearing the ears, more positive action is called for. Pinch the nostrils closed, close the lips, and blow (as if you were going to blow your nose). This is known as the



Valsalva manoeuvre. The momentarily increased pressure in the nasopharynx forces the Eustachian tubes open and equalises the pressure in the middle ear.

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## AVIATION SAFETY BULLETIN

## EAR TRAVEL CONT....

(Continued from previous page..)

If this isn't immediately sucwhile cessful, try again 'wiggling' the jaw at the same time. Don't blow so hard as hernia! to give yourself а During descent, you may have to do this almost continuously, as the further behind the descent you get, the harder it is to equalise.

The sweets handed out on some airline services do serve a purpose – sucking on a sweet keeps the jaw active, and will help with clearing the ears. Crunching it and swallowing it immediately will limit the benefits, however. For young babies, a



great way of assisting their earclearing is to arrange a feed just before top of descent, or to give them their pacifier ('dummy') if that's what they are used to.

### **Possible Problems**

If you are suffering from a cold or similar infection, you may have equalising problems even during climb. This is fair warning that you are probably going to have difficulty on descent. On a scheduled service, there's probably not a lot that can be done, but if you are flying yourself, you may have the option of levelling at a lower altitude than originally planned, or even abandoning the flight altogether.

If you do have a light cold, and you can't avoid flying, it may be advis-

able to seek the advice of your medical examiner if time permits. Using an appropriate nasal spray before flight temporarily may relieve swelling and inflammation in the nasopharynx to the point where equalising can be achieved without too much diffi-An addiculty. tional danger with an infection is the possibility of forcing mucus into the Eustachian tube during a Valsalva manoeuvre, causing a subsequent inner ear infection.

Ear discomfort may also be accompanied

by sinus pain, where inflamed tissue is limiting equalisation in the sinus cavities. The combined pain may be severe enough to be incapacitating.

The worst-case scenario is not being able to equalise at all, and a likely result is a burst eardrum from the increased external pressure. Leading up to this, there will be increasingly intense pain, then immediate relief when the eardrum ruptures. If you even suspect that this has happened, seek medical attention as soon as possible after landing. A burst eardrum will normally heal by itself in a matter of several weeks, but care is required to prevent infection during this process.

#### **Pilot Actions**

Any time you are taking pasyou should insengers flying, clude 'ear travel' in vour preflight briefing, rather than trying to sort out a problem after it has occurred. Point out that the use of earplugs as a remedy will not have any effect. Children are usually good at entering into the spirit of things, and a proper lesson will see them right for any future flying they do.

When descending, limit the rate to 500 ft/min, as this will enable most people to 'keep up'. In a pressurised aeroplane, the cabin rate of descent is normally set at this rate for the same reason. Let the passengers know when the descent is about to start, so they can get the equalising going. lf the aircraft and the middle ear pressure can arrive at ground level about the same time, all is well. If not, keep trying to equalise after landing, but if persistent severe pain is experienced, medical advice should be sought.

(Source: Vector—July/August 2013).

## **AVIATION SECURITY SUPERVISORS COURSE**

The Civil Aviation Authority of Fiji (CAAF) conducted the first ever AVSEC Supervisors course from 05<sup>th</sup> – 13<sup>th</sup> August 2013.

CAAF has a fundamental role to play in assisting organistions in strengthening their capacity building efforts and enhancing their capability to implement International Standards and Recommended Practices.

The target audience for this course was the mid to senior level management from organisations or authorities that have been assigned the responsibility to carry out national airport inspections or audits within the States and who are also experienced in operational aviation security (AVSEC) matters.

This course was attended by 13 participants from the following stakeholders: Airports Fiji Limited, Air Laucala and Tyco Fiji Limited. The course was officially opened and closed by the Controller Aviation Security & Facilitation, Mr Etuate Rakuro.

This course had been designed to enable security supervisors to:

- supervise implementation of relevant aspects of airport security programmes;
- monitor inspection, screening, searching of passengers and baggage in accordance with prescribed standards;
- organize initial response actions in security emergencies;
- apply principles and practices of leadership, motivation and

communication

skills;

- monitor implementation of standard operating procedures;
- allocate and assign security personnel to duties;
- assess security personnel job performances and supervise on-the-job training;
- ensure preparation, recording and submission of incident reports; and
- develop and maintain liaison with other aviation securityrelated agencies, organizations and entities.

The course was presented by series of lectures and presentations, hands-

on exercise sessions. In

addition, course participant were required to sit for a mastery test at the completion of each module.

It also required participants to successfully pass a mastery examination based on ICAO Annex 17, the Security Manual for Safeguarding Civil Aviation Against Acts of Unlawful Interference (Doc 8973 Restricted) and materials presented during the course. As this is a "Pass/Fail" course, participants must successfully pass the mastery examination in order to receive a Certificate of Achievement while all other participants shall receive a Certificate of Attendance.

At the end of the 7 days course the participant's achievements were exceptional. All thirteen (13) participants passed the course and received certificates of achievement.

## AVIATION SECURITY MANAGEMENT COURSE



## From

September 16th-20th the Aviation Security & Facilitation Department (ASFD) conducted the ICAO Aviation Security Management Course at the Civil Aviation Authority of Fiji (CAAF) training room.

This course was officially opened and closed by the Controller Aviation Security & Facilitation, Mr Etuate Ra-

kuro who emphasized the importance of partnership and capacity building.

The primary objective the of course to was equip aviation security managers with relevant skills and knowledge to manage the application of security preventive measures in accordance with Annex 17 Standards and

Recommended Practices and protheir approved security grammes / expositions.

Participants were assessed through Mastery Tests after the completion of each Module and their participation in class exercises and discussions. There were twenty five (25) participants from a broad cross section of the aviation industry namely; airport

ers and regulated agents.

The highlight of the course was the Crisis Management Exercise which simulated a bomb threat against a newly opened airport. The crisis management team had to utilize the skills learnt during the course to help manage the crisis. Other participants provided individual critiques following the exercise.



All twenty five (25) participants passed the course and received certificates achievement. of The Aviation Security & Facilitation Department has been inundated the course since with requests to provide similar courses for industry as soon as practicably possible.

## Issue 3, September 2013

## AUTOMATIC DEPENDANT SURVEILLANCE-BROADCAST (ADS-B)

### What is ADS-B and how does it work?

ADS-B is a broadcast surveillance system with air Automatic -to-groud (aircraft to air traffic control) and air- Position and velocity information is automatically transmitted to-air (aircraft to aircraft) applications.

ADS-B avionics broadcasts the aircraft's identification, position, velocity and other data automatically every half a second with input from other aircraft systems, such as the barometric Dependent encoder and global navigation satellite system (GNSS) equipment.

From the aircraft perspective, the ADS-B out signals is sent via a digital datalink (1090 mega-

### Who is required to be equipped with ADS-B avionics?

# what ADS-B means

periodically (at least once every second) without flight crew or operator input, other parameters in the transmission are preselected and static.

a sending system.

The transmission is dependent on proper operation of on-board equipment that determines position and velocity and availability of

#### Surveillance

Position, velocity, and other airplane information are surveillance data transmitted.

#### Broadcast

The information is broadcast to any airplanes or ground station with an ADS-Breceiver, current mode S ATc transponders are interrogated and then send a reply.

hertz), from the transmitting aircraft to receivers located on the ground or in other aircraft; these signals travel line-of-sight from transmitter to receiver.

The ADS-B groud station equipment comprises a receiver unit, an antenna and a site monitor. There are 11 ground stations in total installed across Fiji and these are connected to Airports Fiji Limited's digital communication infrastructure, providing a "line-of-sight" surveillance coverage. The information received from the aircraft is then displayed to the air traffic controllers, providing them with an accurate depiction of real- time aviation traffic.

The Air Navigation (Amendment) Regulations 2009, stipulates in Regulation 23 (5) Table 1, that all Fiji registered aircraft except aircraft operating outside controlled airspace not above 500ft and no closer than 10nm to an aerodrome serving air transport operations, or international aircraft due to be withdrawn by 1<sup>st</sup> January 2014, are required to carry serviceable and operating ADS-B equipment that meets a standard notified by the Authority; refer Fiji Airworthiness Notice 01/13 available for download from the CAAF website; http://www.caaf.org.fj/.

With the ADS-B equipment mandate in force from 01<sup>st</sup> January 2014, it is imperative that all are equipped and prepared. Changes to procedures will be published; via AIC, AIP and NOTAM, in the months leading up to this date.

For more information on ADS-B, the following personnel may be contacted:-

CAAF Airworthiness regulatory aspects; Ashraff Nasir via ashraff.nasir@caaf.org.fj

CAAF CNS regulatory aspects; David McDonald via david.mcdonald@caaf.org.fj

CAAF ATM regulatory aspects; Theresa Levestam via theresa.levestam@caaf.org.fj

CNS/ATM Service Provider AFL; Kolokesa Kini via kinik@afl.com.fj or Elaisa Moagrava via moagravae@afl.com.fj





AVIATION SAFETY BULLETIN

## A TRIBUTE TO LATE DON COLLINGWOOD

The Authority pays tribute to Mr. Don **Collingwood**, an icon in the aviation industry who is no longer with us.

Don, as he was fondly known by, originally hailed from Christchurch, New Zealand, where his mother and father owned the Claredon Hotel which in the 60's was one of the most prestigious hotels in Christchurch.

From his earliest days, it was obvious that Don had chosen a career as a pilot. Even against his Father's wishes he dogmatically insisted that he start his training at the earliest opportunity. This filater, he called her and sent a one way ticket so she could join him in London (which she did ) . They rarely spent time apart from then onwards.

After getting married on a quiet Wintery day in London, Don was offered work with the U.N. in Africa . This meant relocating to Sudan and then down to Kenya for some seven years with the UN Food and Agricultural Organisation in Northern Somalia, Ethiopia and Uganda before heading back to New Zealand to take up position with Field air at Napier on Beavers and DC-3's.

Spirit of the West

a BN2 Island which operated regular services between Nadi and Malololailai then Nadi and Taveuni. This nine (9) seater with the registration, DQ-FCA was purchased from Fiji Air and services begun between Nadi and Taveuni . It is interesting to note, Don was the only employee then of his own company which meant not only did he do the flying, but every other function involved in the delivery of service including reservations, check-in, loading, regulatory functions, finance, maintenance and so on.

Don, bought out his partner and expanded the operation to include six des-

attendance at Flying School in 1963 where he gained his Commercial Pilots licence through the Wanganui Aero Club. New Zealand.

nally meant his

This was the beginning of his extensive aviation career beginning with Rural Aviation in

Wanganui as a nineteen-year old topdressing pilot. Moving on to Te Kuiti with Northern Air Services on Cessna 180's and 185's, he came up with a personal and record breaking 108 tons of superphosphate spread in a day! It was real 'hands on 'flying and his stories suggest that this experience took pilots to the cutting edge of performance. After New Zealand, Don was offered similar work in the pastoral regions of South East Queensland. It was here that he met his Wife , Robyn Collingwood . When he left for London a few months

Then, around 1973, Don decided to take a three month break in the sun flying for Fiji Air, a change that developed into something more permanent. By 1977 he relocated his family from Bureta St in Tamavua to Malololailai Island in the West . After working closely with Tourism Icon , Mr. Dick Smith , Don joined the Castaway Group where he managed the three Castaway Resorts including castaway Taveuni ( which we know call Garden Island Resort ). This is where the concept of a new air service began and by 1981, Don and his partner purchased

Nadi, moving compete to with Fiji Air in the latter's traditional destinations of Suva to the west, and Labasa on the northern island It shared of Vanua Levu. This bold move turned out to be just what an emerging Tourism Economy five islander needed and soon Resorts and Visitors to Fiji were flocking to the more remote corners of these Islands.

tinations out of

The pride of the Sunflower fleet was the Riley eenair. Heron DQ-FDY. Don appreciated the 34

roster wi

two

year old re-engined veteran's ability to carry sixteen people 1200 km at 165 knots, an ideal inter-islander. Adding to its appeal is its comparatively low operating costs.

It shared a fleet roster with five islanders, two DHC-6-210 Twin Otters and a Beech Queenair.

**AVIATION SAFETY BULLETIN** 

## A TRIBUTE TO LATE DON COLLINGWOOD CONT....

#### (Continued from previous page..)

Sunflower's history has had more than the usual small airlines ups and down, tropical cyclones Erics and Nigel destroying the company hanger in 1985. In the wake of the high winds lay a badly damaged Heron, three islanders and an Aztec. While a major setback for the operation, Don named one of the Islanders "Adi Makutu"- Determined Lady - to symbolize his intention to both survive and prosper.

Sunflower Airlines continued to expand during the 90's with the acquisition of two Shorts

330 aircraft which provided a higher standard of comfort to passengers travelling between the two islands and Rotuma.

Around 2002 Don decided to change the company name from Sunflower Airlines to Sun Air (Pacific) Ltd and it was this company that the then Air Pacific (now Fiji Airways) purchased during 2005 or 2006 in order start their own domestic airline, Pacific Sun.

The Pacific Flying School has its origins dating back to 1987 when Don identified a need to establish a locally based flying school to train Fiji nationals. This was the year of the first military coup and the Royal Fiji Military Forces (RFMF) then provided the first batch of trainees to be trained with the intention of forming an Air Wing (fixed wing) for the RFMF. This batch of 5 trainees were made up of 3 Navy Officers and 2 Territorial Army Officers and they became the pioneers of the Flying School and were the first to be issued a Fiji Pilot's Licence (PPL and CPL) with Theory and Flight Test conducted in Fiji by a Flight Testing Officer from abroad. The first to be issued with a Fiji CPL was a former Air Pacific B737 Captain, Nacanieli Saumi.

Up until this time only nationals who could meet the stringent entry requirements were granted a scholarship by

Government and they attended a flying training school at Oxford.

The cost of the scholarship was considerable for Government as airfares had to be provided in addition to meals, accommodation and payment of the course. Some of the students who attended this course decades ago are today senior pilots of Fiji Airways.

During the formation of Sunflower Airlines Don accepted the fact that he would need to recruit pilots from overseas as a ready pool of qualified local pilots was not available. However, following the start of domestic air services by Sunflower Airlines he then pursued the idea of forming a flying training school based at Nadi Airport. The concept behind this idea was to provide affordable and accessible flying training to any national who had an ambition to enter the industry.

Initially, the Pacific Flying School operated from an upstairs room at the rear of the Sunflower Airlines hangar with instructors employed from New Zealand. Over time, the number of nationals seeking to enter the aviation industry as pilots increased and the School, due to the shortage of space, found it necessary to re-locate to the Nadi Airport AFL maintenance building abeam runway 27.

The Pacific Flying School continued to flourish with trainee pilots from both Fiji

and other Pacific Island states attending the courses provided by the School. Notable achievements gained over time included the issuing of an Aviation Training Institution certification and 150 hour Commercial Pilot Licence approval from the Civil Aviation Authority of Fiji and a flight instructing staff composed entirely of Fiji nationals.

Following the sale of Sun Air (Pacific) Ltd to Air Pacific Don acquired a piece of land from AFL not far from his original hangar and had a new hangar constructed. This hangar housed the classrooms of the Pacific Flying School and a aircraft engineering facility, a business which Don had decided to be involved in and develop. He also started a small charter company using a Britten Norman Islander and in addition, provided facilitation services at Nadi Airport for visiting corporate aircraft.

Don also had a brief stint directly with CAAF having served as the Board Chairman for a short period between 2006 and 2007.

Don was not a person to rest on his laurels and was still exploring other business opportunities right to the end.

Our condolences to the family and may he *Rest In Peace*.

(Source: Acknowledgment from an article by Peter Clark, NZ Wings, March 1992 Issue).



