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Privacy Concerns Regarding Unmanned Aerial Systems

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With the advent of the increasing use of Unmanned Aerial Systems (UAS) by private organisations and individuals, a greater interest regarding the impact of these systems on personal privacy is also being expressed.

Unlike some countries, such as England, which have become used to living with closed circuit cameras, in Canada we enjoy a great deal of privacy in our lives. Our privacy rights are protected under the Privacy Act which limits the personal information held by the Government of Canada and provides us with access to our personal information held by the Government. We are also protected by the Personal Information Protection and Electronic Document Act (PIPEDA), which governs the collection, use and disclosure by the private sector of our personal information, including the retention period during which the information is held by the organisation. Under the Interpretation section of PIPEDA, a definition is provided for the term "record":

> *"record" includes any correspondence, memorandum, book, plan, map, drawing, diagram, pictorial or graphic work, photograph, film, microform, sound recording, videotape, machine readable record and any other documentary material, regardless of physical form or characteristics, and any copy of any of those things.*

It is within this definition that the product of a UAS video or photograph falls under the purview of the Act. It should be noted that neither the Privacy Act nor PIPEDA prohibit the collection of personal information; they restrict the purpose for which the information is used, the distribution of the information and the length of time it is retained on record.

The matter of privacy as it pertains to UAS images might be considered to be on par with the images caught on Google Street View. In each case, the images of people and property in the picture or video that are not intentionally included are incidental to the scene being photographed. Unlike a satellite picture, which is all encompassing and includes everything visible from space, Street View is limited to images taken while driving along specific roads; therefore, whatever is photographed was in plain view as the Google car drove along the selected route. If someone or something is in plain view of the general public, there is no reasonable expectation of privacy and no cause of action for invasion of privacy. Likewise, if a UAS is flown in a public area and everything which is shown on video or photograph was in plain sight of the general public at the time, then there is no reasonable expectation of privacy and no cause of action for invasion of privacy. However, a UAS is not a car, it is an aircraft which gathers much more incidental information, so a different level of care is required in its operation.

As neither the Privacy Act not PIPEDA have provisions covering the manner in which incidental information, such as that gathered by a UAV is handled, it is necessary to draft new legislation and regulations which perform the following functions:

- identifies and addresses the specific privacy concerns of the public regarding UAS,
- balances the use and development of UAS with public safety,
- creates a licensing and regulating body and states its enforcement powers,
- determines the size and scope of the new regulating body,
- provides clear direction on the use and limitations on use of the UAS,
- places limits on the availability of new UAS technology to the general public,
- establishes specific penalties for non-compliance with the regulations,
- develops a standardized training program for all UAS operators in Canada, and
- transfers responsibility for all matters pertaining to UAS, including the issuing and administration of Special Flight Operation Certificates (SFOC) to the proposed regulating body.

Currently, Transport Canada regulates civilian use of UAS and requires those who wish to utilise UAS to obtain, in advance of any flight, a SFOC. For all intents and purposes a SFOC is a license to fly a specific vehicle, for a specific purpose, for a limited time. In order to conduct any further flights, the user has to obtain another SFOC. Transport Canada will provide SFOC that permit extended operational time periods under special circumstances.

Ideally, the proposed regulating body would be solely responsible for all aspects of UAS use, including licensing and enforcement. Essentially the necessary resources and authority to perform its function must be provided to the proposed regulating body to ensure it will be able to fulfill its mandate with respect to inspection and enforcement.

While the matter of being caught on camera incidentally by UAS may be of great concern to lawyers and university professors, it is possibly not the primary concern of the general public. This might best be illustrated by the general lack of concern shown by people passing tourists who are taking photographs. Few people (unless they are some sort of celebrity) remonstrate with a tourist to demand they be given the film if there's a chance they were caught in the picture. It is more likely, it is the idea of a stranger intentionally spying on them, when they are involved in a personal activity or an illicit act, which causes most concern, especially the thought that the person who took the picture or video may then post it on line.

Many of the concerns that are raised about UAS appear to be based on both a misunderstanding of the capabilities of the current technology and the idea of the technology being misused by anonymous individuals and agencies to spy at will upon the general population. The situation is made worse by poorly written and researched news stories which report on self-appointed spokespeople with little knowledge of the technology who may either intentionally or unintentionally exaggerate the danger to society, such as the lawyer who stated that UAS can take photographs through a window (*RCMP to Get Drones: by Paul McLeod, Chronicle Herald January 2, 2014*).

The truth of the matter is that while there are specialised UAS which are capable of performing long range–high altitude surveillance, they are prohibitively expensive to buy and to use, therefore, they

are beyond the means of the general public and highly unlikely to be purchased by any organisation or individual to conduct random surveillance, just to satisfy their curiosity.

The UAS which are currently within the budget of the general public do not have the capability to perform long term surveillance. The battery charge for these units is limited on average to less than one hour for the higher priced units and to ten minutes for the lower priced units. There is also a limit on the size of the camera these UAS can carry. The low priced units only have a very small camera which provides a relatively poor picture, due to the instability of the UAS. The higher priced units can carry a much better camera, mounted on a gyroscopic gimbal, which will hold the camera steady, but still requires pictures or video to be taken at a relatively short distance from the subject. This brings into play the third limitation of these units, which is noise.

The propellers for all UAS make a noticeable and distinctive sound when the vehicle is in flight. This sound is audible from a distance sufficiently close enough to ruin any chance of stealthy surveillance. As the cameras operate best at a fairly short distance, a surveillant would risk attracting the attention of the subject due either to the sound of the propellers, or the noise of a collision with the building when trying to take a photograph or video through a window.

Probably the best way to allay the fears of the public is through education. The main causes of misunderstanding the facts about UAS are:

- sensationalised news coverage
- uninformed opinions or misinformation from biased sources
- exaggeration in movies, books and advertising
- mistrust in the organisation operating the UAS
- suspicion of new technology
- naivety and poor critical thinking skills

The more often the public is exposed to accurate and concise information regarding UAS, the less likely they are to believe false information provided in the news, books, movies and television. A well prepared presentation provided to service and business clubs, schools, youth groups and professional organizations will help significantly to remove the stigma of Big Brother's eye in the sky that some people apply to UAS.

The following list shows the wide variety of uses to which UAS can be utilised. Their use will become more prevalent as the technology develops and operating them becomes easier. It is now, while we are in the early stages of their deployment to business and the general public, that the government must act to develop an environment for the future where they will be used safely, responsibly and in a manner that respects the privacy of others.

Military	Terrain Reconnaissance
	Forward Observation & Artillery Targeting
	Air Strike
	Defensive Surveillance

Police	Accident Assessment and Reconstruction Threat Assessment & Situation Management Extended Area Search for Missing Parties or for Evidence Disaster Extent & Damage Survey Area Cordon Coordination
Regulatory Agencies	Reconnaissance & Monitoring Accident Survey and Reconstruction Extended Area Observation Preparation for Prosecution
Emergency Services	Hazard Assessment Resource Coordination & Management Extended Area Search for Missing Parties Disaster Damage Survey
Businesses	Land Use Surveys Boundary Surveys Resource Surveys Infrastructure Surveys Structure Inspection Real Property Assessment and Management Asset Assessment and Management Advertising and Promotions Hazard Assessment Progress Surveys Construction Management Security Services Training UAS Development
Consumers	General Recreation Flights Aerial Photography UAV Racing Aerobatic Flying and Competition

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