

EXPLANATORY STATEMENT

DRAFT TRANSPORT SAFETY INVESTIGATION AMENDMENT REGULATIONS (No.)

The draft Transport Safety Investigation Amendment Regulation 2012 (No.) (TSIA Regulation) will amend the *Transport Safety Investigation Regulations 2003* (TSI Regulations). The draft **TSIA Regulations** are available on the Australian Transport Safety Bureau's (ATSB's) website: www.atsb.gov.au The current TSI Regulations and the enabling *Transport Safety Investigation Act 2003* (TSI Act) are both available on the Comlaw website by clicking on the respective links.

The amendment will revise the list of safety occurrences that the aviation industry must report to the ATSB. The covering consultation paper for aviation, explains the intent and purpose of the amendments. This Explanatory Statement provides an overview of the reporting requirements under the TSI Act and Regulations, highlighting where particular amendments have been made.

OVERVIEW: MANDATORY REPORTING OF AVIATION ACCIDENTS AND INCIDENTS UNDER THE TSI ACT AND REGULATIONS

Below is an overview of the mandatory reporting framework under the TSI Act and Regulations. Included in the discussion is an explanation of some of the key changes made by the draft TSIA Regulations.

Structure of the Scheme under the TSI Act

Part 3 of the TSI Act places obligations on *responsible persons* to report *immediately reportable matters* (IRMs) (*accidents* and *serious incidents*) and *routine reportable matters* (RRMs) (*incidents*). The Regulations prescribe what are IRMs and RRMs. They also prescribe who is a *responsible person*.

Who is a responsible person?

In the Draft Regulations, regulation 2.5 lists the following persons as *responsible persons* where there is a reportable matter involving an aircraft:

- (a) a crew member of the aircraft;
- (b) an owner or operator of the aircraft;
- (c) a person who provides an air traffic service on behalf of Air Traffic Service for the aircraft;
- (d) a person who:
 - (i) is a provider of an aerodrome rescue and firefighting service for Subpart 139.H of the Civil Aviation Safety Regulations; and
 - (ii) provides the service for the aircraft;
- (e) a licensed aircraft maintenance engineer under the Civil Aviation Regulations or the Civil Aviation Safety Regulations who does any work in relation to the aircraft:
- (f) a member of the ground handling crew for the aircraft;
- (g) a member of the staff of the Civil Aviation Safety Authority;
- (h) the operator of an aerodrome used by the aircraft;



- (i) a controller of a UAV within the meaning of regulation 101.240 of the Civil Aviation Safety Regulations;
- (j) a recreational aviation administration organisation recognised by the Civil Aviation Safety Authority.

An amendment has been made to the list of responsible persons to include recreational aviation administration organisations (RAAOs). RAAOs are included for reporting purposes because of the oversight responsibilities they have for certain operations involving self-administration. These organisations may be aware of reportable matters involving their members that should be reported to the ATSB.

What are the obligations on a responsible person?

A *responsible person* is required to report to the ATSB IRMs and RRMs of which they have knowledge. However, they are excused from the requirement to report if they believe on reasonable grounds that another *responsible person* will report the matter within the required timeframe with all the relevant details (if they do not have this belief they are not excused).

If it is an IRM, section 18 of the TSI Act requires the *responsible person* to report as soon as practicable by telephone or another form of telecommunication or radio communication (current regulation 5.4). The details that must be provided, to the extent they are within the *responsible person's* knowledge, are contained in draft regulation 2.5A.

Section 19 requires the *responsible person* to follow up on the immediate report of an IRM with a written report within 72 hours. The details that must be provided, to the extent they are within the responsible person's knowledge, are contained in current regulation 2.6. For an RRM, the responsible person is only required to provide the written report within 72 hours in accordance with section 19 and provide the details prescribed in current regulation 2.6.

What IRMs and RRMs are reportable under the new Regulations?

For ease of reference three tables have been produced below which provide ready reference guides for the prescribed IRMs and RRMs in the new TSIA Regulations. When the regulations are made into law similar tables and supporting information will be made available on the ATSB website (www.atsb.gov.au) and in the Aeronautical Information Publication (AIP) available on the Airservices website at (www.airservices.gov.au).

While the tables will be a useful reference tool, it will be important that when a responsible person is considering their reporting responsibilities that they refer to the actual regulations. The regulations provide definitions of terms used as well and explain in greater things such as applicable limitations on the requirement to report. For example, regulation 2.1 states that IRMs and RRMs only need to be reported when they occur during a flight period for an aircraft.

For a manned aircraft, the flight period commences from when the first person boards the aircraft with the intention of flight and ends after the last passenger or crew disembarks. For an Unmanned Aerial Vehicle (UAV) the flight period



commences from when the UAV begins to move under its own power for the purpose of take-off and ends at the latter of:

- (a) the moment at which the UAV comes to rest after being airborne;
- (b) the shutting down of the UAV's primary propulsion system.

TABLE 1: IMMEDIATELY REPORTABLE MATTERS FOR ALL AIRCRAFT OPERATIONS

The prescribed IRMs in the regulations must be reported where they occur in relation to any type of aircraft operation (i.e. air transport or private).

		Reportable Matter	Regulation Reference
	IRMs affecting the Person	 The death of the person, as a result of the occurrence, within 30 days. The death of the person, as a result of the occurrence, if the person was admitted to hospital within 30 days of the occurrence. Serious injury to the person as a result of the occurrence. The exposure of the person to serious risk of death or serious injury as a result of the occurrence. 	Regulation 2.3A
Defined IRMs	IRMs affecting the aircraft	 The destruction of the aircraft. Serious damage to the aircraft. The abandonment or disappearance of the aircraft. The exposure of the aircraft to serious risk of destruction, serious damage, abandonment or disappearance as a result of an occurrence. 	Regulation 2.3B
	IRMs affecting property	 Destruction of the property as a result of the occurrence. Serious damage to the property as a result of the occurrence. The exposure of the property to serious risk of destruction or serious damage as a result of the occurrence. 	Regulation 2.3C Note: the cost of destruction or serious damage would need to exceed \$25 000 to be reportable.
	Other IRMs	 A crew member broadcasting a declaration of an emergency in relation to an occurrence that compromises the safety of any person; or The aircraft coming into such close proximity with another aircraft that an applicable separation standard is breached. 	Regulation 2.3D



TABLE 2: ROUTINE REPORTABLE MATTERS (CATEGORY A OPERATIONS)

Regulation 2.4C requires that an RRM must be reported in <u>every instance</u> if it occurs in relation to a manned aircraft operation:

- conducted for hire or reward;
- otherwise made publicly available; or
- that is a private operation and the maximum takeoff weight of the aircraft is:
 - greater than 2 250kg; or
 - is less than 2 250kg but the aircraft has a turbojet engine.

To assist with explanation, these types of operations are called **Category A Operations**.

Regulation 2.4C defines an RRM to be:

An occurrence that involves a failure to eliminate, minimise or effectively manage risks of:

- death or injury to a person; or
- damage to an aircraft or property.

An RRM is prescribed in general terms because it is not possible to accurately list in the regulations every individual incident, which might occur, that demonstrates an unacceptable level of safety. The obligation to report RRM where one occurs in relation to Category A Operations is based on an understanding of the extent to which those people who utilise or otherwise come into contact with these operations expect that risk be appropriately managed.

To assist responsible persons with understanding when an RRM might have occurred the table below has been produced. The table lists occurrences normally involving the presence of risks of death, injury or damage that have not been eliminated, minimised or effectively managed.

When reviewing the table it should be noted that while most of the occurrences will normally be RRMs on occasions they may constitute an IRM. Table 1 contains prescribed IRMs relating to a person being exposed to a serious risk of death or injury, an aircraft being exposed to a serious risk of destruction or serious damage; and property being exposed to a serious risk of destruction or damage. The significance of the failure to eliminate, minimise or effectively manage risk may elevate the occurrence to an IRM. Where there is a significant likelihood that occurrence could be an IRM it has been highlighted yellow.

The occurrences have been broken down into the following categories:

- Aircraft flight operations;
- Mechanical;
- Airspaces;
- Aerodrome and Airways Facilities; and
- Environmental.

Aircraft Flight Operations			
	Airframe overspeed	The airspeed limit has been exceeded for the current aircraft configuration as published in the aircraft manual.	Includes exceedences of:
	Control difficulties	The flight crew encounter difficulties controlling the aircraft when it is either airborne or on the ground.	Includes; • Loss of control • Weather phenomenon (icing, severe turbulence, etc); • Wake turbulence (severe disturbance); • Significant mechanical issues. • Minor control issues • Windshear • Minor Wake Turbulence disturbance • Minor mechanical issues.
Aircraft Control	Hard landing	The operational limits for the aircraft set out in the aircraft's flight manual are exceeded during the landing.	Note: Serious damage must be reported as IRM
	Incorrect configuration	Where the aircraft systems are incorrectly set for the current and/or intended phase of flight.	Includes; Inadvertently retracts the landing gear after landing; Gear not extended in preparation for landing; Incorrectly sets the flaps or slats; Incorrectly applies carburettor heat.
	Unstable approach	A continued approach and/or landing in contravention of the operator SOP relating to 'stable approach' criteria	Operator Stable Approach criteria in relation to: Track Altitude Flight path angle Airspeed Configuration
Aircraft Loading	Dangerous goods	Carriage of dangerous goods in contravention of Commonwealth, State or Territory <u>law;</u>	Includes: • Undeclared dangerous goods are discovered • Dangerous goods have spilled • Dangerous goods are incorrectly



		manifested, labelled, packed or stowed.
Loading related	The incorrect loading of an aircraft if the loading adversely affected, or could have affected, any of the following: a) the aircraft's weight; b) the aircraft's balance; c) the aircraft's structural integrity; d) the aircraft's performance; e) the aircraft's flight characteristics.	 Incorrect load sheet to tech crew. Incorrect weight data into flight computers Passengers Cargo/Baggage Fuel

Collisions	Collision	an aircraft or a detached part of an aircraft, collides with another aircraft, terrain, person or object either airborne, on the ground or on water.	Includes: Wirestrikes CFIT Mid-air Terrain collisions Ground collisions
	Ground strike	A part of the aircraft drags on, or strikes the ground or water in an unintended manner during taxi, takeoff or landing.	 Includes: A rotor or propeller makes contact with the ground An engine pod, wingtip, or tail contacts the ground.
	Near collision	An aircraft comes into such close proximity with another aircraft, terrain, person or object where immediate evasive action was required or should have been taken either airborne or on the ground.	Circumstances where a collision was narrowly avoided
Crew & Cabin Safety	Cabin safety	Any occurrence relating to crew members, passengers, unrestrained equipment or objects in the aircraft cabin	Includes: Injuries/incapacitation to flight or cabin crew Passenger injuries relating to aircraft operations Unrestrained crew or passengers when required to be restrained. Cabin communications system failure (PA, IFE, etc)
	Flight crew incapacitation	A Flight Crew member is restricted to limited duties as a result of illness or injury.	Note 1: For multi crewed aircraft 'total' or 'severe' incapacitation is to reported as an IRM.



		Note 2: For single pilot operations any incapacitation is to be reported as an IRM.
Communications	Communication difficulties between aircraft and Air Traffic Control, ground units or other aircraft, whether an aircraft is airborne or on the ground.	Loss of radio, datalink, or SELCAL communication regardless of cause Poor communication between aircraft Any miscommunication Any communication difficulties associated with Unicom and CAGRO
Fire, Fumes & Smoke	A fire (even if subsequently extinguished), smoke, fumes or an explosion on or in any part of the aircraft;	Note: Fire incidents are likely to be assessed as an IRM. Some smoke and fume incidents will also be assessed as exposing the aircraft to serious risk of serious damage or its occupants to serious risk of serious injury. In these circumstances the fire, fume or smoke event will need to be reported as an IRM.

Flight preparation / Navigation	Aircraft preparation	Errors or omissions during the planning phase that affect or might affect the aircraft safety in relation to: a) the aircraft's weight; b) the aircraft's balance; c) the aircraft's structural integrity; d) the aircraft's performance; e) the aircraft's flight characteristics.	Includes: Inadequate fuel planning Navigation/flight planning issues Aircraft deviating from a flight planned route without required ATC authorisation Deficiencies or erroneous data in navigation databases, including use of an out of date database or FMS data card Flying with maps, charts or guidance materials that are out of date (or neglecting to carry valid charts). Inadequate preflight inspection
	Flight below LSALT	An aircraft is operated below the designated or planned LSALT for the in-flight conditions and phase of flight.	Note 1: Descent below LSALT in IMC will be reportable as an IRM. Note 2: Designated LSALT relates to 'Controlled' airspace whereas Planned relates to operations OCTA
	Lost / unsure of position	Where flight crew are uncertain of the aircraft's position and request assistance from an external source.	Applies to aircraft that request navigational assistance from ATC or other aircraft, in determining their current position.

П			Includes:
	Low fuel	The aircraft's supply of useable fuel becoming so low (whether or not the result of fuel starvation) that the safety of the aircraft is compromised.	 Result of unexpected or extended holding Unforecast weather Alternate no longer an option Note: In cases where an emergency is declared or fixed reserves are compromised then these are to be reported as an IRM.
	VFR into IMC	An aircraft operating under the Visual Flight Rules enters Instrument Meteorological Conditions.	Includes: • Little or no control loss Note: If this results in a loss of control it will normally be reportable as an IRM.
Ground operations	Foreign object damage / debris	Any loose objects on a runway or a HLS or in an aircraft have caused, or have the potential to cause, damage to an aircraft.	Any potential runway hazard to aircraft Tools or equipment left in an engine or avionics bay (found during prefight) Loose objects in the cockpit/aircraft that result in a hazardous condition Note: Aircraft must be boarded for flight
	Ground handling	Any ground handling and aircraft servicing that caused, or have the potential to cause damage to the aircraft or injury.	Any hazardous condition resulting from ramp operations Note: Aircraft must be boarded for flight
	Jet blast / Prop wash	Any air disturbance from a ground- running aircraft propeller, rotor or jet engine that caused, or has the potential to cause, damage or injury.	Jet blast or prop wash that has the potential to cause injury damage.
	Depart / Approach / land wrong runway	An aircraft that takes off, lands, attempts to land from final approach or takes off from an area other than that authorised or intended for landing or departure.	Landing/departing on a closed runway Landing/departing on a taxiway Landing approaches to highways (mistaken for runways)
Runway events	Runway Excursion	Any aircraft that veers off the side of the runway or overruns the runway threshold.	Note: high potential to result in an IRM.
	Runway Incursion	The incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft.	Includes entering a runway; Without an ATC clearance Stop light intrusion (Red) even if cleared

			incorrect presence means: (a) anything within the confines of the runway strip, irrespective of having an appropriate clearance, which hinders the operation of an arriving or departing aircraft; or (b) an aircraft, vehicle or person entering the confines of the flight strip without a clearance to do so, regardless of other aircraft operations Note: high potential to result in an IRM.
	Runway Undershoot	Any aircraft attempting a landing and touches down prior to the threshold.	Note: high potential to result in an IRM.
	Airborne Collision Alert System warnings	An airborne collision avoidance system resolution advisory or equivalent type alert.	Includes: - TCAS RA - STCA
	Aircraft or ground Warnings / system alerts	Warnings or alerts that requires flight crew or ATC intervention	Abnormal engine indications requiring the immediate shutdown of an engine Stall warnings during critical phases of flight E/GPWS or TAWS ATC Alerts (STCA, MSAW, RAM, etc)
Warnings & Alerts	Ground Proximity Warning/Alert	A Ground Proximity warning or alert.	An aircraft ground warning systems (EGPWS, TAWS, etc) An ATC system alert (MSAW)
	Stall Warning	Any cockpit warning or alert that indicates the aircraft is approaching an aerodynamic stall.	Includes: • Stickshaker • Audio or visual alerts Note: Stall warnings during critical phases of flight will be reportable as an IRM.
	Warning Device other	Any warnings or alerts not covered elsewhere that affected, or has the potential, aircraft safety and requires action by the flight crew.	Includes: • EICAS & ECAM warnings • Master caution warnings • Chip detector warnings • ATS system alerts

Mechanical			
	Airframe structures	Damage to, failure or malfunction of any aircraft structure and/or its component parts.	Includes: Doors/exits Windows
Airframe			 Internal fittings Landing gear (incl fault indications) All external aircraft surfaces
	Objects falling from aircraft	Objects inadvertently falling from or detaching from an aircraft	 Includes: Aerials Lights Panels External loads (helicopter) Internal objects
	Engine failure or malfunction	An engine failure, loss of power or shutdown irrespective of the phase of flight.	 Uncommanded shutdown Any in-flight shutdown Precautionary shutdowns Fuel exhaustion Uncontained failures
Powerplant /	Abnormal engine indications	Any indications that an engine is malfunctioning or operating outside normal parameters.	 High or low oil temps/pressures High EGT Excessive vibration
propulsion	Propeller/Rotor malfunction	Failure or malfunction of an aircraft propeller/rotor or its associated components.	 Failure of associated propeller accessories, such as feathering mechanisms, constant speed units, and reduction gearboxes. General reports of damage to a propeller. Main & tail rotors
	Transmission/ gearboxes or abnormal indications	Any indications that a transmission or gearbox is malfunctioning or operating outside normal parameters.	Applies to any transmission or gear box in the power train of either a fixed wing or rotary wing aircraft.
Systems	Critical aircraft system failures	A system failure that that affects or could affect the safe operation of the aircraft and/or the safety of the crew and passengers	Necessitates an immediate return or diversion Requires <u>"emergency"</u> use of oxygen by flight crew



	 Depressurisation Aircraft controls (incl surface controproblems) 	ı
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Airspace			
Aircraft separation	Loss of separation assurance	An occurrence where separation has been maintained, but not planned, actioned or monitored appropriately	Where it is: Applicable to ATS or pilot attributable occurrences For ATS means where application of a separation standard was not planned, actioned or monitored appropriately. Note: breach of a separation standard is reportable as an IRM.
ATC Operational Error	Failure to pass traffic/Information error	Failure of Air Traffic Services to provide adequate traffic information to a pilot in relation to other aircraft. The information may have been incomplete, incorrect, late or absent.	This incident classification is relevant for on-ground operations and only in the airspace and flight categories detailed below: - Class C: VFR to VFR; - Class D/E: VFR to IFR; - Class E: IFR to IFR; - Class G: IFR, VFR on request.
Breakdown of coord	lination	Where traffic related information flow within the Air Traffic Service system is late, incorrect, incomplete or absent.	Used on occasions when information flow is deficient within or between Air Traffic Services operating positions, including foreign and military Air Traffic Service providers.
Operational Non-Co	mpliance	An aircraft deviates from an air traffic management procedure or instruction.	 Includes: Altitude busts Flying incorrect SID/STAR Failing to meet ATC requirements

Infrastructure		
Airways facilities/ systems	Malfunction or failure of facility or system, or degradation of the performance of the facility or system	This includes: A navigation aid;



to a level that may pose a threat to the safety of aircraft.	 Communications; Radar/surveillance; Runway lighting General operational services (e.g. briefing, Unicom, etc) General aerodrome safety issues
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Environment			
Interference from th	ne ground	Any ground based activity that interferes with the operation of an aircraft.	Includes: Laser/Spotlight Model aircraft Radio frequency interference Weather balloons Yacht masts
Wildlife	Animal strike Birdstrike	Occurrences where there is a collision between an aircraft and an animal or a bird.	All confirmed strikes plus those where the pilot has reported that they struck a bird or animal but no physical evidence has been detected. Note: animal/bird strikes are reportable regardless of the level of risk involved.
Other		Other environmental issues that affect, or may affect, the safety of a flight.	Includes insect nests or foreign bodies blocking pitot tubes

TABLE 3: ROUTINE REPORTABLE MATTERS (CATEGORY B OPERATIONS)

A smaller set of reporting responsibilities apply for those operations where there is a greater self-acceptance of risk. These operations involve:

- a manned aircraft that:
 - is a private operation
 - does not have a turbojet engine; and
 - has a maximum takeoff weight of less than 2 251kg; or
- a UAV.

To assist with explanation, these types of operations are called **Category B Operations**. RRMs must be reported in relation to Category B operations. An RRM for these operations retains the same definition being:

An occurrence that involves a failure to eliminate, minimise or effectively manage risks of:

- death or injury to a person; or
- damage to an aircraft or property.

However, reports of RRMs <u>only</u> need to be made in relation to Category A operations in the instances set out in regulation 2.4D:

	Reportable Matter
Routine Reportable Matter	a runway incursion
	A collision between the aircraft and a wire suspended above the ground
	Fuel exhaustion or fuel starvation
	Failure of an aircraft system
	the failure or inadequacy of anything related to an aerodrome used by the aircraft, including any of the following:
	(i) lighting;
	(ii) a runway, taxiway or apron area; (iii) signs and markings
	the failure or inadequacy of a civil transportation facility, including any of the following, used by the aircraft: (iv) a navigation aid;
	(v) a radar service; (vi) an air traffic service provided by Air Traffic Services



A Bird/Animal Strike
Note: animal/bird strikes are reportable regardless of the level of risk involved.

CONTENT: DRAFT TSIA REGULATIONS 2012

In addition to the overview of the reporting framework provided above, some additional explanatory material is provided with reference to each of the amending clauses of the draft TSIA Regulations.

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Proposed Regulation 1. Name of Regulations

This regulation provides the title of the draft regulations: the Transport Safety Investigation Amendment Regulation 2012 (No.).

Proposed Regulation 2. Commencement

This regulation provides that the TSIA Regulations will commence on the day after they are registered. It is anticipated that this date will be prior to the end of 2012.

Proposed Regulation 3. Amendment of Transport Safety Investigation Regulations 2003

This regulation introduces Schedule 1, which contains the proposed amendments to the current TSI Regulations.

SCHEDULE 1: AMENDMENTS

AMENDMENT 1.

Proposed Regulation 1.3 definition of serious damage and serious injury

Proposed subregulation 3(1) would substitute definitions for the terms 'serious damage' and 'serious injury' used in current TSI Regulation 1.3.

Serious damage

The new definition for serious damage states:

Serious damage for a transport vehicle¹, means damage that:

- (a) Significantly affects the structural integrity, performance or operational characteristics of the transport vehicle; and
- (b) Necessitates major repairs to or replacement of a component of the vehicle.

The only significant variation from the current definition is that 'destruction of the transport vehicle' is no longer included. For reporting purposes, the destruction of the transport vehicle will be captured separate to the occurrence of serious damage to a transport vehicle (see proposed new regulation 2.3B under Amendment item 3.

Further, where the serious damage involves aircraft damage, subregulation 2.3B excludes the following:

- (a) engine failure or damage, if the aircraft has more than one engine and:
 - (i) only one engine fails or is damaged; or
 - (ii) the damage is only to the cowlings or accessories of only one of the engines;
- (b) damage to any of the following:
 - (i) a propeller;
 - (ii) a wing tip;
 - (iii) an antenna;
 - (iv) a probe;
 - (v) a vane;

¹ The term 'transport vehicle' is defined in the TSI Act. It is a mulit-modal term which covers aviation, maritime and rail transport vehicles. The term is used in regulation 1.3 as this is an introductory regulation applying to all three modes of transport.

- (vi) a tyre;
- (vii) a brake;
- (viii) a wheel;
- (ix) a fairing;
- (x) a panel;
- (xi) a landing gear door.

Serious injury

The new definition of serious injury states:

Serious injury means:

- (a) For Part 2 see regulation 2.2; or
- (b) For Parts 3 and 4 an injury sustained by a person that causes the person to be admitted to hospital within 7 days of the injury

The occurrence of a serious injury in relation to the operation of an aircraft is an immediately reportable matter in accordance with proposed new regulation 2.3A. Part 2 of the regulations contains the specific reporting requirements for the aviation mode of transport. For aviation, a serious injury is defined by regulation 2.2 as:

Serious injury means an injury sustained by a person that:

- (a) causes the person to be hospitalised for a period that:
 - (i) begins within 7 days of the inquiry; and
 - (ii) is longer than 48 hours; or
- (b) consists of any of the following:
 - (i) a bone fracture, except a simple toe, finger or nose fracture;
 - (ii) a laceration that causes nerve, muscle or tendon damage or severe haemorrhage;
 - (iii) injury to an internal organ;
 - (iv) second or third degree burns;
 - (v) burns affecting more than 5% of the person's skin:
 - (vi) exposure to infectious substances;
 - (vii) exposure to radiation, if the exposure is a reportable incident within the meaning of Schedule 13 to the National Directory for Radiation Protection, as in force from time to time.²

This definition is consistent with the use of the term in Annex 13 to the Convention on International Civil Aviation (done at Chicago on 7 December 1944) (the Chicago Convention). Annex 13 provides the International Standards and Recommended Practices for aircraft accident and incident investigations. Given the global nature of the aviation industry, it is important to try to achieve a high level of consistency with the international regime so that data from different countries is comparable.

² A copy of the National Directory for Radiation Protection is available online at: www.arpansa.gov.au/publications/codes/rps6.cfm

AMENDMENT 2.

New heading for Part 2

Part 2 prescribes the reportable matters for the aviation mode of transport in accordance with Part 3 of the TSI Act.

AMENDMENT 3.

Substitution of Regulations 2.1 to 2.5A

Presently, regulations 2.1 to 2.5A of the TSI Regulations outline what the aviation industry must report to the ATSB. These regulations will be replaced by new regulations:

Proposed Regulation 2.1 Application

Regulation 2.1 sets out the circumstances in which Part 2 applies for the purpose of determining whether or not a matter needs to be reported to the ATSB. Subregulation 2.1(1) sets out the following criteria:

- (1) This Part applies to an investigable matter that:
 - (a) involves any of the following kinds of aircraft:
 - (i) a manned aircraft;
 - (ii) a large UAV;
 - (iii) a small UAV operated for purposes other than sport or recreation; and
 - (iv) occurs during a period mentioned in subregulation (2) or (3) (a **flight period**).

Must be an investigable matter

To be reportable, the occurrences set out in divisions 2.2 and 2.3 will need to be capable of being considered an 'investigable matter' as defined by section 3 of the TSI Act. Broadly speaking, an 'investigable matter' is the same as a 'transport safety matter' defined by section 23 of the TSI Act. This includes an aircraft being involved in an occurrence that affected, or could have affected, the safety of the operation of the aircraft.

While the term 'investigable matter' has an expansive meaning, Divisions 2.2 and 2.3 narrow in scope what is actually reportable with a focus on occurrences where there are uncontrolled risks. The prescribed reportable matters for IRMs and RRMs are discussed under the headings below for divisions 2.2. and 2.3.

Must involve a manned aircraft or certain UAV operation

Subparagraph (i), (ii) and (iii) of paragraph 2.1(1)(a) describe the types of aircraft operations that need to be involved for an occurrence to be reportable. The current regulations do not make a distinction between manned aircraft and unmanned aircraft. However, the increasing use of Unmanned Aerial Vehicles (UAVs) for activities like aerial photography, law enforcement and surveying means that UAV operations need to be reflected for reporting purposes in a way that is commensurate with the risk of injury to persons and damage to property.

The regulations will not apply to small UAVs operated for the purpose of sport and recreation.³ Essentially small UAVs used for sport and recreational purposes are model aircraft. Because of the limited risk involved in this type of operation, there is no intention that their operators should have to report to the ATSB. The Model Aeronautical Aircraft Association of Australia (www.maaa.asn.au) is recognised by CASA and provides for its own reporting requirements so that hazards and risks can be managed.

There will still be reporting requirements for UAV operations involving:

- large UAVs being operated for any purpose; and
- small UAVs being operated for purposes other than sport or recreation.

The reporting requirements exist in divisions 2.2 and 2.3 because these types of aircraft are often flown in a manner surpassing the capabilities of model aircraft.

Must happen during a flight period

Consistent with the existing regulations, IRMs and RRMs will only be reportable when they occur during a 'flight period' (see subparagraph 2.1(1)(a)(iv). The prescription of flight periods for manned and unmanned aircraft in subregulations 2.1(2) and 2.1(3), respectively, are based on the flight periods prescribed for the same aircraft operations in Annex 13 to the Chicago Convention. If it is a manned aircraft operation, and an IRM or RRM in division 2.2 or 2.3 occurs, it will only need to be reported if it happens during the period:

- (a) commencing at the earlier of:
 - (i) the embarkation of the first passenger; and
 - (ii) the embarkation of the first flight crew member who intends to remain onboard during the flight; and

³ A small UAV is defined in regulation 2.2 by reference to the definition in regulation 101.240 of the *Civil Aviation Safety Regulations 1998*. A small UAV is a UAV that is not a large UAV and a large UAV is defined as:

⁽a) an unmanned airship with an envelope capacity greater than 100 cubic metres;

⁽b) an unmanned powered parachute with a launch mass greater than 150 kilograms;

⁽c) an unmanned aeroplane with a launch mass greater than 150 kilograms;

⁽d) an unmanned rotorcraft with a launch mass greater than 100 kilograms;

⁽e) an unmanned powered lift device with a launch mass greater than 100 kilograms.

(b) ends after the disembarkation of the last passenger or crew member to leave the aircraft.

For a UAV the matter will only be reportable if it happens during the period:

- (a) commencing when the UAV begins to move under its own power for the purpose of take-off; and
- (b) ends at the latter of:
 - (i) the moment at which the UAV comes to rest after being airborne; and
 - (ii) the shutting down of the UAVs primary propulsion system.

Proposed Regulation 2.2 **Definitions**

Regulation 2.2 contains definitions for specific terms used in Part 2 of the Regulations.

Division 2.2 Immediately Reportable Matters

Proposed Regulation 2.3 Prescribed Investigable Matters

Regulation 2.3 advises that the division prescribes certain investigable matters as IRMs for the purpose of the definition of an IRM in subsection 3(1) of the TSI Act. Regulation 2.3A prescribes IRMs relating to persons, i.e. involving deaths or serious injury. Regulation 2.3B prescribes IRMS relating to damage to the aircraft itself. Regulation 2.3C prescribes IRMs involving damage to property such as a building, road or vehicle. Regulation 2.3D prescribes certain other matters reportable as an IRM.

The matters in regulations 2.3A, 2.3B, 2.3C and 2.3D are reportable as IRMs provided they fall within the parameters set by regulation 2.1, i.e. they occur during a flight period.

The note to regulation 2.3 advises that guidance material to assist with interpreting what matters should be reported will be provided on the ATSB's website and in the Aeronautical Information Publication available on Airservices' website. The guidance material will be similar to the material provided at the beginning of this Explanatory Statement.

Proposed Regulation 2.3 A Immediately Reportable Matters – deaths and serious injury

Regulation 2.3A requires immediate reports of the following investigable matters:

Item	Matter
1	The death of the person, as a result of the occurrence, within 30 days
2	The death of the person, as a result of the occurrence, if the person was
	admitted to hospital within 30 days of the occurrence
3	Serious injury to the person as a result of the occurrence
4	The exposure of the person to serious risk of death or serious injury as a result of the occurrence

These matters are reportable as IRMs provided they occur within the parameters set by regulation 2.1. Regulation 2.3A also sets some additional parameters that limit the circumstances in which the matters above need to be reported as IRMs.

Must occur in association with the operation of the aircraft (person onboard)

Regulation 2.2 defines the phrase associated with the operation of the aircraft as:

Associated with the operation of the aircraft, in relation to an occurrence, means an occurrence that relates to:

- (a) the movement of the aircraft; or
- (b) the altitude of the aircraft; or
- (c) anything used in connection with moving or guiding the aircraft.

Items 1, 2, 3 and 4 only need to be reported in relation to a person onboard the aircraft if they are associated with the operation of the aircraft as defined. The intention is that the occurrence needs to have something to do with the aircraft's operational characteristics as an aircraft (i.e. the aircrafts movement and altitude). The occurrence of events in relation to people on board the aircraft that do not have anything to do with these characteristics will not be reportable.

As an example, it will not be a requirement to report the death of a person from natural causes on board the aircraft. This is because the death is not related to the movement of the aircraft, its altitude, or anything used in connection with moving or guiding the aircraft. Similarly, it will not be a requirement to report a serious injury that from a passenger dropping baggage on another passenger. This will be the case unless the incident resulted from the movement or altitude of the aircraft.

Person external to the aircraft

For a person external to the aircraft, the matters in items 1, 2, 3 and 4 are only reportable if they occur as a result of:

- (a) a person coming into contact with:
 - a. the aircraft; or
 - b. anything that is attached to the aircraft; or
 - c. anything that has become detached from the aircraft; or
- (b) a person being directly exposed to jet blast, propeller blast or rotor downwash.

Exposure to serious risk

One of the reportable in regulation 2.3A is 'the exposure of the person to serious risk of death or serious injury as a result of the occurrence'. In this instance a person has not actually died or suffered serious injury but they have been exposed to serious risk

of such an event. To assist with determining when a report needs to be made the phrase 'exposure to serious risk' requires some explanation.

The term 'serious risk' is undefined in the regulations. Leaving the term undefined is consistent with the approach taken in similar legislation, such as the *Workplace Health and Safety Act 2011* (CTH) involving the reporting of events affecting the health or life of persons. The generally understood approach to interpreting this phrase is therefore used involving the consideration of the likelihood of the event occurring and the consequences if it did. At a base level, it means that a person has been involved in a situation where 'but for chance' they have avoided death or serious injury. The events or circumstances were such that they would most often be associated with the occurrence of a death or serious injury.

Examples of situations that often involve exposure to serious risk of death or serious injury include: collisions, near collisions, wire strikes, runway excursions, fire onboard an aircraft and uncontained engine failures. The highlighted occurrences in Table 2 at the start of this Explanatory Statement provides further examples when it is most likely that a person has been exposed to serious risk of death or serious injury. However, while these examples are a useful guide they of when an exposure to serious risk has occurred. They cannot be as any number of different variables could be involved that create or negate the existence of a serious risk. The important thing from the perspective of someone designated as a responsible person is that if he or she becomes aware of a situation that gives them significant cause for concern, then they should report it immediately.

Proposed Regulation 2.3B Immediately Reportable Matters – aircraft damage etc.

Regulation 2.3B requires immediate reports of the following investigable matters:

ltem	Matter
1	The destruction of the aircraft
2	Serious damage to the aircraft
3	The abandonment or disappearance of the aircraft
4	The exposure of the aircraft to serious risk of destruction, serious damage,
	abandonment or disappearance as a result of an occurrence associated
	with the operation of the aircraft

These matters are reportable as IRMs provided they occur within the parameters set by regulation 2.1. Also, item 4 of regulation 2.3B uses similar language to item 4 of regulation 2.3A. The particular reportable matter is concerned with an aircraft being exposed to a serious risk of destruction, serious damage, abandonment or disappearance as a result of an occurrence associated with the operation of the aircraft. An exposure to a serious risk means the aircraft was involved in a situation where 'but for chance' it avoided destruction, serious damage, abandonment or disappearance.

Many of the same sorts of situations that would expose a person to serious risk of serious injury or death would expose an aircraft to serious risk of destruction,

damage etc. For example, near collisions, wire strikes, fire onboard the aircraft etc. If a responsible person has significant concern about the safety of a person or an aircraft, they should report the occurrence as the matter that gave them the most immediate concern.

Proposed Regulation 2.3C Immediately reportable matters – property damage etc.

Regulation 2.3C requires immediate reports of the following investigable matters:

ltem	Matter
1	The destruction of the property as a result of the occurrence
2	Serious damage to the property as a result of the occurrence
3	The exposure of the property to serious risk of destruction or serious
	damage as a result of the occurrence

The matters are reportable as IRMs provided they occur within the parameters set by regulation 2.1. Further, it must have been an occurrence in association with the operation of an aircraft that caused the property to be destroyed, seriously damaged, or exposed to a serious risk of damage or destruction.

Regulation 2.3 defines 'property' and 'serious damage' for the purpose of the matters in this regulation. Property is defined to include buildings, infrastructure and vehicles. This definition gives an indication of the significant nature of the property that is the subject of the concern for it to be a reportable matter. Further, for the damage to be serious damage, it must be damage estimated to exceed the lesser of:

- (a) \$25 000 to costs of repair, including materials and labour; and
- (b) if the property was destroyed fair market value.

Proposed Regulation | Immediately reportable matters-other

Regulation 2.3D requires immediate reports of the following investigable matters:

- (a) crew member broadcasting a declaration of an emergency in relation to an occurrence that compromises the safety of any person; or
- (b) the aircraft coming into such close proximity with another aircraft that an applicable separation standard is breached.

These matters are most likely to be reportable under regulations 2.3A, 2.3B and 2.3C, i.e. occurrences that involve an exposure to serious risk of death, serious injury or serious damage to the aircraft. However, to avoid doubt, anytime there is a declaration of an emergency, or a separation standard is breached, the occurrence will be an immediately reportable matter.

Division 2.3 Routine reportable matters

Proposed Regulation 2.4 Definition for Division 2.3

The term 'relevant aircraft' is defined in regulation 2.4. The requirements in Division 2.3 for reporting RRMs are different depending on whether the aircraft operation

involves a 'relevant aircraft' or some other type of aircraft operation. A relevant aircraft is defined as:

- (a) manned aircraft that:
 - (i) is classified as a private aircraft for paragraph 2(6)(d) of the Civil Aviation Regulations; and
 - (ii) does not have a turbo jet engine;
 - (iii) has a maximum take-off weight of less than 2 251kg; or
- (b) a UAV mentioned in subparagraph 2.1(1)(a)(ii) or (iii).

Relevant aircraft are essentially aircraft involved in private operations or UAVs. The discussion in relation to table 3 at the start of this Explanatory Statement refers to these operations as Category B operations.

The requirements for the reporting of RRMs in relation to Category B operations are less extensive than for passenger, cargo or aerial work operations (Category A operations). Where the operation is private there is greater personal acceptance of risk in undertaking the flight than if you were a passenger who purchased a ticket and boarded a commercial airliner. With a UAV operation, there is minimal exposure to risk for the controller.

However, with these operations third parties, such as persons on the ground, are exposed to unaccepted risks. For this reason, the full range of IRMs is still reportable for private and UAV operations. There is also small subset of situations detailed in regulation 2.4D in which RRMs will be reportable.

The exceptions that expose private operations to the full range of reporting responsibilities for RRMs is if the aircraft's take-off weight is more than 2 250kg and/or if the aircraft has a turbojet engine. The increased reporting requirements for these types of aircraft involved in private operations exist because of the aircraft is more likely to have capabilities consistent with those engaged in commercial operations.

Proposed Regulation 2.4A Prescribed investigable matters

Regulation 2.4A prescribes certain investigable matters as RRMs for the definition of an RRM matter in subsection 3(1) of the Act. Regulation 2.4B prescribes a specific reportable matter in relation to collisions with animals (including birds). Regulation 2.4C prescribes a general requirement to report occurrences where there has been a failure to eliminate, minimise or effectively manage the risks of deaths, injury or damage. Regulation 2.4D limits the reporting requirements where the aircraft involved is a 'relevant aircraft' (i.e. private operation or a UAV).

Proposed Regulation 2.4B Routine Reportable Matters-collisions with animals

Regulation 2.4B makes collisions with animals reportable in relation to all types of aircraft operations. This is set out as a general reporting requirement because of the need to monitor the hazards and risks that birds (in particular) and other wildlife create for air traffic. The ATSB publishes research reports on this subject and airports and aerodromes use the information to put in place hazard and risk



mitigation strategies. A link to the ATSB publication:

<u>Australian Aviation Wildlife Strike Statistics: Bird and Animal Strikes 2002 to 2009</u>, is provided.

Proposed Regulation 2.4C Routine reportable matters-other

Subregulation 2.4C(1) sets out what is an RRM. A RRM is

An occurrence that involves a failure to eliminate, minimise or effectively manage risks of:

- death or injury to a person; or
- damage to an aircraft or property.

With an RRM defined in this way the intention is that the industry will need to report occurrences that demonstrate a concern about whether an acceptable level of safety was maintained.

The regulations do not seek to prescribe each and every occurrence and the circumstances in which the occurrence would demonstrate that there was not an acceptable level of safety. This is not possible. However, at the start of this Explanatory Statement Table 2 is used to provide a taxonomy of occurrences that the ATSB has developed which generally indicate that the risks of death, injury or damage were not eliminated, minimised or effectively managed. As a guide, if you are responsible person, you should report these occurrences to the ATSB.

In addition to the list in Table 2, there are some guideposts that can be used for determining whether safety was acceptable at the time of the occurrence. Subregulation 2.4(3)(c) points to:

- (a) applicable safety requirements under a law of the Commonwealth, a State or Territory (for example, the *Civil Aviation Act 1988* and Regulations);
- (b) guidance material on safety approved by a regulatory authority under a law of the Commonwealth, a State or Territory (for example, a Civil Aviation Advisory Publication);
- (c) any applicable safety management system adopted by an aircraft operator; and
- (d) good industry practice.

Also, the standard approach to risk management will help determine the acceptability of the risk involved. Paragraph 2.4(1)(c) states that consideration should be given to the relationship between the seriousness of the consequences arising out of the identified risk and the likelihood of those consequences eventuating, i.e. death, injury and damage. With this model, the ATSB would not be expecting to get reports of minor cuts and bruises to a person arising out of an occurrence unless they demonstrated the potential for something more serious. The same applies if the occurrence involves very minor damage to an aircraft or one of its components.

Aircraft operations other than private operations and UAV operations have the more significant reporting responsibilities for RRMs. They have the general requirement under regulation 2.4C to report occurrences where risks of death, injury or damage

have not been eliminated, minimised or effectively managed. As stated earlier, the broader requirements exists because in commercial type operations there is less personal acceptance of risk of passengers and flight crew. It is important that those with aviation safety responsibilities closely monitor the accidents and incidents that indicate the presence of hazards and risk.

Air transport operators will be most familiar with the concept of risk management because of the need for a number of them to have in place safety management systems that address risk. Civil Aviation Advisory Publication SMS-1(0) 2009 provides guidance on the safety outcomes and key elements of an SMS. High capacity and low capacity regular public transport operators are required to have an SMS in place in accordance with Civil Aviation Orders 82.3 and 82.5. Under proposed changes to the *Civil Aviation Safety Regulations 1998* there will be more types of operations that will be required to have an SMS in place. See for example CASA's website for proposed Part 119 of the CASRs: (www.casa.gov.au/scripts/nc.dll?WCMS:PWA::pc=PARTS119).

Proposed Regulation 2.4D Relevant aircraft-circumstances

Regulation 2.4D prescribe the limited circumstances in which reports of RRMs are required to be made for aircraft engaged in private or UAV operations at the time of the occurrence. Table 3 at the start of this Explanatory Statement contains a list of the occurrence types that need to be reported where there has been a failure to eliminate, minimise or effectively manage risk.

Division 2.4 Responsible Persons

Proposed Regulation 2.5 Prescribed responsible persons

The list of responsible persons is detailed at the start of this Explanatory Statement in the overview of the reporting framework under part 3 of the TSI Act. As noted the only new addition is the listing of a recreational aviation administration organisation recognised by CASA.

Division 2.5 Compulsory Reporting

Proposed Regulation 2.5A Immediate Reports

Regulation 2.5A sets out what information needs to be provided by a responsible person making a report of an IRM. The responsible person must report the information to the extent that it is known by them. This information is:

- (1) For subsection 18 (1) of the Act, the following particulars are prescribed:
 - (a) the type, model, nationality, registration marks and flight number (if any) of the aircraft;
 - (b) the type of aircraft operation that the aircraft was engaged in at the time of the immediately reportable matter;

- (c) the name and contact details of:
 - (i) the operator of the aircraft; and
 - (ii) the owner of the aircraft;
- (d) the nature of the immediately reportable matter, including:
 - (i) whether a person died or was seriously injured;
 - (ii) whether there was damage to the aircraft or property and, if so, a description of the damage;
 - (iii) if the immediately reportable matter involved the presence of dangerous goods onboard the aircraft—a description of the goods;
- (e) where the immediately reportable matter occurred, including a description of the location or the geographical coordinates;
- (f) the aircraft's place of departure and destination;
- (g) the day and local time when the immediately reportable matter occurred;
- (h) a description of:
 - (i) what occurred; and
 - (ii) how and why it occurred (if known).
- (2) When making the report, the responsible person must give the nominated official:
 - (a) the person's name; and
 - (b) the best method of contacting the person.

AMENDMENTS 4, 5 & 6

Amendments 4, 5 and 6 make small changes to the prescription of information in regulation 2.6 that a responsible person needs to provide when they are making a written report of an IRM or an RRM. For ease of reference the current regulation 2.6 is produced below with the amendments highlighted:

- (1) For subsections 19 (1) and (4) of the Act and subject to subregulation (2), a report must contain as many of the following particulars as are within the knowledge of the person making the report:
 - (a) the name and contact details of the person making the report:
 - (b) the person's role in relation to the aircraft concerned;
 - (c) the type, model, nationality, registration marks and flight number (if any) of the aircraft;
 - (d) the name of the owner of the aircraft;
 - (e) the name and contact details of the operator of the aircraft;
 - (f) if the aircraft was under hire when the reportable matter occurred, the name of the hirer:
 - (g) the name and nationality of the pilot, and the type and licence number of the licence held by the pilot;
 - (h) the name and nationality of each other flight crew member (if any), and the type and licence number of the licence held by each of them;
 - (i) the day and local time when the reportable matter occurred;
 - (j) if, when the reportable matter occurred, the aircraft was in flight:
 - (i) the place where the flight started; and
 - (ii) the place where the flight ended, or was intended to end; and
 - (iii) the purpose of the flight;
 - (k) unless the reportable matter occurred at an airport, the location of the aircraft immediately after the occurrence of the reportable matter, including the geographical coordinates of that location;

- (I) the number of persons on board the aircraft when the reportable matter occurred:
- (m) the nature of the reportable matter, including:
 - (i) its outcome or effect on the flight of the aircraft; and
 - (ii) the phase of the aircraft's flight when the matter occurred; and
 - (iii) the weather conditions; and
 - (iv) the airspace designation; and
 - (v) the altitude at which the matter occurred; and
 - (vi) if the matter occurred at, or in relation to, an airport, the name of the airport, and if it occurred on, or in relation to, a runway, the runway number; and
 - (vii) if the matter involved a collision with an animal, including a bird, the nature of the collision; and
 - (viii) the factors that contributed to the occurrence (if known), including any human performance issues; and
 - (ix) any safety action carried out to prevent a recurrence of the matter; and
 - (x) the nature and extent of any damage to the aircraft;
- (n) the physical characteristics of the area where the reportable matter occurred (eg the terrain, vegetation cover, and existence and location of any buildings, runways or aerodromes);
- (o) the flight rules under which the aircraft was operating at the time of the reportable matter;
- (p) the type of aircraft operation the aircraft was engaged in at the time of the reportable matter;
- (q) if the matter resulted in a death or serious injury, and the aircraft carried an emergency locator transmitter — whether the emergency locator transmitter was fixed or portable and whether it was activated at the time the immediately reportable matter occurred;
- (r) if the aircraft's pilot has died:
 - (i) the pilot's date of birth; and
 - (ii) the pilot's total flying hours on all aircraft and flying hours on the same type of aircraft;
- (s) if any crew members have died or been seriously injured as a result of the reportable matter, how many, and their names and nationalities;
- (t) if any passengers have died or been seriously injured as a result of the reportable matter, how many, and their names and nationalities;
- (u) if any other persons have died or been seriously injured as a result of the reportable matter, how many, and their names and nationalities.
- (2) For subsections 19 (1) and (4) of the Act, a report **that concerns a collision with an animal for regulation 2.4B** must contain as many of the following particulars as are within the knowledge of the person making the report:
 - (a) the name and contact details of the person making the report;
 - (b) the day and local time when the reportable matter occurred:
 - (c) the nature of the reportable matter, including:
 - if the matter occurred at, or in relation to, an airport, the name of the airport, and if it occurred on, or in relation to, a runway, the runway number; and
 - (ii) the nature and extent of any damage to the aircraft;



(d) any other information that the person making the report considers appropriate.

AMENDMENTS 7, 8, 9 and 10

These amendments make changes to headings within the regulations.