Stuart Godley, ATSB

Classifying serious incidents workshop

Paragraph 5.1.2 of Annex 13

- Annex 13 calls for the investigation of serious incidents when the aircraft involved is of a maximum mass of above 2 250 kg.
- The reason why Annex 13 requires these serious incidents (with minimal consequences) to be investigated is so that lessons can be learned that can be implemented to prevent future accidents with injuries and damage.

Why is this important?

- There was a high risk of an accident
- Accidents are rare; maximise learning from incidents, especially serious incidents
- Reveal hidden safety issues – often precursors to accidents
- Easier to establish the circumstances in full
- Less emotion, pressure and distraction
- Important to understand what prevented the accident

Challenges

- Notification - timeliness and quality of the information available
- Identification - classification of serious incident is subjective
- Decision - some discretion on when to investigate
- Resources are finite
- Wider context, safety priorities
- Consistency

Definition

Serious incident: An incident[1] involving circumstances indicating that there was a high probability of an accident[2].

1. An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down

Definition 2

Accident:

a) a person is fatally or seriously injured as a result of:

— being in the aircraft, or
— direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
— direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

b) the aircraft sustains damage or structural failure which:

— adversely affects the structural strength, performance or flight characteristics of the aircraft, and
— would normally require major repair or replacement of the affected component,

except for engine failure or damage, when the damage is limited to a single engine (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or

c) the aircraft is missing or is completely inaccessible.

What are typical serious incidents

1. Attachment C to Annex 13 contains a list of typical examples of incidents that are likely to be serious incidents. However, it was also recognised that not all of these examples *always* the definition of “a high probability of an accident”.

2. As such, an event risk classification-based approach was introduced into the 12th edition of Annex 13 in July 2020.

3. The list of examples in Attachment C does make an excellent list of incidents that state investigation agencies should ensure are reported to them. The ATSB has done this. All of these incidents need to be reported to the investigation authority so that they can then make a decision about whether the incident also meets the definition of “a high probability of an accident”.

4. However, the list is not exhaustive, so state investigation agencies should also ensure that any incident which indicated a likely a high probability of an accident is also reported.

Background

- As per Attachment C, there may be a high probability of an accident if there are few or no safety defences remaining to prevent the incident from progressing to an accident (where an accident is per the Annex 13 definition involving injury and/or damage, and not necessarily a “crash”).
- To determine this, an event risk-based analysis is used, based on a simplified version of the established Aviation Risk Management Solutions (ARMS) event risk classification (ERC) methodology.

Risk decision for deciding if Serious Incident

The event risk takes into account the most credible scenario had the incident escalated beyond what actually occurred on the day, and the effectiveness of the remaining defences between the incident and the potential accident. It is performed as follows:

a) consider whether there is a credible scenario by which this incident could have escalated to an accident; and

b) assess the remaining defences between the incident and the potential accident as:
— effective, if several defences remained and needed to coincidently fail; or
— limited, if few or no defences remained, or when the accident was only avoided due to providence.

Consider both the number and robustness of the remaining defences between the incident and the potential accident. Ignore defences that failed, and consider only those that worked and any subsequent defences still in place.

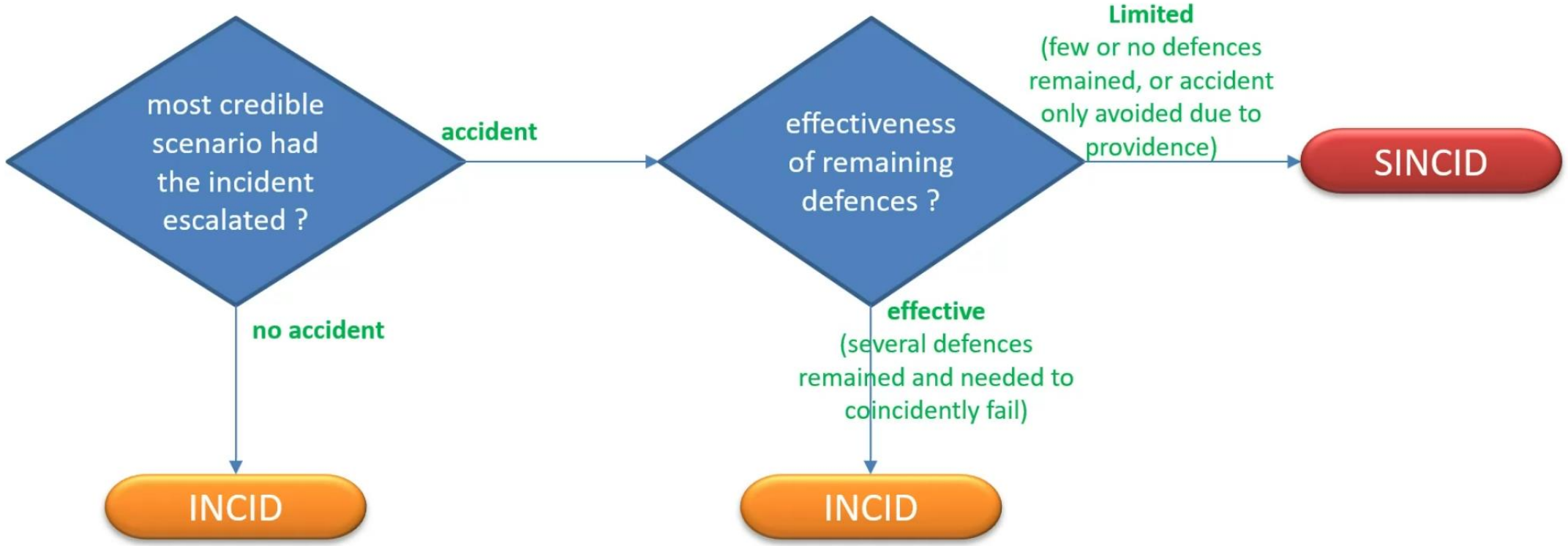
1. As per Note 1, the most credible scenario refers to the realistic assessment of injury and/or damage resulting from the potential accident. Without applying this realistic scenario, then every incident considered would be catastrophic outcomes. Although appropriate for some incidents, the process is designed to differentiate between serious incidents and those other incidents that really have less possible consequences.

2. As per Note 2, defences include crew, their training and procedures, ATC, alerts (within and outside the aircraft), aircraft systems and redundancies, structural design of the aircraft and aerodrome infrastructure. So for example, if an aircraft involved in a technical incident has been designed with two independent hydraulic systems and the technical event would only cause interruptions to one of them, then this is a defence that must be considered. Likewise, if the credible accident scenario involved a runway excursion, defences that need to be taken into consideration include the flat graded areas around runways that minimise aircraft damage.

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

Notified event → INCID or SINCID - INCID vs SINCID decision



Example – engine failure

Example 1: Engine failure, single engine piston aircraft

a) Most credible consequence is a forced landing (possible accident).

b) The only remaining defences between an inflight engine failure and an accident is limiting the damage during the forced landing. If the incident occurred in an urban area, or mountainous terrain, then damage and injury is very likely, so defences are limited (serious incident). If it was on an airfield, then defences are effective (incident).

Example 2: single engine failure, twin engine turbojet aircraft in cruise

a) Most credible consequence a diversion due to capabilities of the aircraft and pilot training etc (No accident).

Example 3: single engine failure, twin engine piston aircraft during take-off

a) Most credible consequence is a forced landing off aerodrome due to lack of climb performance (Accident).

b) The only remaining defences are pilot training and experienced, procedures, the area available to land. These are dependent on the pilot(s) involved etc, and what actions they did in response to the engine failure, so may be limited (serious incident) or effective (incident).

Class exercises

- ATSB summary + Notifications of occurrence (as received) + damage/injury known
- In groups, discuss questions:

I. Does it meet the definition of an accident? If yes, Answer = Accident. If not, then:

II. There was a high probability of an accident. Can help determine this via risk matrix

I. consider whether there is a credible scenario by which this incident could have escalated to an accident; If no, Answer = Incident. If yes, then:

II. assess the remaining defences between the incident and the potential accident as:
— effective, if several defences remained and needed to coincidently fail; (Answer = incident)
— limited, if few or no defences remained, or when the accident was only avoided due to providence/luck. (Answer = serious incident)

- Answer = Incident, Serious incident, or Accident
- (NOTE – some of the serious incidents are for aircraft below 2,250 kg so do not require investigation under Annex 13)

Cessna 172

Summary

- During final approach, the aircraft was struck by a downdraft. As the pilot applied full power to climb, the aircraft contacted tree foliage resulting in minor damage. .

Pilot reported

- From 8am local aircraft was engaged in aerial sheep spotting in the paddock of the given runway location. The runway had been used multiple times on morning of the incident. At 10:00 aircraft landed on runway at the given location to save fuel and wait for stock to pass. No adverse environmental effects were experienced on approach and landing. Approximately 10:15 the aircraft departed the given airstrip and thence begun spotting in the neighbouring paddock to the south. Just prior to 11:00 the aircraft was manoeuvred for landing again at the given departure location. Weather was CAVOK with gusting. On approach short final, approximately 150ft AGL the aircraft experienced a strong down draft and sheer while in landing configuration 40 flap pushing the aircraft to the right by approximately 8m and down of the desired flight path by approximately 120ft towards dead tree foliage. Full power was applied, climb attitude was selected and aircraft underbelly and gear collided with foliage which broke and flew around hitting the frame.

Damage reported

- Minor: Nosewheel collapsed, propellor bent, dent in airframe below nose, small hole under left wing. .

Cessna 172~ Answer

- Damage not substantial/structural therefore not classified as accident.
- Classified as serious incident - incident involving circumstances indicating that there was a high probability of significant damage / an aircraft accident.

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

SIkorsky/S92A

Summary

- During take-off and again on climb, the crew received a no. 2 engine fuel pressure alert and detected a loss of power. The crew diverted the aircraft to XXXX. The engineering inspection revealed the torque seal line attached to the fuel line was displaced.

Pilot reported

- Just before VToss on departure from the CPF EXPLR, the ENG 2 FUEL PRES Caution light illuminated, followed quickly by a Torque split and power loss. Engine power recovered shortly after. This occurrence repeated again approximately 2mins later in the climb. The crew consulted the ECL, selected ENG #2 to XFEED and diverted to XXXX using the fuel in the #1 fuel tank and Aux Fuel. No further caution lights or power losses occurred.

SIkorsky/S92A ~ Answer

- Still had power in the no. 1 engine. helicopter in PC1 conditions at the time (meaning was light/able to return/or continue to destination depending on where the failure occurred).
- Classified = incident

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

Piper PA-28 Hard landing

Summary

- The aircraft landed hard and the fixed landing gear failed resulting in minor damage.

Aerodrome operator reported

- Aerodrome operator reported aircraft landed - didn't see what happened, only saw afterwards - front nose gear collapsed. Currently working to remove from runway. No injuries, 1 POB, front bent up.

Runway safety inspector reported

- I was starting my afternoon inspection, as I was entering the apron and rounding the tail of a q300, I immediately noticed the Piper Archer tail up on the Rwy, it's navigational strobes were still on, I have immediately changed my direction to along Twy A on then made the radio call to enter Rwy 11/29, when I have parked the Ute besides the aircraft I could see the pilot slumped forward, it turned out the pilot was OK and was looking for a phone number in his phone to call (He was calling the airport manager) while the pilot was talking on the phone I have notified an Aero commander that was taxing that I had a disabled aircraft on the Rwy, it appears that the aircraft has landed very late and very hard and caused a nose gear collapse.

Pilot reported

- Landing on runway 29 late afternoon and was suddenly blinded by glare of sun that was directly in front of me ..could not see the runway and had a bad landing

Damage reported

- Minor damage. (Nose landing gear detached and skin friction damage.)

Piper PA-28 Hard landing - Answer

- The fixed landing gear failed due to a hard landing, resulting in the possibility of structural integrity of the aircraft's landing gear being compromised (and therefore accident nearly occurring). The pilot also had sun glare issues but chose to proceed with the landing which resulted in a higher possibility of an accident occurring.
- Classified as serious incident

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

Small aircraft (RV8) Flight below LSALT

Summary

- During the RNP approach, the aircraft deviated from the published approach path and descended below the lowest safe altitude.

ATC reported

- IFR RV8. Acft conducting a RWY35 RNP Z approach. At about 10nm south of CB acft was observed to deviate right off of and away from the final approach path. Acft was at approximately A048 (mode C) in a A054 RTCC step. MSAW [minimum safe altitude warning] was observed. Controller issued a safety alert due terrain and climbed acft to a safe level. Acft was then re-processed for a visual approach without further incident.

Pilot reported

- I was being vectored to intercept RNP Z RWY 35 via IF Mombi. Some confusion as CB2SI rather than MOMBI is the listed IF for RNP Z RWY 35 (in hindsight I should have clarified this before starting the approach). Entered cloud during the turn in and had some difficulty with managing the autopilot and automation resulting in deviation from instrument approach, safety alert from ATC and climb to 7000. Visual approach and landing conducted.

Small aircraft (RV8) Flight below LSALT - Answer

- Although flight below LSALT in IMC, aircraft was in controlled airspace with ATC alert issued before aircraft came into proximity with any terrain in area.
- Effective defences in place to prevent accident, and aircraft was re-processed for a visual approach.
- Classified as incident - not a serious incident.

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

Boeing 787

Summary

- During climb, the no. 2 engine failed and fire was observed emanating from the engine. The crew returned the aircraft to Cairns. The no. 2 engine was subsequently replaced.

Pilot reported

- 1) On climb approximately FL290 there was a noticeable shudder.2) Looked at the engine indications to see the right engine EGT in exceedance.3) Carried out "Engine Limit Exceeded R" memory items, EGT returned back within limits.4) Noticed then the N2 vibration indication was around 6 and increased quickly to 9.9 and above.5) EICAS - Engine Fail R 6) PAN radio call made to ATC, Stopped climb at FL2907) Shortly after Engine Fail another EICAS Fire Engine R with associated fire indications.8) Carried out the Fire Engine R memory items, fire indications remained until 1 bottle was discharged.9) Maintained FL290 and requested a turn back towards Cairns with ATC and holding and approach

Cabin manager report

- On FLIGHT15 flight today everything went as per normal. After the altitude reached approximately 27000ft, at 12.45lt, I called the Flight Crew asking their permission to go to the Flight Deck as I need to relying the information regarding the special handling upon arrival and need to confirm the STA with them. They then granted my permission and I went to the Flight Deck. Conversation went as per normal until approximately 1 minute after I enter the Flight Deck, we experienced a slight bump and I saw there's a caution warning flashing from the panel. I was stunned at that time and all I heard was Capt said 'I got the Control'. I then realised that this is not a normal situation. I then tried my best to recognise and to figure the situation. I then saw there's 'Autothortle RHS Failure' text (If I am not mistaken) from one of the screen on the flight deck. Capt then told me to go back to the Cabin and that they will have a chat with me again later. I then went outside the Flight Deck and all I noticed was the engine sound is louder then its normal sound, and the vibration I felt on the floor is not normal. ..... At 12.51lt, My Back Up CM then saw a flame coming out of the RHS Engine. I then quickly go to my station to call the Tech Crew. I wanted to gave them an alert with the RHS Engine Fire. But they didn't pick up the phone as I believe they are still busy with all the checklist and procedures they need to conduct. Approximately 3 minutes after the call, the 'Fasten Seat Belts' Sign is extinguish.

Boeing 787- Answer

- Initial operator report noted fire warning in engine.
- Confirmed with operator not just indication only - cabin crew observed flames, engine inspection post-flight shows signs of heat damage and blade damage.
- Confirmation of engine fire = serious incident classification.

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		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

DIAMOND AIRCRAFT DA40

Summary

- During taxi, the aircraft's right wing struck a fence post resulting in substantial damage.

Operator reported

- DA40 VHPQM during a solo flight for CCT training the student pilot decided to perform a full stop landing on RWY34 at YJST. The pilot taxied the aircraft to the apron area at YJST and failed to notice that there was insufficient clearance between the right wing and the fence surrounding the main building. As a result the outer part of the right wing collided with the fence causing significant damage. The pilot shutdown the engine contacted FTA OPS for assistance and received instructions to secure the plane. Another company aircraft was dispatched to pick up the PIC and return to YPPF. .

Damage reported

- Substantial Right wing leading edge.

DIAMOND AIRCRAFT DA40~ Answer

- Aircraft wing (not tip) substantially damaged. Aircraft performance/flight characteristics would be adversely affected.
- Classified as accident

KAVANAGH BALLOONS/G~450

Summary

- During disembarkation, a passenger fell and sustained serious injuries.

Operator reported

- Flight crew reports approximately 0710 EST 22-6-24 during disembarkation from Kavanaugh 450 ballon following a scenic flight near Beaudesert, a passenger has fallen and broken their arm, the passenger has been transferred to the Beaudesert hospital for treatment. Crew reported that the aircraft had been on the ground for approximately 10 minutes and they were preparing for deflation of the balloon. Injured party details - 14y/o has broken both Ulna and Radius unsure which arm, was transferred to Beaudesert Hospital for treatment.

Pilot later reported

- Normal passenger flight in the company of 4 other balloons ,conducted from Laravale, (14kms south Beaudesert) take off @ 06:20 AEST ,flew for 0.9 hrs and landed 07:10 AEST @ 3/4 knots for a stand up landing at Veresdale (9kms north of Beaudesert). After the balloon came to a stop briefed the passengers to exit the basket and move to the upwind side , as the passengers disembarked xxxx (14 years old) climbed out " and fell forward with his left hand under him" , he didn't yell or call out in pain ,but his mother stated that he had broken his arm. I continued to deflate the balloon and then went to access and assist the injury, by the time I saw xxx an Ambulance had been called from Beaudesert Hospital. He had a very visible bend to his left forearm which we placed in a sling and drove him out of the paddock to await the ambulance which arrived at 07:40, he was then treated and taken to Beaudesert Hospital with his mother and sister. X-rays taken show broken radius and ulna bones , he has been booked for surgery Sunday 23/06/2023 and we await any further developments .

Injury = Serious

KAVANAGH BALLOONS/G-450- Answer

- Passenger broken arm (and therefore serious injury) during disembarkation. Reportable matters for manned aircraft occur during the period beginning when the aircraft is being prepared for take-off and ending when all passengers and crew members have disembarked after the flight.
- Classified Accident

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

PIPER AIRCRAFT CORP/PA-28-161

Summary

- During manoeuvring, the engine lost partial power and the pilot conducted a forced landing in a paddock. .

Pilot reported

- Private Pilot Licience flight test, enroute GLB - CB via LGGN a practice force landing was initiated, on recovery from the PFL engine only revved to 1500-1800rpm. losing height and elected to make a forced landing in a paddock. .

Damage reported

- Minor: Prop impact damage, wingtip indentations.

PIPER AIRCRAFT CORP/PA-28-161- Answer

- Although not total engine failure, aircraft unable to maintain altitude resulting in a forced landing and minor damage,
- therefore serious incident. .

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

CIRRUS DESIGN CORPORATION/SR20

Summary

- Passing 300 ft on initial climb, the pilot's seat slid backward and the pilot encountered control issues. The pilot returned the aircraft to Bankstown. Engineers suspect the locking pin was not correctly in place.
- **ATC reported**
- AIRCRAFT declared PAN PAN at 0330Z on upwind due seat sliding back. NIL services required. Landed safely at 0335Z on RWY 29C. .

Pilot reported

- Pilot advised that ops were normal until ~300' on initial climb, when seat suddenly slipped rearward by approximately 20cm. He was raising flaps at that time and his right hand slipped from the flap lever; his left hand pulling back on the yoke, pitching the aircraft up. Aircraft at full power, unsure of extent to which airspeed reduced below climb speed of 85 kt. No stall horn sounded. Was able to lean forward and lower the nose and maintain control. Advised TWR of control issues - cleared for return any RWY. Was able to level A/C and commence circuit for RWY 29R. During downwind, he was able to move seat forward to a better position. Normal approach and landing C/O. Unsure of why seat moved back - has been given no information.

CIRRUS DESIGN CORPORATION/SR20~ Answer

- Accident/loss of control did not nearly occur. The seat moved back to a maximum of 20 cm, the pilot was able to lean forward and lower the nose to ensure control was maintained and was able to move the seat forward to a better position after levelling off. Aircraft also was not about to stall as the situation was rectified immediately. .
- Classified incident

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	No accident	Incident	

BEECH AIRCRAFT CORP/A36

Summary

- The Beechcraft A36 commenced a take-off on runway 14 at the same time the Fairchild SA226 commenced a take-off on the crossing runway 03. Due to communication issues neither aircraft heard each other's radio calls. The crew of the A36 observed the SA226 and delayed rotation to pass behind the SA226. The investigation is continuing.
- **Aerodrome operator reported**
- 19 MAR 24 - 0810 WST -- Near collision during take-off on crossing runways - Beechcraft A36 and Fairchild Metro - Air Transport Passenger - Operator reports; A36 taxied and backtracked on rwy 14 proceeding Metro which backtracked rwy 03. A36 lined up and called ready on CTAF twice and asking position of Metro, with no response from the Metro. Another aircraft relayed A36 call, Metro responded to other aircraft stating they had been on MEL CTR frequency and they were holding on rwy 03, however A36 did not hear this call. The other aircraft broadcast that both aircraft were holding for each other, A36 then commenced take-off on rwy 14 while the Metro commenced take-off on rwy 03. A36 identified the Metro on the crossing runway and delayed rotation to pass behind and beneath the Metro, which was estimated to be 300 ft AGL - ATSB gathering further info. .

BEECH AIRCRAFT CORP/A36 ~ Answer

- Although both aircraft were aware of each other, they were experiencing communication issues at the time with a third aircraft relaying between the two. Both aircraft commenced take-off in minimal time, with the Beechcraft A36 delaying rotation behind the Metroliner. The collision risk 'High'.
- Classified as a serious incident.

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

S.A.A.B. AIRCRAFT CO/340A

Summary

- During cruise, the crew received multiple warnings, including cargo smoke, avionics smoke and cabin pressure. The crew subsequently detected thick smoke in the cockpit, donned oxygen, conducted an emergency descent and diverted the aircraft to Cobar. The post-flight inspection revealed fire damage in the vicinity of the right air cycle machine and cargo bay floor.

- **ATC reported**
- At 0055 XXX9982 YSWG to YBCV called PAN due smoke in cockpit and advised that they were diverting to YCOB. A Distress phase was declared. 2 POB Nil dangerous cargo. Services were requested. The AEP at YCOB was activated and the ARO was informed. Aircraft landed at 0115 and the crew evacuated. Distress phase was cancelled at 0119..

Pilot reported

- In cruise maintain FL220, 60nm NE Cobar enroute WG - CV - CS CWP CARGO SMOKE illuminated. Conducted standard Failure mangement proceedures.. QRH reading very difficult due smoke (QRH required to be within a few cm of face to read) Commenced diverting to YCBA requested local fire services CWP RH DUCT overheat illuminated. CWP RH Bleed valve close illuminated CWP AVIONICS SMOKE illuminated CWP CABIN PRESSURE WARNING illuminated (HIGH SPEED descent) Tracked via 5nm final RWY 23 YCBA. Cockpit/cabin Smoke had decreased significantly to allow normal approach & landing. ATC communication relayed via another Aircraft stopped on RWY 23. Evacuation Drills commenced. Local emergency services arrived to secure scene and to conduct health check on crew..

Damage reported

- Substantial: Smoke damage around the external panels of the RHS aircycle machine. Fire damage to the cargo floor adjacent to the RHS aircycle machine and in and around the bay where the RHS aircycle machine is located.

S.A.A.B. AIRCRAFT CO/340A ~ Answer

- Upgraded from serious incident to accident based on damage assessment - specific to below notes in ICAO definition: Regarding aircraft damage which adversely affects the structural strength, performance or flight characteristics, the aircraft may have landed safely, but cannot be safely dispatched on a further sector without repair; and If the structural damage is such that the aircraft depressurises, or cannot be pressurised, the occurrence is categorised as an accident.
- For this occurrence,,'Structural components in the surrounding area had been distorted by the extreme heat, including the floor panels, which had collapsed when fire crews entered the aircraft and inadvertently walked over the affected area. The seat track support structure had distorted, and the fuselage was weakened by the fire which breached the outer skin, preventing the aircraft from remaining pressurised'..
- Classified Accident

CESSNA 441

Summary

- During take-off, the aircraft was not aligned with the runway centreline and struck multiple runway lights.

Pilot reported

- 0513 start up, 05:26 take off. Pre flight, start up taxi all normal. From taxi way Victor, cleared to line up 06. Lined up, what I believed was straight down the centreline of 06. As I lined up. I did make a mental note that it was quite dark. I did double check landing and taxi lights were in fact on because it seemed quite dark. (these have been checked in pre and post flight and are operationally). As I lined up, lined up to a white solid line, which I believed was the centreline. Held on ground for a few minutes before given take off clearance. After take off clearance, take off conducted as per normal. As I started rolling down the runway, I felt a bump. And just assumed something was on the runway. Rest of flight normal. After landing did an inspection and didn't pick it up. Rest of day continued. After landing back from CUE, looking at right prop inside cockpit after shut down, noticed it looked different. Did a closer inspection to find one of the right props had a few nicks and damage. One of airport ground staff approached me at this time to advise there was two runway lights taken out early this morning and believed it may have occurred on my take off. Marcus contacted, photos taken. Perth ERSA, charts do have a misalignment hotspot marked for 06. NOTAM C192 24, taxiway V, lead on lights to 06 US.poano keys and runway numbers quite scuffed on runway 06 and can be diffident to see in low viz, night ops. Runway 03/21 has centreline lightning whilst 06/24 does not..

Damage reported

- Minor: Nicks to right propeller. Several runway edge lights damaged. .

CESSNA 441- Answer

- aircraft took off along the side of the runway and hit runway lights, pilot continued and didn't identify damage to aircraft after first leg. .
- serious incident

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

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a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

SIAI-MARCHETTI S.P.A./PAS-SM-1019

Summary

- During aerial survey operations, the engine failed and the pilot conducted a forced landing in a paddock resulting in substantial damage. The engineering inspection did not reveal any faults to the engine.
- . **Operator reported**
- The aircraft departed Bathurst aerodrome to conduct powerline patrol south of Bathurst, around Wisemans Creek. The pilot had conducted his daily inspection of the aircraft, including checking oils, and for fuel contamination. The aircraft departed at 10am and flew to the powerline patrol area and commenced work at 10:15am. At 10:22am, whilst turning to come back around for a small tee off, the pilot had the engine stop generating power. The pilot then commenced emergency procedures and assessed a suitable area to land the aircraft. The aircraft landed in a suitable paddock and rolled through to a soft ground area below a dam. The crew had raised an SOS with spidertracks, and our company Emergency Response Plan was initiated, where the crew was contacted, were safe, and OK. Aircraft to be recovered from paddock via vehicle and will require an engine bulk strip to determine cause of loss of power.

Damage

- Substantial**:** Engine and wing spar damage.

SIAI-MARCHETTI S.P.A./PAS-SM-1019 - Answer

- Upgraded from serious incident to Accident upon receipt of photos due to confirmed structural damage of left wing - 'structural failure which adversely affects the structural strength, performance or flight characteristics of the aircraft and would normally require major repair or replacement of the affected component'. .
- Classified Accident

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

PIPER AIRCRAFT CORP/PA-28-140

Summary

- The aircraft operating under VFR entered IMC. The pilot conducted a climb to ensure terrain clearance was maintained and inadvertently entered controlled airspace without a clearance.

Pilot reported

- Flight plan was YMBD - WRR - DMW - YPPF. Approaching DMW weather deteriorated below forecast conditions. I still maintained 1500'. At one point traffic behind told me VMC would be a concern. I considered turning back but did not. I entered a shower of rain and cloud with zero visibility and lost VMC. I immediately climbed back to 2500' while calling on Parafield CTAF to let everyone know I'm zero visibility. I turned and orbited but I couldn't see anything so I climbed to 3000' to avoid terrain. I was not aware that I had entered Adelaide airspace. After turning back toward Parafield I saw the field and announced on CTAF freq I was going to pick 21R and join base on the left hand side, other traffic suggested to take my time and join upwind on 21R, I joined upwind and completed the circuit and landed on 21R safely.

PIPER AIRCRAFT CORP/PA-28-140- Answer

- VFR into IMC with inexperienced pilot (new PPL), zero visibility and terrain (Adelaide Hills) in area. Classified as serious incident as high probability of an aircraft accident occurring.
- Classified serious incident

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

British Aerospace PLC/BAE 146 SERIES 300

Summary

- On descent into Brisbane Airport, the aircraft's approach became unstable. The approach continued and the tail of the aircraft subsequently struck the runway on landing, resulting in damage to the aircraft.

Operator reported

- BAE-146-300 landing at Brisbane airport had a tail strike. Noticed on walk around whilst preparing for next flight. FO was pilot flying, un-forecast fog at Brisbane. Aircraft passed through the minima and pilot deemed high on approach. Pilot attempted to flatten the approach and had a hard landing with a potential bounce. Damage was noticed on walk around whilst preparing for next flight. Aircraft not fitted with a skid plate, damage only looks to be paint and not into the aircraft skin. Engineers assessing.

Damage reported

- Minor: • Max reduction in skin thickness was reported as 0.006” (0.152 mm). Note – original thickness was probably 0.100” (2.54 mm) so at worst there was 0.094” (2.38 mm) of material left • Max dent dept was reported as 0.050” (1.27 mm) • A repair scheme was produced by BAe, the damaged area was cut away, underlying structure inspected, no damage found. The area was then patched, and a new tail strike indicator was fitted.

British Aerospace PLC/BAE 146 SERIES 300 ~ Answer

- Upgraded to serious incident -, limited defences to prevent accident, therefore high ERC. Unstable approach continued in inclement weather and no skid plate on the aircraft to prevent further damage. High probability of an accident (structural failure). Further assessment undertaken by LAME post-damage review to ensure classification correct and not an accident. Main info below confirming not structural damage/accident: Max reduction in skin thickness was reported as 0.006" (0.152 mm). Note – original thickness was probably 0.100" (2.54 mm) so at worst there was 0.094" (2.38 mm) of material left Max dent dept was reported as 0.050" (1.27

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

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		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

Bombardier BD-700 / Fairchild AS227

Summary

- During taxi, the Fairchild SA227-AC contacted the stationary Bombardier BD-700. The stationary aircraft sustained minor damage.

Aerodrome operator reported

- At approx. 04:05am on the 2nd of July 2024 Flight crew began taxi of VH-XXX a Metroliner SA227 from the Melbourne Jet Base Hangar – Tullamarine Airport. The aircraft was operating as a freighter, scheduled to depart at 04:10 MEL-LST-HBA. Weather was clear, but a lot of frost and condensation was present around the flight deck windows. this was cleaned off by crew prior to taxi. Onboard the aircraft were 2 Flight Crew & No Passengers, the Flight Crew have taxied the aircraft by following the apron line markings. During taxi the upper R/H wing of VH-XXX has made contact with the underside of the L/H wing of a parked (stationary) aircraft VH-YYY (Bombardier Global 6000). This contact was a glancing scrape with no hard impact evident from initial engineering reports. Due to no hard impact the Flight Crew were unaware of the contact and continued the flight. (Time unknown at this stage) - Flight Crew preparing VH-XXX found the scrape marks under the wing and contacted the MAP Hagar team who checked CCTV footage and identified the contact.

Damage reported

- Minor: Scoring/scuffing and paint transfer to wing lower surface.

Bombardier BD-700 / Fairchild AS227- Answer

- Contact between aircraft was a 'glancing scrape' with no hard impact evident from engineering reports. Crew of taxiing aircraft were unaware it occurred, with right-hand wing making contact with underside of the parked aircraft's left-hand wing. Taxiing aircraft only had paint transfer marks, nil damage. .
- Classified as incident

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

VANS RV14A

Summary

- During take-off, the pilot manoeuvred the aircraft to avoid a bird strike and the aircraft struck the ground resulting in minor damage. The pilot continued the flight to Roma and during landing, the nose gear collapsed.

Pilot reported

- Departed Winton approx. 0900 hours 25 July 2024. On rotation for take-off a bird (kite) flew in front of aircraft, lowered nose to avoid collision. Nosewheel struck the ground heavily. Diverted to ROMA as a precaution. Undercarriage was inspected by XXX who could not identify any damage. Upon landing at Roma runway 36 used full flap slow approach technique. Upon the nose wheel settling on runway crashing sound heard. Held the nose off the ground until taxiway Alpha and lowered the nose. Aircraft fell onto nose as front undercarriage went under the aircraft. Damage sustained to nose wheel, engine strike under power and propellor damage

Damage reported

- Damage sustained to nose wheel, engine strike under power and propellor damage .

VANS RV14A~ Answer

- Minor damage (propellor, engine, nosewheel) - not an accident but potential for further damage high likelihood of an accident resulting.
- Classified serious incident

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

EUROCOPTER/AS 350 B3

Summary

- During take-off, the pilot detected vibration in the main and tail rotor and observed that the helicopter's pedals were jammed in the neutral position. The pilot determined that the tail rotor block was not removed prior to departure and conducted a diversion and zero speed, no-hover landing at XXX Aerodrome..

Pilot reported

- After refueling the helicopter) at XXX Aerodrome, I took off and flew approximately 10 NM to the east and landed at the pickup point for the survey team which I had dropped off at the same location a few hours prior. We had been in contact as they had cell phone reception and they had informed me that they would still be working for another hour or so, so I shut the aircraft down. We were parked close to the summit of the ridge above the gorge the surveyors were working in, and the wind was rather strong and gusting from the east over the ridge, so I tied down the blades to prevent damage caused by blade sailing or bouncing in the wind. I noticed that the tail rotor was seesawing very aggressively in the wind, so I elected to install the tail rotor block to dampen this movement. I waited in the helicopter until the surveyors returned. While they loaded their gear, I removed the main rotor tie downs and stored them in the rear locker with the rest of the helicopter's overnight gear. I then conducted a pre-flight walk around from the rear locker to the front of the aircraft then around the nose to the pilot door, checking the security of the latches and passenger doors. I failed to visually inspect the tail rotor and remove the block. I started the helicopter and conducted a normal pre-start and pre-takeoff check. I noted an unusual but only mild vibration in the main rotor and tail rotor and determined it due to the strong, gusting wind from the 3 o' clock. I elected to takeoff. Immediately on takeoff I noticed the pedals jammed in a neutral position and determined the cause to be the tail rotor block still in place. I briefed the passengers as to the nature of the emergency and what our course of action would be and diverted to XXX Aerodrome. I called the ARO on my phone via Bluetooth in my helmet and informed them of our emergency. I then conducted the emergency procedure for jammed pedals and landed on the runway at XXX Aerodrome without further incident. The landing was a gentle zero speed no-hover landing with no run on. There was no visible damage to the structure of the aircraft or to the tail rotor assembly. We are awaiting engineer inspection to determine whether any non-obvious damage to the aircraft is present..

EUROCOPTER/AS 350 B3 ~ Answer

- - helicopter jammed pedals requiring emergency no-hover landing. Risk of loss of control..
- Classified as serious incident

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	

DASSAULT~ AVIATION/FALCON 7X

Summary

- During cruise, the crew observed smoke emanating from galley equipment. The engineering inspection traced the smoke to the hot water unit which had short circuited.
- **Initial report**
- Minor in-flight smoke event traced to electrical wiring. Aircraft had departed Brisbane for PNG and smoke in cockpit about 2 hours after leaving Brisbane.

Operator follow up reported

- En-route from YBBN-AYKV, an electrical burning smell and wispy smoke was observed by the flight attendant and engineer coming from the galley equipment. The engineer (who was onboard) pulled all the breakers for the equipment and informed the pilots. The smell and smoke stopped and the flight continued without further incident. After returning to Brisbane and the hot water unit removed, it was noted a small electrical fire/short had occurred.
- .

DASSAULT~ AVIATION/FALCON 7X~ Answer

- Smoke contained to galley/cabin, not flight deck per initial report. Onboard travelling engineer immediately pulled all galley item circuit breakers and smoke rapidly ceased. Flight crew unaffected.
- Classified as incident - not serious incident..

2.2 The combination of these two assessments helps to determine which incidents are serious incidents:

		b) Remaining defences between the incident and the potential accident	
		Effective	*Limited*
a) Most credible scenario	*Accident*	Incident	Serious Incident
	No accident	Incident	