ATSB Australian Transport Safety Bureau

Air Safety Investigations

Recently completed investigations

As reports into aviation safety occurrences are finalised they are made publicly available through the ATSB website.

Fixed-wing Aircraft

Occ. no.	Occ. date	Location	Aircraft	Short description
199905698	01 Dec 1999	6 km NE Gisborne Vic	Cessna 172R	Loss of control in windy conditions
199902874	06 Jun 1999	20 km NNW Cairns Qld	Boeing 737	ILS approach–back beam radiation from localiser
199901012	12 Mar 1999	4 km N Cairns Qld	Short Bros SD360 and Cessna 208	Separation infringement following missed approach
199903436	18 July 1999	3 km WNW Melbourne Vic	Boeing 767 and Beech 1900D	TCAS traffic advisory – separation infringement
199903790	06 Aug 1999	130 km S Carnarvon WA	Fokker F27 and Fokker F27	Traffic confliction outside controlled airspace
199905196	04 Nov 1999	Melbourne Vic	Boeing 767	Second stage turbine blade failure
199904384	02 Sep 1999	Perth WA	Boeing 747	Engine pod strike during landing
199904771	11 Oct 1999	10 km NE Dubbo NSW	De Havilland Dash 8 and Piper PA28	Ambiguous terminology led to separation infringement
199904284	03 Sep 1999	Griffith NSW	Piper PA28 and Saab 340	Loss of situational awareness
199905649	30 Nov 1999	Childers Qld	Amateur-built aircraft RV-6	Crash following simulated engine failure
199902817	09 Jun 1999	700 km NE Sydney NSW	Boeing 747	Weather and alternate landing location
199905302	09 Nov 1999	9 km ENE Cairns Qld	Embraer-Brasilia and Cessna Citation X	Separation assurance techniques in air traffic control

Helicopters

Occ. no.	Occ. date	Location	Aircraft	Short description
199901009	12 Mar 1999	5 km SE Cairns Qld	Bell 206L-3	Poor visibility in bad weather
199901057	07 Mar 1999	282 km NNW Coober Pedy SA	Bell 47J	Fuel exhaustion accident
199904791	10 Oct 1999	World Trade Centre Vic	Bell 206B	Fatigue failure of turbine rotor vane blade
200000622	21 Feb 2000	17 km SE Mackay Qld	Hughes 369E	Windscreen fogging impairs vision

For more occurrence reports and safety information

visit us at www.atsb.gov.au

Safety briefs

Loss of control in windy conditions

Occurrence Brief 199905698

Four young people on a private flight were fatally injured on 1 December 1999 when the pilot apparently lost control of the aircraft following a stall during unbalanced flight.

Witnesses reported that the aircraft had conducted steep turns at different stages of the flight. Radar information showed that between the times 1432 and 1435 the aircraft was flown in a sequence of left turns through 360 degrees between 1,900 feet and 2,300 feet above mean sea level near the accident site. The elevation of the accident site was 1,350 feet.

Shortly after the aircraft was reported to head north and adopt a nose high attitude before entering a steep turn to the left. The bank angle steepened as it passed through a westerly heading and the nose dropped. The aircraft was heading approximately south in a near vertical, nose-down attitude when it impacted the ground.

An analysis of the prevailing weather conditions and surrounding terrain suggested that the aircraft was probably operating in turbulent conditions. This would have made it very difficult for the pilot to maintain balanced flight. The manoeuvre described by witnesses was consistent with the aircraft stalling during the steep turn with insufficient height to effect recovery.

Helicopter crashed after windscreen fog distracted pilot

Occurrence Brief 200000622

A Hughes 369E helicopter on a routine VFR charter positioning flight crashed into the water when the pilot attempted to clear a fogged windscreen on 21 February this year. Low cloud and light rain were in the area at the time. The helicopter was over water 17 kilometres south east of Mackay. No-one was injured. The pilot held a commercial licence with 5,980 total hours and 1,968 on the 369E. The following report was based on information received from the pilot.

The Hughes 369E helicopter was substantially damaged when it struck the water after the windscreen fogged up. When the windscreen became fogged due to the high humidity the pilot had turned on the heater-demister. This action caused an immediate increase in the fogging and dramatically reduced the view outside from within the cockpit.

The pilot decided to turn back towards the loading terminal, reduce speed and descend well clear of cloud. He leant forward to wipe the windscreen to clear his view and while he was distracted did not notice the helicopter was descending towards the water.

The pilot said that windscreen fogging occurs during the start and warm-up when weather conditions are conducive to fogging. In this situation he would operate the heater-demister prior to take-off. This action combined with intermittent use is usually sufficient to prevent the windscreen from fogging during flight.

However, on this occasion the windscreen did not fog during the start and the pilot did not use the demister. The pilot reported that the company's procedures are being reviewed to include pre-takeoff use of the demister during periods of high humidity and rain.

Separation infringement after missed approach

Air Safety Occurrence report 199901012

A Shorts SD360-300 and a Cessna 208 came within 100-200 feet vertically and about 70 metres horizontally at Cairns airport on 12 March 1999 following intense flying activity in cloud, heavy rain and severe turbulence.

The Cessna had been cleared to execute a standard instrument departure and the Shorts commenced a missed approach. The missed approach and departure tracks at Cairns were within a 40 degree sector to the north east due to terrain constraints. The two aircraft crossed tracks at approximately 2 nm north east and were only able to avoid further conflict when they entered a clear area at the same time and the crews sighted each aircraft.

Other factors that contributed to the incident included air traffic control instructions that placed the departing Cessna in direct conflict with the runway 15 missed approach path; lack of positive separation techniques between the aerodrome and the approach controllers; and a lack of ongoing refresher training for tower controllers in emergency and unusual situations.

On 17 June 1999 Airservices Australia introduced a new missed approach procedure that changed the outbound heading from 030 to 015 degrees, and a restriction to the heading for departure to 030 degrees when missed approaches are likely. Regular emergency training sessions for controllers have also been implemented.

Helicopter CRASH in bad weather

One passenger was fatally injured when a helicopter crashed in bad weather near Cairns last year.

AT 1130 on 12 March 1999 the Bell 206L-3 helicopter departed from Green Island on a routine passenger charter flight to Cairns airport. The helicopter took off in light drizzle and the pilot elected to track back to Cairns via the shipping channel.

The Bureau of Meteorology had issued an amended aerodrome forecast for Cairns at 0808 for the 24-hour period from 1000. It forecast an easterly wind at 15 knots, visibility of 9,000 metres and light rain. Some cloud patches were expected with a base of 800 feet a broken layer at 1,800 feet and overcast at 10,000 feet. Periods of up to one hour of heavy rain, scattered cloud at 800 feet and broken cloud at 1,500 feet were expected over the forecast period.

At 1139 the helicopter was cleared by Cairns Air Traffic Control to track to The Pier, not above 500 feet. The controller advised the pilot that within seven to nine kilometres from The Pier the cloud base was between 800 and 1,000 feet with some showers and visibility less than 10 kilometres.

As the helicopter continued along the shipping channel, the pilot noticed that the weather ahead was deteriorating. A short time later, he descended the helicopter to about 150 feet to keep the water surface in sight, and reduced speed.

The weather conditions continued to deteriorate, and eventually the pilot flew the helicopter at 50 feet or less above the water in light to moderate rain. By this time he could no longer see any channel beacons.

The pilot turned on the windscreen demister as condensation had begun to form on the inside and he also armed the inflatable floats, which were fitted to the skid-type landing gear.

At about 1146 the pilot asked the controller for directions to The Pier. He was advised that The Pier was on a bearing of 205 degrees M, at a range of three kilometres (about 1.5 nautical miles). At about that time, visibility had deteriorated to the extent the pilot could not determine where the helicopter was.

Then, noticing that the helicopter had climbed to 100 feet altitude, the pilot placed it in a gentle descent to try and sight the water again. A short time later the helicopter contacted the water and rolled inverted.

The pilot and five passengers escaped from the fuselage but one passenger was trapped inside the cabin and did not survive. One passenger sustained serious injuries, four experienced minor injuries and the pilot was uninjured.

Actual weather conditions

The air traffic controllers on duty in the tower said that the weather had been fluctuating significantly and rapidly throughout the morning. There were periods when the weather conditions met the criteria for VFR (Visual Flight Rules) flight and intervals of low cloud and very heavy rain, some of the worst conditions controllers said they had seen at Cairns airport.

Radar images and rainfall rates suggested that the visibility in the area of the accident would have been reduced to a few hundred metres or less. Personnel who were at The Pier at the time of the accident described the rainfall as torrential with visibility as low as one car length.

The weather information passed by the controller to the pilot was based on his visual assessment of the weather in Cairns Harbour as he saw it from the air traffic control tower.

Height speed and track

Air Traffic Services radar data confirmed that the helicopter was initially tracking via the Cairns Harbour shipping channel at about 100 knots and at an altitude of 200 feet above mean sea level.

At about seven kilometres from The Pier the speed gradually decreased to between 55 and 60 knots and then to below 40 knots. The last recorded speed was 31 knots. The altitude recorded during the last two minutes of the recording was 100 feet with one reading of 200 feet.

The pilot reported that during an earlier flight to The Pier the airspeed indicator was not functioning normally and did not indicate above 40 knots. He thought that the fault was probably due to water in the pitot-static system and expected it to clear during the flight to Green Island. However, the fault remained.

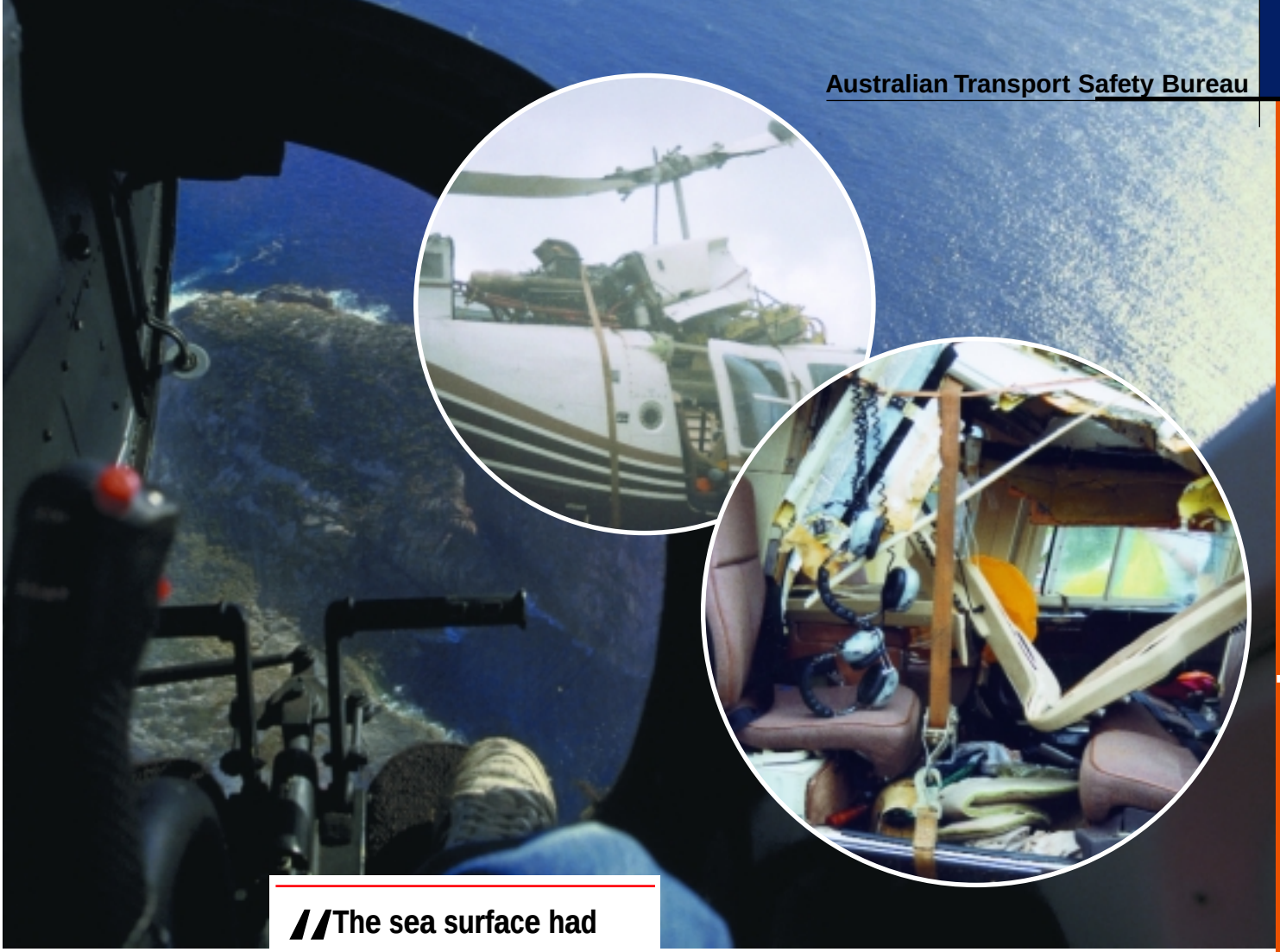
The airspeed indicator did not function during the flight when the accident occurred. The pilot said he relied on the ground speed display on the GPS (Global Positioning System) unit. The ATSB's occurrence brief stated that the GPS receiver records ground speed and not indicated airspeed.

Examination of the wreckage confirmed that the helicopter had struck the water in a slight left skid-low nose attitude, and at low forward and vertical speeds.

Circumstances and issues

A number of issues were highlighted as possible contributing factors to this accident.

There was an expectation from the helicopter company that the pilots would 'give it a go' if weather looked doubtful; to 'have a look before turning back.' However, there was no pressure to complete flights



in unsuitable weather conditions.

The pilot held an ATPL (airline transport) licence with a total of 5,321 hours and 1,656.1 on the Bell 206L. His decision to track via the channel was based on his experience with mechanical turbulence on the alternative route, which was coastal via False Cape. The alternative route had proven uncomfortable for passengers in the lee of high terrain on the southern side of Trinity Inlet when the wind was a south or south easterly greater that 15 knots.

The pilot followed his usual practice during conditions of deteriorating visibility of descending to keep sight of the water and reduced airspeed. Although the visibility was poor he continued with the flight because of his experience in similar conditions and the information from the controller which suggested that the weather would improve as he approached Cairns.

The pilot's night VFR rating was not current and he disliked instrument flying since getting the rating in 1992. In any event, the helicopter was not Instrument Flight Rules (IFR) rated. In the prevailing conditions the pilot did not consider that turning at low altitude and flying back to better conditions was a safe option.

> **"The sea surface had become completely flat and featureless and had blended entirely with the rain"**

The pilot reported that the visibility during the return flight from Green Island was the worst that he had ever experienced. The sea surface had become completely flat and featureless and had blended entirely with the rain. By that time it was too late to turn around.

He reflected that it might have been better to track coastal because the vegetation and other land features would have provided a higher level of visual contrast against the rain and cloud and may have enabled him to complete the flight safely. He would have been able to land the helicopter and await passage of the weather.

Investigation analysis

The formal analysis of this accident noted the following circumstance as valid contributors:

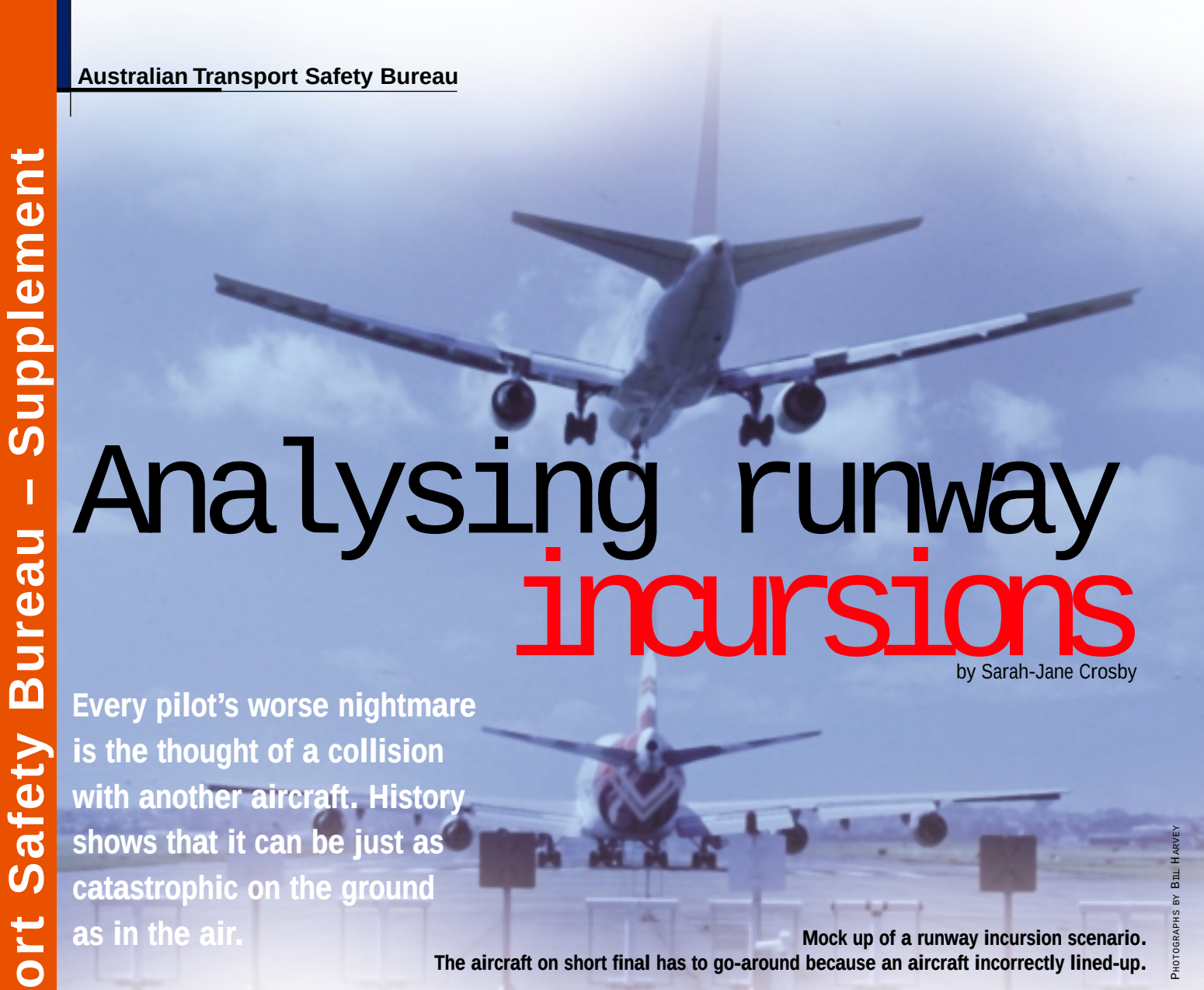
- The pilot continued the flight into adverse weather beyond the point of having a visual external reference.
- The risk of not being able to turn around onto a reciprocal track without visual clues was high as the pilot was not instrument rated and the helicopter was not IFR rated.
- The pilot's operating culture was conditioned from having 'got through' adverse weather on previous occasions.
- Having decided to track via the shipping channel because of turbulence consideration on the coastal route, the pilot overlooked the coastal route as an alternate course of action.
- The weather information passed by the tower controller probably placed an expectation in the pilot's mind that he could negotiate the weather successfully. ■

More details of this accident are contained in Occurrence Brief 199901009

Analysing runway incursions

by Sarah-Jane Crosby

Every pilot's worse nightmare is the thought of a collision with another aircraft. History shows that it can be just as catastrophic on the ground as in the air.



Mock up of a runway incursion scenario. The aircraft on short final has to go-around because an aircraft incorrectly lined-up.

PHOTOGRAPHS BY BILL HARVEY

THE industry's worst disaster remains the collision between two Boeing 747s on the runway at Tenerife in 1997, in which 583 people died.

According to the Federal Aviation Administration, the number one aviation safety issue in the United States is now runway incursions, which are occurring at a rate of about 230 a year.

In Australia the figures are a lot lower. The ATSB recorded a total of 89 runway incursions in 1996, 130 in 1998, and 113 in 1999.

Unlike the US, Australia has considerably fewer airports in controlled airspace and less daily traffic movement. But the numbers are significant enough to warrant closer inspection for trends and safety implications.

A runway incursion is an occurrence at an airport with an operating air traffic control tower that involves an aircraft, vehicle, person, animals or another object on the ground, and which creates a collision hazard or results in a loss of air traffic separation.

Using the Systemic Incident Analysis Model, [SIAM was described on page 33 in the last issue of *Flight Safety Australia*], an analysis of occurrence reports held by the ATSB reveals that the majority of runway incursions involve a failure to follow air traffic control instructions.

Approximately 85 per cent of runway incursions in the period 1997–1999 occurred after the failure of the defence of 'ATS procedures, facilities and standards'. Of the ATS failures, nearly 94 per cent are further classified as 'clearances and instructions' failures. In just over 90 per cent of the incursions, Air Traffic Services noticed the problem, and the situation did not become more serious.

The following example shows how a series of events can lead to a runway incursion, starting with a failure to follow instructions.

On Wednesday 22 July 1998 at Sydney airport a Boeing 737 and a Metro 111 narrowly avoided collision at the intersection of taxiway Juliet and runway 34L.

The Metro pilot was taxiing the aircraft on taxiway Juliet with instructions to taxi via taxiway Bravo and hold short of runway 25. The pilot read back the instructions correctly.

The pilot had experienced difficulties during a practice ILS approach under the supervision of a training captain and was distracted with thoughts of his performance. The training captain left it too late to warn the pilot that he had taxied the aircraft past the correct taxiway turn-off and only called for him to stop when he saw the aircraft landing on runway 34L.

The 737 was landing on runway 34L at the same time that the Metro overshot the runway holding point. The pilot could not stop the aircraft before the taxiway entry point and passed to the left of the runway centre line to

keep clear of the Metro. It cleared it by about 25 metres while travelling at 80 knots.

The air traffic controller called for the Metro to stop about the same time as the check captain. The prompt action of the tower controllers was the final safety defence which stopped the aircraft from entering the runway.

Other examples show how incomplete communication and air traffic control actions can lead to a runway incursion.

On 14 May 1999 a Navajo Chieftain lined up on runway 34L at the intersection of taxiway B10 at Sydney at night. A Saab 340 had been cleared to depart prior to the Chieftain. Another Saab 340 was on final approach to land on the same runway.

When the departing Saab had been cleared to take off the arriving Saab was cleared to land. The pilot of the Chieftain was then given a conditional clearance to line-up on the runway behind the landing aircraft. In the same transmission, the pilot was also given instruction regarding the direction of turn and heading to adopt after becoming airborne.

The pilot of the Chieftain heard the line-up clearance and after take off instructions, but did not hear the condition that the aircraft should line up behind the landing aircraft. The pilot read back the instructions that he heard, but the controller did not notice that the condition on the line-up clearance was not read back.

The Chieftain lined up on the runway, sighted the aircraft on final approach to runway 34L, and expected an immediate take off clearance. The crew of the Saab noticed an aircraft on the runway and after contacting the tower commenced a go-round from a height of approximately 35 feet, overflying the Chieftain at a height of about 150 feet.

The controller had correctly issued the take off instruction, but did not detect the incomplete read back by the pilot. The controller did not notice with a normal visual scan or by referring to the surface movement radar that the Chieftain had already entered the runway contrary to its assigned clearance.

System defences

While system defences work by preventing a serious accident on many occasions, occurrence reports will often highlight the potential for a breach in the defences, leading to safety action to rectify a deficiency before it contributed to an accident.

At Melbourne airport on 9 October 1997 a B767 landed on runway 21 while a B737 was on final for runway 24. Visibility from the tower was poor due to low cloud and fog.

The controller reported that he was unable to see either runway clearly. As the B767 turned off runway 21 onto taxiway J the crew were instructed to hold short of runway 24. They were unable to comply with this instruction as their aircraft was already two to three metres past the holding point for runway 24. They reported their position to the controller who then instructed the crew of the B737 to go round. The B737 was 3 nm from the runway at the time.

The pilot in command of the B767 reported that he had not previously used taxiway J and that in the limited visibility the aircraft had reached runway 24 more quickly than expected. Although they had attempted to stop short of runway 24 the aircraft passed the holding point before all movement ceased.

> **"…pilot look-out, clear radio communications and go-around procedures feature regularly…"**

Had the crew of the B767 not reported its situation immediately there were no other defences to prevent a possible collision between the aircraft.

Key safety messages

While the figures in the Bureau's database represent only those occurrences in an active control zone they also highlight safety issues that apply to operations at non-controlled aerodromes.

The importance of pilot look-out, clear radio communications and go-round procedures feature regularly as one of the key safety messages, as the following catastrophic accident in the United States shows.

At Quincy Municipal Airport in November 1996 a number of passengers and crew were fatally injured when two aircraft collided at the intersection of two runways.

A Beech 1900C made a straight-in approach in visual conditions to Runway 13. At the same time, a Beech King Air began its take-off roll on Runway 04. Waiting behind the King Air was a Piper Cherokee (PA28).

The captain of the Beech 1900C reported his aircraft was on short final for Runway 13. He asked whether the aircraft in position on Runway 04 was holding or about to take off.

The King Air pilot did not respond, but the pilot of the PA28 did, and stated it was holding for departure on runway four. The US National Transportation Safety Board's (NTSB) report found the PA28 pilot's response to the Beech pilot's question was inappropriate since the PA28 was behind the King Air and not first in line for take-off.

Despite evasive action by the pilots of both aircraft, the Beech and the King Air collided on the ground at the intersection of the two runways. The weather was not a factor and all the pilots involved were properly rated, trained and qualified.

The NTSB determined the probable cause of the accident to be the failure of the King Air crew to effectively monitor the common traffic advisory frequency (CTAF.) Also implicated was their failure to scan for traffic. Contributing to the cause of the accident was the PA28 pilot's interruptive radio transmission. The crew of the Beech misunderstood his message.

In its discussion of the human factors involved in the accident, the NTSB concluded that the radio transmission by the PA28 pilot created some of the confusion that precipitated the accident. The pilot of the King Air was a retired airline captain and known to usually be in a hurry to get home. It is possible the crew in the King Air were not monitoring the CTAF.

Industry safety success

The key to the aviation industry's success in developing into a safe system is its defences. Many elements such as procedures, and hardware and software, play a part in providing a defence against the consequences of human error. When one or more of these system defences are breached, an incident can happen. If they fail, an accident may be the outcome.

The best defences against the hazards of runway incursions are by compliance with procedures, and for pilots to cross check and monitor their environment and actions to maintain situational awareness.

Put yourself in the position of the pilot in the occurrences described above. What would you have done? More importantly, what will you do from now on? ■

Confidential Aviation Incident Reporting

THE CAIR SYSTEM helps to identify and rectify aviation safety deficiencies. The reporter's identity remains confidential. Information gathered from CAIR reports is used in many ways and provides valuable input for studies and further action. To make a report, or discuss an issue you think is relevant, please call me on 1800 020 505 or complete a CAIR form which is available from the Internet at www.atsb.gov.au

Chris Sullivan
Manager CAIR

CAIR reports

Horror flight for student

I obtained weather from Dectalk at 6.30am, and arrived for an appointment with the instructor at 8.45am. We went over the flight plan, checked the weather and NOTAMs and considered a SARTIME. After looking at the weather I advised the instructor that, if I was going solo on this flight, on no account would I leave the ground. I asked the instructor, who was from interstate, if he was familiar with the weather in the area. He said, "you'll be all right with me".

After a four-and-a-half-hour briefing, we departed at 1.44pm on the 220 nm exercise. I was then advised that the 'push-to-talk' might stick open at times and to flick it a bit to close it. Tracking to Bellingen, a diversion was necessary due to a heavy rain shower and reaching our planned height of 6,500ft looked doubtful because of low stratus cloud. Overhead Bellingen, I was advised to make a diversion between two high points, which were in cloud. Climbing out of the valley at Dorrigo, it was impossible to reach 6,500ft and I stayed just below cloud at approximately 2,500ft AGL. My actual track was as if I was heading for Glen Innes – this was necessary as rain showers were centred on Monkey Point.

After clearing the upper reaches of the Guy Fawkes River, I was able to track for Guyra at 2,000ft AGL keeping Mt Hourigan to the south. I was asked the question, 'How do you know it's Guyra?' I was asked to orbit once, then twice. After pointing out all the features, I was told that I was lucky to hit on Guyra like that.

We continued for Glen Innes heading 350M and this section was uneventful, although I tracked to the east of Ben Lomond, arriving on time for landing on runway 14. After backtracking and lining up for departure, I was asked to go through my after landing checks and completed the pre-take off checks. This took about 10 minutes, while at the runway threshold with the engine running.

After take off, I was asked to maintain runway heading, then turn left to 083M and track for Grafton. When approximately 10 minutes out from Glen Innes, a complete white out lay ahead and I was told to track down a valley to my right. Rain was coming in from the east and cloud covered the mountain tops. The valley was actually going up to meet the cloud base and visibility was poor with heavy rain on the windshield leaving only the side windows available to watch the hills around. We were in the Guy Fawkes River valley, heading south and running out of space.

At this point the instructor said he was taking over and going IFR. We went into cloud and he contacted Sydney 122.6 requesting IFR at 5,000ft and later, after checking the map, requested 6,000ft. The frequency selection knob fell off the radio and disappeared. Neither the VOR nor the ADF were working. A request was made to extend SARTIME by half an hour and a position report was made. A transponder code was issued with a request to 'squawk ident'. After a couple of minutes, we received another request for ident and position. The instructor was then told we were 52 nm south west of Coffs Harbour – not north west as he had reported! We were told to track 075, as we were near Point Lookout, and to contact Coffs Tower at 30 nm.

After a while I spotted a large hole in the cloud and could see the Bellingen River. The instructor flew the aircraft down through the hole, and we came out near Thora. Below cloud at approximately 1,500–2,000ft and nearing Bellingen, I was told to take over. The tower requested that I track for a right base for runway 21. I suggested to the instructor that, because of the poor visibility, it would be a good idea to turn on the landing lights. He agreed. I landed, taxied in, parked and tied down the aircraft, by which time the SARTIME had expired.

Arriving in the terminal the instructor was asked to contact CENSAR and explain why the SARTIME had not been cancelled. The heavens opened and it rained very heavily as darkness closed in. I was pleased to be back. I felt very hungry as I'd had no lunch and it had been a long day – 9am to 4.50pm, including 3.6 hours flying.

The instructor said that the GPS coordinates had been entered incorrectly and were out by 28 nm for Coffs Harbour. I have since heard from the senior instructor (who programmed the Coffs Harbour coordinates) that there was no way they could have been out. I have since lain awake at night thinking what would have happened if the hole hadn't appeared!

CAIR note: This event occurred some time ago and is included to demonstrate how easy it is to get into an adverse situation when flying in poor weather. The flying school no longer employs the particular instructor.

Allocation of SSR codes

The aircraft departed Coolangatta for a local flight. It was allocated a discrete SSR code for operations in controlled airspace and the standard code 1200 when it departed controlled airspace. When the pilot called for clearance to re-enter controlled airspace, he

was told to remain OCTA as he could not be identified on radar due to clutter. Eventually, ATC allocated a new code; the aircraft was identified and cleared into controlled airspace. However, there was a delay. The reporter asked if it is always necessary for aircraft on short local flights that originate from a controlled aerodrome for operations OCTA and return to the departure aerodrome to be allocated code 1200 then a new code for clearance back into controlled airspace. Could the controllers reserve the original code and, either the pilot re-select it with the call requesting clearance to re-enter or, continue to squawk the original code for the short period of operations conducted OCTA.

CAIR note: Although this occurrence did not highlight a critical safety issue, the response from Airservices Australia is reproduced for educative purposes.

Response from Airservices Australia:

Aircraft proceeding outside controlled airspace are allocated code 1200 to facilitate observation of track and altitude to assist in monitoring and traffic information.

It is not possible to permit an aircraft proceeding outside controlled airspace to retain a previously allocated specific code because:

- The number of codes is strictly limited by the technology and providing 'skin' codes, even temporarily, creates unacceptable problems with code allocation for aircraft in controlled airspace.
- The TAAATS radar system (and in fact its predecessors, AUSCATS and IRDS) are not designed for aircraft to retain codes. The system works by allocating a code for a specific track as and when required.

Aerodrome lighting at Sydney

Sydney Airport is in the process of upgrading aerodrome lighting and as such is installing lighting to indicate a taxiway/taxiway intersection (TIMS). These consist of three orange lights on the taxiway centre line in line with a broken yellow line. This lighting also indicates where an aircraft should stop when required to give way to an aircraft moving on the intersecting taxiway. The same type of lighting is also used at the holding point for a taxiway/runway intersection. The only difference between a taxiway/ taxiway and a taxiway/runway intersection is the 'MAG' signs used to designate the runway/taxiway intersection. However, not all 'MAG' signs are illuminated and ground controllers have no indication of those that are not illuminated.

My concern is that someone may mistake a runway/taxiway intersection for a taxiway/taxiway intersection and cause a runway incursion. The AIP does not make reference to the lighting used to designate a taxiway/taxiway intersection.

Response from Sydney Airports Corporation Limited (SACL):

Thank you for your recent advice on the submitted CAIR report. The report is quite timely. We have been in discussion with both Airservices and the Civil Aviation Safety Authority on this matter.

Taxiway Intersection Markings (TIMS) are a requirement under the Rules & Practices for Aerodromes (RPA) manual and SACL installed these markings in accordance with the standards mostly during taxiway enhancement works. It should be understood that this CAIR report is only referring to the 'night-time' markings. Daytime markings are in accordance with the RPA and no confusion exists.

As a runway holding point is delineated with the same type of 'night' marking (three amber lights) the potential for a runway incursion coupled with the potential for human error was recognised by this office. Immediate clarification was sought from CASA. At the same time, a plan was put to Airservices, CASA and the Sydney Airport Pilots Forum to decommission the TIMS until the more distinguishable 'Runway Guard Lights' (also called for by the RPA) were installed. Upon commissioning of the Runway Guard Lights, the TIMS will be recommissioned. As both light markings are very different, the potential for confusion and error will be eliminated.

SACL will be installing Runway Guard Lights to meet the regulatory requirements. Until that time, Airservices will manage surface movement traffic without the use of the TIMS.

On the matter of the 'MAGS', we have received advice from our technical staff that all operational 'MAGS' are serviceable. The writer may be confused with the Cat 1 system 'MAGS' which have not yet been commissioned due to technical difficulties. Further the lack of information in the AIP is a matter for Airservices and CASA – it is not a SACL controlled document.

Audibility of public address units

During taxi for departure, the pilot instructed the cabin crew to be seated for take-off. The instruction was issued over the public address system but was barely audible. Flight attendants in the vicinity of Door Four Right remained standing and talking. The aircraft entered the runway, take-off power was applied and the take-off run commenced. The flight attendants then scurried to their seats.

Frequently, and on many airlines, I have been unable to hear announcements from the flight deck or from cabin crew over the public address system. I am concerned that passengers will not hear safety evacuation instructions. Injuries/ accidents, and incidents such as this, can be avoided by clear public address announcements.

Maintenance release overrun

An operator allowed a Citation to be flown on a charter flight from Aerodrome A to Aerodrome B and return, knowing that the maintenance release would overrun significantly. The operator intended to fly the aircraft again from Aerodrome A with the maintenance release out of date.

CAIR note: The regional CASA Office was immediately advised by telephone of the allegation and requested to investigate. CASA advised that the Cessna system of maintenance allows a 30-hour (non-cumulative) leeway with maintenance schedules. The maintenance records indicated that although the maintenance release had overrun, the operator was able to invoke the 30-hour extension. This would include the period for the flight scheduled on 18 April 2000. ■

ATSB is part of the Commonwealth Department of Transport & Regional Services

A CAIR form can be obtained from the ATSB website @ www.atsb.gov.au or by telephoning 1800 020 505.