

# Chapter 2

## RPAS laws in Australia

2.1 The regulation of RPAS in Australia is administered via the *Civil Aviation Act 1988* (the Act) and the Civil Aviation Safety Regulations 1998 (CASR) established under the Act. Part 101 of the CASR, introduced in 2001, specifically regulates unmanned aircraft.

2.2 In 2016, Part 101 of the CASR was amended in an effort to reflect the drastically changed operating environment for RPAS since Part 101 first took effect in 2001. This chapter explains the 2016 amendments and considers the evidence about the impact of these changes to RPAS use in Australia.

2.3 The chapter also considers the international and domestic legislative framework in place to regulate the operation of RPAS; the penalty regime for RPAS misuse; and the concerns raised by witnesses and submitters.

### **The Chicago Convention and the International Civil Aviation Organization**

2.4 The Convention on International Civil Aviation, also known as the Chicago Convention, was signed in 1944. The convention establishes rules of airspace, aircraft registration and safety, whilst also detailing the rights of signatories regarding air travel. It applies to civil aircraft and excludes aircraft used in military, customs or police services.<sup>1</sup> Article 8 of the convention provides that 'pilotless aircraft', including RPAS, are prohibited from flying over the territory of a contracting State, without special authorisation. Article 8 notes:

Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft.<sup>2</sup>

2.5 The Chicago Convention also established the International Civil Aviation Organization (ICAO), a specialised United Nations agency responsible for coordinating and regulating international air travel. The goal of ICAO in relation to RPAS is to provide an international regulatory regime through Standards and Recommended Practices (SARPs), with supporting Procedures for Air Navigation Services (PANS) and guidance material, to 'underpin [the] routine operation of UAS

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1 Article 3 of the Convention on International Civil Aviation, Ninth Edition, 2006.

2 Article 8 of the Convention on International Civil Aviation, Ninth Edition, 2006.

throughout the world in a safe, harmonized and seamless manner comparable to that of manned operations'.<sup>3</sup>

2.6 According to ICAO:

The principal objective of the aviation regulatory framework is to achieve and maintain the highest possible uniform level of safety. In the case of UAS, this means ensuring the safety of any other airspace user as well as the safety of persons and property on the ground.<sup>4</sup>

***Addressing a growing global concern***

2.7 In light of the proliferation of RPAS worldwide, a growing number of ICAO member states expressed concern to the international body about reported incidents of RPAS flying near airports and creating hazards for commercial aircraft. To support the development of appropriate regulations, ICAO formed a UAS Advisory Group in March 2016 to share best practice and develop guidance material for the 191 ICAO member states.<sup>5</sup>

2.8 In October 2016, the member states requested that ICAO consider developing a management tool for UAS operating at low altitudes and to explore registration and identification solutions.<sup>6</sup> ICAO acknowledged the concerns and released a publication ahead of Christmas in December 2016 to provide recreational RPAS users with tips on safe RPAS use. The publication noted that RPAS can 'pose a serious threat to manned flights and people and property on the ground'.<sup>7</sup>

2.9 Whilst ICAO has been involved in further discussions about harmonising UAS regulations, and continues to hold symposiums across the globe to facilitate this

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3 International Civil Aviation Organization, *Unmanned Aircraft Systems (UAS)*, Circular 328, 2011, p. iii, [https://www.icao.int/Meetings/UAS/Documents/Circular%20328\\_en.pdf](https://www.icao.int/Meetings/UAS/Documents/Circular%20328_en.pdf) (accessed 29 September 2017).

4 International Civil Aviation Organization, *Unmanned Aircraft Systems (UAS)*, Circular 328, 2011, p. 4.

5 International Civil Aviation Organization, *Training Education General Recommendations*, <http://www4.icao.int/uastoolkit/Home/Narrative#training> (accessed 1 November 2017).

6 International Civil Aviation Organization, *Unmanned Aircraft Systems Advisory Group (UAS-AG)*, [https://www.icao.int/safety/UA/Pages/Unmanned-Aircraft-Systems-Advisory-Group-\(UAS-AG\).aspx](https://www.icao.int/safety/UA/Pages/Unmanned-Aircraft-Systems-Advisory-Group-(UAS-AG).aspx) (accessed 7 March 2018).

7 UK Civil Aviation Authority, *Ten things to know before buying a drone this Christmas*, <http://www.unitingaviation.com/general-interest/ten-things-to-know-before-buying-a-drone-this-christmas/> (accessed 1 November 2017).

work, the responsibility for regulation at the national level falls to the individual states, as per Article 8 of the Chicago Convention.<sup>8</sup>

2.10 According to Article 8, standards relating to the maximum weight or authorised flying altitude for various categories of RPAS are a responsibility for national civil aviation authorities, with ICAO serving only an advisory role. To this end, in December 2016, ICAO launched a UAS toolkit to guide member states in developing their own UAS regulations.<sup>9</sup>

2.11 The toolkit highlights the multitude of challenges facing member states in developing appropriate UAS regulation, including managing the expectations of the UAS industry; providing training materials to educate operators; advancing harmonization with international counterparts; engaging legal authorities to strengthen enforcement capacity; and managing large volumes of new operators or new types of operations.<sup>10</sup>

### **Australia's legal framework**

2.12 In Australia, the *Civil Aviation Act 1988* (the Act) establishes the regulatory framework for maintaining, enhancing and promoting the safety of civil aviation, with a particular emphasis on preventing aviation accidents and incidents.

2.13 The Act provides for the establishment of regulations and gives effect to the provisions of the Chicago Convention relating to safety. Subsection 9(1) of the Act outlines the role and responsibilities of CASA. It states that CASA:

...has the function of conducting the safety regulation of...civil air operations in Australian territory by means that include...developing and promulgating appropriate, clear and concise aviation safety standards; and issuing certificates, licences, registrations and permits.<sup>11</sup>

2.14 In terms of the overall civil aviation framework, CASA is the regulator; DIRDC is responsible for policy; the ATSB is responsible for the investigation of aviation incidents and accidents; and Airservices Australia is responsible for service provision, including air navigation, and aviation rescue and firefighting services.

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8 International Civil Aviation Organization, *DRONE ENABLE, ICAO's Unmanned Aircraft Systems (UAS) Industry Symposium*, <https://www.icao.int/Meetings/UAS2017/Pages/default.aspx> (accessed 4 October 2017); Author unknown, 'Drone tracking plan by ICAO to avoid air disasters', *The Australian*, 12 May 2017, <http://www.theaustralian.com.au/business/aviation/drone-tracking-plan-by-icao-to-avoid-air-disasters/news-story/d635abe479d6f442321c0e06abca1c02> (accessed 5 October 2017).

9 International Civil Aviation Organization, *UAS Toolkit*, <https://www4.icao.int/uastoolkit/Home/About> (accessed 5 October 2017).

10 International Civil Aviation Organization, *Development of UAS Regulation*, <https://www4.icao.int/uastoolkit/Home/Narrative#regulation> (accessed 9 January 2018).

11 *Civil Aviation Act 1988*, ss. 9(1).

### ***Part 101 of the Civil Aviation Safety Regulations 1998***

2.15 As noted in Chapter 1, Australia was the first country to allow commercial UAV activities, with CASA the first body in the world to regulate the operation of RPAS. Part 101 of the Civil Aviation Safety Regulations 1998 (CASR) was first introduced in December 2001 to provide a regulatory framework for RPAS, with the aim of enabling the technology to progress without compromising the safety of other airspace users, people and property. It is the primary instrument governing the civil operation of all types of 'unmanned' aircraft in Australian airspace including model aircraft, remote controlled aeroplanes and helicopters, blimps, rockets, kites and RPAS.<sup>12</sup>

2.16 When first introduced in 2001, the regulations contained in Part 101 of the CASR were considered ground-breaking. According to many within the industry, the success and advancement of Australia's UAV industry is largely due to the flexible approach outlined in the regulations.<sup>13</sup> However, CASA developed the regulations at a time when there were only a few operators in the country, with the majority of them commercial.<sup>14</sup>

2.17 Since the introduction of the CASR in 2001, the number of RPAS users has grown rapidly. In 2007, there were less than 25 certified RPAS operations in Australia. By the end of March 2016, the number had grown to 500.<sup>15</sup> Similarly, the number of ReOCs issued by CASA rose from 70 in February 2014 to 1106 in July 2017.<sup>16</sup> By February 2018, CASA reported approximately 1283 ReOC holders and 7380 RePL holders in Australia, with an estimated 50 000 additional unregistered RPAS being operated for sport and recreational purposes.<sup>17</sup> A review of the regulations, to encompass the increased number of hobbyist and amateur operators, was therefore considered necessary to keep pace with the evolution of RPAS use.<sup>18</sup>

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12 Civil Aviation Safety Regulations 1998, Part 101 – Unmanned aircraft and rockets.

13 See, for example: Parrot ANZ Pty Ltd, *Submission 28*, [pp. 2–3]; Canberra UAV, *Submission 47*, [pp. 1–3]; DJI, *Submission 60*, [pp. 1–2]; Australian Pork, *Submission 32*, [p. 1].

14 Mr Greg Tyrrell, Australian Association for Unmanned Systems, *Committee Hansard*, 16 June 2017, p. 1.

15 Reece Clothier and Jonathan Roberts, 'New relaxed drone regulations will help the industry take off', *The Conversation*, 7 April 2016, <https://theconversation.com/new-relaxed-drone-regulations-will-help-the-industry-take-off-57201> (accessed 4 October 2017).

16 Civil Aviation Safety Authority, *Submission 17*, p. 1; Civil Aviation Safety Authority, *Discussion paper: Review of RPAS operations*, August 2017, p. 3.

17 Civil Aviation Safety Authority, *Discussion paper: Review of RPAS operations*, August 2017, p. 3; Civil Aviation Safety Authority, *Review of aviation safety regulation of remotely piloted aircraft systems*, May 2018, p. 19.

18 Mr Greg Tyrrell, Australian Association for Unmanned Systems, *Committee Hansard*, 16 June 2017, p. 1.

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*Civil Aviation Legislation Amendment (Part 101) Regulation 2016*

2.18 On 29 September 2016, following a review of the regulations, amendments by way of the Civil Aviation Legislation Amendment (Part 101) Regulation 2016 came into force. CASA noted the following in relation to the changes:

Globally, aviation safety regulators are facing the same kinds of challenges: to maintain high levels of safety without unnecessarily impeding progress or unduly constraining commercial opportunities to use a technology capable of a multitude of beneficial humanitarian, economic and recreational applications. Responding to these challenges, CASA introduced important amendments to the regulations that took effect in September 2016.<sup>19</sup>

2.19 Prior to the 2016 amendments, all RPAS, regardless of weight or operation, were regulated under the CASR as a single category.<sup>20</sup> Operators of UAV were required to obtain a RePL or ReOC in order to conduct operations. However, under the new regulations, operators of RPAS below 2kg are no longer required to obtain these qualifications. Along with the introduction of weight categories, the new regulations also make the distinction between commercial operators, and those using RPAS 'for the purpose of sport and recreation'.<sup>21</sup>

2.20 CASA explained that the intention of the amended Part 101 was to seek a balance between managing risk and encouraging innovation.<sup>22</sup> It noted that the changes enhanced the existing safety framework by introducing new provisions to strengthen and clarify the requirements and limitations governing the safe operation of RPAS. At the same time, the changes aimed to reduce the 'cost and legal requirements for lower-risk RPA operations',<sup>23</sup> and effectively 'cut red tape'.<sup>24</sup>

2.21 The committee noted that the amendments made a number of significant changes to the CASR, including:

- new weight classifications for RPA;
- reduced regulatory requirements for 'excluded' category RPA;

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19 Civil Aviation Safety Authority, *Discussion paper: Review of RPAS operations*, August 2017, p. 3.

20 Military drones are regulated by the Chief of Air Force as the Defence Aviation Authority. See: Department of Defence, *Submission 44*, p. 3.

21 Civil Aviation Legislation Amendment (Part 101) Regulation 2016, para. 21.

22 Civil Aviation Safety Authority, *Submission 17*, p. i.

23 Civil Aviation Safety Authority, *Flying drones/remotely piloted aircraft in Australia*, 13 August 2017, <https://www.casa.gov.au/aircraft/landing-page/flying-drones-australia> (accessed 19 September 2017).

24 Civil Aviation Safety Authority, *New drone rules cut red tape*, 28 September 2017, <https://www.casa.gov.au/media-release/new-drone-rules-cut-red-tape> (accessed 1 November 2017).

- the establishment of standard operating conditions for RPA; and
- the establishment of a series of new offences relating to the environment in which RPA can be operated.

*New weight classifications*

2.22 The amended regulations recognise five types of RPA based on size and weight as provided in Table 2.1 below.

**Table 2.1: New weight classification for Remotely Piloted Aircraft<sup>25</sup>**

<b>RPA</b>	<b>Gross weight</b>
<i>Micro RPA</i>	100 g or less
<i>Very small RPA</i>	More than 100 g but less than 2 kg
<i>Small RPA</i>	At least 2 kg but less than 25 kg
<i>Medium RPA</i>	At least 25 kg but not more than 150 kg
<i>Large RPA</i>	More than 150 kg

*New 'excluded' category*

2.23 The amendments introduced the concept of 'excluded' RPAs for lower risk categories of use. The meaning of 'excluded' category RPA is laid out in Regulation 101.237 of the CASR, but generally includes both commercial and recreational operators of RPAS below 2kg.

2.24 Operators of 'excluded' RPAS have reduced regulatory requirements and are permitted to use their RPAS without a ReOC or RePL, and can therefore operate without formal training or safety education.<sup>26</sup> Excluded category RPAS are not subject to formal registration requirements, unless being flown for commercial purposes, in which case an aviation reference number is required.<sup>27</sup>

2.25 In addition, the 2016 amendments introduced the following provisions:

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25 Civil Aviation Safety Authority, *Discussion Paper: Review of RPAS operations*, August 2017, p. 7.

26 Prior to 29 September 2016, the ReOC was called an operator's certificate and the RePL was called a controller's certificate. A RePL is held by individual controllers, whilst a ReOC is required by the commercial entity to conduct commercial operations.

27 Civil Aviation Safety Authority, *Commercial unmanned flight – remotely piloted aircraft under 2kg*, <https://www.casa.gov.au/standard-page/commercial-unmanned-flight-remotely-piloted-aircraft-under-2kg> (accessed 8 March 2018).

- persons conducting operations for 'hire and reward' using very small RPAs (100g to 2kg) are not required to have a ReOC or a RePL. They do, however, have to notify CASA at least five days before flying, and must operate in accordance with the standard operating conditions. Notification is valid for 24 months;
- private landowners are permitted to carry out some commercial-like operations on their land under the 'standard RPA operating conditions' without requiring a ReOC or RePL on two conditions: the RPA in use is below 25kg, and none of the parties involved should receive remuneration; and
- for RPA weighing between 25kg and 150kg, the operator needs to hold a RePL in the category of aircraft being flown.<sup>28</sup>

### *Standard operating conditions*

2.26 The standard operating conditions applicable to RPA are set out in Regulation 101.238 of the CASR. Under the standard operating conditions, RPA operators must abide by the following rules:

- the RPA is operated within the visual line of sight of the person operating it;
- the RPA is operated at or below 400 feet (120 metres) above ground level (AGL) by day;
- the RPA is not operated within 30 metres of a person who is not directly associated with its operations;
- the RPA is not operated:
  - in a prohibited area or in specified restricted areas
  - over a populous area
  - within 3 nautical miles (5.5 kilometres) of the movement area of a controlled aerodrome;
- the RPA is not operated over an area where a fire, police or other public safety or emergency operation is being conducted, without the approval of the person in charge of the operation; and
- the person operating the RPA is only operating that RPA.<sup>29</sup>

2.27 These requirements were expressly noted in a Notice of Final Rule Making (NFRM) on August 2017,<sup>30</sup> and later in a direction issued under Regulation 11.245 of the CASR on 17 October 2017.<sup>31</sup>

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28 Explanatory statement, Civil Aviation Legislation Amendment (Part 101) Regulation 2016, pp. 1–2.

29 Civil Aviation Safety Regulations 1998, reg. 101.238.

30 Civil Aviation Safety Authority, *Notice of Final Rule Making – Remotely piloted aircraft systems*, NFRM1309OS, August 2017, pp. 9–15.

2.28 According to CASA, standard operation conditions apply when using excluded RPAs, both for recreational or commercial purposes. Those using RPAs in breach of those conditions must notify CASA and may have to apply for a licence or exemption.

#### *CASA 96/17 Direction*

2.29 Following the introduction of the 2016 amendments, CASA told the committee that there was a need to remove some ambiguity about the rules around the use of recreational RPAS, including the prohibition of flights above 400 feet and within 3 nautical miles of an aerodrome.<sup>32</sup> Whilst the standard operating conditions instructed RPAS operators not to operate within 3 nautical miles of a controlled aerodrome, the new rules established that RPAS operations should also not occur near a non-controlled aerodrome, should the operator become aware that a manned aircraft is being operated to or from the site.<sup>33</sup>

2.30 Other changes included the imposition of a weight limit on RPAS operating in the movement area of aerodromes,<sup>34</sup> and clarification around the operation of RPAS over emergency operations.

#### *Penalties and offences*

2.31 A breach of the regulatory requirements set out in Part 101 of the CASR constitutes a strict liability offence in most cases for which:

- a penalty of a fine of up to 50 penalty units or \$10 500 (imposed by a court on conviction) may be applied; or
- the issuance of an aviation infringement notice by CASA requiring the payment of an administrative penalty of up to 5 penalty units or \$1050 (in default of which the matter would be referred for prosecution) can be applied.<sup>35</sup>

2.32 The reckless operation of an unmanned aircraft which endangers the life of another person, or endangers another person or another person's property, is

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31 CASA 96/17 – Direction—operation of certain unmanned aircraft [F2017L01370].

32 Mr Shane Carmody, Civil Aviation Safety Authority, *Supplementary Estimates Hansard*, 27 October 2017, p. 27.

33 CASA 96/17 – Direction—operation of certain unmanned aircraft [F2017L01370].

34 RPAS weighing 100g or below are permitted to operate within 3 nautical miles of an aerodrome. See: Mr Shane Carmody, Civil Aviation Safety Authority, *Supplementary Estimates Hansard*, 27 October 2017, p. 27.

35 The penalties prescribed for offences under Part 101 of the CASR are specified in the regulations as penalty units, ranging in value from 10 to 50 penalty units depending on the seriousness of the offence. The value of a penalty unit is fixed under section 4AA of the *Crimes Act 1914*, and adjusted periodically. As of 1 July 2017, the value of a penalty unit was \$210.

recognised as a serious offence under the Act. Upon conviction, a person may be sentenced to a period of up to 5 years in prison for endangering another person's life, and up to two years for otherwise endangering another person or another person's property.<sup>36</sup>

### *Aviation Infringement Notices*

2.33 CASA informed the committee that a penalty specified in a regulation is the maximum amount a court may impose on a person convicted or found guilty of an offence against that regulation. CASA may issue an aviation infringement notice (AIN) for offences under the CASR. The amount of the penalty imposed by an AIN is specified in regulation 296A of the Civil Aviation Regulations 1988 (CAR) as follows:

- if the maximum penalty a court could impose for the offence is 5 or 10 penalty units, the prescribed penalty for an AIN issued for that offence is 1 penalty unit;
- if the maximum penalty a court could impose for the offence is 15, 20 or 25 penalty units, the prescribed penalty for an AIN issued for that offence is 3 penalty units;
- if the maximum penalty a court could impose for the offence is more than 25 penalty units, the prescribed penalty for an AIN issued for that offence is 5 penalty units.

2.34 Converted into dollar amounts, the range of penalties a court may impose for offences against the provisions in CASR Part 101 is any amount from \$2100 to \$10 500 (depending on the penalty specified in the regulation).<sup>37</sup> The range of penalties that CASA may impose through AINs issued under those regulations are also fixed amounts between \$210 and \$1050, depending on the penalty specified in the regulation.<sup>38</sup>

2.35 Information provided by CASA in September 2017 revealed that since 2015, nine AINs related to RPAS had been issued. The first prosecution was made in January 2015 when an RPAS operator in Townsville received an \$850 fine for operating the RPAS within the Townsville Control Zone. The RPAS was flown within 3 nautical miles of Townsville Airport, above 400 feet, at night, over populous areas, and within 30 metres of people not directly associated with the operation of the RPAS.

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36 Civil Aviation Safety Authority, *Submission 17*, p. 4.

37 Civil Aviation Safety Authority, answers to written questions on notice, 19 September 2017, p. 2 (received 3 October 2017).

38 Civil Aviation Safety Authority, *Infringement notices and demerit points*, <https://www.casa.gov.au/regulations-and-policy/standard-page/infringement-notices-and-demerit-points> (accessed 8 March 2018).

Whilst the offender had breached the regulation multiple times, a single fine was issued.<sup>39</sup>

2.36 A more recent prosecution was made on 10 July 2017 when an RPAS operator was fined \$900 for 'hazardous flying at and near guests' at a wedding in Kangaroo Valley. CASA told the committee that another person was fined \$900 on the same day after their RPAS came too close to a group of children at an Easter egg hunt in Canberra.<sup>40</sup>

2.37 Noting the range of offences and fines applied over some years, the committee questioned whether the penalty regime for RPAS-related offences had been applied consistently. However, CASA noted that '[i]n the exercise of its discretion, and consistent with the approach reflected in CASA's *Enforcement Manual*, CASA may issue a single AIN for more than one offence of the same kind committed by the same person', as was the case with the incident in Townsville.<sup>41</sup> The committee was further advised that varying fines were the result of the changing value of a penalty unit, as defined in the *Crimes Act 1914*.<sup>42</sup>

### **Concerns raised in evidence regarding the regulations**

2.38 Inquiry participants' primary concern with the regulations related to the classification of the recreational or hobby user as an 'excluded category' RPAS operator, particularly given the growing number of hobbyists reported in recent years. The argument was put to the committee that the amendments leave recreational users effectively untouched as they are not required to undergo any training or safety induction prior to operating an RPAS.<sup>43</sup>

2.39 Concerns were also raised about the extent of due diligence taken prior to the introduction of the amendments, the complex nature of the regulations, and the effectiveness of the current penalty regime. These concerns are detailed in the following section.

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39 Civil Aviation Safety Authority, answers to written questions on notice, 19 September 2017, p. 1. Also see: Chris Griffith, 'Airspace regulator CASA on collision course with drones', *Australian Business Review*, 3 February 2015, <http://www.theaustralian.com.au/business/technology/airspace-regulator-casa-on-collision-course-with-drones/news-story/d998fc507203885bc701a56b00d92ddc> (accessed 26 October 2017).

40 Civil Aviation Safety Authority, answers to written questions on notice, 19 September 2017, p. 1.

41 Civil Aviation Safety Authority, answers to written questions on notice, 19 September 2017, p. 2.

42 Civil Aviation Safety Authority, answers to written questions on notice, 19 September 2017, p. 2.

43 Mr Greg Tyrrell, Australian Association for Unmanned Systems, *Committee Hansard*, 16 June 2017, p. 9.

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### ***Concerns raised about 'excluded' category operators***

2.40 Many witnesses raised concerns that under the amended regulations, excluded category operators are not required to undergo any formal training or licensing commensurate to the risks that they pose. Yet, according to evidence before the committee, there are now more than 5000 'excluded category' operators in Australia, many of whom do not have an aviation background.<sup>44</sup>

2.41 Inquiry participants argued that differentiating between recreational and commercial RPAS operations did not justify relaxed requirements for new users. The Australian Association for Unmanned Systems (AAUS) argued that under a risk-based regulatory approach, 'regulations applicable to hobbyists and recreational drones should be the same as those presented by commercial RPAS operators'. In parallel, AAUS noted, effort is required to 'address issues surrounding education and enforcement of the regulations'.<sup>45</sup>

2.42 AusALPA suggested that there is a diminishing argument for the regulatory divide between commercial and recreational RPAS operations, particularly as passenger-carrying RPAS are a likely next step. It submitted that:

While we recognise that several years ago, the division between private/recreational and commercial use was a reasonable proxy for [consideration of RPA mass, frequency of use and location of use], the explosion of availability of affordable RPAs has undermined that connection...<sup>46</sup>

2.43 AusALPA further stated that the new rules would '[broaden] the base of barely constrained users while undermining the market for the highly invested and highly constrained commercial users'.<sup>47</sup>

2.44 For many submitters, the development of the 'excluded' category appeared to be 'a de-reg[ulation] of the entire UAV (drone) industry', allowing untrained operators to fly their RPAS without first understanding the potential hazards.<sup>48</sup> The International Aerospace Law and Policy Group (IALPG) commented that it is 'alarming' to roll back the very protections that had allowed safe operation before the changes to CASR

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44 Mr Greg Tyrrell, Australian Association for Unmanned Systems, *Committee Hansard*, 16 June 2017, p. 1.

45 Mr Greg Tyrrell, Australian Association for Unmanned Systems, *Committee Hansard*, 16 June 2017, pp. 1–2. Also see: Australian Airline Pilots' Association, *Submission 39*, p. 4.

46 Australian Airline Pilots' Association, *Submission 39*, pp. 4–5.

47 Australian Airline Pilots' Association, *Submission 39*, p. 5.

48 Mr Vince Sofia, *Submission 7*, [pp. 1–2]. Also see: Mr John Reidy-Crofts, *Submission 89*, p. 1; Mr Joseph Urli, Australian Certified UAV Operators, *Committee Hansard*, 28 June 2017, p. 9.

Part 101,<sup>49</sup> while Austec Aerial Solutions went further to describe the legislation as a 'complete failure' that would lead to injuries, and reckless and illegal RPAS use.<sup>50</sup>

### ***Concerns about due diligence conducted prior to the amendments***

2.45 Submitters also raised concerns about the extent to which CASA undertook its due diligence before introducing the amendments. In particular, witnesses pointed to the extremely short consultation period prior to the introduction of the amendments.<sup>51</sup>

2.46 CASA engaged in consultation with industry and the public about the proposed amendments for approximately one month between 14 May 2014 and 16 June 2014 through a Notice of Proposed Rulemaking (NPRM 1309OS). CASA received 90 responses, including two which had established petitions with a total of 430 signatures.<sup>52</sup> In response to feedback on the amendments, CASA then prepared a new draft of the regulations and submitted it to the UAS Standards Sub-committee (UASSC),<sup>53</sup> and CASA's RPAS Operations Office, for review.<sup>54</sup>

2.47 The IALPG pointed out that the 2016 regulations came into force more than two years after the initial consultation period, and did not reflect the 'leaps and bounds' that had been made in understanding the risks associated 'with all sizes of drone' since that time.<sup>55</sup> This concern was echoed by Maurice Blackburn Lawyers who were critical of CASA's lack of research on the likelihood of injury occurrence from RPAS, compared to other countries.<sup>56</sup>

2.48 Mr Joseph Urli of Australian Certified UAV Operators argued that the decision made by CASA to relax the regulations went directly against the recommendations of the wider aviation industry. He stated:

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49 International Aerospace Law & Policy Group, *Submission 19*, p. 12.

50 Austec Aerial Solutions, *Submission 13*, [p. 1].

51 See, for example: Drone Solutions Pty Ltd, *Submission 63*, p. 4; Mr Joseph Urli, Australian Certified UAV Operators, *Committee Hansard*, 28 June 2017, p. 9; Australian Airline Pilots' Association, *Submission 39*, p. 4; International Aerospace Law & Policy Group, *Submission 19*, p. 5; Maurice Blackburn Lawyers, *Submission 22*, p. 2.

52 Civil Aviation Safety Authority, *Notice of Final Rule Making: Remotely Piloted Aircraft Systems*, August 2017, pp. 7–9.

53 The UASSC includes representatives from the RPAS industry, as well as CASA, Airservices Australia and major Australian airlines. Following a committee meeting on 4 September 2017, the UASSC was subsumed into the Aviation Safety Advisory Panel (ASAP). A full list of members is available at: <https://www.casa.gov.au/rules-and-regulations/standard-page/aviation-safety-advisory-panel>.

54 Explanatory statement, Civil Aviation Legislation Amendment (Part 101) Regulation 2016, p. 2.

55 International Aerospace Law & Policy Group, *Submission 19*, p. 5.

56 Maurice Blackburn Lawyers, *Submission 22*, p. 2.

CASA's notice of proposed rulemaking was not a fair and open process. More than one person between CASA and industry had preconceived ideas about deregulating the industry and both the public consultation process and [the UAS Standards Sub-committee's] support was manipulated to achieve the desired outcome. The large majority of the actual industry certified commercial operators, numbering just over 100 operators at the time of the [notice of proposed rule-making], were against the deregulation for good reason.<sup>57</sup>

2.49 The committee was also informed that, during risk assessments of the key changes proposed in the amendments, CASA's own risk matrix, which incorporates both likelihood and consequence values for a collision, was misinterpreted to produce a low risk rating. It was noted in evidence that the conclusions made by the two CASA-commissioned studies undertaken by Monash University diverge significantly from the conclusions made in similar studies overseas.<sup>58</sup>

2.50 In addition to these concerns, the committee heard criticism that CASA did not fully grasp or consider how the relaxation of rules may impact on the number of 'undesirable' RPAS operations undertaken by excluded category users.<sup>59</sup> According to submitters, CASA effectively 'opened the flood gates',<sup>60</sup> and abrogated responsibility in a way that was out of step with its usual regulatory rigour.<sup>61</sup> To this end, questions were raised about the proliferation of recreational RPAS operating in Australia, with some witnesses questioning how CASA could relax the regulations without having a clear picture of the total number of recreational RPAS users in the country. Airservices Australia acknowledged these concerns, noting that the number of RPAS in Australia presents 'an emerging and insufficiently understood transport safety risk'.<sup>62</sup>

### ***Concerns about the complexity of regulations***

2.51 An additional concern of many submitters was that the regulations are in and of themselves too complex. Mr Chris Bird stated:

CASA has tried to apply a full size aviation solution to something that is now in the hands of the common person. To fly a full size aircraft you need a lot of training and getting access to a plane is not easy without having a license [sic]. The common person hasn't had this training and the

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57 Mr Joseph Urli, Australian Certified UAV Operators, *Committee Hansard*, 28 June 2017, p. 9.

58 Chapter 3 considers the two Australian studies commissioned by CASA as well as the research undertaken in other jurisdictions.

59 Australian Airline Pilots' Association, *Submission 39*, p. 4.

60 Mr Mark Leuschner, *Submission 82*, [p. 1].

61 Virgin Independent Pilots Association, *Submission 11*, [p. 3].

62 Dr Rob Weaver, Airservices Australia, *Committee Hansard*, 29 August 2017, p. 11. Also see: Australian Transport Safety Bureau, *A safety analysis of remotely piloted aircraft systems*, March 2017, [p. iii].

expectation is that they just know about these things. Right now the regulations are just too complex for the common person to understand.<sup>63</sup>

2.52 Representatives from law firm Piper Alderman supported this view, stating:

...the language used in the CASA Regulations is likely to be difficult for a lay person to navigate and interpret; for example, Reg 101.280 provides various strict liability offences in respect of the operation of RPAs in "populous areas" but the definition of "populous area" provided in Reg 101.025 is legalistic and not easily translated for real world application...

As noted above, it is hardly accurate to describe the CASA Regulations as "simple".<sup>64</sup>

2.53 The committee heard that it is not only the regulations that are perceived as convoluted, but also the advice provided directly by CASA. Mr John Reidy-Crofts suggested that CASA's advice is overly technical and hard for the public to understand. He referred to correspondence he received from CASA which used terminology such as 'VFR', 'deconfliction' and 'uncontrolled air space'. According to Mr Reidy-Crofts:

Until I read the CASA Advisory Circular, and made further enquiries by gaining web site access to how airspace is managed in Australia, I was not aware of what these terms meant.

...I hold serious concern that under the current CASA Licensing and Operational rules for RPAS, a child or person of unsound mind, can operate a small (excluded) RPA without any pre-requisite [sic] training or license requirements. I have also concerns over adults who may be of sound mind but have no understanding of VFR or other terms as mentioned above.<sup>65</sup>

### ***Concerns regarding the recording of aviation occurrences***

2.54 According to the ATSB, an aviation occurrence is reported and recorded when it is deemed to be:

- an accident involving death or serious injury, aircraft destruction or serious damage, or property destruction or serious damage;
- a serious incident involving circumstances indicating that an accident nearly occurred; or
- an incident associated with the operation of an aircraft which affects or could affect the safety of operation.<sup>66</sup>

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63 Mr Chris Bird, *Submission 52*, [p. 3].

64 Piper Alderman, *Submission 65*, p. 2.

65 Mr John Reidy-Crofts, *Submission 89*, p. 2.

66 Australian Transport Safety Bureau, *ATSB National Aviation Occurrence Database – Terminology*, <https://www.atsb.gov.au/avdata/terminology.aspx> (accessed 7 March 2018).

2.55 However, submitters highlighted a number of issues with the current system of recording aviation occurrences, particularly with regard to RPAS incidents. Such information is an important means of measuring the effectiveness of the regulations.

2.56 Aviation occurrence reporting requirements are provided under the *Transport Safety Investigation Act 2003* and the Transport Safety Investigation Regulations 2013. Airservices Australia is responsible for collecting occurrence data, and recording it in their Corporate Integrated Reporting and Risk Information System (CIRRIS). According to an Airservices Australia representative, the database captured by CIRRIS is not publically available, but reports can be sent to the ATSB when required under the *Transport Safety Investigation Act 2003*.

2.57 Airservices Australia told the committee that, while there is currently a 'very high reliance on pilot reports', it is working on enhancements to the safety performance, monitoring and reporting systems 'to improve the management of RPAS operational safety', such as through accurate occurrence reporting.<sup>67</sup>

2.58 In addition to the CIRRIS database, the ATSB also records RPAS-related incidents on the National Aviation Occurrence Database. The occurrence notifications recorded in this database must meet a number of criteria, including that the incident is deemed a 'transport safety matter'. Notifications not meeting the criteria are classified as 'events' and excluded from the database.<sup>68</sup>

2.59 As Australia's national transport safety investigator, the ATSB is currently resourced to investigate around 140 aviation accidents and incidents per year from approximately 5500 reported.<sup>69</sup> ATSB told the committee that it historically 'has not had sufficient resources to investigate all accidents and serious incidents'. However, it does record data 'for safety research, analysis and education'.<sup>70</sup> Information made available by CASA showed that, in the past five years, the ATSB has published 10 investigations into RPA incidents, including two research investigations in 2017. This is from a total of 151 reported RPA near encounters with manned aircraft in 2017.<sup>71</sup>

2.60 Along with these resourcing pressures, witnesses raised concerns that there are also gaps in the current methodology for gathering aviation occurrence data. According to Regional Express (Rex), the criterion for reportable activity is too

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67 Airservices Australia, *Submission 29*, [pp. 1–2]. Also see: Dr Rob Weaver, Airservices Australia, *Committee Hansard*, 29 August 2017, p. 11.

68 Australian Transport Safety Bureau, *ATSB National Aviation Occurrence Database*, <https://www.atsb.gov.au/avdata/> (accessed 29 January 2018).

69 Australian Transport Safety Bureau, *Submission 62*, p. 2.

70 Australian Transport Safety Bureau, *Submission 62*, pp. 2–4.

71 Civil Aviation Safety Authority, *Review of aviation safety regulation of remotely piloted aircraft systems*, May 2018, p. 19.

narrow, causing many instances of illegal or dangerous RPAS activity to be deemed to be 'non-reportable events'.<sup>72</sup>

2.61 Another issue raised was the heavy onus on members of the public to provide information to CASA before a complaint can be verified, or an infringement notice issued to the offending operator. According to CASA's website:

We are unable to pursue enforcement action unless we have sufficient evidence.

Please provide photographic/video evidence showing the possible safety breach. If this footage does not clearly display the individual operating the drone/RPA, further evidence may be required.<sup>73</sup>

2.62 Austec Aerial Solutions likened this requirement to 'reporting a burglary to Police and the Police ask[ing] you to provide all evidence so they can charge the offenders'.<sup>74</sup>

2.63 Mr Vince Sofia added that 'it should not fall into the hands of licensed drone operators to become a "watchdog" for CASA, nor do we want too [sic]'.<sup>75</sup> A lack of regulatory resources, as well as the fact that recreational RPAS and their operators are not registered, was blamed for the poor reporting system in place.<sup>76</sup>

2.64 By CASA's own admission, a vast majority of cases remain unresolved as 'it is often extremely difficult to identify who was responsible for the alleged conduct, and challenging to obtain sufficient evidence to support any enforcement action'.<sup>77</sup>

### ***Concerns about the penalty regime***

2.65 The evidence provided to the committee with regard to the penalty regime raised two key issues. The first is that the penalty regime in its entirety is an insufficient enforcement mechanism, as it does little to discourage unsafe RPAS operations. Under the existing regime, a fine of up to 50 penalty units for a breach of CASA's rules equates to approximately \$10 500.<sup>78</sup> AusALPA noted that this amount

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72 Regional Express Airlines, *Submission 70*, p. 4.

73 Civil Aviation Safety Authority, *Unsafe drone operations complaints form*, <https://www.casa.gov.au/webform/unsafe-drone-operations-complaint-form> (accessed 9 November 2017).

74 Austec Aerial Solutions, *Submission 13*, [p. 1].

75 Mr Vince Sofia, *Submission 7*, [p. 3].

76 See, for example: International Aerospace Law & Policy Group, *Submission 19*, p. 18; Mr Joseph Urli, Australian Certified UAV Operators, *Committee Hansard*, 28 June 2017, p. 15; Model Aeronautical Association of Australia, *Submission 50*, p. 5.

77 Civil Aviation Safety Authority, *Submission 17*, p. 13.

78 The penalty regime applying to RPAS in Australia was discussed earlier in this chapter.

is 'inadequate or at best unclear' in the case of a serious incident involving manned aircraft.<sup>79</sup>

2.66 NSW Farmers highlighted that RPAS misuse can also pose a hazard to other operations, particularly agricultural activities. The lack of civil remedies available to farmers that have caught RPAS trespassing on their property was of particular concern.<sup>80</sup> NSW Farmers advocated for a base penalty of at least \$50 000, contingent upon 'the potential for harm and the amount of due diligence not undertaken by the UAS operator'.<sup>81</sup>

2.67 The Aerial Application Association of Australia was of the view that penalties should be raised in order to account for the potential loss of income for aircraft that are forced to stand down when an RPAS flies into restricted airspace.<sup>82</sup> Elevo agreed that the current level of penalties should be increased, and should include a temporary or permanent prohibition measure for companies or individuals found guilty of illegal operations.<sup>83</sup>

2.68 Under the current system, CASA publishes formal enforcement decisions online. It does not publish information on suspensions, cancellations or fines.<sup>84</sup> However, a number of submitters including the Australian Miniature Aerospots Society took the view that the publication of all such breaches would serve as a stronger disincentive to RPAS misuse.<sup>85</sup> The Aerial Application Association of Australia suggested that the publication of RPAS prosecutions would act as a major deterrent for reckless RPAS users, whilst AAUS agreed that it would 'establish a precedent' and deter operators that may have ill-intent or are simply unaware of the rules.<sup>86</sup>

2.69 The second major issue regarding the penalty regime is that of inadequate resources allocated to the regulator. The committee received evidence indicating that,

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79 Australian Airline Pilots' Association, *Submission 39*, p. 5. At the time of submission, the value of 50 penalty units was equivalent to \$9000.

80 NSW Farmers, *Submission 45*, [pp. 6–8].

81 NSW Farmers, *Submission 45*, [p. 5].

82 Aerial Application Association of Australia, *Submission 49*, p. 3.

83 Elevo Pty Ltd, *Submission 8*, [p. 2].

84 CASA's policy on publishing enforcement decisions was laid out by Dr Jonathan Aleck at a public hearing. See: Dr Jonathan Aleck, Civil Aviation Safety Authority, *Committee Hansard*, 29 August 2017, p. 34.

85 Australian Miniature Aerospots Society Inc, *Submission 71*, p. 4. Also see: Helistar Aviation, *Submission 23*, [p. 4]; Australian Airline Pilots' Association, *Submission 39*, p. 5; Australian Association for Unmanned Systems, *Submission 46*, p. 11; Aerial Application Association of Australia, *Submission 49*, pp. 2–3; Elevo Pty Ltd, *Submission 8*, [p. 2].

86 Aerial Application Association of Australia, *Submission 49*, p. 3; Australian Association for Unmanned Systems, *Submission 46*, p. 5.

without sufficient staff training and resources, CASA is unable to effectively enforce the regulations in a way that responds to the growing cohort of amateur RPAS operators. This includes being unable to investigate the multitude of incidents breaching the standard operating conditions, and issue aviation infringement notices to offenders.<sup>87</sup> The issue of cost-effective solutions for RPAS management is discussed further in Chapter 7.

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87 At an estimates hearing, CASA'S CEO stated that 'the allocation of resources for investigations of drones...depends a great deal on the seriousness of the matter'. See: Mr Shane Carmody, Civil Aviation Safety Authority, *Supplementary Estimates Hansard*, 27 October 2017, p. 21.