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AVIATION SAFETY BULLETIN

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LAUNCHING OF THE INDUSTRY CONSULTATION MECHANISM

The Director of Civil Aviation (DCA), Mr. Akuila Waradi, on behalf of the Minister for Foreign Affairs, International Cooperation and Civil Aviation, formally launched the Industry Consultation mechanism on 1st June 2010 at CAAFI Headquarters. This also coincided with the opening of the new extension to the CAAFI building and the completion of the 1999 re-organization of the Authority with the transfer to the AFL of the CAAFI Housing Estate including the Unit's 14 staff.

Although the Minister for Foreign Affairs, International Cooperation and Civil Aviation, Ratu Inoke Kubuabola, was not present at the function, being away overseas for an important government business, his message was passed on to the Industry members by the DCA.

In his address to the Civil Aviation Ground Safety Committee (GSC) and Air Safety Committee (ASC), DCA highlighted the importance of the role the Industry plays in the success of the consultation mechanism that CAAFI had setup to consult with, listen to and to act upon issues and concerns that the Industry has regarding air safety. He highlighted that the establishment of the GSC & ASC which is aligned to the requirements of the ICAO is confirmation of the CAAFI's ongoing commitment to ensuring that its technical regulatory roles are not only understood by all stakeholders but also enforced with all due impartiality and in accordance with laid-down air safety laws.

The Director of Civil Aviation, Mr. Akuila Waradi briefing the Industry Members

The DCA further encouraged all parties to engage in regular dialogue and strongly supports the CAAFI's view that air safety must not be compromised for short term monetary gains.

The DCA's address on behalf of the Minister also highlighted the following aspects of the new Industry Consultative Mechanism and the broad parameters to be followed by the parties:

- The new consultation system reflects the commitment by Government to partner with Industry and empower Industry to participate in the development of new air transport regulations and standards.
- Empowerment comes with greater commitment, integrity, accountability and responsibility.
- Consultation does not mean agreement and consultation cannot be allowed to continue indefinitely.

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- The Chairman of the GSC & ASC play a key role in managing the Industry meetings and establishing the best method to discuss changes. This strategy is to ensure quality decisions are reached as soon as is practically possible. Additionally, another key element would be to quickly identify areas of contention and the establishment/convening of Sub-Committees to put together submissions.
- The importance of working together with the CAAFI to justify and iron out any differences impacting on air safety.
- The new consultation process offers an effective machinery to bring together the Industry and the CAAFI to work out disagreements.
- This consultative mechanism would naturally require committee members to commit time, manpower and resources to produce the best regulation for Fiji.
- There will be areas of disagreement and situation will arise where positions taken on a particular legislation by CAAFI and Industry are poles apart. But with commitment and air safety as the common goal, parties will walk together to a better and safer future where air travelers can be guaranteed safety, security and comfort.
- The legislation and standards adopted must be targeted towards achieving a high level of safety that is acceptable to support Fiji's economy, particularly, tourism.
- The new ANR Part must meet the ICAO requirement.
- The new ANR part must offer same as or better safety standards and practice offered under current ANR and Standards.
- Filing differences must be avoided unless it is practically impossible to implement or develop alternative means of complying with the new ICAO requirements and, the new change offers no added safety advantage.
- Rejecting the law on the basis of cost alone without due consideration of the safety implication is an irresponsible way of managing and reviewing legislation changes.
- Safety must be paramount and while cost of new rules could affect the business, justification must be provided to support proposed deviation and/or offer alternative safety methods to mitigate risk which must be borne by airline.

In his closing address, the DCA congratulated Capt. Matereti Tuisue on his appointment as Chairman of the ASC carrying the responsibilities focusing on Flight Operations & Airworthiness and Mr. Luke Koroi, the AFL's General Manager – Aerodromes/Airports as the Chairman of the GSC whose mandate will center on Air Navigation Services and Aerodromes.

As requested by the Minister, DCA stressed to all parties involved in the GSC & ASC the importance of team work in ensuring that Fiji maintains its high standing in the international aviation community as a safe place for air travelers and air operators.

Industry members present at the launching

IT'S THE BASICS THAT CAN SAVE YOU….

Cause:	**Incomplete Installation?**
Prevention:	**Three steps back after (task) interruption.**
Cause:	**Improper access and restoration?**
Prevention:	**Torqued?** **Lock-wired?** **Paper work complete?**
Cause:	**Improper repair?**
Prevention:	**By the Manual?** **Use new seals** **Second set of eyes?**

AND THE BASICS FAILURES THAT CAN COST YOU!!

(Extract by: Industry IFSD Reduction Effort)

Loss of Communication

CAAFI has noted a number of incidents involving loss of communications between aircraft and the Air Traffic Control which creates a safety hazard when there is no other means to communicate. It then becomes a challenge to get the aircraft safely back onto ground without creating a risk of collision. The following information and guidelines are adopted from Skybrary that describes how it happens, its effects, and what are the possible solutions from operator, pilot and Controller's perspective.

Loss of communication incidents usually occurs in one of three circumstances:

- Radio Interference;
- Mis-management of communications equipment or mis-application of prescribed procedures; or,
- Malfunction of communications equipment.

Effects

Whether brief or prolonged, loss of communication has obvious flight safety significance. Potentially dangerous outcomes include the following:

- A pilot is unable to receive (and therefore to follow) a new clearance, leading to loss of separation and perhaps an AIRPROX;
- A pilot is unable to pass important information to ATC;
- Loss of communications may be interpreted as a security threat and result in military interception;
- ATCO workload and possibly Pilot workload may be significantly increased due to action necessary to restore normal communication.

Typical Scenarios

- The pilot copies a radio frequency incorrectly, changes frequency before the error can be corrected and forgets to check in.
- The pilot copies a frequency change correctly but fails to actually change frequency or changes to the wrong frequency.
- The pilot misses a frequency change instruction because of a blocked transmission, radio interference or because it is not given until the aircraft has already left coverage of the frequency in use.
- The ATCO passes a frequency change as the part of a multi-part clearance. The pilot reads back the new frequency correctly and changes frequency without waiting for the remainder of the clearance.
- Communication equipment problems make it impossible for communications to be maintained.

Solutions

Operators

- Ensure that flight crews, cabin crews and ground engineers are aware of the loss of communications issue through publicity.
- Ensure that SOPs for copying, setting and cross-checking frequency changes, and for loss of communication are sound, and that they are followed by all pilots.
- Install radio anti-blocking devices if appropriate.
- Ensure the carriage and pre-flight functional checking of at least one spare headset.
- Install radios with a pre-select frequency capability.

Pilots

- Do not switch immediately to the next sector frequency following read back of controller's instruction. Ensure confirmation of your read back is received.
- Always follow standard procedures for copying, setting and cross-checking RTF frequencies. As soon as a loss of communication is suspected, check radio equipment settings and audio panel settings and carry out a radio check.
- If any part of a message for you is garbled or unclear, request confirmation or clarification.
- Always use headsets during times of high RTF loading. Always wear a headset when members of the flight crew are involved in other tasks and may not be monitoring the RTF.
- If the squelch control is adjusted to reduce the effect of interference, take care to ensure that transmissions from ATC or other aircraft are not cut out.
- Always report any radio interference experienced whether or not it affected safe operation.
- Make use of other aircraft to relay messages when operating at extreme range or when poor propagation is suspected.
- If there is no suitable frequency on which to initially re-establish communications, then 121.5 MHz can be used. This frequency should also be selected if it is impossible to re-establish communica-

tions on any frequency so that any transmission from intercepting military aircraft might be heard.

Controllers

- Do not pass RTF frequency changes as part of a multi-part clearance.
- Do not follow any frequency change with another instruction such as a heading or level change.
- Listen carefully to read-back of RTF frequency changes and immediately correct any error.
- On observing or being informed of radio interference, arrange for transfer of affected aircraft to another RTF frequency.
- Report any radio interference through the appropriate reporting channels.
- If loss of communication is suspected, attempt to contact the aircraft by other means, including relay through other aircraft, through the previous operating agency/RTF frequency and through the operator, who may be able to contact the aircraft by other means, e.g. SELCAL or ACARS.
- When contact is not quickly established, do not delay issuing precautionary clearances to potentially conflicting aircraft because of an assumption that contact will soon be re-established.

More information on the procedures following communications failure, can be obtained from Fiji Islands Aeronautical Information Publication (AIP), *ENR 1.15—Emergency Procedures* (Pink Pages).

Source: www.skybrary.aero

CAAFI's quality 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 service, 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@caaf.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.

Human Factors in Aviation Accidents

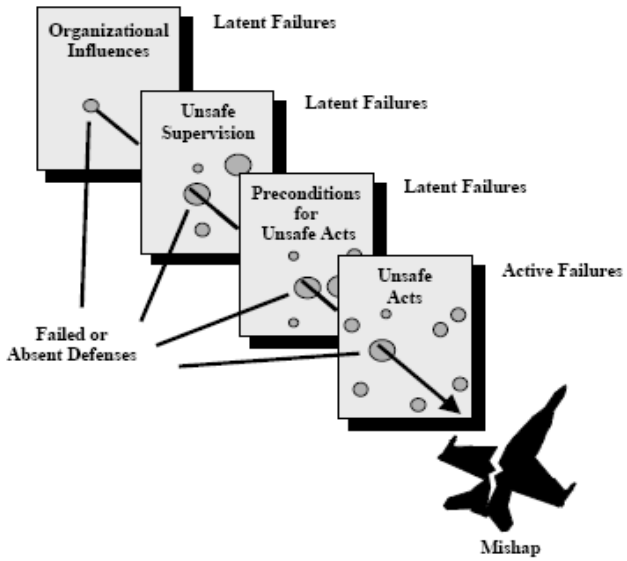
The following information on human factors is adopted from 'The Human Factors Analysis and Classification System – HFACS' covered by course coordinator (Mr. Jose Castellanos) during the Safety Management System (SMS) training held at CAAFI in February 2010.

While the aviation accident rate has declined tremendously since the first flights nearly a century ago, the cost of aviation accidents in both lives and dollars has steadily risen. Even with all the innovations and improvements realized in the last several decades, one fundamental question remains generally unanswered: "*Why do aircraft crash?"* The answer may not be as straightforward as one might think. In the early years of aviation, it could reasonably be said that, more often than not, the aircraft killed the pilot. That is, the aircraft were intrinsically unforgiving and, relative to their modern counterparts, mechanically unsafe. However, the modern era of aviation has witnessed an ironic reversal of sorts. It now appears to some that the aircrew themselves are more deadly than the aircraft they fly (Mason, 1993; cited in Murray, 1997). In fact, estimates in the literature indicate that between 70 and 80 percent of aviation accidents can be attributed, at least in part, to human error (Shappell & Wiegmann, 1996).

So what really constitutes that 70-80 % of human error?

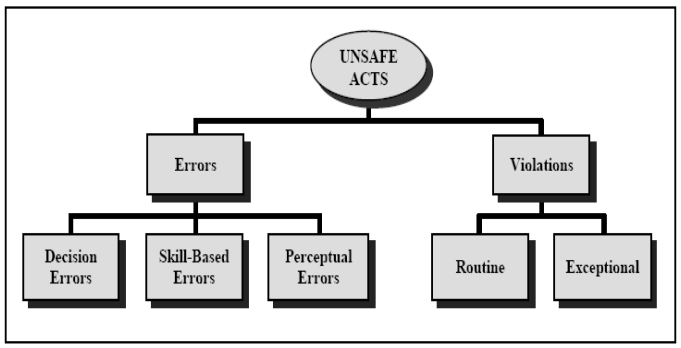
Reason's "Swiss Cheese" Model of Human Error

Generally referred to as the "Swiss cheese" model of human error, Reason describes four levels of human failure, each influencing the next (shown below).

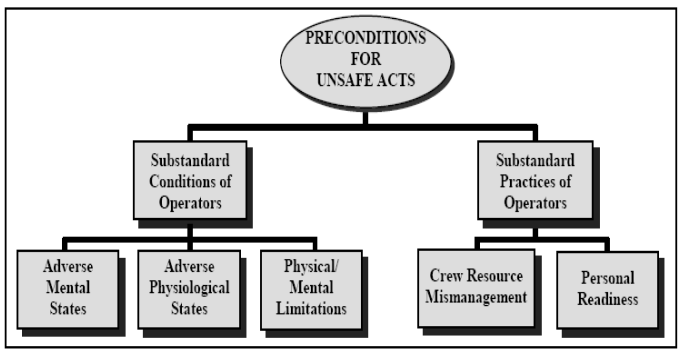


Unsafe Acts - more commonly referred to in aviation as aircrew/pilot error, this level is where most accident investigations have focused their efforts and consequently, where most causal factors are uncovered.

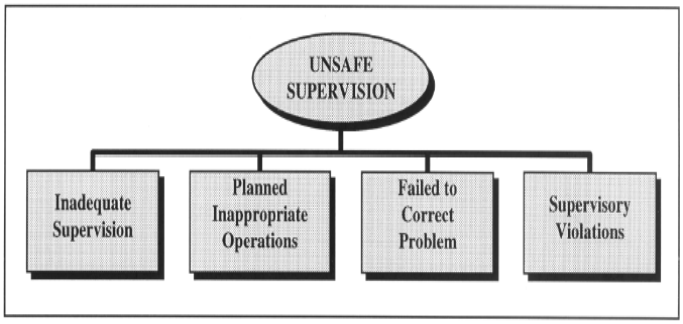
Unsafe acts can be classified into two categories: errors and violations. Errors represent the mental or physical activities of individuals that fail to achieve their intended outcome. Violations on the other hand, refer to the willful disregard for the rules and regulations that govern the safety of flight. A further expansion of errors and violations are shown in the diagram below.



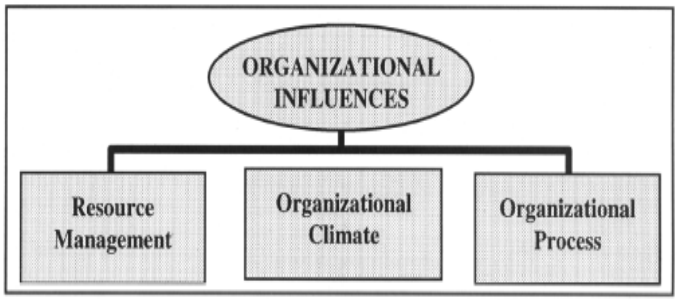
Preconditions for Unsafe Acts - this level involves conditions such as mental fatigue and poor communication and coordination practices, often referred to as crew resource management (CRM). The unsafe acts of pilots can be directly linked to nearly 80% of all aviation accidents. However, simply focusing on the unsafe acts is like focusing on a fever without understanding the underlying disease causing it. Thus investigators must dig deeper into why the unsafe acts took place. Things like complacency, distraction, mental fatigue, haste, medical illness, visual limitation, loss of situational awareness, insufficient reaction time, crew resource mismanagement, self-medicating etc, are some examples of 'Preconditions for Unsafe Acts'.



Unsafe Supervision - But exactly why did communication and coordination break down in the first place? This is perhaps where Reason's work departed from more traditional approaches to human error. In many instances, the breakdown in good CRM practices can be traced back to instances of, the third level of human failure. The role of any supervisor is to provide the opportunity to succeed. To do this, the supervisor, no matter what level of operation, must provide guidance, training opportunities, leadership, and motivation, as well as the proper role model to be emulated.



Organizational Influence - the organization itself can impact performance at all levels. For instance, in times of fiscal austerity, funding is often cut, and as a result, training and flight time are curtailed. Consequently, supervisors are often left with no alternative but to task "non-proficient" aviators with complex tasks. Some examples of organizational influences are, lack of funding, purchasing of unsuitable equipment, deficient planning, time pressure, structure, schedules, culture, policies, excessive cost cutting, human resource management, documentation, instructions, etc.



All of these factors will affect performance and elicit aircrew errors. Therefore, it makes sense that, if the accident rate is to be reduced beyond current levels, investigators and analysts alike must examine the accident sequence in its entirety and expand it beyond the cockpit. Ultimately, casual factors at all levels within the organisation must be addressed if any accident investigation and prevention system is going to succeed.

Cockpit distractions

CAAFI wishes to emphasize to crewmembers and operators that engaging in tasks not directly related to required flight duties, including using personal electronic devices (PED), constitutes a safety risk. The following information is obtained from notice (OPR: AFS-220) issued by Federal Aviation Administration (FAA) for operators' and pilots' information.

Background: Recent incidents and accidents have revealed pilots using Personnel Electronic Device (PEDs), including laptop computers and mobile telephones, for personal activities unrelated to the duties and responsibilities required for conduct of a flight. In one instance, two pilots were using their laptop computers during cruise and lost situational awareness, leading to a 150 mile fly-by of destination. In another instance, a pilot was texting after the aircraft pushed back from the gate and before the take-off sequence. In still another instance, a Federal Aviation Administration (FAA) Inspector in the jump seat overheard a crewmember's mobile phone ring during the takeoff roll.

Discussion: It is a crewmember's responsibility to guard against distractions on the flight deck. Technology continues to advance and provides our industry with new tools to assist crews in accomplishing their jobs. For instance, electronic flight bags (EFB) (both installed and portable) and high speed data transfer units are two of the more recent and increasingly common devices available. For the traveling public, PEDs are an established fact of life, particularly in the highly mobile air transportation industry. While PEDs can be valuable tools in aviation operations, crewmembers cannot permit PEDs to distract them from focusing on duties and responsibilities related to the flight. Regulations regarding sterile flight decks prohibit crewmembers from performing any duties not relating to the safe operation of the aircraft during critical phases of flight. At other phases of flight, crewmembers must avoid becoming distracted by any task not related to the safe operation of the flight, whether it involves use of a PED or not. Maintaining the public trust is both a personal responsibility and professional requirement.

Recommended Action: Operators should create a safety culture that clearly establishes guidance, expectations and requirements to control cockpit distractions, including use of PEDs, during flight operations. Operations Managers and Safety Managers should review and reinforce these policies and guidance. Training Managers should review and reinforce crew training on this subject. Crewmembers should evaluate their personal practices, including those regarding the use of PEDs, to ensure they do not distract from or interfere with duties and responsibilities related to the flight.

Automatic Dependent Surveillance-Broadcast (ADS-B)

What is ADS-B?

Simply put, ADS-B is the future of air traffic control. This technology represents another step forward in our ability to make Fiji's skies safer. Aircraft will be allowed to be controlled and monitored with greater precision and accuracy by a satellite-based system called Automatic Dependent Surveillance – Broadcast (ADS-B). This requires aircraft flying in certain airspace to broadcast their position via ADS-B. The rule mandates that the broadcast signal meet specific requirements in terms of accuracy, integrity, power and latency. This onboard equipment will allow our air traffic controllers to know where aircraft are with greater precision and reliability which in turn will improve the safety and efficiency of flights.

This is the preferred system for progression from the present procedural system - instead of using radar data to keep aircraft at safe distances from one another, signals from the Global Navigation Satellite System (GNSS) will provide air traffic controllers and pilots with much more accurate information that will help keep aircraft safely separated in the sky and on runways.

How does ADS-B work?

GNSS position information processed by aircraft avionics to transmit the aircraft's location to ground receivers for presentation to air traffic controllers.

The aircraft transponders receive satellite signals and using transponder transmissions to determine the precise locations of aircraft in the sky. The system then converts that position into a unique digital code and combines it with other data from the aircraft's flight monitoring system — such as the type of aircraft, its speed, its flight number, and whether it is turning, climbing, or descending.

The code containing all of this data is automatically broadcast from the aircraft's transponder once a second. Aircraft equipped, broadcast the data and ADS-B ground stations up to 200 miles away receive these broadcasts and Air traffic controllers will see the information on the

displays they are using. ADS-B signals that are transmitted once per second, provide a more accurate tracking system for pilots and controllers.

What are the benefits of ADS-B?
When aircraft are properly equipped with ADS-B, Fiji Air Traffic Control systems will, for the first time, display the same real-time displays of air traffic.

ADS-B will increase capacity, as more accurate tracking means aircraft will be able to fly safely with less distance between them. And, because ADS-B accuracy also means greater predictability, air traffic controllers will be better equipped to manage air traffic arriving and departing from congested airports, resulting in even more gains in capacity.

Additional ADS-B services should allow pilots to view cockpit displays to see the location of other aircraft in the sky around them. ADS-B displays are envisioned to show pilots where they are in relation to bad weather and terrain – even at night or in conditions with poor visibility – and provide flight information, including temporary flight restrictions, which allow pilots to plan safe, and more efficient routes.

Why is Fiji adopting ADS-B?
With the increase in air traffic, the procedural system of air traffic control that Fiji currently uses is fast approaching saturation point. The only available alternative is to install an air traffic control surveillance system i.e. Radar or ADS-B. Primary and Secondary Radars require large structures that are both expensive to deploy and have high maintenance costs, they also require the lease of land on which to situate them.

ADS-B on the other hand, is inexpensive when compared to Radar in the long term, and are the sizes of mini refrigerators that essentially can go anywhere, minimizing the required real estate. Additionally, ADS-B updates are broadcast once every second and locate aircraft with much higher precision.

One of the key elements to this next generation (NextGen) of operations is the nationwide rollout of ADS-B ground stations expected to be completed in 2011.

What about aircraft avionics?
CAAFI has issued Fiji Islands Airworthiness notice 01/08 (FIAN 01/08) effective June 2008, to provide information, guidance and advice for airworthiness approval of aircraft equipment to support the use of ADS-B in Fiji.

Fiji Legislation
The Air Navigation (Amendment) Regulations 2009 – Regulation 23 (5) Table 1 Scale 2, requires that all aircrafts after 01st May 2010 shall be equipped with serviceable ADS-B equipment that meets a standard notified by the Authority, unless permitted by the aircraft's MEL and with notification to and acceptance by ATC. The exception to this is:

- Aircraft that operate outside controlled airspace, no higher than 500ft and no closer than 10nm to an aerodrome serving air transport operations, or
- Domestic aircraft due to be withdrawn by 01st January 2011, or
- International aircraft due to be withdrawn by 01st January 2014, or
- Any other aircraft where the requirement is specifically excluded, either indefinitely or until a date acceptable to the Authority, on the aircraft's certificate of airworthiness.

The CAAFI is committed to working with industry to ensure a standard and cooperative approach is achieved in its pursuit of a safer and more efficient air transport industry. With national coverage, benefits in improved safety and capacity and better efficiency for users will accrue, as more and more users equip.

FCAIR

FIJI CONFIDENTIAL AVIATION INCIDENT REPORTING

FORMS AVAILABLE ON WEBSITE

www.caafi.org.fj

OR FRONT DESK, CAAFI HQ

FREE CALL

SAFETY MESSAGE LINE

Phone your safety concerns to CAAFI – 0800 6725 799

SAFETY, SERVICE AND SECURITY

The aviation industry is generally good at flight safety training, with considerable investment in recurrent training for emergency situations, for example, ditching at sea. However, the industry record is not as good when it comes to security training. As quoted by *Philip Baum*, *director of a London-based aviation security organisation,* *'*that despite the fact that aircrew have to deal with disruptive and violent passengers each and every day, the degree of training we afford aircrew, and the investment in human factors for people on the ground is woefully limited'.

He cites that since 2001, there have been at least eight incidents of aircraft destruction or attempted destruction, and in excess of 50 hijackings by passengers. In the majority of the cases, passengers were the cause, but Baum says, most aircrew training does not reflect this reality. Rather, he says, increasingly, the approach to aviation security is to apply 'technological solutions to a very human problem'. However, the danger with many of these technological solutions is that we will forever be playing catch-up, because, he says, 'we are up against individuals who are creative, and always trying to explore and identify our Achilles heel.'

Human factors-based approach to aviation security, is profiling, which Baum describes as a risk analysis of people and situations based on perceived threat, and carried out by 'trained, streetwise individuals'. A passenger risk assessment is made using baselines of behaviors; and travel patterns; identifying anyone who doesn't meet these baseline expectations. With the family group you would look at 'how the dad is interacting – focused on the travel documents, while mum is trying to keep the younger children under control. You would be looking at their appearance, their baggage labels, how long they stay, how long they arrive before the flight. I'm guessing that they would not be the people who arrive 25 minutes before departure: they'll be the ones who arrive two and a quarter hours beforehand. You're looking at everything which screams out "family on holiday". The person travelling early from Hobart to Melbourne, and returning nine at night— well your expectation is that they're on business. You would expect far less interaction if they're on their own, you'd look at the type of newspaper they're reading, their demeanor dress.'

Baum believes that aircrew are the world's best profilers, not only because they fly in the aeroplane in the passenger cabin, but they're also used to thinking as the passengers board the flight "Who's going to be my problem passenger today? Is it going to be the kid who's going to scream all the way? Is it the businessman that's going to be arrogant? Is it the young couple who are going to be drunk?" Now that's all well and good, but we now need to capture that information and covert it into an effective tool, to prevent not only disruptive passenger incidents, but also other potential incidents.

There's a big difference between reporting, "captain that passenger in seat 27F – I'm concerned, he's behaving a little strangely, it's probably all right, but I just thought we ought to let you know", and being much more assertive, recommending "captain, this passenger is behaving strangely we're not happy about this situation, and we think it should be resolved before take-off." You're forcing the captain into a situation to act. We've got to build into the training programs some protection against paranoia, but cabin crew with experience know the difference between a nervous passenger, and someone behaving abnormally.

Aircrew have loads of opportunities for identifying unusual behaviors. When someone strikes you as being a little bit unusual – have a conversation with them. There are loads of reasons why people may not be happy on a flight: there might have been a death, or they might be flying back to be fired. But on long haul flights you have more opportunity to engage them in conversation, and to evaluate the situation if you have concerns. The one thing you don't do is ignore the behavior if you have concerns.

Baum's dream for the aviation security system of the future involves a better balance between the use of technology and human factors. It's a dream where a sensor-based system means passengers are 'sniffed and sensed' as they move around the airport; there are no queues, because for him, they simply demonstrate inadequate security; and above all, aircrew are trained, not only to be safety and customer service professionals, but importantly, security professional.

Source: Flight Safety Australia magazine (May – June 2010 issue) - by Margo Marchbank.

SAFETY REMINDER— FLIGHT PLANNING

CAAFI's Aviation Quality Database – AQD (database used for recording occurrences) shows that since 2009, there has been 7 incidents of runway incursions, involving disabled aircrafts on the runway and some instances resulted in the aircraft that was following, having to hold until the disabled aircraft was removed. In at least 2 of the instances, the aircraft that was following, informed the Control Tower that they were back to minimum fuel and sought a time interval on how long the runway would continue to be blocked.

These two incidents highlight the need for crews to exercise care when pre-departure planning requires the aircraft to land at an airport with only the minimum regulatory fuel reserve of 45 minutes.

Apart from Nadi Airport, all other airports in Fiji consist of only one runway and in the event that it becomes blocked by an aircraft or vehicle, crews may find themselves in a very difficult position should they not have sufficient fuel on board which will enable them to continue to an alternate airport.

Regulation 31 (2)(a) and (e) of the Air Navigation Regulations 1981 (ANR), clearly state that it is the Pilot-in-Command's responsibility ensuring an alternate 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 clear portion of a blocked runway, such action 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 Taunovo Bay and crews 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 situation for amphibian aircraft as they have the ability to land on the water at Nadi Bay.

It costs fuel to carry fuel as the saying goes but crews 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.**

Safety Reminder by: Capt. Norman Walding (Senior Flight Operations Inspector (Domestic) – CAAFI)

MANDATORY OCCURRENCE REPORTS

This column has briefs of selected occurrences in a de-identified way and the action taken after the investigation was completed. These briefs are published in the interests of improvement to aviation safety and not to apportion blame.

Brake started to pull to the right

During take-off, the aircraft started pulling to the right as Starboard brakes started locking. Pilot aborted the take-off and proceeded to the Domestic Apron. While parking the aircraft, pilot noticed smoky brakes. The smoky brakes were put out by a Fire Extinguisher and the passengers were safely evacuated to the Terminal.

Action: The investigation found that there was a hydraulic leak. The defective Brake Units and Main Wheels were changed. Brake operations carried out and found satisfactory.

Aircraft aborted take-off

During take-off run, the left hand engine was not achieving its Maximum Continuous power setting of 50% torque.

Action: Investigation found that Engine Torque Value required calibration for correct temp and fuel flow. Both engine torque calibration carried out with reference to Maintenance Manual. Engine ground carried out and the results were found satisfactory. The Max Stop on the Fuel Control Unit (FCU) was also adjusted. The handling flight found to be satisfactory.

Broken nose wheel tiller cable

During taxing the nose wheel tiller cable broke. Aircraft was stopped, shutdown and had to be towed back to the hangar from access road.

Action: Inspection found and confirmed tiller cable broken. Nose wheel tiller cable removed and replaced, cable tensioned as per the Maintenance Manual. Duplicate inspection and Operational checks of the steering system carried out, and found satisfactory. Engineers cautioned to be more vigilant while carrying out cable inspection.

Aircraft descended below cleared altitude by 500 feet

The centre auto-pilot was engaged. Aircraft descended through target altitude twice. Aircraft was cleared to 6000 feet but descended to 5850 and then climbed back to 6000. It then descended again and F/O was having a hard time trying to disconnect the auto-pilot. F/O disconnected the autopilot but the elevator was still maintaining increase descent rate. He recovered by over powering the elevator at 5600, then climbed back to 6000 feet. ATC advised to stop descend at 5500 ft and few seconds later cleared aircraft back to 6000 ft. Crew re-engaged left auto-pilot and operation was normal till landing.

Action: Investigation found that the autopilot was electronically disconnected by the crew but failed to disconnect mechanically. A full investigation was carried out by Engineering and no fault was found with the system. Autopilot Servo was subsequently changed. The operator arranged for all Flight Crew on the aircraft type to experience overriding the autopilot in the simulator.

Local Standby - Hydraulic Failure

Hydraulic system pressure dropped to zero on approach. Hand pump was used to lower flaps. Normal landing was carried out and the aircraft taxied to the apron. Hydraulic pressure was maintained with the use of the hand pump.

Action: Investigation found Electrical Hydraulic pump and pressure switch failure. Electrical pump assembly and pressure switch was replaced. Handling flight after ground test found to be satisfactory.

Aircraft disabled on runway in Kadavu

During landing, excessive vibration was coming from the right undercarriage and the aircraft began to veer to the right . When the aircraft came to a halt, the right main wheel was facing outwards.

Action: Investigation found Torque Link Attachment Bolt failure. Both starboard main wheel were replaced and a new Torque Link Bolt and spacer installed. Aircraft released to service.

Incorrect waypoint coordinate

Enroute Nadi - Rotuma on a mercy flight, crew reverified GPS flight plan coordinates with the AIP Fiji Island and discovered differences. Crew decided to use the AIP coordinates and found out ETA RM NDB to have increased by about 1 hr 50mins. When crew changed coordinates back to the originals on the GPS, the ETA was then normal.

Action: The investigation discovered an error in the AIP Fiji Islands coordinates under section ENR 3-2-37. NOTAM issued A0155/10 and D0180/10 advising the amendment. AIP amendment effective 08/04/10 contains revision to this portion of the AIP; ENR 3.2-36 Table ENR 3.2-3(a).

Nose wheel Gear Axle Damage

On a daily walk around inspection Engineer found R/H nose wheel assembly hub damaged.

Action: Nose wheel assembly removed found both bearings (inner & outer) collapsed & caused axle damage. Damage out of limits. Investigation also found that two bearings had excessive time in service. The bearings were replaced and new maintenance requirements for bearings to be replaced is coincident with wheel overhauls at every fifth tyre change.

Occurrence Stats

The following graphs generated from the Authority's AQD represent the number of occurrences from January —May 2010. The line graph shows the trend and the pie chart shows the proportion of occurrence by types.