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Introduction

1.1 Australia's drone industry is booming. The number of certified commercial operators has risen dramatically in recent years, and the increasing capability and usability of drone technology has seen a huge rise in the number of businesses and consumers purchasing and using drones.

1.2 Drones, or remotely piloted aircraft (RPAs), have numerous civil and commercial applications. They offer economic benefits and significant safety improvements to a diverse range of organisations through novel or more cost-effective capabilities. As such, drone technology has the potential to offer substantial social and economic benefits to Australian society. However, their increasing use has led to a number of incidents that draw attention to the air safety and privacy implications of RPA technology. As RPAs become more popular, they are increasingly being used in unsafe ways. In addition, the increasing sensitivity of the cameras and instruments they can carry has raised concerns about privacy intrusions.

1.3 The foreword to the 2012-13 annual report of the Office of the Australian Information Commissioner stated that:

> We now expect that we will regularly see new ways in which personal information can be collected and used. Two pieces of technology that have caught the community's attention during the year because of their potential for doing just this were aerial drones, with the capacity to film while being controlled, and

> Google Glass, a wearable device that allows the user to collect, access and transmit information.[1]

1.4 This reference prompted the Committee to initiate an inquiry under Standing Order 215 (c) into RPAs and their implications for air safety and privacy. Under this Standing Order, a Committee can conduct any inquiry it wishes into the annual report of a Government department that stands referred to the Committee under the Speaker's Schedule of Annual Reports.[2]

1.5 The Committee did not initiate this examination of RPAs with the intention of conducting a comprehensive inquiry. The Committee observed that the commercial opportunities, safety risks, and privacy concerns raised by RPAs were emerging issues, and the purpose of the inquiry was to determine the adequacy of regulatory arrangements to respond to these technological developments. The Committee's inquiry focused on civil, commercial and recreational RPA applications, and consequently this report will not consider military RPAs or their uses.

Conduct of the inquiry

1.6 For this inquiry, the Committee did not seek submissions, but determined that a more effective approach was to conduct a series of roundtables with invited participants. The inquiry commenced with a roundtable discussion held in Canberra on 28 February 2014, followed by a public hearing in Canberra on 20 March and a second roundtable in Brisbane on 21 March, with a final public hearing in Canberra on 29 May 2014.

1.7 The Canberra roundtable consisted of three sessions that focused on air safety, RPA applications and privacy, and featured a range of industry stakeholders. The roundtable heard from air safety authorities like the Civil Aviation Safety Authority (CASA) and Airservices Australia, a number of industry groups, and privacy experts including the Privacy Commissioner.

1.8 The Committee's second roundtable was held in Brisbane on 21 March. The first of its two sessions focused on Queensland police and emergency services' experience using RPAs, and the privacy implications of that use.

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1 Office of the Australian Information Commissioner, *Annual Report 2012-13,* p. xv.

2 A link to the Speaker's Schedule of Annual Reports can be found on the Parliament website at http://www.aph.gov.au/Parliamentary_Business/Committees/House.

The second session focused on the agricultural and commercial applications of RPAs in Queensland.

1.9 The Committee also held two short public hearings, in Canberra on 20 March at which the Attorney General's Department gave evidence, and on 29 May at which CASA appeared. A list of the public hearings and roundtables held by the Committee is included at Appendix A.

1.10 Transcripts of these roundtables and hearings are available on the Committee website, along with a number of additional documents tendered to the Committee in the course of its inquiry, such as responses to questions on notice. A list of the documents received by the Committee is included at Appendix B.

1.11 The Committee also had the opportunity to view a variety of RPAs and discuss their capability through an RPA demonstration given to the Committee by Parrot Pty Ltd and a site inspection at Insitu Pacific's facility in Brisbane.

Structure of the report

1.12 The Committee's report consists of four chapters. This chapter sets out the context and conduct of the inquiry. Chapter 2 describes the types of RPAs and highlights the impressive range of civil and commercial applications of RPA technology, in contexts such as law enforcement, emergency services, biosecurity, agriculture and scientific research.

1.13 Chapter 3 discusses the air safety issues raised by RPA use, including concerns regarding the build quality and reliability of RPAs, and the safety risk posed by large numbers of untrained RPA operators who may not know of or understand the relevant aviation safety regulations.

1.14 Chapter 4 focuses on the privacy issues that widespread RPA use raises. It briefly examines the complex web of Federal, State and Territory laws and common law principles that are relevant to privacy, and draws attention to some of the weaknesses that emerging technologies such as RPAs may expose in the existing regulatory system.

Terminology

1.15 The names used to refer to drones are almost as varied as the forms the technology itself can take. Participants in the inquiry have used a range of terms to refer to drones, including 'unmanned aerial vehicles' (UAVs), 'unmanned aerial systems' (UAS), and 'remotely piloted aircraft systems' (RPAS).

1.16 Industry groups expressed a desire to avoid the term 'drone', as a result of perceived negative connotations arising from an association with the United States military's program of 'targeted assassinations'. This report will refer to all aircraft of this type as 'remotely piloted aircraft' (RPA or RPAs).