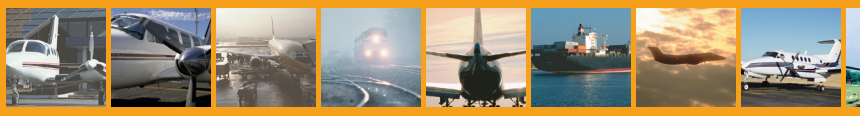
Australian Government
Australian Transport Safety Bureau

The Australian



Chief Commissioner's message

Over the last few issues, I have described the various elements that go to make up the independent ATSB. I am pleased to announce that we now have our full complement of commissioners, following the appointment of Carolyn Walsh as the Bureau's second part-time Commissioner. Ms Walsh commenced her three-year term on 8 March, joining Commissioner Noel Hart and myself.

Commissioner Walsh brings a wealth of experience in transport safety. Most recently she was the CEO of the Independent Transport Safety and Reliability Regulator in New South Wales.

As we have reviewed the work of the ATSB, it has become clear that we need to balance two things in our investigations: ensuring we focus on what is most likely to improve safety, while covering as many occurrences as possible. In aviation, we receive about 15,000 notifications each year, of which we classify about 8,000 as safety occurrences. In recent times, we have investigated about 80 of those each year.

To get as wide a coverage as possible, we have created a new investigation team to focus on what may have been previously unexamined flight safety occurrences. This team looks at less-prioritised incidents and produces short summary reports. These reports compile information on the circumstances surrounding an occurrence and what safety action may have been taken or identified as a result of it.

I take great pleasure in announcing the release of the first of these investigation reports, compiled in the publication Level 5 Factual Investigations: 1 December 2009 to 30 March 2010. You can find the new publication on the ATSB website <www.atsb.gov.au>.

Finally, I draw your attention to the report in this issue on a go-around occurrence AO-2007-044. This report shows that key safety issues can be identified and resolved through investigation of occurrences where there has been no accident. For this to work as it should, the ATSB needs to receive as much information as possible on safety occurrences. We would remind you all to remain alert to your reporting responsibilities so that we can all work together to improve safety.

Martin Dolan
Chief Commissioner

Dangers of inclement weather

On 24 February 2009, at 1417 Eastern Standard Time, a Piper Aircraft PA28-180 Cherokee, registered VH-DAC, departed Normanton Airport, Queensland on a visual flight rules private flight to Mount Isa with the pilot as the sole occupant.

Before departing Normanton, the pilot informed his partner by telephone of his planned arrival time for Mount Isa. When the aircraft did not arrive as advised, it was reported missing by the partner. The next evening, a search and rescue helicopter located the wreckage of the aircraft 2.5 km east of the direct track from Normanton to Mount Isa, in a Designated Remote Area. The crew of the helicopter confirmed that the pilot had received fatal injuries from the accident.

The wreckage trail extended about 109 m from the aircraft's initial impact with a tree to the main wreckage. Examination of the wreckage indicated a high-speed, approximately 20° nose-down, right-bank collision with terrain, implying that the aircraft was not in a state of controlled flight at that time. The examination did not reveal any pre-existing technical fault that may have contributed to the accident.

Satellite images recorded at 1430 on 24 February 2009, indicated that showers and thunderstorms were present in the general area of the accident site. The pilot was not qualified for instrument flight, and was relatively inexperienced at flying in instrument meteorological conditions (IMC). That represented a number of the risk factors in the development of spatial disorientation. If the pilot inadvertently entered IMC while attempting to avoid the weather in the area, and manoeuvred at low level in those conditions in an effort to regain visual meteorological conditions, he may have either experienced spatial disorientation and then lost control of the aircraft, or inadvertently descended into terrain.

A review of Airservices Australia recorded air traffic services automatic voice recording data found no record of any radio transmissions by the pilot during the flight. According to witnesses, the pilot appeared well-rested the night before the flight, and had eaten lunch while conducting business in Normanton.

The investigation could not conclusively determine the reason for the collision with terrain. The aircraft wreckage trail indicated a heading away from Mount Isa, the reverse of the planned track. The lack of any apparent technical problems supported the conclusion that the pilot most likely manoeuvred the aircraft for operational reasons, such as in the case of inclement weather. Although carrying a portable 406 MHz frequency emergency locator transmitter (ELT) satisfied the regulatory requirements, the unit was not utilised as the pilot did not survive the impact. The carriage of a portable ELT may also have limitations in the event of a survivable but disabling impact. ■

ATSB investigation report AO-2009-009 released on 1 March 2010, avaliable on the website.

Aviation Safety Investigator

Altered procedures complicate go-around event

On 21 July 2007, an Airbus Industrie A320-232 aircraft, registered VH-VQT, was being operated by Jetstar on a scheduled international passenger service between Christchurch, New Zealand and Melbourne, Australia. Prior to their departure, the crew had been informed that weather conditions at Melbourne Airport meant that an instrument approach to the decision height for the approach was likely. The crew had planned accordingly, and were prepared to conduct a missed approach, since a number of aircraft had already done so because of the low visibility due to fog.

Upon reaching the decision height on the instrument approach into Melbourne, the crew did not have the prescribed visual reference to continue the approach to land and commenced a missed approach. During the initial part of the approach, the pilot in command had not correctly moved the thrust levers to the 'take-off/go-around' position and so the aircraft's automated flight mode did not transition correctly to the go-around phase. The crew, however, were unaware that the aircraft had not transitioned to the expected flight modes. The aircraft continued to descend towards the runway, reaching a minimum recorded height of 38 ft above the runway before it responded to manual flight crew inputs and began to climb away. After a second missed approach, which was completed within expected parameters, the aircraft was diverted to Avalon Airport, where it landed uneventfully.

The aircraft manufacturer had published its go-around procedure with the requirement to check and announce the aircraft's flight mode as part of the initial actions of the go-around. That requirement was included to ensure that the crew could confirm the necessary changes to the aircraft's flight mode.

The aircraft operator, however, had changed the go-around procedure and moved the positive confirmation of flight mode to a much later position in the procedure. The changed procedure required that a call be made after a positive rate of climb was obtained. In this instance, due to the aircraft continuing to descend, with the crew distracted by unexpected warnings and a subsequent increased workload, this call could not be made by the flight crew, and so the standard operating procedure in support of the go-around effectively paused at that point. As a result, the crew never obtained positive confirmation of the aircraft's flight mode.

The operator had not conducted a risk analysis of the change to the procedure. Nor did it comply with the incident reporting requirements of its safety management system (SMS), which was part of its operations manual, or with the reporting requirements of the *Transport Safety Investigation Act 2003*.

This incident highlighted the potential for unintended consequences when changes to standard operating procedures are introduced without first conducting an appropriate risk analysis. The ATSB considered this issue serious enough to issue a Safety Advisory Notice (AO-2007-044-SAN-109), advising all aircraft operators to consider the safety implications of this safety issue and to take action where considered appropriate.

As a result of this occurrence, the aircraft operator changed its go-around procedure to reflect that of the aircraft manufacturer. It also changed its SMS to require a formal risk management process in support of any proposal to change an aircraft operating procedure. The operator is in the process of reviewing its flight training requirements, has invoked a number of changes to its document control procedures, and has revised the incident reporting requirements of its SMS.

In addition, the aircraft manufacturer has enhanced its published go-around procedures to emphasise the critical nature of the flight crew actions during a go-around. ■

ATSB investigation report AO-2007-044 released on 1 March 2010, avaliable on the website.

Investigation briefs

Preliminary report on firebombing collision

ATSB Investigation AO-2009-075

On 8 December 2009 at about 1840 EDST, an Aerospatiale AS350-B2 helicopter, registered VH-NFO (NFO), and a Kawasaki BK117 helicopter, registered VH-LXC (LXC), were engaged in aerial firebombing operations about 20 km south-east of Orange Airport, NSW. The pilots were the only occupants of their helicopters. After the pilot of NFO landed to refuel, he noticed damage to the trailing edge of the helicopter's vertical fin. In addition, the plastic navigation light cover on top of the vertical fin was broken. The pilot reported the damage to the pilot of LXC. Examination of LXC did not reveal any apparent damage. There were no injuries.

The pilots had been flying circuits to and from two small dams, refilling at different dams. The pilot of NFO completed his refill first and informed the pilot of LXC that he was departing. The pilot of LXC subsequently reported that he was also departing. The pilot of NFO recalled that he thought LXC was at least 'a couple of hundred metres' behind him as he conducted his run and did not see LXC at any time. As he initiated a water drop from an altitude of about 100 ft, he felt 'a slight jolt' through the helicopter and immediately rolled right. In his peripheral vision, he saw a yellow object flash past the left door and initially thought it was a water bombing aeroplane that had not reported its bombing run. He believed that LXC had caught up during the run, resulting in the collision.

The pilot of LXC recalled that when he departed the dam, he turned towards the fire. He did not see NFO but thought that his turn placed him ahead of NFO by about 300 m. He believed that NFO had overtaken LXC close on the right side, and that the collision occurred as NFO turned sharply away from LXC.

The investigation is continuing.

Main landing gear wheel failure

ATSB Investigation AO-2009-006

On 6 February 2009 at approximately 1435 Australian Eastern Daylight-saving Time, a Saab 340B aircraft, registered VH-KDQ, landed at Sydney Airport following a scheduled passenger service from Orange, NSW.

The flight crew reported that during the post-flight inspection, the aircraft's left outboard main landing gear tyre was found to have deflated and the wheel assembly had sustained noticeable damage.

Failure to the rim had resulted in deflation of the tyre. Further examination by the operator's maintenance staff found that a section of the bead seat had fractured. Both the brake assembly and the wheel axle had also been damaged as a result of the failure. No other damage was sustained by the aircraft. The flight crew reported that there was no prior indication of the failure, as the aircraft had handled normally during the landing and taxiing phase of the flight.

During the investigation, it was found that the particular wheel design was being phased out due to recognised fatigue problems identified at the bead seat area. Both the manufacturer and the operator were aware of the increased fatigue susceptibility of the earlier wheel design, and had established increased inspection regimes for those wheels remaining in service.

In response to the occurrence, the operator advised that to enable the aircraft to be returned to service, the entire main landing gear assembly was replaced. The operator conducted a review of its current wheel inspection practices and schedules. The operator indicated that all procedures used were found satisfactory and compliant with the wheel manufacturer's guidelines.

White out conditions

ATSB Investigation AO-2009-077

On 9 December 2009, the pilot of a Bell Helicopter Co. 206L-1 Longranger, registered VH-MJO, was conducting a visual flight rules flight at Dorrigo NSW, the second such flight that day, with one passenger on board.

The pilot later stated that, shortly after takeoff, at approximately 1120 Eastern Daylight-saving Time, while the helicopter was in a high hover, he looked inside the cockpit at his instruments for a few seconds. When the pilot looked outside again, the helicopter was in what he described as 'white out conditions'. The pilot experienced a complete loss of visual orientation with the surroundings due to the helicopter being enveloped by cloud. The pilot attempted to maintain a neutral hover in the expectation of regaining adequate visibility to land, however, the helicopter was inadvertently moving to the north at a slow speed. The pilot stated that he then saw trees and a spur line through the cloud and that the helicopter appeared to be in a sideways crab motion to the left. With limited visual reference, the pilot attempted to land, however, the helicopter impacted the ground with significant vertical force and came to rest on its right side As a result, the pilot was seriously injured and the passenger was fatally injured. The helicopter was seriously damaged.

The duration of the flight, not including start up and static hover, was approximately 1 minute and 20 seconds. During that time, the helicopter travelled a distance of approximately 550 m.

The investigation is continuing.

Dark night flight

ATSB Investigation AO-2008-076

On 7 November 2008, a Piper Chieftain, registered VH-OPC, was being operated on a private flight under the instrument flight rules from Moorabbin Airport, Vic. to Port Macquarie via Bathurst, NSW. On board the aircraft were the owner-pilot and three passengers.

The aircraft departed Moorabbin Airport at 1725 Eastern Daylight-saving Time and arrived at Bathurst Airport at 1930. The flight from Moorabbin to Bathurst was conducted in accordance with the pilot's flight plan, and a review of recorded air traffic control data and communications did not reveal any problems during that flight.

After refuelling at Bathurst Airport, the pilot departed for Port Macquarie in dark-night conditions with light rain in the area. About 2 minutes and 30 seconds after the pilot reported he was airborne, residents of Forest Grove to the north of Bathurst Airport heard a sudden loud noise from an aircraft at low altitude. Shortly after, there was the sound of an explosion and the glow of fire. The aircraft was found to have impacted terrain, resulting in serious damage to the aircraft. The four occupants were fatally injured.

The aircraft descended at a steep angle before impacting the ground at high speed, consistent with uncontrolled flight into terrain. Due to fire and impact damage, and limited information about the sequence of events after take-off, the evidence available to the investigation was limited.

Based on analysis of the available information, an airworthiness issue was considered unlikely to be a contributing factor to this accident. The investigation was unable to establish why the aircraft collided with terrain; however, pilot spatial disorientation or pilot incapacitation could not be discounted.

Leading edge device failure and cabin safety issues

ATSB Investigation AO-2007-070

On 29 December 2007, a Boeing Company 737-229 aircraft, registered VH-OBN, was being operated on a scheduled passenger service from Brisbane, Qld to Norfolk Island. At 0352 Coordinated Universal Time, due to poor weather, the flight crew conducted a missed approach.

During the flap retraction, the flight crew felt a high frequency vibration through the airframe, while observing control yoke deflection to the left. Due to the vibration, the aircraft's autopilot system could not be engaged and controlled flight was manually maintained with difficulty. The flight crew elected to continue to the designated alternate airport at Nouméa, New Caledonia. Due to reserve fuel concerns, the cabin crew prepared the passengers for a possible ditching.

A post-flight engineering inspection determined that the number-4 leading edge slat, inboard main track had failed. An examination identified fatigue cracking that originated at the intersection of diverging machining marks at the fracture site. Further inspection of the number-4 slat found corrosion damage on the outboard auxiliary track, with the inboard auxiliary track adjacent to the failed main track having failed in overload at the slat attachment.

The investigation also identified a number of cabin safety issues during the diversion flight, and poor passenger handling after the subsequent landing at Nouméa.

As a result of this investigation, the aircraft operator advised the ATSB of the implementation of a number of safety actions, including, the revision of flight crew flight planning — alternate fuel load provisions, the revision of cabin crew equipment and procedures, a review of company emergency response procedures.

Subsequent to this event, the original operator's air operator's certificate had been taken over by a different organisation. The new organisation does not use the aircraft type involved in this occurrence. It has, however, reviewed its operations to ensure that hazards identified in this investigation are mitigated appropriately.

Mustering helicopters collide

ATSB Investigation AO-2009-018

On 5 May 2009, two Robinson Helicopter Company R22 Beta II helicopters, registered VH-PHT and VH-HCB collided midair about 15 km south-east of Springvale Station, WA. Both helicopters had departed the station just prior to sunrise to conduct mustering operations.

The first helicopter departed to the east in order to make radio contact with an adjoining station prior to heading for the mustering area. The other helicopter departed about 10 minutes later and was observed heading to the south-east, the general direction of the muster.

The helicopters were due to refuel at about 0830 at a place to be arranged, depending on the progress of the mustering operation. When the pilots failed to respond to radio calls from ground personnel, a search helicopter departed a nearby station and noticed a fire while en route to Springvale Station. On arrival overhead the fire, the pilot was able to identify the remains of the two helicopters and observed that the respective pilots appeared to have sustained fatal injuries. Both helicopters were seriously damaged as a result of impact forces associated with the midair collision, the impact with terrain and post-impact fires. The wreckage was scattered over an area of about 260 m by 100 m.

The circumstances of the accident were consistent with a midair collision while the pilots were positioning to commence the muster. The converging flight paths of the helicopters, pilot fatigue and sun glare from the rising sun are identified as contributing safety factors.

REPCON briefs

Australia's voluntary confidential aviation reporting scheme

REPCON allows any person who has an aviation safety concern to report it to the ATSB confidentially. Unless permission is provided by the person that personal information is about (either the reporter or any person referred to in the report) that information will remain confidential.

The desired outcomes of the scheme are to increase awareness of safety issues and to encourage safety action by those who are best placed to respond to safety concerns.

Before submitting a REPCON report, take a little time to consider whether you have other available and potentially suitable options to report your safety concern. In some cases, your own organisation may have a confidential reporting system that can assist you with assessing your safety concern and taking relevant timely safety action. You may also wish to consider reporting directly to the Civil Aviation Safety Authority (CASA) if you are concerned about deliberate breaches of the safety regulations, particularly those that have the potential to pose a serious and imminent risk to life or health. REPCON staff may be able to assist you in making these decisions, so please don't hesitate to contact our staff to discuss your options.

REPCON would like to hear from you if you have experienced a 'close call' and think others may benefit from the lessons you have learnt. These reports can serve as a powerful reminder that, despite the best of intentions, well-trained and well-meaning people are still capable of making mistakes. The stories arising from these reports may serve to reinforce the message that we must remain vigilant to ensure the ongoing safety of ourselves and others.

REPCON has recently received several concerns about transport security matters. These reports are best sent direct to the Office of Transport Security (OTS) who have a 24 hour, seven day a week point of contact and can respond quickly to any transport security concerns that are of a serious nature. Contact details for the OTS 1300 307 288 or www.infrastructure.gov.au/transport/security/index.aspx.

If you wish to obtain advice or further information, please contact REPCON on 1800 020 505.

Cabin crew duty times

R200900037

Report narrative:

The reporter expressed safety concerns about the operator's cabin crew working excessive duty times on long haul flight operations. Cabin crew are in fear of the consequences (i.e. losing their job) if they speak up and remove themselves from duty if they are fatigued. Even after exceeding 20 hours duty time, the majority of cabin crew are hopeful that adrenalin would kick in if an emergency occurred after an extreme tour of duty. Cabin crew have been observed sleeping in their seats while waiting for the aircraft to be given a taxi clearance. In some circumstances, duty times have been up to 29 hours. The reporter expressed concerns that cabin crew, by their nature, are service orientated and therefore put the passenger before their own wellbeing.

Reporter comment: As the operator is not mature enough to cancel flights so that cabin crew can operate with safe duty times, there needs to be CASA regulations to remove the decision from operators and exhausted cabin crew.

Action taken by REPCON:

REPCON supplied CASA with the de-identified report. CASA provided the following response:

> CASA monitors the safety implications of duty periods and does follow-up on specific events that are reported. The operator has voluntarily specified cabin crew duty times in relevant procedures. Adherence to such procedures is subject to CASA audit and surveillance activity.
>
> CASA is considering regulations for cabin crew fatigue risk management systems which will follow the introduction of fatigue risk management system regulations for flight crew. The flight crew regulations are awaiting directions from the ICAO [International Civil Aviation Organization] group which will report in 2010.

Maintenance certification

R200900051

Report narrative:

The reporter expressed safety concerns about the certification of some maintenance conducted on company aircraft. The reporter believes that maintenance was certified under the direction of the maintenance contractor, when a maintenance person was not an authorised person to conduct such maintenance for the maintenance contractor.

Action taken by REPCON:

REPCON supplied CASA with the de-identified report and CASA provided the following response:

> CASA has reviewed the report and contacted the operator concerned who has investigated the matter and is unable to identify any known maintenance carried out by company or contractor staff who are not authorised. Without more specific information such as a date and aircraft registration the operator and CASA is unable to investigate the matter further.

Noise level within the aircraft cabin

R200900065

Report narrative:

The reporter expressed safety concerns about the noise level in a certain aircraft type during takeoff and the inability to clearly hear instructions in the cabin over the intercom. On two separate flights, the reporter was seated at the rear of the aircraft and indicated that once the engines were operating only about 10 per cent of the pre-takeoff safety brief given by the flight attendant could be heard, although on both flights when the

flight crew addressed the cabin the words were very clear and easy to understand. The reporter believed that the difference between the audibility of the flight attendant as opposed to that of the flight crew may possibly be the result of the nature of the voice pick-up systems in the two locations.

Reporter comment: In an emergency situation it would almost be impossible to hear the instructions issued by the flight attendants.

Action taken by REPCON:

REPCON supplied the operator with the de-identified report and the operator advised that it was not able to comment on the specific instance, but there are certain actions taken in relation to the PA (Public Address) system. These include specific maintenance tasks carried out at certain checks. The PA is checked every day, as a first flight of the day item. The operator also has not identified any PA issues during their cabin audits.

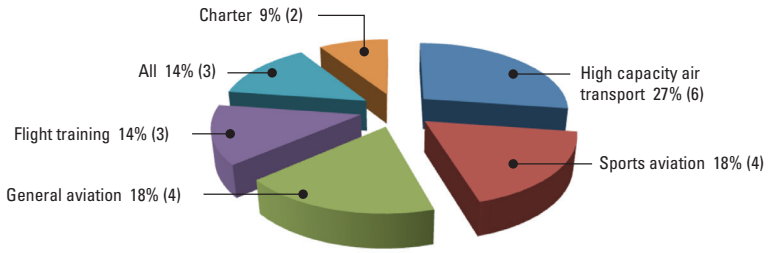
REPCON supplied CASA with the de-identified report and a version of the operator's response. CASA provided the following response:

> The functionality of the Public Address (PA) system forms part of the daily maintenance check. However, the maintenance check does not assess the audibility of the PA system during aircraft operations. CASA has liaised with the operator regarding the cabin crew monitoring audibility during aircraft operations in order to improve the clarity of cabin public address announcements.

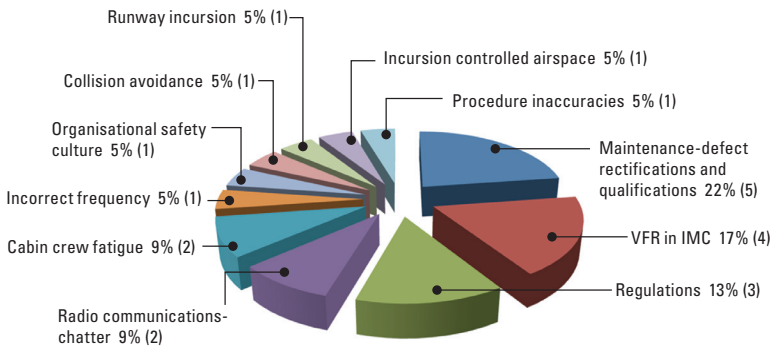
REPCON reports received	
Total 2007	117
Total 2008	121
Total 2009	118
Total 2010[a]	38

a. as of 18 March 2010

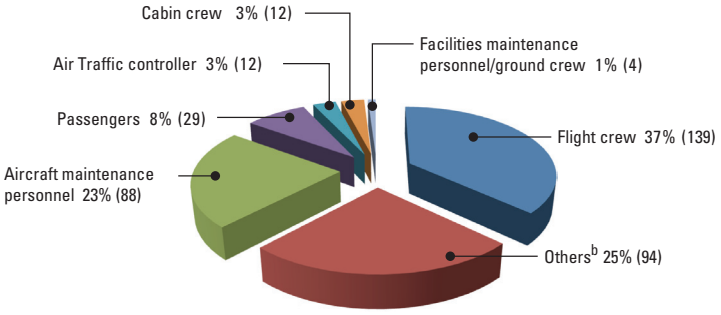
REPCON Operation types Jan/Feb 2009



Reported issues Jan/Feb 2009



Who is reporting to REPCON?[a]



a. 29 January 2007 to 28 February 2010
b. examples include residents, property owners, general public.

What is not a reportable safety concern?

To avoid doubt, the following matters are not reportable safety concerns and are not guaranteed confidentiality:

(a) matters showing a serious and imminent threat to a person's health or life;
(b) acts of unlawful interference with an aircraft;
(c) industrial relations matters;
(d) conduct that may constitute a serious crime.

Note 1: REPCON is not an alternative to complying with reporting obligations under the Transport Safety Investigation Regulations 2003 (see <www.atsb.gov.au>).

Note 2: Submission of a report known by the reporter to be false or misleading is an offence under section 137.1 of the Criminal Code.

How can I report to REPCON?

Reporters can submit a REPCON report online via the ATSB website.
Reporters can also submit via a dedicated REPCON telephone number: 1800 020 505
by email: repcon@atsb.gov.au
by facsimile: 02 6274 6461
or by mail: Freepost 600, PO Box 600, Civic Square ACT 2608

How do I get further information on REPCON?

If you wish to obtain advice or further information on REPCON, please visit the ATSB website at <www.atsb.gov.au> or call REPCON on 1800 020 505.