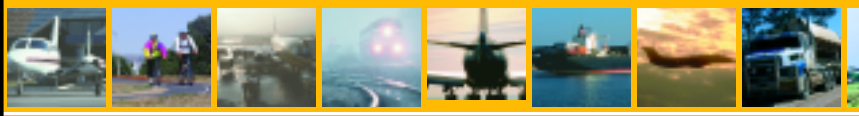
ATSB
Australian Transport Safety Bureau

The Australian Air Safety Investigator



The ATSB makes a significant contribution to the safety of the Australian aviation industry and travelling public through investigation, analysis and open reporting of civil aviation accidents, incidents and safety deficiencies.

It performs air safety functions in accordance with the provisions of Annex 13 to the Convention on International Civil Aviation (Chicago Convention 1944) as incorporated in Part 2A of the *Air Navigation Act 1920*. Part 2A contains the ATSB's authority to investigate air safety occurrences and safety deficiencies.

The ATSB is an operationally independent bureau within the Federal Department of Transport and Regional Services. ATSB investigations are independent of bodies, including regulators that may need to be investigated in determining causal factors leading to an accident or incident. ATSB is a multi-modal bureau with safety responsibilities in road, rail and sea transport in addition to aviation.

The Australian Air Safety Investigator is a regular eight-page feature in *Flight Safety Australia* produced with editorial independence by the ATSB. It aims to keep the industry informed of the latest findings and issues in air safety from the bureau's perspective.

Australian Transport Safety Bureau
PO Box 967,
Civic Square ACT 2608

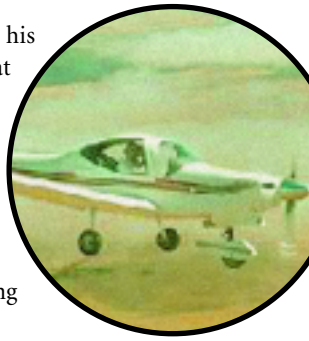
Telephone: 1800 621 372
E-mail: atsbsupp@atsb.gov.au

Website: www.atsb.gov.au

A Confidential Aviation Incident Reporting (CAIR) form can be obtained from the ATSB website or by telephoning 1800 020 505.

Disorientation during night operations

Occurrence 200101929



THE student pilot was authorised by his instructor to conduct solo night circuits at Merredin, WA in a Grob 115 aircraft. Shortly after take-off from runway 28, and as the student commenced his after take-off checks, he noted that the aircraft was becoming difficult to control. Scanning the aircraft's flight instruments he concluded the attitude indicator was unreliable and noted that the directional indicator was turning quickly to the left.

Despite applying back-pressure to the control column and maintaining the pitch attitude for a climb, the aircraft continued to lose height and impacted the ground beyond the aerodrome boundary. Immediately following the ground impact, the aircraft became airborne and the student recalled applying full power and commencing a climb. An instructor on the ground established radio communication and provided instructions to assist the student to complete the subsequent circuit and landing. As the nose was lowered to the runway during the landing roll the propeller struck the runway and stopped. Examination of the aircraft indicated that the nose wheel and oleo had been damaged on contact with the ground and had detached from the aircraft prior to the landing. The student was not injured and vacated the aircraft without assistance.

The accident occurred at approximately 2000 Western Standard Time. Last light at Merredin on the night of the accident was 1802. It was reported to be a dark night, with no discernible natural horizon. During the initial climb from runway 28, the student had no significant external visual reference available and was using the flight instruments to maintain control of the aircraft.

Post-accident examination of the aircraft flight instruments, engine driven vacuum pump and other associated systems did not reveal any pre-existing defect. The student was relatively inexperienced in dark night operations and had not completed the training specified in the operator's syllabus prior to commencing night operations.

The circumstances of the accident were consistent with the student becoming disorientated, possibly associated with the change in aircraft configuration during completion of the after take-off checklist. Because he had not completed the training required for night operations, the student had most probably not developed his instrument flying skills to the standard normally required. The pilot had completed a dual navigation exercise prior to departing on the accident flight. At the time of the accident he had been in attendance at the aerodrome for 10 hours. Accordingly, it was possible that his performance during the accident flight was also affected by fatigue. ■

Recently completed investigations

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

Published September–October 2002

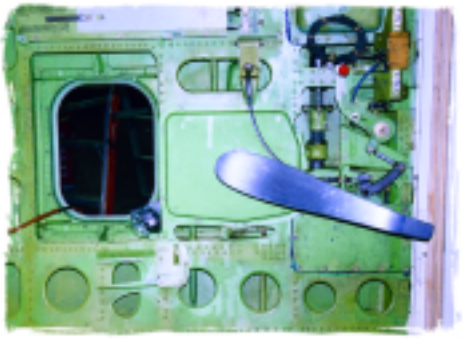
Occ. no.	Occ. date	Released	Location	Aircraft	Issues
200200095	31 Jan 02	29 Oct 02	222 km NW Perth VOR WA	Cessna 441	Rising cabin altitude indication
200200018	8 Jan 02	29 Oct 02	Sydney Aero. NSW	Boeing 767-238	Engine stalled during landing roll
200203242	19 Jul 02	28 Oct 02	Gogo Station Condamine Yards WA	Robinson R22 BETA	Passenger walked into tail rotor
200100348	26 Jan 01	23 Oct 02	3 km E Newman Aero. WA	Cessna 310R	Fuel starvation
200200190	8 Feb 02	22 Oct 02	PUMIS (IFR) Other	Boeing 747-438/Boeing 747-400	Loss of separation standards
200201617	2 Apr 02	21 Oct 02	741 km N Cairns Aero. QLD	Boeing 747-338	Malfunction of door locking mechanism
200200463	20 Feb 02	21 Oct 02	22 km E Sydney Aero. NSW	Boeing 737-800/Boeing 767-338ER	Loss of separation standards
200200029	6 Jan 02	16 Oct 02	56 km NE Melbourne Aero. Vic.	Fairchild SA227-AC	Smoke in the cockpit
200102289	27 May 01	8 Oct 02	20 km W Louth NSW	Beech C24R	Rough running engine
200105627	27 Nov 01	2 Oct 02	56 km NE Melbourne Aero. Vic.	Boeing 767-238	Engine failure
200104280	5 Sep 01	30 Sep 02	Melbourne Aero. Vic.	Boeing 767-336/Commander 500-S	TCAS Resolution Advisory incident
200102695	18 Jun 01	27 Sep 02	Perth Aero. WA	Boeing 737-476	Take-off on occupied runway
200104604	24 Sep 01	24 Sep 02	5 km W Kurrajong Heights NSW	Bell 206B (III)	Engine flameout
200200035	11 Jan 02	24 Sep 02	9 km E Horn Island Aero. QLD	Cessna U206F	Loss of control at low level
200201100	24 Mar 02	24 Sep 02	Groote Eylandt Aero. NT	Cessna 210N	Loss of control after take-off
200105942	27 Dec 01	20 Sep 02	6 km NNW Sydney VOR NSW	Saab SF-340B/Piper PA-23-250	Inoperative cooling flaps
200102292	24 May 01	18 Sep 02	Perth Aero. WA	BAe 146-100	Failure of airstair 'retract' switch
200105446	14 Nov 01	16 Sep 02	8 km E Kalgoorlie WA	Cessna 210N	Loss of engine power
200102901	27 Jun 01	16 Sep 02	4 km N Tamworth Aero. NSW	Beech 1900D/Pacific CT4B	Failure to comply with Air Traffic Clearances
200106230	26 Dec 01	10 Sep 02	159 km SW Sydney VOR NSW	Boeing 767-338ER/Cessna 500	Loss of separation standards
200103749	12 Aug 01	10 Sep 02	Orange Aero. NSW	Fairchild SA227-DC	Engine failure on take-off
200102263	23 May 01	10 Sep 02	Canberra Aero. ACT	Saab SF-340B	Loss of power on take-off
200101929	24 Apr 01	4 Sep 02	Merredin (ALA) WA	Burkhart G-115C2	Disorientation during night operations

Safety briefs

Malfunction of door locking mechanism

Occurrence 200201617

While en-route to Japan, the crew of the Boeing 747-300 aircraft noticed the number-5 left main entry door warning light illuminate. The flight engineer went to investigate and found the door handle had moved from its fully locked 4-o'clock position to an unlocked 3-o'clock position.



The flight engineer, with the assistance of one of the cabin crew, attempted to move the handle back to the fully locked position but were unable to do so. It was determined that the door would not be able to come open in flight due to the cabin being pressurised, so the flight continued on to destination.

Shortly before landing, following a normal approach, the door handle again started to move towards the open position. As the handle reached the 2-o'clock position, loud wind noise could be heard. The flight attendant, with the aid of a passenger, forced the handle down holding it there until the aircraft had landed and taxied to the terminal.

Minor adjustments were made to the door but the handle movement re-occurred over the next few flights. On returning to the operator's main base, the door was removed and inspected with no faults found. The door was refitted and a rigging check carried out. ■

Fuel starvation

Occurrence 200100348

At about 1930 Western Standard Time (WST) on 26 January 2001, a Cessna 310R aircraft, VH-HCP, departed Kiwirrkurra, Western Australia, for Newman. The flight was conducted under the night visual flight rules (NVFR), with one pilot and three passengers on board. The aircraft was operated by the Air Support Unit of the WA Police Service.

At 2134, the pilot made a radio broadcast on the air traffic services area VHF frequency, reporting that the aircraft was 50 NM to the east of Newman on descent, passing 8,000 ft and estimating the circuit area at 2149.

The aircraft arrived in the circuit area at Newman at approximately 2150. WA police officers waiting at the aerodrome to meet the aircraft saw it approach from the east, pass overhead and join the circuit for a landing on runway 23. The runway lights were on. The aircraft was reported to be flying at a constant height on the downwind leg of the circuit and the engines sounded normal.

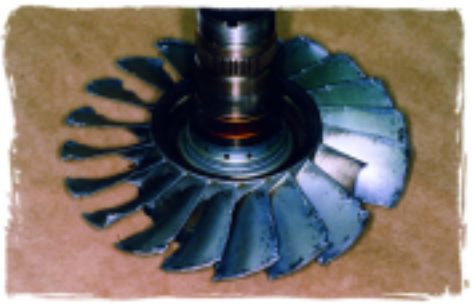
The officers recalled that they heard the engines start to 'cough and splutter' when the aircraft was on late downwind and noticed that the aircraft had started to descend. The red and green wing-tip lights seemed to 'intertwine' during the descent. One of the officers thought that the aircraft was 'spiralling', while another recalled that the aircraft appeared to fall to the ground 'like a fluttering leaf'. All the officers recalled that the sound of the engines stopped prior to the sound of a ground impact.

The aircraft collided with the ground, approximately 3km to the east of Newman aerodrome, and was destroyed on impact. The four occupants sustained fatal injuries. ■

Loss of power on take-off

Occurrence 200102263

During the take-off roll, as the Saab 340 aircraft reached about 100 kts, the crew heard a loud bang that was followed by loss of power from the right engine.



The crew rejected the take-off and shut down the engine when the inter-stage turbine temperature increased to about 1,190 degrees Celsius. The air traffic controller confirmed the absence of fire or smoke and the crew returned the aircraft to the gate where the passengers disembarked.

An internal boroscopic examination revealed that about one half of a single first-stage compressor blisk (bladed disk) blade had separated, and that the compressor and turbine blades sustained varying degrees of damage on the leading and trailing edges.

The blade separation was found to have occurred as a result of fatigue cracking that initiated from corresponding transverse mid-span locations on both sides of the blade. The initial development and growth of the crack had been slow, extending over numerous hours and flight cycles. At approximately nine cycles before failure, the crack began to advance much more rapidly. The crack grew to a critical size and final overload fracture of the remaining section allowed separation of the outer blade section.

No anomalies were found within the blisk material and manufacture. ■

Loss of separation standards

Occurrence 200200463

The Boeing B737-800 (B737) was cleared to Melbourne via the Sydney RWY 34R MARUB THREE standard instrument departure (SID) to 5,000 ft. The Boeing B767-338ER (B767) was inbound from Auckland NZ and had been cleared to descend to 6,000 ft with a vector to a right downwind leg for RWY 34R. As the aircraft approached each other 12 NM east of Sydney, an infringement of the radar separation standard occurred due to the B737 continuing to climb above 5,000 ft and reaching 5,700 ft before descending back to the assigned level. Recorded radar data indicated that lateral separation between the B737 and B767 reduced to 2.8 NM with a vertical separation of 900 ft. The required radar separation standard was 3 NM laterally or 1,000 ft vertically.

The investigation determined that the separation standard would not have been infringed if the crew of the B737 had complied with the 5,000 ft altitude requirement. At the time of the infringement the B737 was being manually flown by the pilot in command who was distracted from his primary task of controlling the aircraft's flight path. The distraction occurred as the pilot in command monitored the weather radar and assessed the meteorological conditions that the aircraft was encountering during the climb.

The engagement of an autopilot would have reduced the pilot in command's workload and enabled him to monitor the weather situation whilst the auto-flight system levelled the aircraft at the assigned altitude. The defence against human error provided by crew coordination failed, as the co-pilot did not monitor the aircraft's flight path as it approached the assigned altitude.

As a result of this occurrence, the operator advised that the standard operating procedures detailed in the B737 Flight Crew Training Manual were amended to include:

'**Altitude Restriction:** Whenever there is a low level altitude restriction after takeoff, the autopilot will be engaged as soon as practical'. ■

Smoke in the cockpit

Occurrence 200200029

During cruise flight, the crew of the Metro III aircraft noticed a burning smell and smoke in the cockpit. The crew discovered that the problem was associated with avionics bus number 2, and isolated the bus. Following this action, the smoke and burning smell dissipated and the flight was successfully completed.

The investigation revealed that a short circuit had occurred in the right avionics bus circuit breaker panel and that the aircraft was being operated with a minimum equipment list item open for a faulty press-to-talk (PTT) for the co-pilot's audio system. Damage was sustained to insulation of the wiring and the bus link in the co-pilot's audio loom, including the PTT wires. The damage had resulted in a short circuit between the right avionics bus circuit breaker bus supply link, and the co-pilot's audio wiring loom. The wiring loom was physically secured to the circuit breaker bus-bar.

The damage to the insulation of the link wire was in the form of cuts, possibly from manoeuvring the right avionics bus circuit breaker access panel past sharp edges on the panel housing during routine maintenance. The insulation damage ranged in depth and in some areas exposed or damaged the copper conductor. There was also evidence of heat moulding from physical contact between the bus link and the co-pilot's audio wiring loom, due to excess current draw from the faulty PTT.

The routing of the PTT wiring loom ran along the circuit breaker bus-bar for the right avionics circuit breaker bus. Chafing against this bus may have caused the original PTT defect, and combined with the damage to the bus link wire, produced a short circuit from the bus link wire through to the earth wires in the co-pilot's audio wiring loom. The short circuit bypassed individual circuit breakers allowing a current draw of up to 100 amperes through the right essential bus 100 ampere circuit breaker switch.

Local safety action: As a result of this occurrence, the aircraft operator has taken action to re-route the PTT wiring away from the circuit breaker supply bus and removed sharp edges from the panel housing to prevent wire chafing. ■

Loss of control at low level

Occurrence 200200035

The pilot of a Cessna 206 (C206) was making a positioning flight in accordance with the visual flight rules (VFR). The flight departed Badu Island, Qld at about 1205 Eastern Standard Time for Horn Island, Qld. At about 1222, the pilot broadcast that he was holding until the weather over Horn Island airport had cleared. At about 1238, the pilots of two aircraft in the circuit area at Bamaga reported hearing a MAYDAY broadcast from the pilot of the C206 on the Torres MBZ frequency. There was no information given as to the nature of the emergency. Further efforts to contact the C206 pilot were unsuccessful and air traffic services were advised.

Witnesses reported that the weather conditions at Horn Island aerodrome between 1230 and 1245 were less than VMC. Heavy rain had reduced visibility to less than 100 m. One witness reported seeing lightning to the north of the field. A Bureau of Meteorology assessment of weather conditions for the area east of Horn Island indicated that the generally low overcast cloud contained embedded thunderstorm cells with associated heavy rain and a cloud base less than 1,000 ft. The recorded rainfall intensity was heaviest between 1200 and 1300. Weather conditions at the time were described by people on Horn Island as being the most severe they had seen that season.

An air and sea search was commenced. Later that day floating debris, identified as from the C206, was located. The following day divers located the aircraft wreckage approximately 3 NM east of Horn Island in 7 m of water. The aircraft wreckage was recovered but the pilot, who was the sole occupant, was not found.

Examination of the aircraft wreckage and maintenance documentation found no evidence to indicate that the aircraft was other than serviceable for the flight. The circumstances of the occurrence were consistent with a loss of control at low level and at an altitude from which recovery was not possible. The investigation was unable to determine the reason for the loss of control. ■

Engine flameout

Occurrence 200104604

The Bell Jetranger 206B (III) helicopter was engaged in aerial firefighting operations utilising an external water bucket and staging out of a nearby national park campground. The pilot reported that he started flying at approximately 0750 hours after completing a pre-flight check of the helicopter, which included draining the fuel sump, inspecting the fuel, and confirming 106 litres or 27.9 United States Gallons (USG) of total indicated fuel. At approximately 0825 hours, while engaged in water bucket operations, he discussed his fuel status with other company pilots on a common radio frequency and noted 38 litres (10 USG) of indicated fuel remaining. He finished a swath run of the fire area, dropping water and then decided to complete one more swath run before returning to refuel.

Approaching the fire line, the helicopter entered a left turn at approximately 200 ft above ground level (AGL). The pilot reported that the helicopter was buffeted by strong turbulence, which caused the helicopter to yaw left and go out of trim. He reported that the engine power then began surging and, subsequently, an engine flameout occurred. He continued the left turn, jettisoned the water and initiated a power-off autorotation to a heavily wooded area.

The pilot's left shoulder harness had broken and separated at a point just forward of and below the pilot's shoulder. The pilot's left shoulder harness was sent for testing by an independent belt and harness testing and repairs organisation. The webbing was identified as MIL-T-50368 Type IV, 2 inch Nylon Webbing, rated at 2,000 pounds strength. The rated assembly strength of the harness assembly was 1,500 pounds. Testing revealed that the webbing failed at a value of 391 pounds, or less than 20 percent of the original strength of the material. Factors contributing to the loss of original strength were ageing related to ultraviolet light exposure, abrasion damage and contamination by turbine oil.

The investigation determined that fuel supply to the helicopter engine was interrupted, resulting in engine surging and subsequent flameout. ■

Rising cabin altitude indication

Occurrence 200200095

Shortly after commencing descent from flight level (FL) 310, the pilot of the Cessna Conquest noticed the cabin altitude indication rising. When passing through FL270, the cabin rate of climb rose to 3,000 ft/min with an accompanying

decrease in cabin differential pressure and both master warning and 'ALT' annunciators illuminating. When the annunciator lights illuminated the pilot observed that the cabin oxygen masks had failed to auto-deploy as required. As the patients were already on oxygen and the flight nurse had donned a spare mask, he did not deploy them manually. The pilot donned his own oxygen mask and commenced a rapid descent to 10,000 ft.

The pilot reported that the cabin altitude indication climbed to a peak of 17,000 ft before decreasing during the descent. A subsequent maintenance inspection found water contamination present in the cabin door seal pressurisation solenoid valve and it was suspected that this water froze preventing the correct operation of the valve.

The failure of the oxygen mask auto-deployment system was also investigated and the wiring to the barometric activation switch was found to have a high resistance. This wiring was replaced. As a precaution, the wiring to the barometric switch that activated the cabin altitude annunciator warning light was also replaced. During these rectifications, the maintenance personnel discovered there was no procedure published by the manufacturer to correctly adjust and test either barometric switch set-point after maintenance. The company has since introduced an engineering order that details the appropriate adjustment and test procedures to be carried out prior to return to service for these barometric switches. ■

Encounter with microburst windshear

Occurrence 200100213

On 18 January 2001, VH-TJX, a Boeing 737-476 aircraft, encountered microburst wind shear at 0729 EST while conducting a missed approach to runway 19 at Brisbane aerodrome during an intense thunderstorm.

The aircraft encountered rain and isolated hail at 1,000 ft during the approach. The approach lights were visible to the crew, and the pilot in command continued the approach. At about 500 ft, the weather deteriorated, and the aircraft encountered hail and turbulence. The pilot in command discontinued the approach and applied go-round engine thrust. The aircraft commenced a normal climb, but the climb performance then substantially reduced due to the effects of the microburst downdraft and flight through heavy rain. The pilot in command applied maximum engine thrust to improve the climb performance of the aircraft.

The Bureau of Meteorology issued severe thunderstorm warnings for the Brisbane area to the public at 0552 and 0654. It also issued an airport warning for Brisbane aerodrome at 0635, forecasting the presence of thunderstorms with possible hail and gusts exceeding 41 kts between 0700 and 0900. The aviation-related forecasts for Brisbane aerodrome, however, made no reference to thunderstorms until 0630. Accordingly, there was inconsistency between the Bureau of Meteorology's weather products between 0552 and 0630.

The Manual of Air Traffic Services, required controllers to pass hazard alert information as soon as practical to aircraft likely to be affected by known hazards.

The occurrence emphasises that thunderstorms and convective activity are significant issues in aviation, particularly in aerodrome terminal areas, and that weather hazards in those areas are a significant safety concern. Aircraft in the landing, take-off, missed approach or go-round phases of flight are particularly vulnerable in or near thunderstorms. The effects of microburst wind shear and the aerodynamic penalties imposed by flight through heavy rain can place an aircraft in a potentially unsafe situation. ■

Inoperative cooling flaps

Occurrence 200105942

The pilot of a Saab Aircraft AB SF-340B (Saab), on final to runway 16R at Sydney airport, was instructed by the aerodrome controller (ADC) to turn right heading 240 degrees M due to an unidentified aircraft in the control zone. The unidentified aircraft was observed to turn north and pass the Saab with 2 NM lateral and 400 ft vertical displacement. The required separation standard was either 3 NM laterally or 1,000 ft vertically. The unknown aircraft was subsequently identified as a Piper Aircraft Corporation PA-23-250 (Aztec).

The Aztec pilot had intended to conduct a visual flight rules (VFR) flight from Bankstown, located 9.5 NM west of Sydney, to Grafton. Weather conditions at the time were visual meteorological conditions that had been affected by bushfires in the Sydney basin.

Immediately after takeoff the right engine commenced to 'run rough'. The pilot reduced power on that engine and attempted to identify the cause of the problem. The pilot decided to return to Bankstown, but as he manoeuvred to return the flight visibility was such that he could not see Bankstown airport. He was aware of the aircraft's proximity to the Sydney control zone and reported that he was about to call Sydney air traffic control for a clearance when he was advised by the departure south controller that the Aztec had infringed the control zone.

The Sydney Aerodrome and Director West controllers saw, on the air traffic control radar, that the Aztec was in the control zone, northwest of Canterbury racecourse, and likely to conflict with aircraft on final to runway 16R. The ADC instructed the pilot of the Saab to turn right to avoid the Aztec.

The Aztec pilot continued the flight but, after take-off at Coffs Harbour airport, after refuelling, the right engine surged at 300 ft and the pilot landed the aircraft on the remaining runway. Inspection by a licensed aircraft maintenance engineer (LAME) found that the cooling flaps on both engines were inoperative and had caused the engines to overheat. The LAME re-rigged the cowl flaps for maximum cooling and a subsequent engine ground run confirmed normal operation. ■

Loss of engine power

Occurrence 200105446

The pilot of the Cessna 210 declared a MAYDAY and stated that he had lost engine power and was attempting a landing on a road. A short time later, the aircraft impacted heavily in a left wing low, nose-down attitude on lightly wooded scrub ground to the south of the road. The pilot received fatal injuries. The three passengers were removed from the aircraft by emergency services personnel and transported to hospital with serious injuries.

The afternoon before the flight, the operator requested fuel for the aircraft (160L in each of two tanks) but later amended the requirement to fill the fuel tanks to a new quantity of 120L in each tank. The trip fuel log found in the aircraft revealed that the pilot had entered the incorrect fuel total with annotations of 160L per fuel tank instead of the actual 120L per fuel tank.

The wreckage, engine and component examinations found no evidence of pre-existing mechanical defects, with the aircraft or its systems, that would have prevented normal aircraft operation prior to the accident.

Because of the initial fuel total error, the pilot would have expected to have 40L more remaining in each tank at the time the engine lost power.

In the absence of evidence of a mechanical failure leading to engine loss of power, the most likely cause of the engine loss of power was associated with fuel supply starvation or interruption. ■

Engine failure on take-off

Occurrence 200103749

The crew of the Fairchild Metro III aircraft, registered VH-DMI, heard a loud bang shortly after application of full power during the take-off roll. The crew immediately retarded both engine power levers and noticed that the left engine exhaust gas temperature was increasing so they shut down the left engine. When a passenger advised that 'smoke and fire' were coming from the left engine, the crew discharged the fire bottle into that engine.

An external examination by the operator's engineers found damage to the left engine turbine blades and shrapnel damage to the exhaust nozzle.

The examination of the rotating air seal and other components from the failed engine revealed that the entire outer rim of the rotating air seal had separated from the flanged section. One location, where the loss of material was substantially greater, exhibited a short length of fracture showing evidence of fatigue crack propagation. Heat tinting over the area of fatigue indicted that it was present prior to the event failure. The seal had no evidence of material or manufacturing anomalies.

The engine manufacturer advised that investigation into previous failures of the rotating air seal concluded that the cracking in the rim area was due to elevated rim operating temperatures, primarily due to hot gas leakage from deteriorated first stage stator assembly hardware.

To alleviate the problem, the manufacturer introduced two service bulletins, TPE331-72-2002 and TPE331-72-2030 and revised the engine maintenance manual to improve inspection of the relevant components at hot section inspection with intention to prevent hardware prone to gas path leakage from returning to service. The requirements of the service bulletins were incorporated in this engine in 1997 and 1999 respectively.

The workshop that overhauled the engine indicated that incidents of rotating air seal cracks were rare on engines that had been modified in accordance with the service bulletins, but they had no service data on the failed seals. ■

Confidential Aviation Incident Reporting

As part of the ATSB database upgrade, CAIR reporters now have the facility to submit CAIR reports online, knowing that their reports are secure. Several reports have already been received by this means. This is an additional means of reporting and is not intended to replace reporting by mail, telephone, electronic mail or facsimile.

Generally, CAIR prefers to receive reports in written form than by telephone. The advantage of a written report is that the reporter ensures that it says what he/she wants it to say before dispatch. A telephoned report must be interpreted by CAIR staff from notes made in discussion, with a slight risk of misinterpretation of the reporter's meaning. However, if you have a concern or are considering reporting and would like to discuss the matter before proceeding, please call on 1800 020 505.

John Robbins
Manager CAIR

Runway availability after PAN call (CAIR 200202370)

After takeoff at approximately 200 ft AGL, the engine of the aircraft started rough running. After conducting the appropriate procedures and no improvements occurring, at approximately 600 ft the pilot made a 'PAN' call and informed the Tower that the intention was to make a close approach and landing back onto 24L.

After just turning onto downwind runway 24L the Tower informed the pilot that runway 30 would not be available. There were a number of cars operating on runway 30.

The pilot continued and landed on runway 24L and taxied back to [operator premises] as per normal.

The prime concern in submitting this report is the potential non-availability of the runway during an emergency. The runway was not available because cars were using the runway for some sort of driver education program. What was the recall time for the runway? Is it appropriate to release a runway for a commercially based non-aviation purpose?

Response from CASA: Investigations indicate that runway 30 was not available because the airport operator had leased the non-active runway for advanced driver training. The Authority understands that the runway was available on 5 to 10 minutes notice.

The Authority is not able to advise if a Notice to Airmen was issued. This action falls within the responsibility of Airservices Australia.

Response from Airservices Australia: I am writing in response to the above report, which relates to the non availability of runway 30 at [location] during the period that an aircraft had declared an emergency due to a rough running engine. Runway 30 was not available due to cars using the runway.

[Aerodrome operator] advised that they have cancelled all future approvals for car operations on the runway.

During the event described runway 30 was available with three minutes notice, which is less recall time than is often available with some works.

Response form aerodrome operator:
[Location] Airport while under the control of FAC, had a practice in place of hiring the non-duty runway for advanced driver training courses and sound/noise testing of vehicles. This practice has been carried on by [airport operator] up until the 21/05/02, when all companies involved have received notice that this is no longer available.

While these procedures were in place, a NOTAM could not be raised in advance due to the variance of the duty runway. At all times the recall time was less than 10 minutes and from previous experience due to wind changes it can be recalled in less than 3 minutes. A Safety Officer was present at all times and maintaining a constant listing watch on 124.3 (Ground frequency). This 'incident' would have been broadcasting on 119.4 (Circuit frequency).

At this time it was unfortunate that the area was being used by a driver training group, however there is a practice in place for similar operations regarding maintenance (such as side light replacement, line marking etc). As you can appreciate, the time slots can be hard to achieve due to traffic levels and prevailing weather conditions.

Refuelling errors (CAIR 200203402)

*I am concerned about safety because of refuelling at [*location 1*] Airport by [oil companies].*

These companies operate as a joint refuelling agency, and over a period of time I believe they have made all their experienced permanent employees redundant and replaced them with inexperienced casuals.

It appears that several problems have been identified, insufficient training together with the lack of ongoing supervision and checking. I also believe that fatigue has been a contributing factor, where staff have been called in for early duty without sufficient rest.

This is all cost driven.

Pilots have reported that on many occasions the wrong fuel truck has arrived carrying AVGAS instead of JET etc. Aircraft have been refuelled with incorrect quantities of fuel and my concern is that an aircraft will receive the wrong type of fuel, possibly resulting in an accident.

*A typical example. On 23 July 2002, a Piper Chieftain operated by [*operator*], was fuelled to full tanks in error. Given the aircraft payload, the aircraft gross weight would have exceeded the permitted maximum with a full fuel load. Another operator had ordered full fuel for one of its aircraft. The pilot realised that the aircraft had been over-fuelled, and had to fly the aircraft from [location 1] to [*location 2*] to be de-fuelled, resulting in a one hour delay to a scheduled service.*

I regard this as totally unacceptable from a

multi-national corporation and I wish to put on record my concerns about the unsafe practices of the refuelling at Adelaide Airport.

CAIR Note: In discussion, the reporter stated that concerns had been passed to a representative of the fuel agency, but nothing had changed. He reiterated his concern that if the present practices continued, it was inevitable that an accident or serious incident would result.

Response from CASA: As a consequence of the issues raised in the Report, the Authority has written to the Manager of the Jointly Owned Storage Facility at [location 1], all AOC Holders at that airport and to the Operations Manager, [location 1] Airport Limited.

The letter sets out, in detail, the checks that persons fuelling aircraft must perform.

These include ensuring that:

- the fuel type and grade and the additives in the fuel are correct for the aircraft;
- the aircraft is effectively bonded to the aircraft: and
- the fuel has been checked for water and other contaminants.

The letter also reminded pilots of their responsibility for checking the required amount of fuel has been added to the tanks of the aircraft and that there is no free water in the fuel. A copy of this letter is provided for the consideration of ATSB.

Differential assessment of AME technical knowledge (CAIR 200200099)

The company has recently introduced the new Boeing aircraft into service and is about to introduce new Airbus aircraft into service.

AMEs/LAMEs have undergone training on these aircraft types. The Boeing aircraft trainees have completed their training with an oral assessment as has been the normal past practice. However, the Airbus aircraft trainees have not undergone an assessment as CASA does not require this.

Why do technical training courses on Airbus aircraft not require the same knowledge assessment as is required for training courses on Boeing aircraft.

Response from CASA: To gain an AME specific type licence rating an applicant must:

1. Be at least 21 years old;
2. Be able to read, write and converse in the English language;
3. Not suffer from any disability likely to affect the applicant's technical skill or judgement;
4. Have passed the appropriate CASA basic examinations appropriate to the category being applied for;
5. Have successfully completed a CASA approved specific type course appropriate to the specific type licence rating sought; and
6. Have completed a Schedule of Experience (SOE) documenting the applicant's practical experience on the aircraft type for which the licence rating is sought. These SOEs are verified by existing LAMEs holding the specific type rating.

Due to the inherent reliability of modern aircraft, the SOE has become difficult to complete resulting in delays in licence applicants completing their SOEs For a few years now CASA has been developing a replacement for the SOE. This program is called Practical Consolidation Training (PCT).

PCT is an agreed set of inspections and functional tests that a licence applicant completes in a line environment with the assistance of a dedicated PCT trainer. At the completion of a PCT program an oral examination is conducted by an appropriate CASA Airworthiness Inspector (AWI).

Another means of attaining experience on the introduction of a new aircraft type is accelerated training approval. This entails the completion of an agreed SOE with a foreign operator of the aircraft type.

With the introduction of the A330, it was decided to run a PCT program to replace the SOE in the accelerated program. The Hong Kong Aircraft Engineering Company (HAECO) who carries out maintenance on Cathay and Dragon Air A330 aircraft, also runs a similar program to PCT. Qantas, with CASA's approval, programmed six groups to undertake HAECO PCT.The program commenced in May 2002 when the first eight Qantas LAMEs were sent to HAECO.

The delivery of the first HAECO PCT was assessed on site by a CASA AWI. The inspector attended the line and observed the delivery of the PCT for the first four nights. At the completion fo this program and prior to the issue of an A330 rating, all applicants will be required to complete a CASA oral examination.

In summary, both Airbus and Boeing aircraft courses cover the same level of knowledge and practical experience for the issue of the appropriate licence rating.

Fatigue issues: *In a recent move by management, the team leaders on the [name] Sector have been removed from the operational roster and tasked with much greater administrative duties.*

What this has done has been a two-fold effect. First, it has reduced the available recreation leave opportunities by over half. Secondly, it has removed all direct supervision of the operational staff.

On the first point, with the reduction in rostered recreation leave lines, the fatigue will start to skyrocket again and people won't be able to take recreation leave when they want to.

[name] Sector controllers work a full night shift on average every 5 days, so you can see why fatigue is such a concern.

Response from Airservices Australia: Operations team leaders have been removed from operational rosters as a precursor to a new structure within the Centre. The intended structure will provide greater supervision and standardisation.

The number of recreation lines has not been reduced with the removal of the team leader, in fact more ad hoc leave is now available as team leaders can now provide short term replacement. As a consequence these arrangements will not lead to an increase in fatigue.

The second point made within the report relates to the assumption that there will be a reduced level of supervision. In fact, the removal of team leaders from the rosters is intended to assist supervision as dedicated supervisors will be rostered within the operations room. These supervisors will have a holistic view of the group, with familiarisation training being provided to team leaders for endorsements which are not currently held.

Response from CASA: As part of its ongoing compliance program, the Authority will continue to monitor fatigue. However, most of the issues raised in the report fall within the responsibility of Airservices Australia. ■

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